



THE
ORCHID
GROWERS
MANUAL

UNIVERSITY OF PITTSBURGH

Dar.
SB409
W 721



Darlington Memorial Library



1872

1872

(95)

THE
ORCHID-GROWER'S MANUAL.

THE
ORCHID-GROWER'S MANUAL,

CONTAINING

Descriptions of the best Species and Varieties of
Orchidaceous Plants ;

TOGETHER WITH

NOTICES OF THEIR TIMES OF FLOWERING, AND MOST APPROVED MODES OF TREATMENT ;
ALSO, PLAIN AND PRACTICAL INSTRUCTIONS RELATING TO THE GENERAL
CULTURE OF ORCHIDS; AND REMARKS ON THE HEAT,
MOISTURE, SOIL, SEASONS OF GROWTH AND
OF REST BEST SUITED TO THE
SEVERAL SPECIES.

BY

BENJAMIN SAMUEL WILLIAMS, F.L.S., F.R.H.S.,

*Author of "The Orchid Album," "Select Ferns and Lycopods," "Choice Stove
and Greenhouse Flowering Plants," "Choice Stove and Greenhouse
Ornamental-leaved Plants," &c., &c.*

SIXTH EDITION, ENLARGED AND REVISED,
WITH NUMEROUS ILLUSTRATIONS.

L O N D O N :
PUBLISHED AT VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

1885.

LONDON:
Printed by JAS. TRUSCOTT & SON,
Suffolk Lane, City.

CONTENTS.



	<i>Page</i>
INTRODUCTION	1
HABITATS OF TROPICAL ORCHIDS	9
SEASON FOR COLLECTING ORCHIDS	12
HINTS ON COLLECTING ORCHIDS.	14
RISKS OF COLLECTING ORCHIDS	18
ORCHID TREATMENT DURING GROWTH	24
ORCHID TREATMENT DURING REST	26
ADAPTATION OF TREATMENT TO SURROUNDING CONDITIONS	28
TREATMENT OF NEWLY-IMPORTED PLANTS	31
TREATMENT OF PLANTS IN BLOOM	33
ON MAKING ORCHID BASKETS	34
POTTING EPIPHYTAL ORCHIDS	37
POTTING TERRESTRIAL ORCHIDS	41
MODE OF INDUCING BACK GROWTHS.	41
WATERING ORCHIDS	42
PROPAGATION OF ORCHIDS	47
RAISING ORCHIDS FROM SEEDS	49
ORCHIDS FOR ROOM DECORATION	52
CONSTRUCTION OF ORCHID HOUSES	56
GLAZING OF ORCHID HOUSES	62
HEATING OF ORCHID HOUSES	62
VENTILATION OF ORCHID HOUSES	65
SHADING OF ORCHID HOUSES	66
GROWING SPECIMEN ORCHIDS FOR EXHIBITION	69
TREATMENT PREPARATORY TO EXHIBITION	72
PACKING ORCHIDS FOR EXHIBITIONS	74
INSECTS AND OTHER ENEMIES	79
DISEASES OF ORCHIDS	87
SELECT ORCHIDS IN CULTIVATION	91
GREENHOUSE AND FRAME ORCHIDS	621
ADDENDA	631
INDEX	641

LIST OF ILLUSTRATIONS.

	<i>Page</i>
ORCHID EXHIBITION HOUSE IN THE VICTORIA AND PARADISE NURSERIES	1
ORCHIDS GROUPED WITH FERNS AND FOLIAGE PLANTS	33
PLAN OF ORCHID HOUSE	57
PLAN OF COOL ORCHID HOUSE	59
ADA AURANTIACA	95
AÆRIDES CRASSIFOLIUM	99
———— CRISPUM	99
———— VANDARUM	110
ANGRECEM EBURNEUM	116
———— ELLISII	117
———— KOTSCHYI	118
———— SESQUIPEDALE	119
ANGULOA CLOWESII	131
BARKERIA ELEGANS	139
BATEMANIA MELEAGRIS	143
BOLLEA PATINII	147
BRASSIA MACULATA	152
BULBOPHYLLUM SIAMENSE	156
BURLINGTONIA CANDIDA	158
CALANTHE VESTITA	165
CATASETUM SCURRA	169
CATTLEYA ACLANDIÆ	172
———— CRISPA	178
———— DOLOSA	179
———— GIGAS	183
———— TRIANÆ	201
———— VELUTINA	206
———— SEEDLINGS IN VARIOUS STAGES	49
CHYSIS CHELSONI	210
CÆLOGYNE CRISTATA	217
COMPARETTIA MACROPLECTRON	225

	<i>Page</i>
CORYANTHES MACULATA PUNCTATA	228
CYMBIDIUM EBURNEUM	232
CYPRIPEDIUM CALCEOLUS	624
----- CAUDATUM	241
----- CONCOLOR	242
----- DOMINIANUM	244
----- EURYANDRUM	244
----- GODEFROYÆ	245
----- INSIGNE MAULEI	248
----- INSIGNE PUNCTATUM VIOLACEUM	248
----- LAWRENCEANUM	249
----- LOWII	250
----- MICROCHILUM	251
----- SEDENI	256
----- SELLIGERUM	257
----- SPECTABILE	625
----- SPICERIANUM	257
----- VEXILLARIUM	260
----- VILLOSUM	261
----- SEEDLINGS IN VARIOUS STAGES	49
DENDROBIUM AINSWORTHII	268
----- AMENUM	269
----- D'ALBERTISII	277
----- DENSIFLORUM	278
----- JAMESIANUM	288
----- LUTEOLUM CHLOROCENTRUM	291
----- NOBILE	294
----- PIERARDI	297
----- SUPERBIENS	301
----- THYRSIFLORUM	303
----- SEEDLINGS IN VARIOUS STAGES	49
DISA GRANDIFLORA SUPERBA	627
EPIDENDRUM VITELLINUM MAJUS	322
GALEANDRA DEVONIANA	328
----- NIVALIS	329
GONGORA ATROPURPUREA	331
IPSEA SPECIOSA	346
LÆLIA ANCEPS	350
----- AUTUMNALIS	353
----- HARPOPHYLLA	360
LEPTOTES BICOLOR	371

	<i>Page</i>
LYCASTE SKINNERI	381
MACODES PETOLA	384
MASDEVALLIA BELLA	386
----- CHIMERA	387
----- LINDENI	394
----- MACRURA	395
----- ROSEA	398
----- TOVARENSIS	400
----- VEITCHIANA	401
MAXILLARIA LUTEO-ALBA	404
MESOSPINIDIUM SANGUINEUM	406
MILTONIA CUNEATA	411
----- REGNELLI PURPUREA	413
----- WARSCEWICZII WELTONI	415
NANODES MEDUSE	420
ODONTOGLOSSUM ASPERSUM	424
----- CIRRHOSUM	428
----- CRISPUM (ALEXANDRE)	432
----- GLORIOSUM	440
----- GRANDE	441
----- HALLII	442
----- HEBRAICUM	444
----- LUTEO-PURPUREUM (RADIATUM)	449
----- LYROGLOSSUM	450
----- MULUS	451
----- NEBULOSUM	453
----- NEVADENSE	455
----- CERSTEDII	456
----- PHALENOPSIS	457
----- POLYXANTHUM	459
----- VEXILLARIUM	467
----- WARNERIANUM	469
ODONTOGLOSSUM HOUSE IN THE VICTORIA AND PARADISE NURSERIES	56
ONCIDIUM CURTUM	481
----- FLEXUOSUM	483
----- GARDNERI	484
----- MACRANTHUM	491
----- MARSHALLIANUM	492
----- MONACHICUM	493
----- PAPILIO	496
----- SARCODES	500

	<i>Page</i>
ONCIDIUM SPHACELATUM	501
----- SPLENDIDUM	502
----- VARICOSUM ROGERSII	505
ORCHID BASKETS	35
ORCHIS FOLIOSA	629
PACHYSTOMA THOMSONIANUM	507
PAPHINJA CRISTATA	510
PERISTERIA ELATA	512
PESCATOREA DAYANA	514
PHAJUS GRANDIFOLIUS	519
----- IRRORATUS	520
----- TUBERCULOSUS	521
PHALENOPSIS AMABILIS	527
----- AMETHYSTINA	527
----- INTERMEDIA PORTEI	531
----- SCHILLERIANA	536
----- SPECIOSA	537
----- AT HOME	524
----- SEEDLINGS IN VARIOUS STAGES	50
PLEIONE LAGENARIA	549
PROMENÆA CITRINA	555
SCHLIMMIA TRIFIDA	569
SOPHRONITIS GRANDIFLORA	578
STANHOPEA INSIGNIS	581
----- WARDII	583
TRICHOPILIA CRISPA	591
VANDA CATHCARTII	599
----- CÆRULESCENS	600
----- DENISONIANA	602
----- LAMELLATA DOXALLII	604
----- SUAVIS	607
----- TERES	609
----- TRICOLOR	610
ZYGOPETALUM CLAYI	618

PREFACE TO THE SIXTH EDITION.

THE issue of a new and thoroughly-revised edition of the ORCHID-GROWER'S MANUAL, which has gained notoriety throughout the world, needs but little explanation on our part. We have had abundant proof of its utility by the demand there has been for the successive editions, by its having been translated into the Russian language by M. Wolkenstein, and by our having also been requested to have it translated into other European languages. It is now many years since we wrote the first edition. At that time the number of Orchid-Growers was very limited, but since then the increase has been extraordinary, so that where there were hundreds there are now thousands of Growers. It is highly gratifying to us to know, through letters received from them to that effect, that many of these, not only in this country, but on the Continent, in America, and the Colonies, obtained their first instructions from the "Manual."

Since the former edition was published, there have been many beautiful additions to our collections, and the number of species and varieties has been greatly increased. These, so far as they have been thought worthy, have been incorporated in our pages. Our collectors, who spare no pains to obtain these valuable

plants, and subject their lives and their health to great risks in order to do so, deserve our hearty thanks, for through their energy the stock of many Orchids that have been rare for years has been so greatly increased as to have given cultivators generally a chance of procuring plants at a reasonable rate. Many of the most beautiful kinds, which were at one time only within reach of the rich at exorbitant prices, can at the present day be obtained for a few shillings. Now, moreover, it has been found that some of the most beautiful species can be cultivated in cool houses, so that their culture is not only less troublesome but also less expensive. Many of these plants are small-growing, and do not take up much space, so that by having even a small house a considerable number of them may be cultivated in a way to produce freely their very handsome flowers, which continue in bloom so much longer than those of most other plants.

We have introduced views of some Orchid Houses engraved from photographs, in order to show the effect produced by intermixing Ferns, Palms, &c., among Orchid flowers. It will be seen how graceful the foliage appears, and its introduction is undoubtedly a vast improvement in the arrangement of an Orchid House. Of course the setting out of the plants can be varied daily, or as frequently as may be desired, so that a new picture of beauty may in this way be continually produced. With the object of preserving the Orchid blossoms as long as possible in a fresh and presentable condition, it is wise to have a portion of each House separated by a partition, and allotted to plants in bloom;

the plants can then be treated so that their flowers will last much longer in perfection than when kept in the damper and hotter divisions in which they were produced. The end next the outer door will, in general, be found most convenient for this object, from its being somewhat cooler than the other parts; and the show compartment may thus serve two useful ends, that of moderating the effect of the cold air admitted when the door is opened, and that of preserving the flowers longer in beauty.

We have also added many illustrations of the most popular kinds, which, we trust, will be found useful by those who are unfamiliar with the habit and appearance of the respective plants. Some of these are original, others have been kindly lent by the editors of the *Gardeners' Chronicle*, the *Garden*, the *Journal of Horticulture*, the *Florist and Pomologist*, and other kind friends, for which we have to record our thanks.

One of the most marked features of the new edition is the copious series of references we have given to Figures of the plants, mostly coloured ones, and for the most part published in works which are generally available at the present day. These references will, we anticipate, be a source of great interest to many among those of our readers who may have access to a botanical library. The figures quoted are not of equal merit, but they will all serve to clothe the dry bones of a mere description with some indications of the beauty of the plants. In the case of the Synonymy, we have quoted those names which appeared to us most likely to be useful, especially as a means of identifying species

which may have been familiar in gardens under names, which in order to meet the requirements of science, real or supposed, it may have been found necessary to change or suppress. A few wholesale suppressions, such as that of referring all the species of *Cattleya* to *Bletia*, and other cases of a similar kind, are so little likely to be followed out in gardens, that we have passed them over with a general record that such changes have been proposed. For assistance of this nature, and for having devoted much attention to the amended descriptions, we have to thank our old friend and our coadjutor in the work of the *Orchid Album*, Mr. Thomas Moore, of Chelsea.

The matter has so greatly increased since the publication of the last edition, that having regard to our efforts to make it as perfect as possible, we have been compelled to raise the price. We hope, however, that the additions that have been made will meet with the approbation of our readers, and be considered by them as real improvements quite worth the increased cost. We have before stated that we do not aim to instruct Botanists, but to assist Amateurs, by placing before them plain and practical information on a sound scientific basis, so that for the time and pains bestowed on the cultivation of this charming class of plants, they may be rewarded by the production of fine specimens, and as a consequence, abundant and beautiful flowers.

B. S. WILLIAMS.

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.,
October, 1885.



ORCHID EXHIBITION HOUSE IN THE
100 ft

(FROM A



CTORIA AND PARADISE NURSERIES.


22 ft

(PHOTOGRAPH.)



THE
ORCHID-GROWER'S MANUAL.

INTRODUCTION.

HE cultivation of Orchidaceous plants is no longer exclusively the privilege of the few, now that their nature and requirements are better understood than was the case in former years. This has arisen chiefly from three causes: firstly, from the useful information given us by those who have studied the plants in their native habitats; secondly, from the close study and application by means of which cultivators at home have brought the varied observations of travellers to bear in a practical manner on the culture of the plants when introduced into this country; and thirdly, from the fact having been discovered that many, at least, of the most ornamental species require less heat and less expensive appliances than was once thought necessary, thus bringing them within the reach of a larger constituency.

It cannot be too strongly impressed upon the minds of all who send plants of this order home from foreign lands that every scrap of information respecting the climate—temperature, rainfall, altitude—soil, &c., of the locality in which each species is found, is of the greatest importance not only to the scientific observer, but also to the cultivator; not

because we can under cultivation strictly imitate the natural surroundings of each particular species or variety, nor, indeed, do we think that this would in all cases be desirable, but the information would enable us to adopt the treatment most congenial to the requirements of each, so far as the means at our command would permit. The want of some such information has been a source of extreme vexation to many lovers of these plants in years gone by. For instance, had we received even the most meagre account of the natural physical and climatal surroundings of the many fine things found and collected by M. Warszewicz, and other travellers of the same period, the collections of the present day would be able to boast, as now they cannot, of many fine species which have never since reached this country in a living state. The collections alluded to were sent to Europe in a very careless manner, and without the slightest indications of the conditions under which they had been growing; and, Orchidology being then in its infancy, they were nearly all killed by being subjected to excessive heat, the keeping up of a strong heat being in those days considered the correct course to pursue with all Orchidaceous plants. Thus hundreds of beautiful species, which had been collected at great cost and risk, and were purchased by eager amateurs at home, oftentimes at high prices, rapidly died out, simply from the prevailing ignorance of the climatal conditions of the localities in which they had been collected.

Thus it will be seen, that in order to assist in preventing a repetition of such disasters and disappointments, the experience of those who have had the good fortune to see Orchids growing in a state of nature is of the greatest importance, giving as it does a solid basis to any experiments which may be made. Strange as it may appear to some, and ridiculous as it has been pronounced by others, we do

not consider it advisable to imitate strictly the natural conditions in which plants are sometimes found, because we have seen so many proofs that, as individual specimens, the cultivated plants are frequently to be seen in greater perfection than those grown in their native habitats. It is, indeed, only reasonable to infer that such would be the case with the majority of small-growing tropical plants, when we consider the struggle for existence which is constantly going on throughout the vegetable kingdom, and remember that they are subject to all the vicissitudes of the seasons; whereas under cultivation extreme care and attention are bestowed upon each individual plant, and no pains are spared to develop its beauties, and shield it from every harm. We admit that we should by all means take nature as our guide for the production of good plants, but it should be nature in her best garb only; and then, looking as we do upon cultivation as a help to nature, the result can only be an improvement, if success in the object aimed at has been attained.

Let us endeavour to make our meaning clear by a familiar example. We have frequently seen some of our indigenous ferns, such as *Scolopendriums*, *Lastreas*, &c., growing upon dry banks, stony grounds, and old ruins, where they have presented the appearance of short, stunted, ill-favoured plants, but still they were in a state of nature. Now, no one would recommend the cultivator to imitate that phase of nature. No—rather would the counsellor say, “Go to that shady dell, with the limpid stream flowing through it; there you will see the rich green, fully developed, and graceful fronds of these gems in all their beauty.” This, then, we say is the phase of nature which cultivators should take as their guide, and endeavour to improve upon. We submit that these considerations are strictly applicable to the plants we have taken under our special cognizance in this volume, and will exemplify

this by an extract from a letter of one of the most acute observers and successful introducers of Orchids of the present day, Colonel Benson. He says—" *Dendrobium formosum* does not appear to seek shady places for growth; in fact, as far as my knowledge goes, few Orchids do, beyond what is given by the trees when in leaf. During the months of February, March, and April, they must be exposed to an atmosphere of 110° in the shade. That the fresh-grown pseudobulbs are by this means reduced in size or shrivelled there can be no question; and in some of the mountain Orchids this reduction takes place to such an extent as to render it doubtful whether they are the same plants when first seen at the end of rains." Now take the case of these plants under culture; the growing or rainy season past, their supply of water would be gradually diminished, and they would be exposed to the full effects of the sun, with plenty of air, but only so long as they could withstand this treatment without shrivelling; for, should this condition ensue, or should exhaustion from any other cause arise, the cultivator would step in, and by judicious treatment preserve the strength and consequently the health of the plant, whilst the plants in their native localities must bear the full power of the scorching sun, let even death be the result. Here, then, we say is a proof that art does in some instances assist nature.

Nearly all epiphytal Orchids are subject to a period of rest, growth taking place during the rainy season, while their resting period occurs during the dry season. Under cultivation, however, we have to alter the circumstances considerably, and make our dry season also the coolest, which is the reverse of what the plants experience naturally; this, indeed, seems to be the most judicious plan we can adopt, for it would simply be madness to endeavour to force our Orchids to make their growth during the winter months, and rest

them during the summer. The best season of rest for the majority of Orchids is from about the beginning of November until the end of February. This long period of drought predisposes the plants to blossom, and also prevents them from making weak and sickly growths, which would undoubtedly be the case in the short dark sunless days of our winter.

In this place, of course, rules respecting the growth and rest of Orchids can only be stated in general terms, the treatment in detail being given with the description of each particular genus. Then, again, there are certain species which are never entirely inactive throughout the whole year, amongst which may be named some of the *Odontoglossums* and *Masdevallias*, besides many others whose home is in the Peruvian Andes and other high mountainous districts.

It is often thought that as Orchidaceous plants are so extremely tenacious of life, the fact of their dying can only be the result of carelessness in their management; but it should be borne in mind that we have under the same roof plants from many different countries, whose natural habitats must vary immensely in most respects. Now, if a little thought is only bestowed upon this fact, it should rather be a matter of surprise how so many plants are successfully managed, than how so many are lost.

Orchid cultivators, and indeed all lovers of Orchids, lost a good and valuable friend and instructor in the late Dr. Lindley; and in this particular branch of botany no one amongst us has been found competent to fill the void. Professor Reichenbach, who was the friend of Dr. Lindley, is undoubtedly the first living authority in regard to the nomenclature of Orchids, but the fact of his labours being carried on in Germany—no fault of his, but our misfortune—cannot fail to be disadvantageous to English cultivators. We are bound to thank Professor Reichenbach most cordially, not only for the valuable infor-

mation he imparts to us, but for the extremely kind and courteous manner in which he gives the desired information to any and all who seek it at his hands.

We predicted many years ago that Orchids would be grown for the million. The original portions of this volume were, in fact, brought out in the *Gardeners' Chronicle*, in a series of papers entitled "Orchids for the Million." It was perhaps presumption on our part to predict what in those days seemed to some people to be utterly impossible. We were often told so after these papers had been published in the *Gardeners' Chronicle*, but we were well rewarded by receiving the approbation of Dr. Lindley, who was the greatest authority on Orchids at that time. When we told Dr. Lindley of our intention to bring out the ORCHID-GROWER'S MANUAL, he advised us not to do so, feeling sure, he said, it would never pay, but our intention was fixed, for it gave us unbounded pleasure to write of our favourites, of which we were then as fond as we are now. Indeed, it is to us a source of great satisfaction to do all we can to bring Orchids before the public, and we are glad to find that our efforts are appreciated, and that there is an increasing taste for these lovely and varied plants. All plants require attention, some of course more than others, but these can be as easily cultivated as any; and as some Orchids can now be bought for a few shillings each, they come within the reach of every one who has a small house, and in such a structure a few of them can be grown with very little trouble and expense.

If Orchid collectors will take our advice, founded on many years' experience, and import the plants at a proper time of year, we should have a good supply, and to spare, and be able to leave some for stock in their native country, instead of sacrificing the whole produce of a district, where doubtless plants, and among them new species and varieties, would turn

up, as there are so many natural hybrids and sometimes but few of the same type in one locality.

We have now in cultivation many species, of which there has only been one importation, such as *Aërides Schröderii*, *Cattleya labiata*, and many others we could name, and although our collectors have been in search of these scarce plants, they have not been successful in again finding them. Look at *Lælia anceps Dawsoni*! Collectors have been to the very spot where this was first found, but we do not think there has been one plant brought home since. Mr. Low's traveller was the first who brought it, and since then there have been many sold for it, but they have not proved to be the true variety; and although there have been several white forms, none have been better or so good as the true *Dawsoni*. We mention these facts for the information of our readers, as well as of importers, in order to show how important it is to try and get home alive all the plants collected, so that the public may have a chance of saving these treasures. This would be better for collectors and importers, as well as buyers; for the present destructive system, or want of system, leads to a loss of capital, and is, besides, an annoyance both to sellers and purchasers. The losses of purchased plants in this wholesale way—plants that will not grow under the best treatment—often stops amateurs from going on with their cultivation. We do not lay all the blame of non-success on the collectors, for there are many other causes which lead to loss even when they are brought home at the right season; for instance, (1) they may be injured by damp in the cases; then (2) sea water will affect them injuriously if it gets on them; and (3) sometimes our amateurs and growers do not treat them right when they receive them. Full directions on this important matter will be found in our chapter on the treatment of newly Imported Plants.

In bringing these introductory remarks to a close, we desire to record our deep sense of the obligations we owe to the many travellers and collectors who have added so largely to our knowledge of Orchids, and who have laboured so arduously and incessantly to enable us to enjoy the beauties of the choicest productions of the vegetable world without meeting the dangers and difficulties with which they have had to contend. We allude specially to such men as the brothers Lobb, Hartweg, J. G. Veitch, Colonel Benson, O'Reilly, Rev. C. Parish, Pearce, Bowmann, Weir, Hutton, Kramer, Porte, Wallis, Linden, Skinner, Hugh Low, Schlim, Warscewicz, Blunt, Roezl, Klaboch, Endres, Chesterton, and many others who might be named, did space permit. Many of them, alas! have fallen victims to the fatigues of the undertaking, and the pestilential climates to which they have been exposed, thus suffering martyrdom for the cause of horticulture. These were men who had in view the advancement of science, and the enriching of our collections with new forms of plant life; and their example might be followed with advantage by many of the latter day collectors, who, instead of sending home a few plants in good order, allowing the skill of the cultivator to grow and increase them at home, seem determined to exterminate certain kinds of Orchids from their natural localities, without any one deriving benefit thereby. When such vast quantities are gathered, they arrive in this country in an almost putrid state arising from overcrowding and heating; whilst, had a few dozens only been sent, and that with proper care in packing, they would in all probability have arrived in a living state. We are glad to find, however, that latterly collectors are gaining more experience in this matter, both as regards packing and means of transit, and that plants arrive now in far better condition than was formerly the case.

HABITATS OF TROPICAL ORCHIDS.



ORCHIDS are divided into two sections, the Terrestrial and the Epiphytal. Those are termed Terrestrial that grow directly in the earth. Such are the species of *Orchis*, *Phajus*, *Calanthe*, *Bletia*, *Cypripedium*, *Neottia*, *Goodyera*, *Epipactis*, &c., which all draw their support directly from the ground. The Epiphytal Orchids, such as *Aërides*, *Saccolabium*, *Cattleya*, *Oncidium*, &c., grow on trees and rocks, from which, however, they derive little or no nourishment, on which account they are often called Air plants. These are by far the most numerous and interesting. Some are found adhering to the stems and branches of living trees; some of them delight in elevated situations in lofty forests, while others grow upon low trees. Some occur on rocks and mountains, some on trees overhanging rivers, and some near dripping rocks—the latter, of course, requiring a particularly damp atmosphere to grow in. Those which are found in dense woods, where scarcely any sun can penetrate, require a shady moist atmosphere, whilst those found in more elevated situations do not need so much shade as the last.

A knowledge of the different habitats of the various species is essential to the careful grower, in order that he may, as far as his means permit, place them in circumstances similar to those in which they make their natural growth; and it is, no doubt, to inattention, or lack of information on this point, that the want of success in the culture of some Orchidaceous plants, by even the most successful of our cultivators, is to be in a great measure attributed.

Epiphytal Orchids are found in tropical countries growing

on the low grounds or plains, and they are also met with as we ascend the mountains up to an elevation of 14,000 feet above the level of the sea. At this altitude, in New Grenada, *Oncidium nubigenum* flourishes. This is, we believe, the greatest altitude at which these plants are recorded to have been found. *Odontoglossum Alexandrae* and *O. Bluntii* occur at from 7,000 to 8,000 feet elevation, as does *O. luteo-purpureum* and its varieties, together with *Masdevallias*, *Restrepias*, and many others from Peru and New Grenada. At such elevations, as a matter of course, the plants are naturally subjected to a low temperature, an abundant supply of water, and a very moist atmosphere throughout the year, and consequently they cannot endure a resting season or a period of drought under cultivation. But if we turn to the Eastern Continent, we find such plants as *Dendrobium infundibulum*, *D. Jamesianum*, *D. chrysotoxum*, *D. Farmeri*, *D. suavissimum*, *Aërides Lobbii*, *Saccolabium ampullaceum*, *S. giganteum*, *Cypripedium concolor*, *Cymbidium tigrinum*, &c., all growing at elevations varying from 2,000 to 7,000 feet, enjoying a copious supply of water during their period of growth, and subjected to a very severe resting season. Now, as these plants grow upon the stems and branches of the forest trees, or upon rocks, they must necessarily be exposed to all the breezes that blow. How reprehensible, then, is the practice of many growers of Orchids in trying to exclude fresh air from their Orchid houses. For the well-being of Orchids, it should be remembered that a free circulation of air is absolutely necessary, as well as an abundance of light; but cold draughts, and also the burning effects of the sun's rays, must be avoided, for it is not essential to their well-being to be hung up close to the glass, fully exposed to the blazing sun; indeed, the life of the plants would, under such circumstances, soon be sucked out of them if shading were not provided.

There are so-called observers of nature who blame the cultivator for many of his acts, and he has perhaps suffered more wrong at the hands of this class of persons upon the matter of shading, than upon any other. We are frequently told that in a state of nature such and such plants grow in most exposed situations—situations open to the full effects of a tropical sun, and that nothing can be more erroneous than the manner in which we use “blinds” for the purpose of keeping away the bright light of that luminary. There are, no doubt, exceptions to this rule; for instance, many of the Australian Dendrobes, such as *D. bigibbum*, *D. superbiens*, *D. Goldiei*, the Indian *D. formosum*, &c., we have grown with the best results, without the slightest shade. All we can say in answer to the objectors is that they totally lose sight of the fact that our plants are growing under glass, which has the power of burning up the leaves and thus disfiguring our plants for years, if not for life; and that sunlight under glass is very different to that in the open, where the wind counteracts its burning properties to a certain extent. A little practice would soon teach such persons how erroneous their ideas are on this point, and they would soon sink their so-called natural treatment, had they to be responsible for the effects produced thereby. In leaving this part of our subject, we must add that plant-growers are now keenly alive to the advantage of strong sunlight for their plants, but that they are too practical to allow more than is advantageous to them under the artificial circumstances in which they are placed.

THE SEASON FOR COLLECTING ORCHIDS.



E are extremely sorry to see the large importations which are sent home in the autumn and winter months, and sold by auction during the cold season, without any regard to the requirements of the plants, or to the interests of the buyers, who are told that the plants have had no cold to hurt them. Such plants, nevertheless, as soon as they reach home, and are housed, lose their leaves, and eventually die. The loss of the money and also of the new and valuable plant, for which a high price has been paid—with a view to secure the best form of some new and rare kind—must be very annoying to the purchaser. If collectors will insist upon sending and importers on receiving these plants in winter, they should keep them in their own Orchid houses until they get established, or show some signs of being of use to those who feel disposed to pay handsomely for them. The smaller buyers also have their losses, being assured by those who import the plants that they have had them in their possession, and exposed in their Orchid houses, for so long a time, while the fact is that many are kept from the light. Moreover, when they are sold, it is not merely the cold weather that meets them as they come from their native country that destroys them, but exposing them at sales and keeping them in cold places, after they have arrived safely. We have seen nearly every plant of an importation lost through this treatment. Take, for instance, the East Indian Orchids; these are sold in winter, and to all appearance are in good health, having their green foliage upon them, but when they are put into light and warm houses the leaves turn black or brown, and fall off; then the heart of the plant goes, and it

becomes quite useless ; whereas, if the plant had been sent home in spring or summer, there would have been a chance of saving it if the leaves had been on it and it had not been exposed to the cold. Such importations are not only a loss to the buyers, but also to the collector, as there are many lots that cannot be sold, and have to be thrown away.

There is another great evil attending importations, but this occurs in their native country ; the plants are heedlessly torn from their natural habitats, which are sometimes ruthlessly cleared of the beautiful flowers that cannot be replaced in the locality. We are sorry to hear of some of our collectors having so little respect for these treasures of nature's production that they gather all they can, having no regard for the future, and not even leaving a few plants in the locality to increase and multiply by shedding their seed to germinate naturally over the mountains, rocks, and trees. If this kind of work continues, there will be but few Orchids left, excepting where the collectors cannot get at them. It is to be feared that some of our collectors do not go for the love of the plants, but to make all they can for the time being, heedless as to whether they would be able to get more the following season.

Our botanists who from time to time have travelled have gone out for the love of the plants, and in order to gain knowledge of them. These men have freely imparted the information they have obtained to those who have remained at home, by giving a record of their travels, and by collecting dried specimens of new and old species, as well as living plants, for the extension of our collections, and the increase of our knowledge of the peculiar characteristics of the plants. We are well aware that the demand for them at the present day is very great, there being now a larger number of cultivators ; and as the plants get cheaper the greater will be the

demand. This we can prove by referring to the hundreds of cultivators who have started since we commenced the culture of these wonderful plants—no doubt, because there are no flowers that are so suitable for decorative purposes, and none that give the same amount of pleasure, and last so long when on the plant, or when cut and put in water to be used as an adornment for the drawing-room or the dinner-table. Again, when grown into specimens for our exhibitions they are always the most attractive objects, and where banks of these plants are staged crowds of admirers are constantly to be found.

HINTS ON COLLECTING ORCHIDS.



HERE are many different ways of importing Orchids to this country. We have seen some that have arrived in good condition, while others have been completely destroyed by not being properly prepared before starting. The first and most important thing is to prepare them for their journey. The next most important matter, perhaps the most important of all, is to start them on their journey at the proper time. Our opinion is, that the plants should be sent away from their native country during the dry season, which is when they are at rest. While inactive their leaves and pseudobulbs are thoroughly ripened and firm, and contain but little sap; whereas, when they are growing the foliage is necessarily tender, and in greater danger of being bruised, a circumstance which accelerates decay during the voyage. Another reason in favour of dormant importation is, that, if sent in a growing state, or just as they are starting into growth, the young shoots push out while on the journey, and for want of light and air become weak and dwindling,

very often dying outright as soon as exposed. We have seen many a fine mass of *Cattleya* imported with all the leading growths completely rotten, which, of course, greatly lessens the value of the plant as compared with those that arrive perfect, and which are just ready to start into growth as soon as they are put into a warm house. Plants which on arrival have pushing pseudobulbs are also apt to lose their leading eyes, an accident fatal to some Orchids, for many do not break well, if at all, from old bulbs.

The species of *Aërides*, *Saccolabium*, *Vanda*, *Angraecum*, and similar plants that have no fleshy bulbs to support, are best imported after they have become established on flat pieces of wood, so that they can be nailed to the sides of their travelling cases. We once received a consignment of Orchids from Manilla, including amongst other fine plants some beautiful examples of *Phalanopsis Schilleriana*, *P. rosea*, *P. amabilis*, *P. intermedia*, *Aërides quinquevulnerum*, and *Saccolabium violaceum*, all established and sent off in the way just described; they had evidently been growing some time before they were started for this country, for on arrival their roots adhered firmly to the wood, and many of their leaves were as green as though they had been in an Orchid house, instead of having made such a long sea-voyage in a glass-topped case.

One point of importance is to take care to secure the plants well to the sides of the cases; because, if allowed to roll or swing about, they get bruised and soon rot, which is very vexing after all the trouble and expense bestowed on importing them. In the case of the *Phalanopsis Schilleriana* just referred to, some of the pieces of wood had become loose, and these from rolling about during the journey had caused injuries. In such cases, if any leaves are bruised during the journey, the best way is to cut them off at once before decay begins; for if allowed to go on, there will be danger of the whole plant being

destroyed. With the cases just alluded to, we received also a close box filled with *Phalanopsids* packed in the dry bark of trees, which is a very bad material for such tender-leaved plants, for when unpacked there was not a green leaf to be seen; the shaking of the rough packing material during the long journey had destroyed all the foliage. If these had been packed firmly in very dry soft moss, they would most likely have travelled safely.

We have received plants in good condition from India in close boxes, packed in dry soft wood shavings; while on the other hand many have been entirely spoiled in that way. The cause of failure we attribute to their not being packed in a proper state; the plants themselves, as well as the material employed, should be well dried before packing, and care should be taken to avoid bruises, which often prove fatal. *Cattleyas* and plants with similar pseudobulbs we have received in close boxes from Brazil, packed in dry shavings, and have found them, when opened, in good condition; but care had evidently been taken to pack them firmly so that they did not shake about in the boxes on their journey.

The best time of year for receiving Orchids in this country is, if possible, the spring, in order that they may have the summer before them in which to get established.

With the *Anæctochili* the best way is to tie some moss round their roots and stems to keep them firm, leaving the foliage free just above the moss; they should occupy a small case by themselves. These little things are very tender, and therefore require a great deal of care to import them alive. On arrival, pot them in some dry soil (see *ANÆCTOCHILUS*), and put them in a close place with little heat at first, until they begin to grow; afterwards pot them separately in small pots, and place them under hand-glasses or in a frame, giving them the treatment usually recommended for this class of plants.

Cases in which Orchids are sent home ought to be made strong, and roofed with good stout glass not easily broken; for we have often found plants spoiled by the glass being fractured. Through an accident of this kind, salt water and cold air may get in, both of which are very injurious. All cases should be air-tight and water-tight, except a round hole at each end, covered with wire gauze inside and out, to allow the damp air to escape. To prevent the glass being broken, the best thing to place over it is some strong iron wire, or perforated zinc, or stout and broad wooden bars. The sash bars ought also to be made very strong, and the case must not be placed during the journey too near heated surfaces or fires in the ship. We have seen many boxes of plants spoiled by being set in such positions, the leaves being completely dried up. They ought to be placed in a moderately warm situation, but by no means near any fires. Many plants also arrive in this country in a dead or dying state, from the effects of full exposure to the rays of the sun; this, however, may be obviated by simply painting the glass white inside, but it must be allowed to become thoroughly dry before being fastened down.

During the past year or two an immense quantity of Orchids have been sent to this country, a large proportion of which have proved to be dead upon arrival. This may perhaps be assigned to several causes, but the rapacious appetite of the collector is the principal one, the boxes being overcrowded by his sending home thousands instead of being satisfied with a few dozens, and as a consequence all have arrived dead. Another probable cause of this loss is, that they may have been gathered at the wrong season. All this is sad to contemplate, involving as it may do the extermination of the plants in their native homes, besides loss of time to the collector, which, combined with the loss of money, causing vexation and disappointment to the trade cultivator at home,

have a most depressing influence upon Orchid growing. These deplorable results might be avoided if collectors would be satisfied with a less number of plants, and would attend to the few simple rules given in this chapter, adapting them to suit the circumstances in which they find themselves placed.

RISKS OF COLLECTING ORCHIDS.



HERE is no doubt that there are many conditions, sometimes peculiar ones, under which Orchids can be successfully grown; and much has yet to be learned regarding their requirements, the methods of cultivation to which they may be subjected, and the amount of endurance they possess. The treatment they receive after their arrival from their native habitats, is also to them a matter of importance. Before they come into our hands, they are found growing in a perfectly natural way, without human aid, having, of course, their native climate to enjoy, receiving heavy moisture by night, which they absorb and store up for their immediate sustenance, and being also favoured with a rainy season as well as a dry one. These different conditions of course exactly meet their wants in their growing and resting seasons respectively. It must be a delightful sight to witness them growing and flowering in this natural way, throwing off their sweet perfume to the breeze, while the roots cling to the branches and stems of the trees where they abound, and in which situations they multiply by means of the seeds scattered from the withered seed-pods. This seed in process of time germinates and forms young plants which finally get established on the branches, and there the fallen leaves, settling among their roots, by feeding impart

to them new vigour, thus preparing them to enter upon and endure the alternating season of drought. Their foliage helps to direct the natural moisture and to retain it about the roots, which are thus enabled to grow more freely, and to fasten themselves securely to the branches and stems of the trees on which they become located.

In their native habitats Orchids have many drawbacks to their growth; they have insects, as we have in our houses, but far more numerous; and they have the extremes of weather to contend with. The plants are generally found on the high trees at the margins of the forests, where they are subject to rough winds and furious storms; in fact, large trees are often blown down loaded with the beautiful blossoms of the plants growing on them, and are frequently destroyed in this way. The stock, however, is generally maintained by the seedlings, which are found to be much more abundant in some localities than in others.

It often happens that, when being removed from their native resorts, the plants are injured by the collectors and by the natives whom they employ to gather them from the high trees and other places difficult of access. They are frequently packed in sacks and transported on the backs of mules, in order to reach the sea-port for shipment; and the native men who help to pack them are very indifferent as to how the bulbs and foliage, which require so much care, are handled. The voyage these plants have to undergo is often very detrimental to them. Sometimes they are placed on a part of the vessel where they get too much dry heat, or where they may get the salt water on them, and these injuries often cause them to rot, or the very life to be shrivelled out of them. A good proportion of the importations, however, seem to endure, notwithstanding the treatment they receive after their arrival here, though passing through hands that have no love what-

ever for them beyond the hope of selling them to the best advantage, and which care little or nothing for the bruises they sustain, and for the bulbs that get broken. After all this they thrive well in many cases. This shows us that when the plants are in a dormant state rough treatment is not so injurious, but in this case the eyes must be plump, and then, when placed in a warm house where there is some moisture, they will soon make plants with fine bulbs, and they may also flower. If the plants are allowed to make growth on their journey they will generally be found to damp or rot off; and although some Orchids which have strong bulbs produce plump eyes from the back bulbs, and will break away freely, yet in the case of the delicate kinds their offshoots will break weakly and pine away. Such as these require close watching, which those who delight in their pets will not fail to bestow on them, and there is then a chance of saving them.

Our ways and means of imitating nature are very limited, but we do succeed in very many cases, although so large a number—hundreds of them—are lost through the rough treatment of which we have spoken, and for which there is really no help; for in the plants' native countries our collectors have to undergo much hardship and privation in order to secure for us these floral gems, and many brave lives have been lost in the endeavour to do so. Some of our most clever botanists have sacrificed their lives in endeavouring to procure for us these treasures; hence to those who have survived and still persevere to send us new consignments, we owe many thanks. No one knows the trouble and expense of collecting Orchids but those who have gone or sent out men in search of these precious plants; they deserve all they get and more for the risk they run, since their attempts are frequently fruitless, for it often happens that after collecting for months the plants are all lost, not through their neglect, but from unavoidable

mishaps and unfavourable conditions. For example, the cool Orchids have to come through hot countries before they are shipped, and then long delays often occur to lengthen the time taken by the voyage. Again, when coming from a hot climate they often reach this country at the cold season. In fact, none but those who are at the expense of importing Orchids from these distant lands have any idea of the risks incurred.

Another risk to which importers are subject relates to the sale of the plants; many have to be sold privately, others at public auctions. If they are new and fine species they generally sell well, and should there be buyers for that particular class they frequently realise a fair sum, whilst many other good kinds may be sold at prices which are not sufficient to pay the expenses of getting them home. New species may turn up in these importations, and of these the buyers get the benefit, instead of the collectors, who do not see them in bloom when collecting so as to be able to pick out the grand varieties that sometimes turn up, and are often worth more than the whole collection has been sold for. This is where the purchaser reaps the benefit. Of course, on the other hand, there is risk in buying imported plants, since there are many that do not turn out as represented, for which the collectors are often blamed; and no doubt they are wrong in some cases, being deceived by the similarity in growth of different species, which can only be correctly determined when in bloom. Or in other cases a few plants only may be in flower, and the collector concludes that all growing there are alike, the foliage being of the same character, and the plants being sold as such, the unfortunate collector gets blamed for selling the wrong plant, though without his knowledge or intention. On the other hand there have been cases where plants have been sold under wrong names and accompanied by wrong descriptions, through the ignorance of the collector, who does not know the species he is

describing. There are not very many of the collectors of the present day who have a thorough knowledge of Orchids; and those who have it not should get some one well acquainted with the species they have brought home to name them for them if possible; or if not known they should be sold as unnamed species, by which means the buyer takes his chance, and the collector gets no blame.

Those who have carefully studied the Orchids, and are acquainted with their peculiarities, can usually tell the species, unless it be something new that has not come under their notice before; even then it is often possible to give a very good guess, especially if the genus that it belongs to, the country it comes from, and such other points as become familiar to an observant eye, are known. The old adage, "Knowledge overcometh difficulties," justifies itself in this case. There are persons who have grown Orchids but a few years, and who think they know more than those who have had large collections always under their charge, and who are acknowledged to be close observers of the different species and varieties, and who besides have had the opportunity to get acquainted with all the old Orchids as well as the new ones. There is, if Orchidists would only admit it, a great deal to be learned from cultivators of these plants, as almost every person has some ideas of his own upon the subject, and these ideas can often be adopted by others with good results.

We are sometimes apt to think we can easily pick out the different varieties of families by their general aspect, but experience teaches us otherwise; we may be able to do so with some kinds, but it is quite a chance, a great deal depending upon the locality and the situation in which the specimens are grown. In some places the bulbs will be short, in others quite different. *Cattleyas* and *Lalias*, for instance, are often brought home grown in this way, which makes it difficult to

distinguish them, and there are also other kinds of Orchids, such as *Odontoglots*, to which the same remark applies. Sometimes a particular species may have dark-coloured bulbs, and at other times light green ones, and yet be of the same variety with the same flowers. This adds to the difficulty of identifying the different kinds. In the case of *Odontoglossum Alexandrae* there are some bulbs that will enable the observer to tell if the varieties are likely to be good as to form and size, but one cannot tell the colour. There are no doubt localities where the best species and varieties have been observed to abound, and when this is the case bad kinds very rarely appear in these spots, even through insect agency. Collectors should endeavour to avoid sending home the bad strains of these plants. Many of them are acquiring more knowledge of the localities where the best varieties are to be found, and they begin to see that the good forms pay the best, since they take up no more room than the bad ones, and buyers are willing to pay more for them instead of growing the poor varieties, of which there are so many sold in auction rooms. Even purchasers now appear to know more than they did of the quality of the plants by the appearance of the bulbs, though sometimes they are disappointed. On the other side there is the chance of picking up new ones among those which are not considered to be of the right sort, so that it is advisable not to destroy any until they have flowered; even then, if the plant is weak, though the flowers may be poor, yet if there is form and substance in them, it is best to grow them on and flower them again, and then it is more than probable they may be approved.

ORCHID TREATMENT DURING GROWTH.



WE have in our Orchid houses plants from localities which vary much in every respect ; some of them, moreover, produce their flowers early in spring, others in summer, and others again during the dull days of winter. It will therefore be readily understood that the period of starting into growth should vary also ; but as for convenience sake we rest our Orchids in winter, the majority will begin to push up their young shoots as soon as the days lengthen and the sun gains increased power. This being the case, when the growing season commences, the temperature of the East Indian house—the house in which the greatest heat is maintained—should be increased to 65° by night and 70° by day, while by sun-heat it may be allowed to range up to 75° . As the days lengthen, so the temperature may be permitted to increase ; and during the months of May, June, July, and August, it should range from 70° to 75° by night, and from 75° to 80° by day, or by sun-heat up to 85° , or even 90° , which will not do any harm, provided the plants are shaded from the direct rays of the sun. Great attention should, at the same time, be paid to the state of the atmosphere, as regards moisture. At all times of the year this is of much importance to the successful growth of the plants, since they derive the greater part of their subsistence from moisture in the air. Wherever, therefore, any of these plants are growing, the atmosphere should be well supplied with moisture, which is obtained by pouring water over the tables, walls, and paths of the house every morning and afternoon ; this causes a nice moist heat to rise, which is of great value whilst the plants are in a vigorous state of

growth, especially as regards the East Indian Orchids, such as *Aërides*, *Saccolabium*, *Vanda*, *Phalanopsis*, *Dendrobium*, and many others requiring a high temperature, with a considerable degree of moisture.


The Brazilian Orchids, most of which come from a cooler climate than the foregoing, and one not so highly saturated with vapour, of course require less heat and less moisture, but these should also have a considerable degree of warmth during their growing season; consequently the houses which are devoted to the Brazilian plants and to some of those from Mexico, should be artificially heated to about 60° by night, and from 65° to 70° by day; and as the days lengthen the temperature may be allowed to increase, so that during the months of May, June, July, and August the night heat may range from 65° to 70° , and by day from 70° to 85° .

Of late years we have had so many additions to what are called Cool-house Orchids, that it is quite necessary there should be added another house specially for their cultivation, and which we may call the New Grenadan and Peruvian house. A plan of such a house will be found at page 59. This will accommodate a great number of plants from various high mountain districts, which may be grown together under the same treatment. We do not recommend ordinary greenhouses for Orchids, for our belief is, that very few Orchid growers will long uphold that treatment; and although we are told by collectors that many of the species of epiphytal Orchids are found in localities where the temperature falls so low at times that the plants are frequently covered with hoar frost, we do not think it expedient to subject them to such cool treatment in this country. The house we recommend for the *Odontoglossums* and other genera and species that come from similar regions, and, consequently, require the same treatment, is precisely the same as others, only it must be kept at a lower

temperature, say from 45° to 55° in winter, and from 50° to 65° in summer. This house should be well shaded from the sun with raised blinds (see p. 66), which will help to keep the heat down, as too much heat is dangerous for these cool Orchids. No fire-heat will be required in summer except on cold or wet days and nights, the object of then having recourse to artificial heat, being to keep the house from getting too damp, dampness without the proper degree of warmth being very detrimental to plants of this order.

There are but few Orchids that will do without heat altogether, except those that come from North America and other cold climates, and these will be treated on in a chapter by themselves.

ORCHID TREATMENT DURING REST.

S the time of starting into growth varies considerably with different kinds, so also, as a matter of course, will the season of rest, although with but few exceptions it comes on during the autumn months. Rest, it has been elsewhere stated, is of great importance to Orchids, as well as to other things. No plant will continue long in good health without it. Our practice is to give them a long season of rest, generally from November to the middle of February. During this time the temperature of the East Indian house should be regulated so as to keep it as nearly as possible at 60° by night and 65° by day, though by sun-heat the temperature may rise a few degrees higher, but air must then be given so as to keep it about 65° ; a few degrees of solar warmth above this point will, however, do no harm. A little air should be given on every fine day, in order to dry up the moisture; but the air must be admitted so as to pass over

and between the hot-water pipes, so that it may become warmed on entering the house. In the case of those plants that come from the hotter parts of India, the temperature should not be allowed to go below 60° . The Brazilian house, which may also include all the species from the warmer parts of Mexico, should range from 50° to 55° by night, and from 55° to 60° by day; this should not be allowed to go below 50° at night. The New Grenadan, or cool-house, should not be allowed to get below about 45° at night.

Rest is induced by lowering the temperature, and withholding water. During this period the plants should only receive sufficient water to keep them from shrivelling. There are, however, some that will grow during the winter months, amongst which may be enumerated many species of *Aërides*, *Vanda*, *Saccolabium*, *Phalænopsis*, *Zygopetalum*, and similar genera. These will require water at the roots to keep them increasing, but care should be taken not to wet the young shoots, for if they get wet they are very apt to rot. Those that are growing should be placed at the warmest end of the respective houses, giving all the light possible.

Some Orchids are deciduous, losing their leaves after they have finished their growth. To this class belong the species of *Cyrtopodium*, *Barkeria*, *Cynoches*, *Thunia alba*, *T. Bensoniæ*, and *T. Marshalliana*, some of the *Dendrobiums* and *Calanthes*, with *Pleione maculata*, *P. Wallichiana*, *P. lagenaria*, and many others. These should be always so placed that they may have as much light and sun during their season of rest as possible. This is the only way to ripen their pseudobulbs, which causes them to grow stronger, and to flower more freely. When at rest the previously named kinds require but very little water, but when those without pseudobulbs like *Vanda*, *Angræcum*, *Aërides*, *Saccolabium*, and *Phalænopsis* are at rest, they should never be

allowed to get too dry at the root; the moss about them should always be kept a little damp, for the stems and leaves are very apt to shrivel if kept too dry, and this often causes them to lose their bottom leaves. Moreover, they require but a short season of rest. Those which are growing on blocks will require more water than those which are in pots or baskets, and if the weather be fine, should be watered about twice or three times a week, just so as to keep them moist, but in dull weather they will not require watering so often. Water should be poured over the paths and walks every fine morning, with a view to create a moist atmosphere, but the moisture in the house must be regulated according to the weather outside—a very important factor in the details of management. Thus, if the weather be dull outside, the house must be kept rather drier inside. The glass and roof should always, especially in winter, be perfectly clean, so that the plants at that season may have full light and sun. It is our practice, as soon as the season of rest commences, to wash every pane of glass in the house, both inside and outside, and also the wood and brickwork, for cleanliness is one of the main points to be kept in view to ensure good results.

ADAPTATION OF TREATMENT TO SURROUNDING CONDITIONS.



HERE is more variation in the localities in which we are placed than most of us imagine. In some parts of the country a nice pure mild atmosphere prevails during the greater part of the year, while in others there is a large proportion of cold and wet. There are other localities in which our plant houses are placed

where they are exposed to high and cutting winds, and others in which they are sheltered on the side of a hill, or in some valley surrounded by hills and trees, on the south side of which they get the full benefit of the sun and light all the year round. Of course plants located under the latter conditions have a greater chance of making robust growth, if they get suitable treatment, than those differently situated.

When plants are grown near large towns, where they have to contend with fogs and smoke during the autumn and winter months, it is often found that there is a moister atmosphere also to contend with during the season in which we get but little sun and light, in consequence of the shortness of the days; in such cases this difference of climate must be guarded against, and the degree of moisture must be carefully studied so as to suit the different genera under cultivation. The rule we lay down must be followed, namely, to be guided by the conditions of the locality and its surroundings, and also by those of the locality in which the plants are found growing in their native country. A great deal depends upon attention to these apparently simple points; and those who study their own localities, and the variation of climate to which they may be subject in different parts of the country, will find themselves more successful in their efforts to achieve success.

There is also a great deal dependent on the positions in which plants are placed in our Orchid houses. They will often be found to thrive better in one part of the house than in another. This is found out by experience and persevering observation. If a plant does not do well in one spot try it in another, and when a suitable place is found let it alone. It is astonishing how differently various plants will thrive in different houses, whether it be Orchid houses, stoves, or warm greenhouses.

We have found this out by reason of want of space in our Orchid houses compelling us to place certain plants in houses having a different temperature, and in which it has turned out that they have succeeded far better, made better growths, and bloomed more freely. When we find they succeed in this way, we keep them under these conditions, treating them otherwise according to their especial wants. It must be the same with all plant growers. If success is to be obtained, the requirements of the plants to be dealt with must be studied, and the cultivator should never be satisfied until the requisite point for the particular plant to be dealt with has been gained. Always take notes of any successes which have been attained, and never think because you have been successful that the plants will do by themselves and require no further care or study to keep them up to the same standard of health. Some persons seem to think that if they have grown their plants well once they can do so again without further trouble, but this is a great mistake; the same forethought and attention must be given as before; and we find that there is always something to be learnt by even the most successful of Orchid growers.

One thing we have always endeavoured to avoid, and that is following the advice of different cultivators; no doubt there is something to be learnt from all by all, but the advice should be cautiously taken. We have seen growers rush into new methods of treatment at once without studying their own appliances, their locality, and their surroundings, and the result has often proved to be failure. Even when one hears of new ideas which are to result in the accomplishment of some extraordinary success, it often happens that before the task is finished the failure is complete. The reason of this failure is hard to tell; they have overdone the matter, or have not kept up the treatment once practised, or there

has been some change in the temperature, or in watering the plants, or perhaps insects have been working mischief. There are so many reasons for failure that it is difficult to tell which may apply in each individual case.

TREATMENT OF NEWLY-IMPORTED PLANTS.



WHEN unpacked these should have every leaf and bulb sponged over, and all the decayed parts removed—not torn off, but cut clean off with a sharp knife. There are many insects that harbour about Orchids, such as the cockroach, and different kinds of scale, all of which are great pests. When cleaned they should be laid on dry moss and placed in some part of the Orchid house, where they are shaded from the sun. Water must be given very sparingly at first, as it is liable to rot them; too much of either light, heat, or moisture is at first very injurious. If they are put in moss or peat it should be gradually moistened, and when they begin to grow and make roots, they should be potted, or put on blocks or in baskets, but care should be taken not to have the pots too large, over-potting being dangerous.

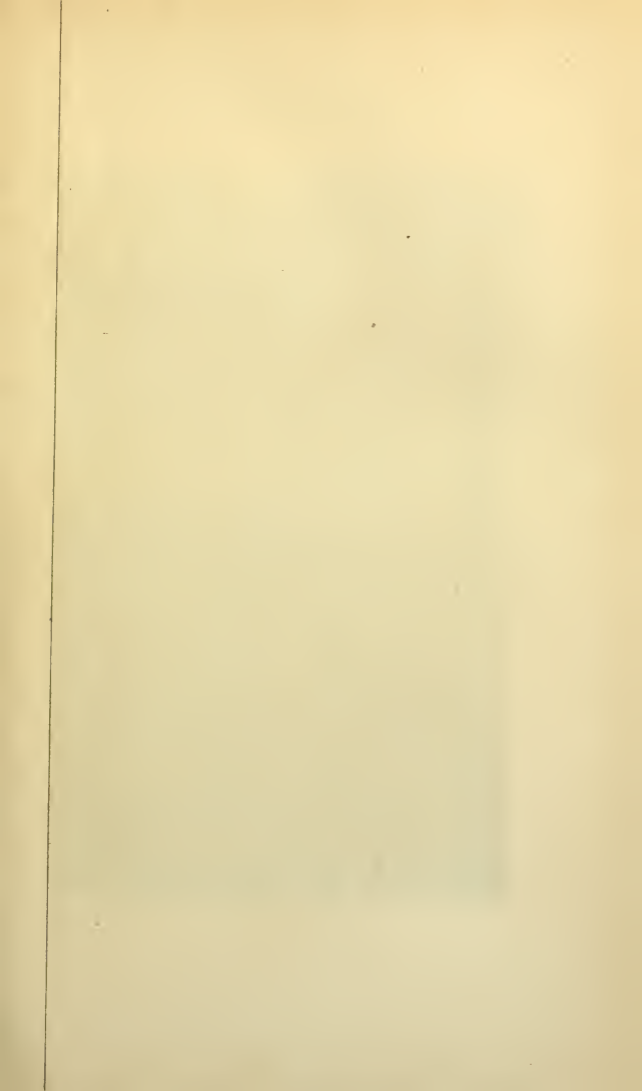
We find it a still better plan to fill the pots nearly full of broken potsherds and charcoal, and to place the plants on the top of this until they begin to grow and make fresh roots. We have treated them in this way now for some years, and find the plants start much better, and they can be supplied with more moisture without fear of rotting them. By having recourse to this method they plump up much sooner, and break more freely, and the water passes away without becoming stagnant. After the plants have well started a little rough

peat or sphagnum moss mixed with charcoal may be placed upon the crocks. By the addition of charcoal the soil is kept sweet and open, in addition to which the roots will cling to it.

If baskets are preferred the plants can be treated in the same way in them. If placed on blocks they require to be put in a moister atmosphere and to be often syringed, as they will of course dry up sooner than if in pots or baskets.

We have also found hanging up the plants in a moist house, without anything about their roots, a good plan where room is scarce; they will break freely in this way, but they are inconvenient to move about as the roots get broken.

As soon as symptoms of growth are observable, those which come from the hotter parts of India should be put at the warmest end of the house, but they should not have too much moisture when first starting into growth. Those which come from the more temperate regions should be kept in the coolest part of the house. They should not be permitted to stand in the way of drip, as this frequently rots the young shoots as soon as they appear. Such plants as the species of *Vanda*, *Saccolabium*, *Aërides*, *Angræcum*, *Phalænopsis*, &c., we place so that the heart or crown hangs downwards, in which position no water can lodge about them. They should hang for about a fortnight, and may afterwards be put in pots, on blocks, or in baskets, with crocks until they begin to grow, when some moss should be placed about their roots; but they must have but little water until they begin to grow, and make new roots, after which they may be treated in the same manner as established plants. This is much the safest mode of treating these valuable Orchids on their first arrival in this country. Always be careful to keep the sun from them until they show signs of growth.





GROUP OF ORCHIDS, ARRANGED W



WITH FERNS AND FOLIAGE PLANTS.



TREATMENT OF PLANTS IN BLOOM.

THERE are many Orchids that when in flower may be removed to a much cooler house than that in which they are grown, or even to a warm sitting-room. The advantage of keeping the plants during their period of flowering in a cool and dry atmosphere, rather than, as is frequently the case, in a hot and moist house, is, that in the former case the flowers last much longer than they do when retained in the warmer and moister atmosphere. Perhaps there are not many cultivators who have studied this point more than we have done, and we have never found the plants to be injured by this treatment. Some imagine that if they are put in a cool place they will suffer damage; but this has not occurred in our experience. During the time they are in a room or cool-house, the temperature should not fall below 50° at night; the room or house should be kept quite dry; and before they are removed from the stove they should be put at the coolest end of it; or if there are two houses, those that are in the hottest should be moved to the coolest for a few days before being taken into the room, and they should be allowed to get nearly dry, that is, they should while in the cool apartment receive but very little water—only enough to keep the roots moist.

We prefer to have a house or easily accessible compartment set apart for the reception of flowering Orchids, where during their flowering season they can be treated according to their special requirements. If they are kept in the growing house they soon become spotted, and the damp injures the flowers and causes them to decay. We have such a house and find it a great advantage for prolonging the flowering season.

The following are a few of those which we have tried in a sitting-room during the months of May, June, July, and August. We have kept *Saccolabium guttatum* in this way for five weeks, and *Aërides affine* for the same time. *Aërides odoratum*, *A. roseum*, and some of the *Dendrobiums*, as *D. nobile* and *D. cærulescens*, we have kept in a room for four or five weeks. *Dendrobium Linavianum*, *D. superbum*, *D. pulchellum*, and *D. Wardianum*, last a much longer time in bloom if they are kept cool than if in a high temperature. Various species of *Brassia*, *Oncidium*, *Epidendrum*, *Odontoglossum*, *Cyrtochilum*, *Trichopilia*, and *Maxillaria*, with *Lycaste Skinneri*, *L. aromatica*, *L. cruenta*, *Aspasia lunata*, and all the *Cattleyas*, succeed well in a cool room or house, in which their flowers keep fresh for a much longer time. We have kept *Lalia majalis* in a cool room for four or five weeks, and *L. flava*, under similar circumstances, will also keep a much longer time in blossom than if left in the warm house.

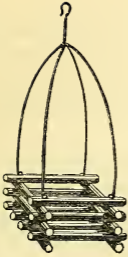
When the flowers begin to fade, the plants should be taken back to the Orchid house, where they may be placed in the coolest end, with plenty of shade; they should be kept in this position for about ten days, for if they are at once exposed to the sun they are very apt to become scorched.

Those flowers which it is desired to preserve should not in any case be wetted, as this will cause them to become spotted, and they will then soon decay. This is a very important point.

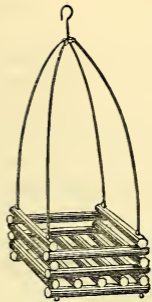
ON MAKING ORCHID BASKETS.



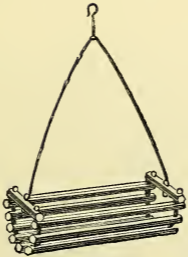
BLOCKS and baskets are most natural receptacles for growing the true air-plants, such as *Vanda*, *Saccolabium*, *Aërides*, *Angræcum*, *Phalænopsis*, &c. When planted in baskets or on blocks, these send out their roots



ORCHID BASKET WITH EXTENDED ENDS.



ORCHID BASKET, ORDINARY SHAPE.



THE BOAT.



SMALL ORCHID BASKET.



THE CYLINDER.



THE RAFT.

much more vigorously into the air, and suck up the moisture, whereas, if their roots are covered too much, they are very apt to rot. Mr. R. Warner has invented a flat block made of ordinary pottery clay, with holes in it, and his plants are thriving well on these.

Various materials are used for forming baskets. Sometimes they are made of copper wire, which is very durable. Others are made from the ordinary material in use for making flower-pots—these are very good indeed, and have a neat appearance. We have some very good ones of this description; they are round, about six inches deep, with holes in the bottom, and made of the ordinary pottery clay; they are, moreover, very useful, as they last a long time, and the plants do well in them. We have also for some years used small earthenware pans of different sizes for many kinds of Orchids with very beneficial results; they have three holes in their sides, and are attached to the roof of the house by means of wires; they are deep enough to allow of sufficient drainage to be put in them, as well as peat or moss, and we find the plants do well in them, much better than on blocks, as they do not dry up so quickly. We have saved many delicate plants in this way. We, however, prefer generally those made of wood, on account of their rustic appearance, and, besides, the roots like to cling to the wood.

We have found teak wood to be the best for making baskets, as it is hard and durable. The best baskets are those of square shape, made of proportionate even-sized rods without the bark, of which we give some sketches on page 35. The wood should be cut into short lengths according to the size of the basket required. They should not be too large, for there are two objections to this: one is, that they take up much space; the other, that the plants do not require much room. After the wood is cut into proper lengths, the pieces should

be bored within one inch from the ends, taking care to have all the holes bored at the same distance: there should be four lengths of copper wire, one for each corner, and this wire being fastened at the bottom, should be put through the hole in each piece of wood, and be afterwards brought up to form the handle for suspending the plants from the roof. Copper wire only should be used in making baskets, for any other is probably injurious to the plants. Cylinders, rafts, boats, &c., made of teak, as shown on page 35, are now largely employed for Orchid culture.

The best kinds of wood for blocks are teak, acacia, apple, pear, plum, maple, hazel, or cork. The wood should be cut into lengths suitable for the size of the plants; some copper nails should be driven in at each end, to which should be fastened copper wire to form the handle; wind the wire round each nail, and leave the handle about ten inches high. Small copper nails, driven in on the surface of the block, serve, by means of copper wire, to fasten the plants on to the blocks. There are some imitation blocks made with pottery ware, which are very neat, and last a long time, but it is questionable if they are so congenial to the plants as wood. The great advantage of growing Orchids on blocks or in baskets, is that of being able to get the plants near the glass, where they may reap the full benefits of sun and light.

POTTING EPIPHYTAL ORCHIDS.



WHEN the season of rest is over, many Orchids will require re-potting, but in our practice we have not confined ourselves to that time only. No season can absolutely be determined on as the proper one for this

operation. The months of February and March—that is, after the resting season, just before they begin to grow, are very suitable for potting some of them. Those that do not require potting should be top-dressed with good fibrous peat and moss, the old soil being removed from the surface without breaking the roots of the plants. This operation affords the means of getting rid of many insects which harbour in the old soil or crocks. The pots should be thoroughly cleansed from the mould, moss, and dirt, which are too often seen covering them. Cleanliness is one of the greatest aids in the successful growth of Orchids. Previously to potting, the plants should not receive any water for four or five days.

Some species should be potted at a somewhat later period, that is, just as they begin to grow. All the species of *Phajus*, *Calanthe*, *Dendrobium*, *Stanhopea*, *Cyrtopodium*, *Brassia*, *Miltonia*, *Sobralia*, *Bletia*, *Oncidium*, and many others, require this treatment; whilst those of *Lalia*, *Cattleya*, *Saccolabium*, *Aërides*, *Vanda*, and similar plants, should be potted just before the commencement of their growing season.

The chief point to be attended to in all potting is that the pots should be well drained, the best material for drainage being potsherds or charcoal. Before potting, be particular to have the pots perfectly clean and dry, inside and out, and the broken potsherds should be washed. After this is done, select a pot in accordance with the size of the plant, but do not give too much pot-room. Some plants require shifting once a year, while it may not be necessary to shift others oftener than once in two or three years. If a plant becomes sickly or soddened with wet, the best way to bring it back into a healthy state is to turn it out of the pot or basket, and wash the roots carefully with some clean tepid water, cutting off such of them as are dead; and then to repot it, not giving it much water till it begins to make fresh roots. The best

pots are those in ordinary use. Some employ slate pots, but they are not so good for Orchids as those made of clay.

In preparing the pots for large plants a small pot should be turned upside down in the bottom of the larger one, filling in around it with potsherds or charcoal broken up into pieces about two inches square for large plants, and using smaller pieces for smaller plants ; then introduce potsherds till within three or four inches of the rim, and afterwards put on a layer of moss to prevent the peat from settling down and impeding the drainage, and preventing the water from passing off quickly. This is of great importance, for if not attended to, the water will become stagnant, and the soil sodden, which is fatal to the health of the plant. The grand point to be observed in the successful culture of Orchids, as well as most other plants, is good drainage ; without that it is hopeless to try to keep the roots long in a healthy condition, and if these fail the plant goes with them.

The best material to be used in potting the different kinds of epiphytal Orchids, when grown in pots, is a mixture of good rough fibrous peat and live sphagnum moss. After the layer of moss is applied, fill up the pot to the top with this mixed peat and live sphagnum moss, and bear in mind not to press the soil too closely, for we believe too firm potting to be very injurious. The peat should be broken into lumps about the size of a hen's egg ; and we always use broken potsherds or charcoal mixed with the peat. The plant should be set so as to be two or three inches above the rim of the pot, taking care to have the base of all the pseudobulbs above the soil ; then put some peat and moss on the top of the roots so as to cover them, inserting a few small pegs in the soil to keep it firmly on the pot. After the plants are potted fix a stick in the centre of each, to keep it firm. In shifting, carefully shake away all the old soil without injuring the roots. After

potting, which should be done in the same way as recommended below for basketing, be careful not to give too much water at first ; but when the plants begin to make fresh roots they may have a more plentiful supply.

The best material to be used for basketing the East Indian kinds, such as *Aërides*, *Vanda*, *Phalænopsis*, *Saccolabium*, and similar growing kinds, is sphagnum moss and broken potsherds. The basket should be suited to the size of the plant ; it should not be too large, for it will not last more than a few years if made of wood, by which time, probably, the plant will require shifting into a larger one. There should first be placed a layer of moss at the bottom of the basket, then a few potsherds, and then the whole should be filled up with moss and potsherds mixed. Take the plants carefully out of the old basket, without breaking the roots, remove all the old moss, place the plant on the new material, about level with the top of the basket, fix a stick in the centre, to keep it firm, cover the roots neatly with a layer of moss, and finish off by giving a gentle watering.

Those plants that require billets of wood to grow upon should have live moss attached to the blocks, if by experience they are found to require it. Some species, however, do better on bare blocks, but they need more frequent waterings, as they are then almost entirely dependent on what is obtained from the atmosphere. The plants must be fastened firmly on the blocks, by means of copper or galvanised iron nails, which are to be driven into the block, and then, with copper wire, the plants must be firmly secured to the surface of the wood. As soon as they make fresh roots they will cling to the block, and the wire may be taken away.

POTTING TERRESTRIAL ORCHIDS.

THESE require a stronger compost than the epiphytal kinds, but do not need so much drainage. They should be potted just when they begin to grow, after the resting season. The compost we prefer to use for them is turfy loam chopped into pieces about the size of a walnut, leaf mould or peat, and a little rotten cow or horse-dung, all being mixed thoroughly together. The plants require good-sized pots ; in the bottom of them put about two inches of drainage, on that a layer of moss, next some rough peat, and then the compost just mentioned, on which place the plant so as to be about an inch below the rim of the pot ; then fill in with the compost, making it tolerably firm about the roots. Water sparingly at first, but by the time the young growths are some six inches high the plants will enjoy a good supply.

MODE OF PRODUCING BACK GROWTHS.

THERE are many of our Orchids that grow on year after year, and yet produce only one flowering pseudobulb annually ; but some of the kinds, if the plants are cut, will produce back shoots or breaks, thus increasing the number of blooming growths, and the sooner making fine specimens. This is the way to produce such plants as are seen every year at the London and provincial exhibitions. Some plants, such as *Cattleyas*, may be more readily treated in this way than others.

The operation is thus performed :—Take a plant that has

back pseudobulbs, some four or five it may be, and cut the rhizome in two between the bulbs, not otherwise disturbing it, but allowing the bulbs to remain in the same place. The best time to cut most Orchids is during their season of rest, or just as they are beginning to grow. Any other Orchids that have pseudobulbs may be treated in the same way, when it becomes desirable to increase them, but it must be borne in mind that no Orchid should be cut except when in vigorous health, and not then except it is to produce back growth. The resting season is best for performing the operation, as when in vigorous growth they often produce the growths from the same pseudobulb, and continue doing so year after year, thus increasing in size rapidly, and in time making a fine specimen. When this is the case, if it is required to increase the stock of a particular plant, take off a piece just as it is starting into growth. The plant taken off can be potted at once, and placed in a shady place until it shows signs of growth, when it may be brought to the light. Many Orchids do not like to be disturbed, while there are those, some much more so than others, which readily submit.

WATERING ORCHIDS.



THIS operation should be performed with great care, especially in the case of plants just starting into growth, for if watered too profusely the young shoots are apt to be affected by the atmospheric moisture, and become liable to what is termed damping off. Whilst, therefore, the shoots are young, only enough water should be given to keep the moss or peat in which the plants are growing just moist. As they advance in growth, more may

be given ; and when the pseudobulbs are about half grown, the roots may receive a good supply. This, however, will greatly depend upon how the plants are potted. If potted according to the directions laid down in this book the water will pass away quickly, which is very essential to the well-being of the plants. We have known Orchid growers try many kinds of potting material, but have never seen any to succeed better than rough fibrous peat and sphagnum moss, and by using these two materials as recommended, there is less liability of the plants suffering injury. Some growers use fine soil, mixed with sand and moss : this we consider bad for epiphytal Orchids, because it soon gets soddened and consolidated round the roots—a condition exceedingly obnoxious to this class of plants, which are not subjects to be tampered with. When plants are potted in this fine soil they require less water, and will also need the soil to be frequently renewed, but to this system we are entirely opposed.

Our practice is to shut up the Orchid house in the spring of the year about 3 P.M., and in May, June, July, August, and September about an hour later, when the heat of the sun is on the decline. We then usually give a gentle syringing with water as nearly as may be of the same temperature as that of the house. In fine weather, the temperature from sun-heat will rise frequently as high as 95°, or even more ; but we have never observed any injury to befall the plants in consequence of this heat, so long as the house was saturated with moisture. The atmosphere should be dried up once a day, if possible, by means of ventilation. In syringing be careful not to wet the young shoots too much. The syringe should be furnished with a fine rose attached, so as to cause the water to fall on the plants in imitation of a gentle shower of fine rain ; but this syringing should only take place after a hot sunny day, and should never be carried to excess, for we have seen the ill

effects of that practice in many Orchid collections. The practice is indeed very dangerous, and growers often wonder at their plants not looking well, when it is entirely due to over-syringing. Nevertheless, water, judiciously applied, is one of the most important items in the culture of these valuable plants. Those of them which are growing on blocks of wood should be syringed twice a day in the summer time; and we also find it beneficial, during the growing season, to take the blocks down about twice or three times in a week, and dip them in water till the surface of the wood and the moss are thoroughly soaked. Plants in baskets should likewise be taken down and examined, and, if they are dry, they should also be soaked in a similar manner. This is a good mode of getting rid of many hurtful creatures that harbour in the moss, such as the woodlouse and the cockroach, which, when the moss is plunged and kept for a while under water, will come to the top, and then may be easily killed.

We have elsewhere observed (*Orchid Album*) that "rain water is the best for Orchids and for all kinds of plants, this being the water supplied in their natural habitats. Rain water is easily to be obtained by providing tanks under the stages, and allowing the rain water to enter from the roof. In this way no room is lost. A pump should be affixed, in case the water should get low in dry weather, by which means it can easily be raised to the required height. The plan we adopt is to have a deep cemented tank in the centre of the house under the stage, so that the top may be open; this allows the water which is standing in the tank to become somewhat warmed by contact with the atmosphere of the house, which is very beneficial. In fact, Orchids should never be watered with water that has not had the chill taken off, as cold water, especially in winter time, causes spot, and may rot the growths, and injure the roots. Into this tank the rain water runs from the

roof, and as we have the New River water laid on as well, when rain water is scarce we fill up with this, and thereby have a mixture of rain and hard water.

“There can be no doubt that Orchids, like other plants, are particular as to the fluids given to them to nourish their roots. We often hear growers say that the water obtainable in the particular locality where they may reside is hard, and that their plants do not thrive as they should do. We can fully sympathise with these men, as we know that hard water is bad for Orchids as well as for other plants. Hard-wooded plants, especially, will not thrive if the water they receive does not suit them ; but it must be borne in mind that these plants have fine hair-like roots, and are much sooner killed than Orchids, which have thick fleshy roots. When conversing some time ago with an Orchid grower from the North of England, who told us that his plants were not doing well, that he could not keep the sphagnum moss alive, which he attributed to the use of hard water, and that he consequently put up a cistern for rain water, and employed that, we were not surprised to hear that the result had been to improve the health of the plants, and that the moss was now growing luxuriantly.

“There is a great difference between different hard waters ; some contain a quantity of iron, while others contain lime ; these latter when used for syringing leave white marks upon the foliage. We believe water containing chalk and lime to be beneficial to some kind of Orchids, especially *Cypripediums*, in fact, some growers use chalk or broken limestone mixed with charcoal and peat to grow them in, and they succeed very well in it. We have frequently seen distinct traces of lime on imported *Cypripediums*. An importation of *Cypripedium Spicerianum*, received some time ago, was literally covered with lime deposit, owing to the plants having been found growing in the fissures of limestone rocks, where the water

trickled down upon them. We should think that water containing iron would be most injurious to Orchids."

Rain or pond water is the best for the plants, but if this cannot be obtained, and water from a spring must be employed, it should be well exposed to the influence of the atmosphere before being used; it should also be allowed to stand in the house for a considerable time, previously to its being required for the plants, so that it may become warmed to about the same temperature as the atmosphere in which it is to be used. This indeed should be done in all cases.

Slate cisterns are very useful for collecting the rain water which falls on the roof; and such cisterns on each side the house placed over the hot-water pipes will keep the water at the same temperature as that of the house. If there is not room for the slate cisterns on the pipes, a cement tank under the centre table will answer the same purpose, and should have a hot-water pipe run through it, if possible, so as to keep up the temperature of the water, which is a very important point in maintaining the healthy growth of the plants.

Over-watering is very detrimental to nearly all the species of Orchids in cultivation. It must be remembered that although in their native habitats they get a great deal of rain during the growing season (which is generally the rainy season), it is very different in our houses, where they are closely confined, and evaporation does not take place to such an extent as it does in their native homes, where they are found growing on trees and rocks and on the ground. In these positions they get all the winds that blow, and which after a shower quickly dry up the superabundant moisture. More Orchids are lost by over-watering than many people imagine; and although they may not show it at the time, it tells upon them afterwards in the shape of disease.

PROPAGATION OF ORCHIDS.

THERE are different modes of propagating the various kinds of Orchids. Some are easily increased by dividing them into pieces, or by cutting the old pseudobulbs from the plants after the latter have done blooming; such plants as *Dendrobiums* are increased in this way. The best time for dividing the plants is just as they begin to grow, or when they are at rest. They should be cut through with a sharp knife between the pseudobulbs, being careful not to harm the roots; and each piece should have some roots attached to it. After they are cut through, they should be put into some shady part of the house, without receiving much water at the roots till they have begun to grow and made fresh ones; then they may be parted, potted, and have the regular supply. *Dendrobium nobile*, *D. Pierardi*, *D. pulchellum*, *D. Devonianum*, *D. Falconeri*, *D. superbum*, *D. Wardianum*, *D. crassinode*, *D. superbiens*, *D. bigibbum*, and sorts of similar habit, are easily propagated. This is effected by bending the old pseudobulbs round the basket or pot in which they are growing; or by cutting the old flowering bulbs away from the plant, and laying them on some damp moss in a shady and warm part of the house, with a good supply of moisture. In either case, they will break and make roots and new shoots, after which they may be potted or put in baskets. Such kinds as *D. Jenkinsii*, *D. aggregatum*, *D. formosum*, *D. speciosum*, *D. densiflorum*, *D. thyrsiflorum*, *D. suavissimum*, and similar growing sorts, are increased by simply dividing the plants.

The species of *Aërides*, *Vanda*, *Angræcum*, *Saccolabium*, *Camarotis*, *Renanthera*, and plants of similar habit, are pro-

pagated by cutting off the top just below the first root, or by taking the young growths from the base of the stem; the latter, after they have formed roots, should be cut off with a sharp knife, and put on blocks or in baskets with some sphagnum moss, and kept in a warm and damp part of the house, without receiving much water till they have begun to grow, when they may have the usual supply.

The *Odontoglossums*, *Oncidiums*, *Brassias*, *Cyrtochilums*, *Zygopetalums*, *Sobralias*, *Trichopilias*, *Stanhopeas*, *Schomburgkias*, *Peristerias*, *Catasetums*, *Miltonias*, *Lycastes*, *Bletias*, *Lælias*, *Cattleyas*, *Galeandras*, *Epidendrums*, *Barkerias*, *Cyrtopodiums*, *Cymbidiums*, *Cælogynes*, *Calanthes*, and the species of *Mormodes*, *Leptotes*, *Cyenocheas*, and *Coryanthes*, are all propagated by dividing them into pieces, each having a portion of roots attached to it, and a young bulb or growing point. Such plants as *Calanthe Veitchii*, *C. Turnerii*, and *C. vestita*, often produce bulbs on the top of their last year's growth, which can be taken off after they have done blooming, and put into sand or some other suitable material until ready to pot in the ensuing spring.

Thunia alba, *T. Bensoniæ*, *T. Marshalliana*, and similar growing kinds, are very easily increased. The best way is to cut off the old pseudobulbs after the young ones have begun to flower, that is, just before the plant has made its growth. These pseudobulbs should be cut into pieces about six inches long, and then put into a pot in some silver sand, with a bell-glass over them, till they have struck root and begun to make their growth, when they should be potted in some fibrous peat and moss, and should have good drainage to carry off the water required in the growing season.

Some of the *Epidendrums*, such as *E. cinnabarinum*, *E. crassifolium*, *E. erectum*, and similar growing kinds, which form plants on the tops of the old flower stalks, are easily



SEEDS OF DENDROBIUM.



SEEDLING DENDROBIUM,
4 months.



DENDROBIUM,
7 months.



DENDROBIUM, 2 years.



DENDROBIUM,
12 months.

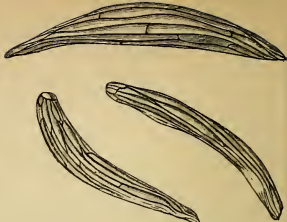


DENDROBIUM, 18 months.

DENDROBIUM SEEDLINGS IN VARIOUS STAGES.



SEEDS OF EUCYPRIDIUM.



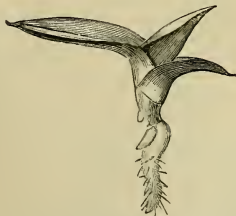
SEEDS OF SELENIPEDIUM.



SEEDLING CYPRIPEDIUM, 6 months.



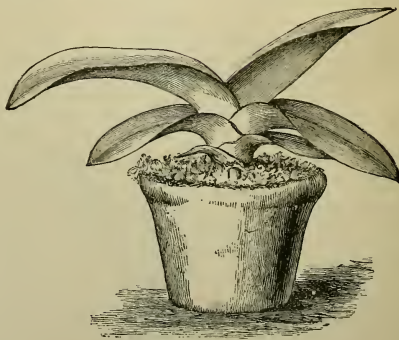
CYPRIPEDIUM, 9 months.



CYPRIPEDIUM, 12 months.



CYPRIPEDIUM, 16 months.



CYPRIPEDIUM, 2 years.

CYPRIPEDIUM SEEDLINGS IN VARIOUS STAGES.



CATTLEYA, 9 months.



SEEDS OF CATTLEYA.



SEEDLING
CATTLEYA.



CATTLEYA, 16 months.



CATTLEYA, 12 months.



CATTLEYA, 2 years.

CATTLEYA SEEDLINGS IN VARIOUS STAGES.

propagated ; the young ones should be left till they have completed their growth, and then be cut off and potted, when they will soon make good plants. Some *Dendrobiums* will also form plants on the tops of the old pseudobulbs, and they should be treated in a similar way.

RAISING ORCHIDS FROM SEEDS.



ANY Orchids have recently been raised from seed in this country ; yet it was not until within the last few years that cultivators succeeded in raising seedlings of these singular subjects. Indeed at the present time the number is not very great, but we are nevertheless every day becoming more familiar with seedling varieties and hybrids which have been raised in English gardens. To Mr. Dominy, Mr. Seden, Dr. Ainsworth, and Mr. R. Warner belong the credit of producing some very beautiful hybrid forms of this order, which are now in cultivation. Several other cultivators are now exercising their talents in the same direction, and there is unquestionably a large field open for all who take an interest in hybridising this singular and beautiful tribe of plants. Some very fine *Cattleyas*, *Lælias*, *Dendrobiums*, and *Cypripediums*, have been sent out by the Messrs. Veitch & Sons, and great credit is due to the energy they have displayed in this branch of Orchidology. Many of these seedlings are very free-growing, but it will be several years before they can be generally distributed, as they are so slow in propagation. We now refer more particularly to *Cattleyas* and *Lælias*.

Some time ago a gentleman remarked that he should like to be in a country where the Orchids grew in a

wild state, in order that he might have the chance of hybridising them ; his ideas were, that something really good might thus be obtained, and no doubt he was right, for considering how seldom it is that we flower two Orchids alike, it may be concluded that many of our imported plants, though taken for the same, are natural hybrids or seminal variations. We have seen at least two dozen varieties of *Cattleya Mossiae* in bloom at one time, some having white petals and rich crimson lip, others rose-coloured petals and yellow lip, but all differing more or less from each other. In fact, nearly all the species of Orchids yield varieties. Four flowers taken from four different plants of *Phalanopsis amabilis* were once brought to us, and no two of them were exactly alike. The same may be said of *Phalanopsis Schilleriana*, of which we have seen many plants in bloom, varying much in the colour of the flower and in the shape and markings of the leaf, all however being handsome. In a wild state, varieties appear to be unlimited, crossed and recrossed, as they doubtless are, by insects. Who, for instance, would have thought, in years gone by, of importing so splendid a plant as *Phalanopsis Schilleriana*, which is beautiful not only in blossom but in foliage ? Now comes *P. Stuartiana*, *P. leucorrhoda*, *P. violacea*, and many others ; and we are told there exists a still finer species, with scarlet flowers ! Let us hope the latter will soon be added to our collections ; what a contrast it would make with the white and mauve coloured kinds now in cultivation ! Mr. Dominy and Mr. Seden have succeeded in raising some choice varieties of *Cattleya*, *Calanthe*, *Cypripedium*, *Goodyera*, *Dendrobium*, &c. ; Mr. Mitchell has raised the fine *Dendrobium Ainsworthii*, and a pretty *Cattleya*, which has been named *C. Mitchellii* ; and some *Cypripediums* have been raised by Mr. Cross, formerly gardener to the Dowager Lady Ashburton at Melchet Court. Let us hope these hybridists and others may persevere in the



SEEDLING PHALLENOPSIS,
4 months.



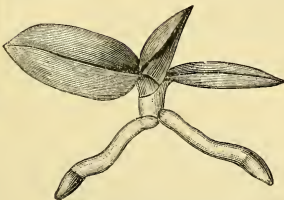
SEEDS OF PHALLENOPSIS.



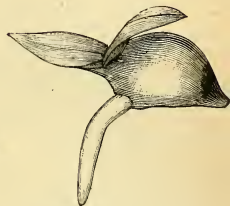
PHALLENOPSIS,
9 months.



PHALLENOPSIS,
15 months.



PHALLENOPSIS, 2 1/4 years.



PHALLENOPSIS, 22 months.



PHALLENOPSIS, 3 years.

PHALLENOPSIS SEEDLINGS IN VARIOUS STAGES.



good work, and produce something new in other genera. Many kinds seed freely if the flowers are fertilised, and they produce many seeds in a pod.

The seed, having been gathered as soon as ripe, should be sown at once, but it requires great care, as it is not so easy to raise as that of many other plants. Some of the kinds are a long time germinating; we have known Orchid seeds to lie twelve months before the plants made their appearance. It is highly interesting to watch their gradual development, from the tiny germ to the first small pseudobulb, and so on up to the flowering stage. The best place in which to sow the seeds is on the top of an Orchid pot, where they will not get disturbed, and where the peat or moss is in a rough state; do not cover the seed, but give a little water with a fine-rose pot, just to settle it. The rough blocks of wood on which another plant is growing also afford a capital situation to sow upon, but the surface should always be kept a little moist. After germination, those which were sown on pots should be placed in small pots quite close to the inside edge, and when the plants get strong enough, they may be potted singly in the material already recommended, or be placed on blocks. In potting and taking them up, great care must be used not to injure the roots.

One of the surest roads to success in hybridising is to select the finer species or varieties only for experiment, though it is possible that there may exist in a flower of inferior merit some quality which would induce the operator to undertake its improvement, or endeavour to transfer the desired feature to some more favoured kind. It is highly desirable that many more growers should turn their attention to the raising of hybrids, not only with the view of obtaining finer flowers than we already possess—though that would be a real advantage; but for the additional purpose of raising sorts that might

succeed in cooler houses. *Odontoglossum grande* and many others, for instance, do better in a cool-house than in a warm one; how desirable it would be to communicate this quality to others. *Cypripedium insigne* will thrive well in a greenhouse, and if we could cross this with some of the other kinds, such as *C. superbiens*, *C. hirsutissimum*, *C. Lowii*, or *C. barbatum superbum*, something good might be the result. There are also several hardy *Cypripediums*, such as *C. macranthum*, *C. pubescens*, and *C. spectabile*, which might be induced to play an important part in the operation. At least, the several hybrid *Cypripediums* which have flowered in the establishment of Messrs. Veitch fully bear out our argument. *Phajus grandifolius* and *P. Wallichii* are likewise two noble plants for winter decoration, which do well in a warm greenhouse, and may probably be the means of producing some very ornamental plants, if crossed with various *Calanthes*.

Since the publication of the fifth edition of this *Manual*, numerous Orchid growers have been turning their attention to this subject of hybridising, and many of them have succeeded in raising seedlings, from which we trust ere long they may realise something startling.

ORCHIDS FOR ROOM DECORATION.



LYCASTES thrive admirably in a cool-house, *L. Skinneri* for instance, which is one of the finest, and of which many splendid varieties are now cultivated. This plant is reported in the *Gardeners' Chronicle* to have been kept in a room in flower for seven weeks—a fact which shows what might be done with these fine plants in a cool-house. We, ourselves, have had plants of this *Lycaste* all the winter in a

greenhouse, where they have flowered in great abundance, as many as from thirty to fifty blossoms being open at one time. Indeed, we exhibited a plant of it at one of the Regent's Park spring shows with as many blossoms on it as we have just mentioned, on which occasion a medal was awarded for its magnificent flowers and colour. Particular care must be taken, however, to keep the flowers dry when in a cool-house or room, or else they are apt to become spotted.

“*Lycaste Skinneri*,” says the *Gardeners' Chronicle*, “seems about to have as great a future as the Tulip. Already something like a dozen varieties of colour are known among its exquisitely beautiful flowers, and we can entertain no doubt that it will break into plenty more, especially if recourse is had to hybridising. From deep rose to a skin only less white than the Hawthorn we have a complete set of transitions, and this is a plant conspicuous for its fine broad foliage, and glorious in its ample floral garments. It is not, however, wholly on account of its disposition to reward us by an endless variety of colour, and perhaps form, that we wish to draw attention to *Lycaste Skinneri*, but because of all tropical Orchids it is one of the hardiest in constitution and most easy to cultivate. This has been very decisively shown by some experiments of the late Mr. Skinner, to whose untiring energy we English owe this and many other treasures. In a note received from him, he writes as follows:—

“On the 2nd February, 1861, I received from Mr. Veitch a fine specimen with seven flower spikes all out, and took it to Hillingdon Cottage, placed it on the drawing-room table in an ornamental pot, and gave it every three days or so about four tablespoonfuls of water, occasionally wiping the leaves with a wet sponge when the dust got on them. There this plant stood throughout the severe weather we had—a fire in the room only during the afternoons and evenings,

and on some days none at all. It never showed the least decay until the 16th of May, when it was for some purpose or other put into the greenhouse, and our gardener sprinkled water over it along with the other plants. Next morning I was shocked to see the flowers all with brown spots and withering. On the 18th May I took it back to Mr. Veitch, still in full bloom (seven spikes), to bear testimony to its condition, and it lasted, though then much injured, a week on the stand by the seed-room in their place. This experiment induced me to try again. On the 18th December, 1861, I brought down to this place two fine plants of the *Lycaste*, and two plants of *Barkeria Skinneri*, both in full bloom. Having been absent (with the exception of three days in January) since, I have had no control over them, but my sister followed the same plan as at Hillingdon, only with the *Barkerias*, which are attached to blocks, dipping the whole block into water for a few minutes every four or five days, according as we have much or little sun, and as the plants are now before me I give you their condition. One of the *Barkerias* is as perfect as the day I brought it here; the other has all gone off within the last few days. One *Lycaste* is perfect, and as beautiful as the day I brought it here; the other has *lost* one flower, I fear by some accident, the other flower still good, but evidently a little 'sbady'; this plant has two flower stems coming on, and would bloom in a fortnight if we pushed them by more moisture. I expect frost has got on it after watering, for it stands close to the window in the drawing-room, and this room, though smaller, is similarly treated to the one at Hillingdon—fires in the afternoon and evenings, with a southern aspect. What a treat to me is this, and I think you should know it, for people have said—'I love Orchids, but hate the stew-pans one has to view them in.'

“It is clear that for *Lycastes* and *Barkerias* 'stew-pans'


may be dispensed with. Plenty of Orchids like these are to be found in our gardens, brought from the Highlands of Mexico and from Central America. It is also probable that mountain species of India, such as the delicious *Cælogynes*, will thrive under the same treatment, and, if so, one more class of enjoyments is provided for the lovers of flowers.

“Surely this is news worth telegraphing through the whole horticultural world! What a charm for a sick-room! What a pet for the poor invalid who has nothing to love except her flowers! Imagine the pleasure of watching the buds as they form, visibly enlarging from day to day, until they reach the slow unfolding of the perfect blossom, and then the delight at seeing it some morning stimulated by even a winter’s sun, suddenly throwing back its green cloak and displaying the wondrous beauty of its richly tinted lining. It is almost worth being ill to enjoy such a scene.”

Since the late Mr. Skinner wrote this there has been quite a change in Orchid growing. Large quantities of the cool growing kinds have been introduced, so that now persons possessing only a pit or small greenhouse with a little heat in winter can indulge their tastes in the possession of some of these beautiful and most interesting plants. All these might be kept in rooms while in flower.

Encouragement like this must surely add new life and vigour to Orchid growing. We hope that as a consequence many may be induced to try their skill. The great secret is to secure robust growth in summer, when there is plenty of sun heat in the greenhouses; but for further and particular instruction, we must refer to the notes on the cultivation of the *Lycaste*, and to the chapter on the treatment of Plants in Flower.

ORCHID HOUSES.

T is not absolutely necessary to build a house for the cultivation of Orchids, for in many cases they are grown most luxuriantly in pine stoves, or in houses principally devoted to flowering and ornamental-leaved plants. Where only a few plants are cultivated, such a plan is by no means objectionable, for we have found many of our Orchids do well in such houses, which fact has only been discovered by those who have been compelled to have recourse to such means. Where, however, a large collection is to be cared for, it is quite essential that houses should be specially set apart for them, and in our opinion the best houses are those with span roofs facing east and west (see pages 57, 59). Ground plans and end sections of such houses are here given. The largest sized span-roofed house should not be more than ten or eleven feet high in the centre, seventeen or eighteen feet wide, and about a hundred feet long, with two glass partitions to separate it into three compartments—one for plants that come from the East Indies, which ought to be nearest the boiler, the second for those that come from Brazil and therefore require an intermediate temperature, and the third for the Mexican species which require plenty of heat and sunlight. There should be upright sashes on both sides of the house, with glass from twelve to fifteen inches high, but not made to open. Many Orchid growers object to side sashes, and sometimes recommend brickwork up to the spring of the roof, but that is not, in our opinion, the best plan; on the contrary, we would advise any one about to build an Orchid house to have upright sashes on both sides and at each end.

For cool Orchids either a span-roofed structure or a lean-to

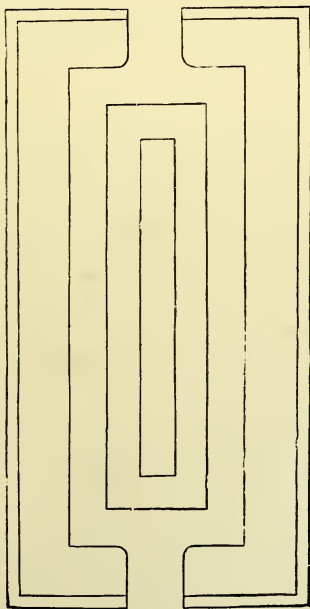
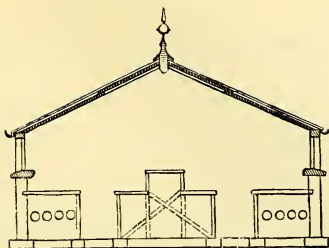


ODONTOGLOSSUM HOUSE IN THE
Dimensions
(FROM A F



TORIA AND PARADISE NURSERIES.
ft. x 12 ft.
(TOGRAPH.)



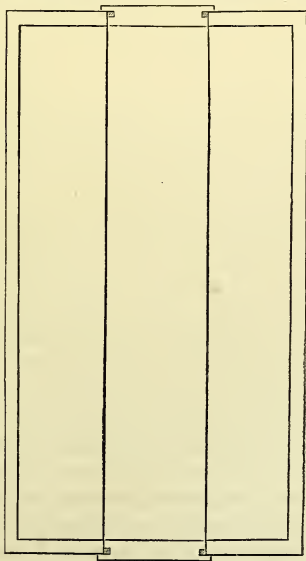
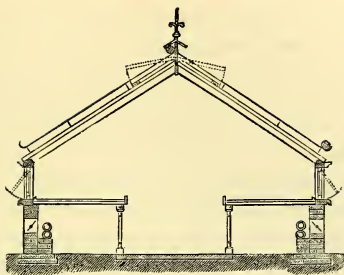


PLAN AND SECTION OF ORCHID HOUSE.

may be used. If a span-roofed house be decided upon the same height of ridge should be given as that recommended for Brazilian and Mexican kinds, but it need not be so broad, say about twelve feet, having two side tables with a path up the centre, and two rows of pipes on each side, with side ventilators in the brickwork made to open, as well as top ventilators. We give a plan and section of such a house on p. 59, to explain more fully what we recommend.

From experience we have found that Orchids do best with abundance of light, which is the only way to get good strong ripe pseudobulbs fit for flowering. Small houses of the size recommended are best. In different parts of the country there exist large lofty houses, but in no instance have we seen plants growing well in them; such houses require a great amount of fire heat to keep them at the proper night temperature, and after all they seem ill adapted to the wants of the plants. We would advise all large lofty Orchid houses to be pulled down or turned to other uses, and their places to be occupied by small ones. The expense of the operation would soon be saved in the reduction that would take place in the cost of pipes and the consumption of fuel.

We have used single roofs for nearly forty years, and have always found them to answer well, but a few years ago double-roofed houses were adopted by many Orchid growers. In no instance did any improvement in the health of the plants take place, but rather the contrary, the result being that after a time the system was abandoned, it having been found (in some cases by dearly bought experience) that double-roofed houses were a complete failure. We never had faith in the double-roofed house; and it appeared to us strange that growers of these valuable plants should adopt such new ideas before they had been well tried on a small scale by those who understood the treatment of this race of plants.



GROUND PLAN AND SECTION OF COOL ORCHID HOUSE, SHOWING MODE OF FIXING RAISED BLINDS.

The houses in our Nurseries are of the size recommended above, and no Orchid houses could answer better. They have been built and used more than twenty years, and are well worth inspection. They afford plenty of room for the plants to show themselves to advantage, and they have likewise roomy paths, which is a great convenience, for nothing is more unpleasant than not being able to inspect the plants with ease and comfort. The inside dimensions of these houses are forty-five feet long, eleven feet high in the centre, and eighteen feet in width ; there is in each a table six feet wide up the centre, and a path all round three feet wide, with side-tables three feet wide, formed of slate. The floor is concreted, three inches thick, and then covered with Portland cement, which forms a capital surface. The whole is heated by hot water, distributed in four rows of four-inch pipes on each side in the East Indian house, and three rows in the Brazilian house, and each having valves to stop or turn on the water as required. On both sides of the Orchid houses are upright sashes, as recommended above, glazed in the manner recommended in the chapter on glazing ; there are three ventilators on each side in the brickwork, close to the hot-water pipes, and one at the end over the doorway. There are four small top-sashes, two on either side, which open with hinges, and are furnished with ropes inside to draw them up and down ; these are found very desirable to let out the over-heated air. These ventilators have been in use for several years, and are found very useful ; for if cold wind blows from the one side the other can be opened, so that the chilly air, which is very injurious, does not reach the plants.

Complaints have been frequently raised against Orchid houses, on account of their excessive heat and moisture, which quite prevents the enjoyment of the beautiful flowers grown in them. This objection has now lost much of its force, because

we grow Orchids in a much cooler temperature, yet in the case of the East Indian house there is still some truth in it. The evil, fortunately, is one which can be readily remedied. To that end a small house should be erected for, or a small division at the end of each Orchid house assigned to Orchids in bloom, or a portion of the conservatory should be enclosed, as is recommended in the chapter on the treatment of Orchids in bloom. Here, with some ferns and a few other ornamental-leaved plants as a background, the blooming Orchids should be placed, and here they may be enjoyed to the full, since the place may be kept quite cool, so that while the most delicate constitution will receive no injury, the blossoms will remain much longer in perfection. This system is adopted by many cultivators of Orchids, and is a source of great pleasure to them. By an arrangement of this kind the beauties of such plants as *Calanthe vestita*, *Limatodes rosea*, the *Pleiones* and plants like them which are destitute of leaves at the time of flowering may be greatly enhanced, as the ferns and other plants can be made to hide the deficiency; and in summer the Orchids in flower will retain their full beauty for a much longer time, if kept well shaded and cool. This system of decoration is well carried out by Mr. O. Wrigley, of Bury. A long span-roofed house, which forms an entrance to the other houses, is devoted to this purpose; it has a central path, with a table on each side, and the blooming Orchids being brought here and intermixed with ferns, flowering and ornamental-leaved *Begonias*, *Poinsettias*, *Euphorbias*, and many other plants, according to the season, the effect produced is charming.

GLAZING OF ORCHID HOUSES.

IN the houses already referred to, the 21 oz. English glass is used, being the best for the purpose because not easily broken. The squares of glass in the roof are two feet six inches long by nine inches in breadth; those in the upright sashes at the sides are fourteen inches long by nine inches wide. The laps are very close. We remember seeing an Orchid house much injured after a hail-storm, a large portion of its valuable contents being nearly spoiled; in this instance the glass used was only 16 oz., whereas, if it had been 21 oz., it would most likely have withstood the storm. We therefore recommend 21 oz. glass, or even a heavier kind, as not being likely to get broken by cleaning or otherwise. Too large squares are bad, as they are apt to get broken by frost. The upright glass at the sides ought to be of the size stated above, to correspond with that in the roof and also in the ends and the door. The sash bars should have a small groove down them to carry the condensed moisture to the bottom, in order to prevent it from dripping on to the plants. Or small pieces of zinc nailed to the bars serve to form a sort of gutter to carry off this moisture, and thus prevent drip, which is very injurious to the plants in cold weather; even when the weather is warm the foliage may be injured, and a deal of harm may be done by drip.

HEATING ORCHID HOUSES.

FOR effecting this, nothing is better than a hot-water apparatus. We recommend four-inch pipes, and to put in an excess of piping rather than too little. There is nothing saved by economising the piping, and it is far

better to spend a little more money for material at first, than have to make additions afterwards. By having plenty of pipe a less rapid combustion is required, which is better for the plants, and the expense is saved in fuel in a very short time. We therefore advise four rows of pipes on either side for the East Indian house, three for the Brazilian, and two for the house devoted to those species from New Grenada, Peru, and some parts of Mexico; by having four pipes for the plants requiring most heat, one does not require to drive the fire so much on a frosty night. We never raise steam from the pipes; for plenty of moisture can be obtained without it, by pouring water on the tables and paths, which we consider much better than steam discharged on the plants direct from rusty pipes. At the same time, we do not by any means condemn the use of evaporating troughs during the summer months, for these will diffuse throughout the house a most congenial moisture, highly beneficial to the growth of the plants, and the effects of this moisture is very different from that of scalding steam.

The boiler should be placed outside of the house, and not set underneath, which is a very bad system. We remember going to see a collection of Orchids where the boiler was so situated, and had been put there to economise heat. The plants were growing very freely at the time, and upon remarking that we should be afraid of smoke getting into the house, we were told there was no fear of that, "for the boiler was well covered over." Only a few months afterwards on calling to see the same collection, we found our fears were realised; the smoke had got into the house, and had spoilt many of the plants. This is merely mentioned to show the ill effects of a boiler being so set that smoke can get into the house. When outside, there is no fear of such a disaster.


There is more importance in the setting of a boiler than

many people imagine, and there are many ways of effecting the operation. It is, however, always best to secure the services of a good bricklayer who has had experience in setting the different kinds of boilers, as they for the most part require different treatment. Many a boiler has been condemned through its being badly set, and the work being indifferently carried out. There is another important point in connection with boilers, *i.e.*, they should be kept clean, and the flues free from soot and dust, which not only greatly impedes the draught but diminishes the heating power. Care should also be used in stoking the fire, for a good deal of fuel may be wasted by injudicious management, more especially as some kinds of boilers do not take as much fuel as others. The man in charge, if he takes a proper interest in his work, will however soon become acquainted with the requirements of the different boilers under his management.

Hot-water boilers are now made of numerous shapes and patterns, and as most cultivators have some predilection in this matter, we leave them to make their own selection. There are, however, many things to be thought of before deciding this question. If the locality is such as to render it impracticable to dig far down into the ground before reaching water, or to prevent a drain from being put below the boiler, then the upright form of boiler is neither suitable nor safe; for in cases of flood during winter, the water may rise and put out the fire, unless the stoke-hole is made water-tight, which is usually a troublesome and expensive process. We, however, by no means depreciate boilers of this type. Then we have cannon boilers, tubular boilers, common saddle boilers, terminal saddle boilers, tubular arched saddle boilers, double L saddle boilers, Gold Medal boilers, improved tubular boilers, Cornish boilers, cruciform boilers, duplex compensating boilers, and boilers that require no setting, the makers of each and all

being able to give what are to them satisfactory reasons why the particular form they adopt is the best. That we have this diversity amongst boilers is no doubt a great advantage, for one that may work admirably in one place, may not, through some peculiarity of place or position, be so thoroughly satisfactory in another. Moreover, the fuel most readily available in one place, and which may suit one class of boiler, may not be so readily obtained in another place, and therefore those who are so situated will naturally have recourse to a boiler adapted to consume the fuel which they can obtain for heating it. When a good draught can be obtained we have found anthracite coal the best fuel for most kinds of boilers; it is more lasting than coke, is smokeless, and gives out twice as much heat, and is altogether a cheaper and much better article, although more costly in the first outlay.

VENTILATION OF ORCHID HOUSES.

 HIS is of itself of great importance, but the manner in which it is carried out is equally if not more important; for if cold chilly air is allowed to pass among the plants they will not thrive, and all the care which has otherwise been bestowed on them will be in vain. The means of ventilation should be provided by ventilators fixed near the ground, close to the hot-water pipes, in order that the air may be warmed as it enters the house, and before it reaches the plants. Fresh air should also be admitted by underground pipes, so that in cold weather a current of pure air may be maintained. This can be accomplished by laying drain-pipes from the outside under the foundation to the inside under the hot-water pipes, so that the air is warmed

immediately upon entering the house by passing over the heated pipes. In the houses here, there are three ventilators on each side to each house in the brickwork opposite the pipes. The ventilating shutters are made of wood, about two feet long, and one foot wide ; sliding slate ventilators answer perhaps better. There should be one glass ventilator at the south end, near the roof, and one at the north end. We have also four small ventilators near the ridge of the roof, two on each side, on hinges, opening from the inside with cords ; they are intended to let out the top-heat, the egress of which we have found very essential to the well-being of the plants.

There are several contrivances for working the ventilators, the most popular being by means of iron rods and levers run from end to end of the house, so that all the ventilators may be opened at once. There are also many other appliances, but great care is required in using them, so that in cold windy weather too much air may not be given, as by all the ventilators opening at once air is given simultaneously all over the house, whereas it may only be expedient to give it at one end. No rule can be laid down for ventilation, as so much depends upon the locality where the plants are grown, and the period of growth at which the plants have arrived, as well as on the temperature of the house.

SHADING OF ORCHID HOUSES.



VERY Orchid house requires to be shaded, although we are often told the practice is wrong ; but as some plants would soon be destroyed if the burning rays of the sun were allowed to shine upon them when grown under glass, the use of blinds in summer is quite necessary

to successful cultivation. It is possible, however, to carry shading to excess, and all such excesses must be studiously avoided. The best shading material is a thin canvas or netting. There should be blinds on each side, with a strong lath at the top to nail the canvas to, and a roller at the bottom. The canvas must be nailed to the roller, but care should be taken in doing this that the awning will roll up regularly from bottom to top. We never allow the canvas to be down except when the sun is powerful, for we find that too much shade is injurious to most kinds of Orchids. The awning will also be useful in the winter season for covering the house during a frosty night, being a great protection to those plants that are near the glass. It is advisable to have a cap or covering or coping on the ridge of the house for the protection of the canvas when rolled up, in order to keep it from wet.

The following remarks on this subject have appeared in the *Orchid Album* as a note under Plate 30, and it may be useful to our readers to reproduce them here :—

“This is a subject of the greatest importance in Orchid culture, and one that is often overlooked until it is too late, the mischief being done. What is required is a strong durable material that will wear well, and, where rollers are used, stand the strain upon them. It must also be understood that shading does not consist of merely daubing upon the glass some opaque material, such as paint, summer cloud, whitening, or the like, which though all very well as palliatives in positions where rollers cannot be used, such as at the ends and sides of a house, are greatly to be deprecated as a shading for the roof; for this reason, that in our English climate we are so subject to sudden changes of the weather, that were such a permanent shading to be used, we should frequently, especially during dull weather, have our plants in comparative darkness when they should be getting all the light possible. This cannot fail to lead to bad results and to produce a sickly growth.

“Some growers have used thick canvas; indeed we have done so ourselves many years ago, but by experience we have found out the ill effects of it, for when we employed this kind of shading we found the plants under its influence became weak and sickly, producing small puny flower-spikes. A lighter shading was then employed and the difference was marvellous; the plants assumed quite a different aspect. It was at this time that we were exhibiting at Chiswick the fine specimens of East Indian Orchids—*Aërides*,

Saccolabiums, *Vandas*, *Dendrobiums*, and many others—such as we seldom see equalled now. Since then we have used thinner shadings, with the best results. Our *Vandas* thus treated have always been strong and healthy, with broader foliage, producing their flower-spikes as often as three times a year, with the flowers of a good colour, lasting a long time in perfection; in fact we are never without flowers, always having a good display. We refer more particularly to the *suavis* and *tricolor* section of the genus. Some people imagine *Vandas* do not flower till they attain a large size, but such is not the case if they are properly grown and thin shading is used.

“Our experience leads us to the belief that all Orchids, with a few exceptions, require a thin shading, that is to say, one that, while warding off the direct rays of the sun, will allow the light to enter through it. To arrive at this result we now use a strong durable cotton netting, woven in small squares, close enough to exclude the rays of the sun while the light penetrates it with but little interruption. This netting stands exposure to the weather much longer than canvas, and on that account is cheaper in the long run. We have used this material for some years in the case of cool Orchids, Mexican and East Indian kinds, with the best results, the netting being attached to rollers with appropriate gear. For the cool Orchid houses we employ Raised Blinds. In the winter we take them off the house and put them in a place of safety until they are required again in the ensuing spring.”

The Raised Blinds just referred to, formed the subject of a subsequent note under Plate 35 of the same work, which note is here transcribed:—


“During the summer months we have found Raised Blinds very beneficial to the growth of Orchids, especially to those requiring cool-house culture. When the hot summer's sun is shining upon the glass, it is very difficult, where Raised Blinds are not employed, to keep the temperature sufficiently low. The glass roof of the structure upon which the sun is shining becomes very hot, even when shaded with ordinary blinds; but if Raised Blinds are used a current of air is allowed to pass over the entire surface of the roof, and the glass is kept comparatively cool. The effect of this is to decrease very appreciably the internal temperature of the house; and the moisture, which would otherwise be dried up by the burning heat of the sun, produces a nice humid genial atmosphere in which Orchids delight.

“We will now explain briefly the mode of construction. Supposing that the house to be furnished with Raised Blinds is an ordinary span-roof structure, it is necessary in the first place to provide a second ridge elevated about six inches above the top of the existing one. This should not consist of a solid plank, but of a strip of timber sufficiently strong to bear the weight and strain of the blinds and roller; and should be supported on blocks of wood placed at intervals in order to allow the current of air from

below to find an outlet, which would not be the case if a solid ridge-board were adopted. Having arranged for the ridge, the next thing is to provide supports for the rollers. Either wood or iron may be used for this purpose, but we have found iron to be the lightest looking and the most durable. Where the length of the rafters does not exceed say eight feet, half-inch rod iron will be found to be strong enough, and this should be cut into proper lengths with the lower end turned up in a semi-circular form so as to catch the roller when it descends, and prevent it from running off the supports. These supporting rods should be fixed to the bars or rafters of the house about six inches above the woodwork, by being welded to vertical iron stays, which latter should be flattened out at the base, and provided with holes so that they can be screwed to the rafters or bars of the roof.

“In this way a strong support for the blinds to roll upon will be formed; the blinds themselves can be attached to the elevated ridge in the ordinary way, and the gearing usually employed for the purpose will be found to answer well for pulling them up and down. Many Orchid growers have already adopted the Raised Blinds with very beneficial results.”

GROWING SPECIMEN ORCHIDS FOR EXHIBITION.

REAT progress has been made in Orchid culture within the last forty years, owing perhaps to what has been written on the subject. There were, however, in years gone by, many fine collections of Orchids around London; some in France, and a few in Belgium, Germany, &c. The grand specimens that were exhibited at our London shows were very fine, especially the East Indian kinds, which were far in advance of those of the present time, and also more numerous. The single specimens were very fine indeed, and great interest was excited, and no little pride was felt among amateurs to produce those which were exhibited for many years at the Chiswick and Regent's Park shows. Within the past few years the taste seems to have in some measure revived, although many of those now exhibited are *made up*, instead of being genuine specimens. Of course there are some Orchids which will not make an exhibition specimen

unless masses of them are put together, and this grouping or massing of such plants being allowed at the shows, nearly every one adopts the practice. While it is permitted, of course the making up instead of growing specimens will be continued, and that without any fault of the exhibitors. Some exhibitors, however, put their plants together to form these quasi specimens in a very clumsy way, instead of displaying taste and judgment in their selection and arrangement.

In all such cases varieties of the same colours should be placed together in the one group; this may be found difficult, but unless the colours match the mass should not be considered as of one variety, although it may be of the same species. The difficulty may be avoided by putting the plants together during the preceding season when they are in blossom, and then growing them on together. This is a far preferable plan than that of disturbing them a few days before a show, which often injures them and prevents them from flowering the following year, which is a great loss to the exhibitor, especially when he desires to make every plant tell.

There is no doubt a great deal may be accomplished in the way of securing a good display by giving attention to bringing the plants into bloom at the right time, without forcing them too much. It is far better to allow the plants to open their flowers gradually, and at the proper time, for they are then of more substance, of a better and richer colour, and last in flower much longer, besides which the plants are more easily carried to the shows, requiring, however, no less care in packing the blossoms so that they do not get bruised. See instructions given for packing Orchids for conveyance to the exhibitions, at p. 74. An experienced grower should be able to tell to a few days when a particular plant will be in flower, and how long it will last in beauty. This knowledge may be obtained by taking notes year by year and summing

up the average results. This is what we did when we commenced Orchid culture. If this matter be made a study, and it can be easily done with persevering observation, it will be found that a much smaller number of specimens is necessary than will otherwise be required in order to ensure a display.

One chief point is often lost sight of, and that is giving attention to the plants at the proper time. A plant, like other things, if it does not get proper attention at, or as nearly as possible to the right time, will not yield a satisfactory result—neither can it be expected. If plants under glass are not potted or planted, and if seeds in the garden are not sown at the time they should be, they cannot be expected to do well, or to come in at the required time. We state these facts for the benefit of the cultivator.

Plants, after being flowered and exhibited, will be found to have exhausted much of their vigour, and consequently after that period they require a good deal of attention. Some must be started into growth, others require rest and to remain dormant for a time before being again stimulated into growth. Those that make the start should have all the encouragement possible, in order to produce good, sound, healthy, vigorous growths for the following year. Success very much depends upon attention to this treatment, which is often overlooked by cultivators, and the next year's flowering is consequently often a failure. A few weeks lost in the growth of a plant cannot be made up. Our seasons are so short that there should be no time lost, especially as we get such a long autumn and winter, during which we have very little light and not much sun. The summer months ought to be made full use of in ripening the pseudobulbs, which will cause the growth to be vigorous and the flowering more successful; there will also be more leading bulbs and strong roots, which are the results of good cultivation.

Under this *régime* exhibition specimens—real specimens—will be produced, and the necessity for putting small ones together to form a mass will be avoided. To remove even these smaller plants disturbs their roots at a time when they require to be making progress in order to perfect their next season's growth, and is not therefore desirable. Plants when in vigorous health are less likely to be attacked by insects, which is an important item in their cultivation. We give full details on the mode of battling with insects in a chapter devoted to these pests.

TREATMENT PREPARATORY TO EXHIBITION.



HERE are many cultivators of Orchids who object to send their plants to a public exhibition solely because they are afraid that they will receive injury; but these fears are quite groundless if a moderate degree of care is exercised. We have been exhibitors of these plants for nearly forty years, and during that period have had very few plants injured by exposure at flower shows. That some valuable Orchids have been damaged at these places we know full well, but the fault has usually been in the want of due care in their preparation.

It is our practice to move the plants to a cool dry house or room for a few days previous to the show. If the plants are growing in the hottest house, we move them to the cooler one. During this time they should be allowed only just enough water to keep them slightly moist. When it is probable that the plants will come into blossom earlier than is wished, the time of flowering may be successfully retarded by taking them to a cooler part of the house, or even putting them in a

warm greenhouse, keeping them slightly shaded during the brightest part of the day.

Dendrobiums, if they are wanted to bloom later in the season, are very easily thus retarded. *Dendrobium nobile*, *D. pulchellum*, *D. superbum*, *D. densiflorum*, *D. Farmeri*, *D. Pierardi latifolium*, *D. Wardianum*, *D. crassinode*, *D. Schröderi*, and *D. Deronianum*, generally bloom during winter, but we have kept them back until June; and by having a succession of plants, the Orchid house may be gay with *Dendrobiums* from January to June. Nearly all the *Dendrobiums* will bear cool treatment while at rest, and all can be kept for late flowering. To ensure this, place them in a warm greenhouse and give but little water, in fact, only just enough to keep them from shrivelling; under this treatment the temperature should not fall lower than 40°, and the stems must be kept dry, or the flower buds are apt to rot. They should be shaded from the sun, so that the flower buds may not be excited. When the plants are wanted to flower they should be removed to the Orchid house, and still kept shaded from the sun. *Celogynes*, *Odontoglossums*, *Masdevallias*, *Oncidium*s, *Phajus Wallichii*, and *P. grandifolius*, *Lycaste Skinneri*, and many others may be kept back in the same way as the *Dendrobiums*. We have had ample proof of this by taking these plants to shows. Thus we exhibited sixty-five specimens in Brussels, and not a plant was injured; again at Philadelphia, Amsterdam, Cologne, and Oporto we exhibited with the same good results. Our plants were taken more safely than those of exhibitors that lived but a few miles off, the reason being that proper care was taken to pack them well and to give no water—in fact, we followed the rules here laid down.

PACKING ORCHIDS FOR EXHIBITIONS.

IN transporting Orchidaceous plants to exhibitions they require great care in packing and tying, for many of them are very tender. Their flowers in many instances are large and waxy, and some of them require more packing than others. It is extremely annoying to have a fine specimen plant spoiled, during its journey to the place of exhibition, in consequence of its not being carefully packed, when with a little more care it would have travelled safely to any distance. In fact, distance is of very little consequence, if the packing is well done. This was proved in a most extraordinary manner in the spring of 1869, by Mr. R. Warner, who sent upwards of fifty specimen Orchids, from his gardens at Broomfield, to the International Horticultural Exhibition at St. Petersburg. These plants were carefully packed in close cases, and sent by rail the whole journey, saving the short run across the Channel by steamer, eight days being occupied in the transport. When unpacked and staged, they were in excellent condition, having suffered during the journey no more than they would have done in the houses at home. That these plants should have travelled to St. Petersburg in such excellent condition, is undoubtedly the greatest feat in connection with horticultural exhibitions that has ever been accomplished, especially considering that they were all large plants—amongst them *Phalænopsis Schilleriana*, with a hundred expanded blossoms; *P. grandiflora*, with about half the number; *Vandas*, with numerous spikes; *Trichopilia crispa*, with a hundred open flowers; *Cattleyas*, *Dendrobiums*, *Odontoglossums*, *Cypripediums*, *Aërides*, and several other genera, the whole being profusely bloomed. A remarkable proof of what care will do with even

the most delicate flowers was given in the case of the plant of *Odontoglossum Alexandrae* exhibited in this collection, which, after standing at the St. Petersburg Exhibition for a fortnight was again packed up and exhibited three weeks later at the Royal Horticultural Society's Gardens at Kensington, with the loss of only one or two flowers.

We have had a good deal of this work to do, and a few hints on the subject to beginners may be of practical use. Some kinds bear carrying much better than others. *Phajus Wallichii* and *P. grandifolius* are both bad plants for travelling, if not well packed. We have seen fine plants brought to different flower shows with their flowers completely spoiled for want of proper packing. On the other hand we have shown *P. Wallichii* for several years at the Chiswick and Regent's Park Exhibitions, and always managed to convey it without any injury. In preparing them we put a strong stick to each flower spike, the sticks being long enough to go firmly into the earth. They should be placed at the back part of the flowers, and should stand one or two inches above the flower spike; some wadding should then be fastened round the stick with the smooth or glazed side towards the flowers so that it does not cling, and the flower spike tied firmly to it, putting more wadding or fine paper round every flower stalk, and tying each firmly to the flower spike. Begin at the top of the spike, and tie every flower separately, so that they do not touch one another. The leaves must not be allowed to rub against the flowers. On arriving at the end of their journey, untie them, remove the wadding, and tie them out in the proper form. In tying, care should be taken not to rub the flowers.

Saccolabiums and *Aërides* do not require so much packing. It is sufficient to put two or three sticks to each spike—one at each end, and one in the centre, if the spike be long, or

two only if it is short. The stick, which should only be long enough to support the spikes in the drooping way in which they grow, should be firmly fixed in the basket or pot; a small piece of wadding or fine paper should be placed on the top of the stick, and to this the spike should be firmly tied. This will be sufficient to ensure safety. The wadding should not be allowed to touch the top part of the flowers, as it will stick to them, and be very difficult to remove.

Vandas require more packing, their flowers being larger and further apart; place some wadding between each flower on the spike, then fix some sticks firmly in the basket or pot, and tie the spike to them, without allowing the stick to touch the flowers; wadding should then be put in between the flowers to keep them separate, and a thin piece of wadding over all the flowers, the smooth surface being placed on the blossoms.

Phalænopsis grandiflora and *P. amabilis* travel badly, and require much care. The best way is to set the plant in the bottom of a box, which must be long enough to allow the flower spike to lie at full length; wadding should then be placed underneath the flowers, which should lie flat on the wadding; another sheet of wadding should then be placed on the top of the flowers, in order to make them lie firmly, although they may be treated in the same way as recommended for *Vandas*.

Dendrobiums in some cases only require a stick to each stem, fixed firmly in the pot, and to this they should be tied. This plan will serve for such as *D. nobile*, *D. superbum*, *D. Devonianum*, *D. Linawianum*, and sorts with similar flowers. Those, however, that flower with pendulous racemes, such as *D. densiflorum*, *D. Farmeri*, *D. thysiflorum*, *D. suavissimum*, and others growing in the same way, require three sticks; one to the stem, to which the latter should be

firmly tied, and the other two to the flower spike, one at each end, in the same way as with the *Saccolabiums*.

Calanthes are bad travellers, especially *C. veratrifolia*, the delicate white flowers soon getting injured and discoloured if allowed to rub against each other; to avoid this put a stick carefully to each spike.

Cattleyas require to be packed very carefully; their flowers should be tied so that they do not touch one another. The best method is to put a stick to each flowering bulb, tying it firmly, and a stick to each flower stalk, just below the flower, with a piece of wadding round the stalk; afterwards tie the stalks to the stick; neither the sticks nor the leaves should be allowed to touch the flowers, or they will become bruised.

*Oncidium*s travel well; they only require a strong stick to each flower spike, with a piece of wadding round the stick at the points where the ties come.

Sobralia macrantha is a bad plant to travel if not properly tied. There should be a strong stick placed to each flowering growth, which must be tied firmly; and also one to the flower stalk with a piece of wadding close to the flower; then tie the stalk firmly to the stick, and allow nothing to rub against the flowers.

Peristeria elata should be treated in the same way as above recommended for *Phajus*.

*Cypripedium*s which have separate flowers require a small stick to each flower stalk. The *Lycastes*, and all other Orchids that flower in the same way, require similar support for their individual flowers, which, if kept separate, will travel safely without more trouble.

All Orchids if going a long distance should have fine paper placed over the flowers, as the dust often spoils the delicate bloom; this also protects them from cold.

The best means of conveyance for Orchids is decidedly a

spring van with a cover on the top. In placing the plants in the van, we always put some hay between pots, to keep them firm and prevent their rubbing against each other; this, moreover, helps to retain the warmth in the pots by preventing draughts from reaching them, and thus the roots are not subjected to any great check through change of temperature.

An opportunity occurs here to remark upon the paucity of Orchids at our great London exhibitions of the present day, as compared with those of former years. It is true several of the large contributors are dead, and their collections are dispersed; some few have relinquished their culture, and others have removed to a distance, but there still remains ample material in the numerous rich collections in the vicinity of the metropolis to again furnish a glorious bank of flowers, such as formerly greeted the eye at the Chiswick and Regent's Park Gardens on Exhibition days; and we are fully persuaded it is only from the want of encouragement in the matter of prizes, that we do not now see these gorgeous displays at our London shows. That such is the case, we have only to turn for proof to the great Whit-week show at Manchester. There the prizes are good, and not only do the cultivators in the immediate vicinity bring their plants, but others from a considerable distance can be seen staging their productions for competition against the celebrated growers of "Cottonopolis"; indeed, the display made in 1870 we never saw surpassed, if equalled, at any show. This may be readily imagined when it is stated that a double row of these plants alone extended a distance of over three hundred feet, and amongst them were many of the grandest *Lælias*, *Cattleyas*, *Vandas*, *Trichopilias*, *Odontoglossums*, and a host of others, we have ever beheld. Some may contend from these facts that the love of gain is the chief motive power. This would

be a wrong conclusion to draw, but although gentlemen and gardeners do sometimes exhibit for the honour only, such cannot always be the case. Indeed, the cost of obtaining a proper conveyance, the packing, the transit, and the time occupied at the exhibitions, represents a considerable sum of money, and very few persons can be induced to incur the expenditure if the prize to be competed for does not at least cover the expense—neither is it reasonable of any Society to expect that they should do so.

INSECTS AND OTHER ENEMIES.



ORCHIDS have always been liable to be injured by many sorts of Insects, such as Red Spider, Thrips, Mealy Bug, White and Brown Scale, Cockroaches, and Ants; and also by such molluscs as Woodlice, and a small kind of Snail (*Helix alliaria*); but they have some friends of the animal kingdom, and amongst them we would mention GREEN FROGS. We have found Green Frogs very useful in Orchid houses, and we believe many growers now employ them. They are very agile in their movements, and it is surprising to see the rapidity with which they move from plant to plant without causing the slightest injury. The quantity of insects they eat is astonishing, especially young Cockroaches and Woodlice, which are generally plentiful wherever Orchids are grown.

The Insects injurious to Orchids are, unfortunately, becoming more numerous than they formerly were. Then we had only those already mentioned to contend with. Now however we hear of new Insects, coming in with new Orchids. This is not at all suprising, as Orchids are being brought home from fresh localities and naturally bring the different species

of Insects infesting them along with them, and these are introduced with the imported plants, amongst which they harbour. Some of them prove to be terrible pests, feeding upon such of the plants as suit their taste. They should therefore be well looked after, and if possible destroyed before the plants are allowed to enter our houses. We cannot be too particular in this, for in it lies one of the chief elements of success ; if these pests are not got rid of, they will in time destroy the foliage, besides giving a most unsightly appearance to the plant, which is very objectionable ; the flowers, moreover, will be destroyed by these marauders, which is most annoying after all the care and expense bestowed upon them.

There is no doubt that in this matter prevention is better than cure. Therefore these enemies must be kept in check, by careful examination of the plants when they reach this country, and for this purpose before admitting them in our Orchid houses, they should be placed in a probationary structure, and should insects be found on them no rest should be given them until they are entirely got rid of. We repeat what we have often said on previous occasions : well wash every part of the plant, leaves, bulbs, and roots, and then there will be little chance of the insects escaping destruction.

Imported plants are not by any means the only ones that suffer from insect pests. We frequently see plants exposed for sale in a disgracefully foul condition ; in fact, they look as though water and sponge had never been near them. These Orchids require quite as much looking after as the imported ones, and the best plan of procedure is to thoroughly cleanse the bulbs and foliage, shake them out of the pots, cut away all the decayed roots, wash the sound roots in clean water, and then pot them, in clean pots and in new material according to the directions given for performing this operation. This if efficiently done will be a sure means of eradicating the pests,

which the inexperienced grower will have to search closely for in order to find them. Some of them are to be seen in the shape of eggs; others appear as young insects but so minute that a magnifying glass should be employed in searching the foliage, to discover them. If, however, the plan recommended above be followed, all traces of them will be cleared away. We find in the case of plants as well as animals, that cleanliness is one of the first steps towards securing good health. We have now, we trust, shown what to do and what to avoid, in the case of imported plants and established specimens affected by these pests.

COCKROACHES are among the greatest plagues with which we have to deal; they will do a great deal of mischief in a few nights if not intercepted, and they should therefore be sought after on every opportunity. The food they like best is the young tender roots and flower stems, and we have known the roots of a plant completely eaten off in one night by these depredators. The only way to keep these insects under is by constantly looking after them, both by night and day, searching for them in the evening by candle-light, and in the day-time by moving the pots and baskets under which they harbour. They leave their hiding-places in the evening, to seek after food, and it is then that they are most easily caught. Chase's Beetle Poison, a phosphoric mixture sold in boxes, is a capital thing to destroy them, if laid in different parts of the house in the evening, or two or three nights a week, and then removed for a week, repeating the operation every other week until they are destroyed. It should be placed on oyster-shells or pieces of tile or slate, the pieces of shell being collected every morning, and put down again in the evening. There are also several other kinds of Beetle powders, which should be placed upon the stages amongst the plants.

By using these preparations from time to time they may be

kept under. It is also a good plan to lay some damp moss as a decoy in the hottest part of the house ; this should be looked over every two or three days. We have killed many in this way. They may also be destroyed by the use of a mixture of honey, lard, and arsenic, the latter in very small quantity, placing some of this on oyster-shells, and laying them in different parts of the house. Some growers mix the arsenic with tallow, and put it on a stick, which is stuck in the pots ; care must, however, be taken that the mixture does not touch the leaves or bulbs of the plants. Bell-glasses are also used for catching these pests, inverting them so that they are level with the soil or moss, and then half filling them with treacle made a little thinner by admixture with water ; it should be thick enough to stick and prevent them from climbing up the glass ; the dead ones should be removed every day.

Small ANTS are another pest in the Orchid house, as they carry the dirt to the flowers, and thus spoil their appearance, as well as smother the plants, and if allowed to accumulate, they frequently cause great injury to them. The best plan we know for catching these little troublesome insects, is to cut apples in halves, scoop out a portion of the inside, and lay the pieces in different parts of the house, looking them over very often. We have in this way destroyed hundreds in a very short time. Treacle is also a good thing as a trap for these pests ; place some in a bell-glass in the places which they frequent—they are fond of anything sweet ; they go to feed, get into the mixture, and cannot get out again, as it holds them down, and thus causes their death. We have also found hollow bones a very good means of enticing them, but these should be dipped in boiling water and the bones laid down again, or the water may be poured on the bones as they lay on the stages. They should be frequently looked over.

The best way of getting rid of the RED SPIDER and the

THRIPS is by frequently washing the leaves with clean water, and by fumigating the house with tobacco or tobacco paper. Our method is, to fill the house with tobacco smoke three or four times, at intervals of two or three days, till the insects are quite destroyed ; the evening is the best time to do this. It is also a good plan to mix some lime and sulphur together, and rub it on the pipes in different parts of the house, taking care not to use too much ; and it should be used only when the pipes are warm, not hot ; there should be a good supply of moisture at the same time, but not too much heat. There is also a kind of Red Thrips which sometimes gets into the heart of the plants, and is very troublesome ; tobacco smoke is the best remedy for this. It is very difficult to perceive, but will soon disfigure the tops of the plants if not kept under. When discovered, the house should be smoked every two or three nights till it is destroyed. The parts on which the insects had established themselves should be washed with tobacco water. Tobacco powder may also be used on the leaves, or even powdered sulphur mixed with water, and applied to the affected parts with a camel's hair pencil.

The GREEN FLY or APHIS, which makes its appearance in spring on the young flower buds, may also be destroyed by tobacco smoke ; and of late we have had a yellow Aphis introduced, which is a great pest if not kept under, and requires more looking after than the green fly ; smoke will kill this pest, and wherever it is seen it must be washed off with a sponge to prevent its increase.

The BROWN SCALE, the WHITE SCALE, and the MEALY-BUG may be kept under by frequently sponging the leaves and bulbs with water. The White Scale is very troublesome if not looked after. A little soft soap mixed with water, and rubbed over the leaves and bulbs, is a good thing to destroy this kind of scale ; it should remain on for a day, and then be washed

off, when all the insects will be destroyed. Care should, however, be taken not to use it too strong. *Cattleyas* are very subject to this pest. The following is another recipe for destroying it:—To one gallon of rain water add eight ounces of soft soap, one ounce of tobacco, and three table-spoonfuls of spirits of turpentine; stir well together, and leave the mixture for forty-eight hours; then strain it through a cloth, when it will be ready for use. It is necessary to rub the plants over two or three times, if they are much infested, but once will be sufficient in most cases. Any portion of the mixture remaining after the plants are washed, should be put into a bottle, and reserved for future use. This recipe is also a cure for Thrips on azaleas or other plants. The ingredients as above noted should be mixed in a large tub, and the plants dipped in it; this will speedily clear them of the pest. It will be seen, therefore, that it is useful to others as well as Orchid growers, and will prove a great saving of labour for those who grow large plants for exhibition, or for those who have a quantity of small plants to clear of such pests.

The MEALY-BUG must be kept away by constantly watching for it and frequently cleansing the plants. Whenever a plant is purchased that is infested with it, take care to cleanse it thoroughly before placing it in the stove or Orchid house. In a word, never allow insects to get the upper hand, or you will not long continue to grow plants to perfection, for all such pests are as poison to plants—robbing them of their vigour, and when they have lost that there is not much hope of them. There are more plants lost through uncleanness than from any other cause.

CATTLEYA FLY. One of the new insects we have now to battle with is a kind of fly which attacks the *Lælias* and *Cattleyas*. A maggot appears at the base of the young growths, and may easily be perceived by those who have once had

their attention directed towards it, for the bulb swells and becomes club-shaped at the part where the maggot is feeding; these larvæ when they are matured change into a fly, the swollen part of the bulb opens, and the flies are liberated and become distributed about the house, when if they are not destroyed they multiply, and will soon infest the healthy plants. They appear to live chiefly amongst the Cattleyas. They remain in the bulb until it is half-grown, which must of course injure the plant, and then they leave it.

The remedy to be adopted is this: as soon as the bulb is perceived to be swelling more than is natural to it, proceed to cut the growth away close to the old bulb, and thus destroy it at once before any mischief has been done. There is then a chance of getting another growth without it. This will be found to be the only effectual method of exterminating this enemy. It is annoying to have to cut away the young growth, but it is better to do so than to get other plants infested in the same manner. In the case of imported plants, the insects will not be in the bulbs, but distributed among the old stems, and if not destroyed at once they will be ready to enter the new shoots while young and tender. When the fly leaves the bulb it lays its eggs, which soon pass through their several stages, and in due time become flies. These when full grown pierce the foliage and young growths with their ovipositor, and lay their eggs, which soon change into the maggots, these latter feeding on the growing bulbs, and deriving their sustenance from the living tissues of the bulb, which is of course most injurious. If imported plants have been infested there will be found a puncture near the bottom of the old bulb. If there is no puncture to be seen, the plant may be cleaned and put away. A successful Orchid grower told us how he had entirely got rid of these insects by the following treatment. He placed his newly imported plants in a house by themselves until the

young growths were sufficiently formed to show whether or not there was any appearance of the swelling of the bulb, and if not he felt safe, and removed them to their permanent quarters. This probationary treatment is a wise plan to adopt.


BLACK THRIPS. There is another new pest which has only come under our notice during the past year; that is a black Thrips, much larger than the one we have been in the habit of seeing. We have noticed it in several collections of East Indian Orchids, and it must have been imported among some of the *Aërides* or *Vandas*. This pest finds its way to the hearts of the plants, and causes the top leaves to become spotted or yellow; it must be closely and constantly watched for, the hearts of the plants especially being well searched; and if any of them should appear their destruction must be set about at once, no rest being given until they are banished from their haunts. For the purpose of destroying them use a fine hair brush wetted with tobacco water carefully, so that the young leaves may not be bruised; then take all the material out of the pot and burn it, wash the roots, and supply fresh moss, as they might accumulate among the roots. It is best to remove the infested plants to another house until the pest has been entirely subdued. When they are thoroughly cleared of the thrips take the plants back to the house, but keep a close watch upon them.

STOCK-SEED SCALE. There is also a scale insect which has made its way into our collections during the last few years; it is known to Orchidists as the Stock-seed Scale, and is so named from its close resemblance to the seed of the stock. This generally gets under the leaves and flower spikes, and must be washed off the plants. Some persons think they are harmless, but they do harm, because they must exist upon something, and that something must be the juices of the plant. They increase rapidly, and go from plant to plant. Where

these are found there are always plenty of small ants, so that there must be something for these pests to live upon, or they would not be followed by these busy insects that are always searching for food. If the Scale is not destroyed, it will in time infest the whole house of plants. The practice of cleanliness by Orchid growers will be found the right road to secure success in the cultivation of their plants.

The WOODLOUSE and the small SNAIL (*Helix alliaria*) are also very destructive. These, like the cockroach, are very fond of the young roots; they may be trapped by cutting some potatoes in two, scooping out the inside, and placing them on the pots and baskets, looking them over every night and morning till the house is cleared of the vermin. Turnips cut in slices will answer the same end. Small flower-pots, with some dry moss at the bottom, also form capital traps for the woodlouse; lay them on their sides in different parts of the house, and examine them frequently, destroying those which are caught. Toads are very useful in catching these pests, and a few placed in a house prove very serviceable.

DISEASES OF ORCHIDS.

RCHIDS are subject to diseases in their leaves, stems, and pseudobulbs, especially during the damp months of winter. Of these the most injurious are the Rot and the Spot.

The Rot, which is apt to assail the thick fleshy bulbs, is caused by too much moisture in the house. When the heat is low, the drip from the glass will sometimes fall on the crowns of the pseudobulbs, and this soon causes them to rot. Steam is also very injurious in a house during the winter; it

is particularly inimical to such plants as *Cattleyas*, *Laelias*, *Odontoglossums*, and other Orchids that have fleshy bulbs.

When the leaves begin to rot, the diseased part should be cut clean away, and a little sulphur rubbed on the part that is cut, but not so that the sulphur can get to the roots.

When the rot attacks the bulbs it should be seen to at once, as it may be easily stopped by cutting the diseased part entirely away with a sharp knife, no portion of the diseased or decayed bulb being left, and the wound should then be filled up with sulphur, to keep it dry. Should any part of the fleshy pseudobulbs of the above-named plants, or of those with similarly-formed bulbs, become discoloured, and the dark or discoloured part appear moist or wet, especially if any fluid exudes from it on pressure, the wet or discoloured part should be immediately cut out, or there is danger that the bulb will be destroyed, as the rot is often much more extensive within than the discoloured appearances on the outside would seem to indicate. The plant should also be removed to a drier and cooler place, and water should be given with the utmost care.

The SPOT is the dread of Orchid growers, and there is no denying that when it attacks a plant it will soon disfigure it. Some assert that it is infectious, but this we do not believe. Indeed, we should have no hesitation in placing a plant infected with spot amongst a quantity of healthy ones, and should any of these become diseased, we should feel certain it was induced by a wrong course of treatment in some respect, and that no blame could be laid to the charge of the neighbouring plant. A great deal has been said and written respecting this disease, which we have seen in various places, and on other plants as well as on Orchids. We have not experienced much of it ourselves, and have in most cases found that the plants outgrew it.

To prevent the disease making its appearance, no rotten

or rotting material should be permitted near the roots, either in the shape of sour stagnant moss or soil, or decomposed wood. If the plants get sufficient, but not excessive heat, an abundance of fresh sweet air without draughts or sudden chills, a liberal supply of moisture, and full exposure to the light, with shade from the direct burning rays of the sun, we are fully persuaded that the Spot will never be troublesome. On the other hand, if any plants are attacked, the material about the roots should be taken away, every particle of decayed or decaying root removed, and the sound portions should be well washed with warm water; after this they should be re-potted in some good sweet soil, the instructions already given for the treatment of healthy plants being otherwise followed out.

In 1860, a gentleman bought of us some plants of *Phalænopsis*, which were the finest grown plants we had seen, and they did beautifully with him for some time, growing very fast—in fact too fast, for they got sappy, and their leaves became spotted, as did also those of some others he had. Some time after we went to see them, and our opinion respecting them was asked. Upon inquiring how they had been treated, we were told that a great deal of water had been given over the leaves, and the roots kept wet; this was during winter. We called to see them several times during the following spring, and advised that they should be treated as recommended for *Phalænopsis* in these pages. These plants have quite outgrown the spot, and are now among the finest round London.

When at Hoddesdon, we had two *Phalænopses* which became affected with spot in the winter. We cut off one of the leaves, and sent it to Dr. Lindley for his opinion as to the cause of the evil. His reply was, that the plants had been kept too moist during the cold dark days of winter—a reply which we

have never since lost sight of. He was quite right, for it was a sharp winter, and these two plants had been kept wet by placing the bottom of the block on which they grew in a pan of water to keep off the cockroaches. In that way, too much moisture crept up to the roots, and, being in the winter time, this doubtless caused the leaves to become spotted. However, by following the treatment here recommended in the remarks on *Phalænopsis*, the plant soon recovered ; but if a rigorous change had not been adopted in time, the disease would have gone too far, and probably killed the plants.

Much injury is done to epiphytal Orchids by keeping the plants too wet at the roots in dull weather ; in fact, too much moisture in that way is injurious at any time, especially to those species that grow on branches of trees, when they come to be confined in pots and baskets. Our practice is, to give but little water at the roots during winter, and not so much as many people in summer, because we have seen the ill effects of it. The treatment we recommended some years ago we still follow, and with uniform success.

Some Orchid growers give more heat and moisture than is here recommended, and their plants have done well for a time ; but under such exciting management they are apt to become spotted, and get permanently into a bad state of health—in short, the least chill, after growing in so high a temperature, is liable to induce disease. The great secret in the cultivation of these as well as of all other plants, is to provide a proper house, without drip ; to supply sufficient ventilation, heat, and moisture ; and to ensure the total banishment of insects detrimental to vegetable life. The temperature throughout the year should be kept in accordance with the directions laid down in these pages, which are the result of long experience and close observation.

SELECT ORCHIDS IN CULTIVATION.



E next proceed to give a popular description of the best Orchidaceous plants now cultivated in our gardens. The distinctive features of each genus are first given, and these are followed by an account of the mode of treatment which we have found, after many years, to be best adapted to their successful cultivation, and supplemented by descriptions of the choicer species and varieties. The genera and species are arranged in alphabetical order for facility of reference.

ACINETA, *Lindley.*

(Tribe Vandeeæ, subtribe Stanhopieæ.)

Epiphytal plants of stout habit, bearing showy flowers in drooping racemes from the base of the pseudobulbs. They are related to *Peristeria*, and distinguished by their broad and finally spreading sepals, and the narrowly margined claw of the lip, which has a concave inflexed middle lobe, by a longish column, and by the oblong stalks of the two pollen-masses becoming thickened with a gland at the base. About eight species are known, natives of Tropical America and Mexico.

Culture.—These plants should be grown in baskets, as their flower spikes, which invariably take a downward direction, spring from the base of the pseudobulbs. They are all evergreen, with short pseudobulbs, and nervose leaves, about a foot high. They are of easy culture in a mixture of moss and peat; and a liberal supply of water at the roots is necessary during their period of growth, but during their resting period less will suffice. They will all succeed in either the East Indian or *Cattleya* house, suspended from the roof; and all of them may be propagated by separating the pseudobulbs when fully matured. In order that the

flowers may be kept as long as possible from blemish or decay, care should be taken not to wet them while watering or syringing the plants; this precaution, indeed, applies to all Orchids, and to all other choice flowers.

A. Barkeri, *Lindley*.—A handsome species, with drooping spikes a foot long of large fleshy golden-yellow subglobose flowers, spotted with dark red in the centre of the lip; blooms during summer, and lasts long in perfection.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4203; *Pact. Mag.*, xiv. 145; *Ill. Hort.*, t. 44; *Batem. Orch. Mex.*, t. 8.

SYN.—*Peristeria Barkeri*.

A. densa, *Lindley*.—A beautiful species, with long drooping spikes of large bright yellow flowers, which are larger and more expanded than in *A. Barkeri*; inside the petals are covered with crimson spots, and the lip which is boldly dotted with red on the side lobes has a large quadrangular appendage or gland of a deep sanguineous red; blooms in March and April, and lasts a long time in perfection.—*Central America*.

FIG.—*Florol Mag.*, t. 16; *Pact. Fl. Gard.*, i. 91, fig. 63.

SYN.—*Acineta Warscewiczii*.

A. Hrubyana, *Rehb. f.*—This, according to Prof. Reichenbach, is a fine and distinct species, with loose racemes of ivory white flowers, which bear a few purple spots on the lip, and are distinguished from those of other species by having narrow erect side lobes to the lip.—*New Grenada*.

A. Humboldtii, *Lindley*.—A noble plant, with pendent spikes two feet long of deep chocolate purple flowers, which are spotted on the surface, and have the petals much smaller than the sepals and of a deep rosy red, while the column is whitish; flowers about March, and continues but a short time in perfection.—*Venezuela*.

FIG.—*Bot. Reg.*, 1843, t. 18; *H.B.K. Nov. Gen.*, i. t. 93; *Moore, Ill. Orch.*, *Acineta* 1; *Fl. de Serres*, x. t. 902.

SYN.—*Peristeria Humboldtii*; *Anguloa superba*; *Acineta superba*.

A. Humboldtii fulva, *Hort.*—A handsome and distinct variety with tawny-yellow flowers spotted all over with dots of purplish brown, the lip of a brighter yellow spotted with deep purple.

FIG.—*Bot. Mag.*, t. 4156.

SYN.—*Peristeria Humboldtii fulva*.

A. Humboldtii straminea, Hort.—An interesting variety with the flowers of a pale straw yellow, with very few spots.—*New Grenada*.

A. superba.—See ACINETA HUMBOLDTII.

A. Warscewiczii.—See ACINETA DENSA.

ACROPERA, Lindley.

(Tribe Vandeeæ, subtribe Cyrtopodieæ.)

A genus of epiphytal plants bearing long loose racemes of large and curiously-shaped flowers. They are so nearly related to *Gongora*, as to be included in that genus by some of our highest authorities on Orchids, the chief differences consisting in the broader sepals, of which the dorsal is galeate; in the often biaristate tips of the petals, and in the articulated oscillating lip. The species are few in number, and are confined to Central America and Mexico.

Culture.—These plants are nearly related to *Gongora*, and, like those of that genus, comprise species that are both pretty and curious. The flowers of those here described are large, and produced in great profusion; they do not thrive under cool treatment, which suits some other species, but they thrive best in the *Cattleya* house, grown in baskets, with sphagnum moss and fibrous turfy peat.

A. armeniaca, Lindley.—A free-growing and somewhat slender plant, attaining about a foot in height, with somewhat oval pseudobulbs, producing from their apex a pair of lanceolate light green leaves, and from the base a slender drooping lax raceme a foot or more in length, bearing from twelve to twenty rich apricot-coloured flowers on a greenish purple rachis; blooms freely through the summer months, and is a very desirable plant for a basket.—*Central America: Nicaragua*.

FIG.—*Bot. Mag.*, t. 5501; *Paxt. Fl. Gard.*, i. 94, fig. 66.

SYN.—*Acropera cornuta*; *Gongora armeniaca*.

A. aurantiaca, Lindley.—A beautiful evergreen species, of neat compact habit, one of the most distinct of its family as

regards the colour of its flowers, which last for a long time in beauty; it grows about a foot high, producing erect scapes with nodding spikes of bright vermilion-orange flowers, which are somewhat distantly disposed, and are peculiar for their closed form; it blooms in autumn and the early spring, and is of a very durable character.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5435; *Ill. Hort.*, 3 ser., t. 167.

A. cornuta.—See ACROPERA ARMENIACA.

A. Loddigesii, *Lindley*.—An old and not very showy species, but an interesting one, as its flowers are very curious in their formation both in the bud state and when fully developed; the pseudobulbs are ovate and clustered, and from their base the drooping racemes of flowers are freely produced, the long ovary curving inwards so as to bring the flowers near to the rachis; they are of a pale tawny yellow, with the lip brownish-red, and give out a powerful odour resembling that of wall-flowers; blooms during the summer months, but does not last long.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3563; *Loddiges, Bot. Cab.*, t. 1645.

SYN.—*Maxillaria galeata*; *Gongora galeata*.

ADA, *Lindley*.

(Tribe Vandææ, subtribe Oncidiææ.)

A small genus of epiphytical plants bearing gay and showy flowers. It is distinguished from *Brassia* by its free but erect connivent perianth divisions, which are appressed below, and spread only a little at the apex; by the wingless column, the base of which is dilated, and united with the base of the narrow undivided lip; by the two lamellæ of the lip becoming confluent into a linear truncate appendage; and by the short obovate caudicle and circular gland of the pollen-masses. There is but one species known, a native of the Columbian Andes, where it is found at an elevation of 8,500 feet.

Culture.—This handsome winter and spring Orchid is nearly allied to *Brassia*. It should be grown in pots, in a compost of peat and sphagnum moss, along with such plants as *Odontoglossum Alexandra*, and should be treated in a similar

manner. A few plants of it intermixed with the *Odontoglots* produce a charming effect, the rich orange-vermilion colour of the flowers contrasting well with the delicate tints of *O. Alexandra* and its congeners. As an exhibition plant, when grown into good-sized masses, the *Ada* is unsurpassed, the flowers being of a colour which is very scarce amongst Orchids. It is, in fact, a fine addition to our now numerous cool-house species.

A. aurantiaca, *Lindley*.—A compact growing evergreen species, attaining to about a foot in height, with long tapered pseudobulbs, narrow channelled leaves, and longer scapes, bearing a nodding distichous raceme of bright orange-coloured or cinnabar flowers, the linear-lanceolate segments of which are pressed together in the lower part, and spreading only at the apex. It is an extremely showy and interesting plant, blooming in the winter and early spring, and lasting for several weeks in perfection.—*New Grenada*.



ADA AURANTIACA.

FIG.—*Bot. Mag.*, t. 5435; *Bateman, 2nd Cent. Orch. Pl.*, t. 113; *Ill. Hort.*, 3 ser., t. 107; *Orchid Album*, ii. t. 53.

SYN.—*Mesospinidium aurantiacum*.

AERANTHUS sesquipedalis.—ANGRECUM SESQUIPEDALE.

AERIDES, Loureiro.

(Tribe Vandææ, subtribe Sarcantheæ.)

A genus of noble evergreen epiphytal Orchids, remarkable for their distichously-arranged elegantly-curving leathery leaves, and their long graceful sometimes loosely-branched racemes of deliciously-scented delicately-coloured flowers. They resemble the *Saccolabiums* in many respects, especially in habit, but differ in having a long stalk to the column, to

which the base of the lip is articulately affixed, the underside being produced into a spur at the back. Numerous species and varieties are recorded, natives of India, the Malay Archipelago, and Eastern Asia, extending to Japan.

Culture.—The species of *Aërides* are among the most beautiful of Orchids, many of them uniting every good quality that a plant can possess. Even when not in bloom the plants themselves are interesting objects, and give a tropical character to the collections in which they are found. The stems are straight or slightly bent, the leaves being attached on opposite sides, and they are nourished by large fleshy roots, shooting out horizontally from near the base. The flowers, which are rich and waxy, proceed from the axils of the leaves, and extend in delicate racemes one or two feet in length, while their fragrance is so powerful as to fill the house in which they are grown with a grateful perfume.

These plants are of easy culture, and if properly attended to seldom fail to do well. They are found growing on the branches of trees, generally on such as overhang streams of water; and to grow them in anything like perfection the climate in which they grow wild must in most respects be imitated. We find they succeed best with a good supply of heat and moisture during their growing season, which is from about March to the latter end of October. During that time we keep the temperature, by day, from 70° to 75° , allowing it to rise to 80° and 85° , or even higher, provided the house is shaded from the rays of the sun. The night temperature should range from 65° to 70° in March and April, and afterwards it may rise five degrees higher. In the autumn and winter months the temperature should average from 60° to 65° by night, while by day a little more heat will be of benefit to the plants; they like a liberal supply of

moisture about their roots, but too much must not be given them in dull weather.

Some persons grow their *Aërides* in baskets and rafts made of wood, but they may also be grown in pots or pans—a mode of culture successfully followed by many of our cultivators, especially by those who exhibit, for when in pots the plants are more easily moved about. Another point in favour of pot culture is that baskets soon decay; but if the plants are not required for exhibition, we should advise some of the smaller kinds to be grown in baskets, in which they have a fine appearance, especially if there is room for suspending them, allowing the roots to grow out of the basket. All the kinds will succeed well in this way.

In pot culture fill the pots about three-parts full of potsherds, placing large pieces at the bottom, but finishing off at the top with smaller ones; above this fresh living sphagnum moss should be used, and when this begins to decay fresh moss should be given to keep all healthy. They all do well on blocks of wood, but to grow them in perfection in this way they require greater care as regards moisture. Sphagnum moss and broken potsherds have proved the best materials for filling baskets. They require frequent watering at the roots during the growing season; indeed, they should never be allowed to become thoroughly dry, not even during their season of rest, as if so they are liable to shrivel and lose their lower leaves.

The species of *Aërides* require but little repose, and the moss should always be kept damp, but during the dull months of winter no water should be allowed to lodge on the leaves or in the heart of the plant, as it would be very apt to rot them. The plants, if not in pots, should be suspended from the roof, but not very near the glass, lest they should be affected by cold.

The *Aërides* should be kept perfectly free from insects, especially the different kinds of scale. There is a small kind in particular which is apt to infest them, and which, if allowed to increase, will speedily make the plants look yellow and unhealthy. It may be kept under by washing with warm water and soft-soap, applied with a sponge, and left on the leaves for some twenty-four hours, when all remains of the soap should be removed with clean water. They are also subject to the attacks of the red Thrips, especially on the young leaves; this can be kept down by frequent applications of tobacco powder, or fumigation; if allowed to remain these red Thrips considerably damage the young growth, turning it red and brown. The black Thrips sometimes attacks the older leaves and disfigures them very much; they should be eradicated by frequent fumigation and sponging.

These plants are propagated by cutting them into pieces, with roots attached to each piece. Some kinds, however, are shy in throwing up young shoots, and this makes these sorts very scarce. Those of the *A. odoratum* group are the most easy to increase, and *A. crispum* sends out roots more freely than some others. If the plants ever get into an unhealthy condition, the best way is to cut away the bottom portion and give the remainder fresh moss, with plenty of water at the roots.

A. affine, *Wallich*.—A beautiful dwarf species, producing leathery bluntly two-lobed leaves, a foot long, spotted with brown, and bearing erect spikes of light rose-coloured flowers, spotted on the lip, which is lozenge-shaped and entire, with a darker shade of the same colour; it blooms in June and July. This plant, which is of slow-growing habit does not root freely, and requires less moisture than any of the other kinds.—*India*.

FIG.—*Lindl. Sert. Orch.*, t. 15.

SYN.—*A. multiflorum*; *A. roseum*, *Hort*.

A. affine superbum, *Hort.*, is a fine variety, much stronger in growth than the type; the flowers are also larger, and of a



W. H. F.

AERIDES



ASSIFOLIUM.

richer colour. The best variety we have seen bloomed with Mr. B. Findlay, at the Manchester Botanic Gardens. The spikes of this, as well as those of the species, are apt to damp off at the ends before the flowers open—an evil which is often caused by too much moisture having been given. It continues a long time in perfection.—*India*.

A. Brookei.—See *AËRIDES CRISPUM*.

A. cornutum.—See *AËRIDES ODORATUM*.

A. crassifolium, *Parish and Rehb. f.*—This species is one of the most beautiful of the genus, and has been called the king of all the *Aërides*. The plant is very stout and compact in growth, with thick coriaceous oblong obliquely-bilobed dark green leaves, and long drooping spikes of amethyst-purple deliciously fragrant flowers, which are produced in May and June, and continue perfect for a very long time. The flowers are amongst the largest in the family, and the bluntly ovate projected middle lobe of the lip is of a deeper richer purple than the rest of the flower. Sir Trevor Lawrence, Bart., M.P., has been most successful in flowering this gorgeous species, which is best grown in a basket suspended near the glass.—*Burmah*.

FIG.—*Warner, Sel. Orch. Pl.*, 3 ser., t. 12; *Part. Fl. Gard.*, reissue, t. 1; *Gard. Chron.*, N.S., viii. 492, fig. 96.

A. crispum, *Lindley*.—A very beautiful free-growing species, of stiff erect habit, sometimes attaining from four to five feet in height. The stem is stout and of a purple colour, the dark green leaves five to ten inches long, blunt and obliquely bilobed, and the flowers grow in long drooping racemes larger than those of any other species, white, tipped with rosy pink, deliciously scented, the lip three-lobed and upwards of an inch long, the middle lobe fringed and almost wholly of a bright rose or sometimes a deep rose purple. The blossoms, which are abundant, are produced in June or July, and last two or three weeks in



AËRIDES CRISPUM.

good condition ; they are very distinct in appearance from those of any other kind. This species is best grown in the Cattleya house.—*India : Bombay.*

FIG.—*Bot. Reg.*, 1842, t. 55 ; *Bot. Mag.*, t. 4427 ; *Flore de Serres*, i. t. 13 ; v. t. 438 ; *Ill. Hort.*, t. 123 ; *Pact. Mag. Bot.*, ix. 145.

SYN.—*A. Brookei.*

A. crispum Lindleyanum, *Hort.*—A charming variety also from India, with large branching spikes, bearing handsome blossoms, of which the sepals and petals are white, and the lip is large of a rich rosy pink ; it flowers in April and May. The growth is similar to that of *A. crispum*, and it requires the same kind of treatment.—*Coonoor.*

FIG.—*Wight, Icon.*, t. 1677.

SYN.—*A. Lindleyanum.*

A. crispum Warneri, *Williams.*—A splendid free-flowering variety from India. In its stems and leaves it closely resembles *A. crispum*, but the habit of growth is more compact, and the leaves are smaller and more slender ; the blossoms, which are produced in June and July, are white and rich rose colour, and they last from three to four weeks in perfection.—*India.*

SYN.—*A. Warneri.*

A. cylindricum.—See *AÆRIDES VANDARUM.*

A. Dominicanum, *Hort. Veitch.*—A fine and very rare garden hybrid, the produce of a cross between *A. Fieldingii* and *A. affine*, producing rich rose-coloured flowers, of the colour of those of *A. Fieldingii*, but having the shape and markings of *A. affine*. It is sometimes called *A. Fieldingii hybridum*, and is one of the most beautiful orchidic variations which have been obtained as the result of judicious hybridising.—*Garden Hybrid.*

A. Ellisii.—See *AÆRIDES VIRENS ELLISII.*

A. Emericii, *Rehb. f.*—This new species is, according to Prof. Reichenbach, allied to *A. virens*, but is more elegant in habit, and the leaves are longer and narrower than in that species, being elongate-lorate, and bilobed at the apex. The flowers are in drooping racemes, the sepals and petals white with a broad purple-lilac stripe down the centre of each, and the lip white with the middle lobe purple-lilac, and marked with numerous small spots of the same colour on the interior.

portion of the spur; it flowers in September and October.—*British India.*

A. expansum, *Rehb. f.*—A grand plant, allied to *A. falcatum*, but the leaves are broader, and of a light green colour. The flowers are produced in elongated racemes, and have the sepals and petals creamy white marked with purple, the well-expanded lip having amethyst blotches on the lateral lobes and on the sides of the middle lobe, the broad anterior portion of which is deep purple and the spur greenish; it flowers in June and July.—*India.*

SYN.—*A. falcatum expansum.*

A. expansum *Leonixæ*, *Rehb. f.*, is a fine variety of the preceding, and was first flowered by H. J. Ross, Esq., Castagnola, Lastra à Signa, Italy. The flowers are not so closely set on the spike as in *A. falcatum*, nor is the foliage so densely set.—*India.*

A. falcatum, *Lindley.*—A fine free-growing plant, with a good deal of the habit of *A. crispum*. The leathery leaves are obtuse and obliquely mucronate at the apex, attaining ten inches in length, and of a dark green colour with a bluish metallic tint on the upper surface. The flowers grow in dense pendulous racemes, of a creamy white with a crimson spot at the apex of the sepals and petals, and the lip, which is three-parted, with the lateral lobes obtusely falcate, and the middle obovate lobe convex and ciliated, is deep rose in the middle, the edges white barred with rose. It is a distinct and striking species, and was first flowered in 1847 by Mr. Eyles, when gardener to Sir G. Larpent, of Roehampton, and was shown at Chiswick in June of that year, when it received the first prize as a new plant; hence the name of *A. Larpentæ* under which it is sometimes known.—*India.*

FIG.—*Xenia Orchid.*, i. t. 92.

SYN.—*A. Larpentæ*, Hort.

A. Fieldingii, *Lindley.*—A magnificent free-flowering species of bold and striking character, of which there are many distinct varieties, both in regard to growth and flowers. It is one of the finest Orchids in cultivation, and is popularly known as the Fox-brush *Aërides* on account of its long dense raceme of flowers. The plant grows from two to three feet high, with broad fleshy obliquely two-lobed leaves, eight or ten inches long, and in some of the varieties

of a dark green colour, while in others they are of a lighter shade. The flowers grow in drooping racemes, which sometimes attain a length of three feet, and are often branched; the flowers are unusually large, white beautifully mottled with clear bright rose colour, and have a rich rose-coloured lip; they are produced during May, June, and July, and continue for three or four weeks. This makes a fine exhibition plant, and Prof. Morren well observes, "l'inflorescence rameuse est toujours somptueuse."—*India: Sikkim, Assam, &c.*

FIG.—*Jennings, Orchids*, t. 20; *Belgique Hort.*, 1876, tt. 18, 19.

A. flavidum.—See *AËRIDES SUAVISSIMUM*.

A. Houlettianum, *Rehb. f.*—This most distinct and beautiful species was exhibited by Sir T. Lawrence, Bart., M.P., in 1876, when it was certificated by the Royal Horticultural Society; previous to this it had been flowered by Mr. Lüddemann, of Paris. The growth, including roots, foliage, and habit, resembles that of *A. virens*, the leaves being short, lorate, and bluntly two-lobed at the apex. The flowers, which are large and borne on dense many-flowered racemes, resemble in form those of *A. falcatum*, but the sepals and petals are buff-coloured tipped with a single spot of magenta, and the lip is creamy-white with a wedge-shaped blotch of magenta on the anterior part of the subrhomboid fimbriated middle lobe, and bearing lines of the same colour on the semifalcate side lobes. It flowers in May and June.—*Cochin China*.

FIG.—*Xenia Orchidaceae*, iii. t. 204; *Ill. Hort.*, 3 ser., t. 455.

A. Huttoni.—See *AËRIDES THIBAUTIANUM*.

A. illustre, *Rehb. f.*—This is, according to Prof. Reichenbach, a grand plant, imported with *A. crispum*, and supposed to be a natural hybrid. It has very short broad leaves marked with a few dark spots, and unbranched racemes of flowers in the way of *A. maculosum*, but larger, the sepals and petals being broader, with a lilac hue over the white and with very few blotches, and these mostly on the inner side of the petals; the lip is very fine, rich amethyst-purple, with the longitudinal basal markings characteristic of *A. maculosum*.—*India*.

A. japonicum, *Linden et Rehb. f.*—This, though quite a diminutive plant, nevertheless bears comparatively large

flowers, and is a pretty and interesting miniature epiphyte. The leaves are short, linear-oblong, leathery, and, as usual, obliquely bilobed at the apex. It produces a drooping raceme of about eight flowers, which are developed in June and July, and are of a greenish-white, the lateral sepals having some concentric purplish bars near the base, and the obovate spatulate crenated lip a raised dark violet-purple median ridge and a few paler purple spots; it is a cool-house species.—*Japan*.

FIG.—*Bot. Mag.*, t. 5798; *Ill. Hort.*, 3 ser., t. 461.

A. Larpentæ.—See AËRIDES FALCATUM.

A. Lawrenciæ, *Rehb. f.*—This species, which was imported by Mr. F. Sander, and purchased by Sir T. Lawrence, Bart., M.P., for the sum of 235 guineas, proves to be a grand and unique plant. The habit of growth resembles that of *A. quinquevulnerum*, but in its flowers it comes near *A. odoratum*, though it is far superior to that kind in the dimensions of the flowers. The floral racemes exceed a foot in length, and the individual flowers are nearly as large as those of *A. crispum*; the sepals are at first greenish, then waxy-white, and finally yellow, the petals are flushed at the tip with fine purple, and the ligulate denticulate middle lobe of the lip is also purple, with two longitudinal purple stripes passing from the disk to the mouth of the spur, which is elongated and tipped with green; the tall erect lateral lobes of the lip are oblong-dolabriform; it flowers during the autumn months; and was shown in fine condition in September last, by Baron Schröder.—*Tropical Asia*.

A. Leeanum, *Rehb. f.*—This distinct species resembles *A. quinquevulnerum* in its growth and foliage. The flowers, which are sweet-scented, are produced in short dense racemes, and are amethyst-coloured with a green spur. It has been named in honour of W. Lee, Esq., of Leatherhead, an enthusiastic patron of Orchid culture; it flowers during the winter months.—*India*.

A. lepidum, *Rehb. f.*—A neat and pretty species, introduced by Lieut.-Col. Berkeley. It has lorate leaves, somewhat narrower than those of *A. odoratum*, and obtusely bilobed at the end. The many-flowered ascending racemes are sometimes as much as eighteen inches in length, and covered with

flowers, as large as those of *A. affine*, which are white, with the sepals and petals tipped with purple, and the triangular projected anterior part of the lip also purple; the spur is slender, cylindrical, curved, and nearly as long as the stalked ovary.—*British India*.

A. Lindleyanum.—See *AERIDES CRISPUM LINDLEYANUM*.

A. Lobbii, *Hort. Veitch*.—A free-flowering and handsome species, producing long spikes of rosy pink and white blossoms. The leaves are lorate, very leathery, channelled, obliquely bilobed, of a light green here and there dotted with purple, about eight inches long, and nearly two inches wide. The flowers are very numerous, white, slightly tinted with soft rose and faintly dotted towards the tips, the lip washed with violet, the colour strongest on each side the white central line of the broad ovate anterior part. Lemaire remarks that the column and anther-bed have a striking resemblance to the neck and beak of a bird. Altogether a very showy kind, and one of our best *Aërides* for exhibition. There are several varieties, many of them producing long branching spikes, and making a fine display when in bloom. The finest specimen we ever saw is in the select collection of J. Broome, Esq., Didsbury, and has been exhibited by him on several occasions at the Manchester Exhibitions. It flowers during June and July.—*Moulmein*.

FIG.—III. *Hort.*, t. 559; *Orchid Album*, i. t. 21.

A. Lobbii Ainsworthii, *Williams*.—A very fine form of the type, producing spikes about two feet long, which are well branched; the colour is very bright and more effective than in the type. It was first flowered by R. F. Ainsworth, Esq., M.D., of Manchester, and was exhibited by his gardener, Mr. Mitchell, at the Royal Horticultural Society's Show at Preston.—*Moulmein*.

A. maculosum, *Lindley*.—A stout dwarf compact-growing Orchid of great beauty, having stiff broad obliquely-obtuse dark green leaves, eight inches long, spotted with purple on the outer side near the base, and producing drooping branched racemes of pale rosy flowers more or less spotted with purple, and having a large bright rosy-purple ovate-obtuse wavy anterior lobe to the lip, which has besides two small acute lobes at its base. These flowers are deliciously

fragrant, and very striking in colour; they are produced about June and July, and if they are kept dry they will last four weeks in perfection. The species is one of slow growth, which is the reason we so seldom see fine plants.—*India: Bombay.*

FIG.—*Bot. Reg*, 1845, t. 58; *Paxt. Mag. Bot.*, xii, 49.

A. maculosum Schröderi, *Williams*.—A magnificent free-growing plant, much stronger than *A. maculosum*, and more in the way of *A. crispum*, with dark green foliage, ten inches long. The flowers are very delicate, and deliciously scented, the sepals and petals being almost alike—white, tinged with lilac and spotted with rose, and the lip or labellum of a beautiful rosy magenta colour; it flowers in June or July, lasting three weeks in perfection. This was first flowered by J. H. Schröder, Esq. It is supposed that there was only one plant imported, and that the stock at present in this country is from that one plant, on which account it is still very rare.—*Hills near Bombay.*

FIG.—*Henfrey, Gard. Mag. Bot.*, ii, 121; *Pescatorea*, t. 33; *Lem. Jard. Fl.*, t. 54; *Gard. Chron.*, N.S., xiii, 493, fig. 87 (woodcut showing habit).

A. McMorlandi, *Hort*.—A magnificent species, compact in growth, and having bright green foliage, about ten inches in length. The blossoms are produced freely in long branching racemes in June and July, and continue three or four weeks in perfection; they are white spotted with peach-colour. The only plant we have known of this was in the collection of E. McMorland, Esq., in compliment to whom it is named.—*India.*

A. margaritaceum, *Hort*.—This pretty species has spotted leaves, and in its general appearance somewhat resembles *A. maculosum*; it produces spikes of pure white flowers during summer.—*India.*

A. Mendelii, *Hort*.—This very handsome and distinct species has been named in honour of the late S. Mendel, Esq., a great lover of plants and a munificent patron of horticulture. It has a stem about the thickness of that of *A. virens*; the leaves, which are about seven and a half inches long, and one and a half in breadth, are smooth, shining, and of a light green colour, and have the habit of clasping the stem at the base, like those of *A. quinquevulnerum*. The flowers are produced upon drooping spikes, and resemble those of *A.*

Larpentæ as to size and shape, but are entirely distinct in colour, being pure white tipped with rose.—*India*.

A. mitratum, *Rehb. f.*—A very distinct and charming species of small stature. The stems are short, with abundant thick aërial roots, the leaves being long (two feet) cylindrical attenuately-acuminate or whip-like, dark green, and the flowers in numerous dense erect racemes, five to ten inches long, the sepals and petals pure waxy-white, and the broadly trulliform obtuse lip rosy purple. A rare and elegant species.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5728.

A. multiflorum.—See *AËRIDES AFFINE*.

A. nobile, *Warner*.—A magnificent free-flowering fragrant species in the way of *A. suavisimum*, but with the flowers larger and of a better colour; we have seen racemes of this plant from two to three feet long, and branched. The habit of growth is vigorous; the leaves are ligulate, obliquely emarginate with an interjected tooth, and the racemes are pendent and profusely flowered, the flowers being creamy white, spotted and shaded with rose, the lip three-lobed, the lobes of nearly equal length, the middle one tongue-shaped, and bifid at the apex, and the long incurved ascendant spur being yellowish; it blooms in June, July, and August, and keeps in perfection for three or four weeks. The flowers as well as the rachides are clammy.—*India*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 11; *Gartenfl.*, t. 641.

A. odoratum, *Loureiro*.—A good old species, of free-growing habit, and one of the most abundant flowering of the genus. The leathery leaves are ligulate, keeled, pale green, and obliquely obtuse at the apex. It blooms in June or July, and remains two or three weeks in good condition; the flowers grow in pendulous many-flowered racemes longer than the leaves, and are creamy white, blotched and shaded with pale magenta, and have a delightful perfume; the lip is remarkable for its large upturned spur. We have seen specimens five feet high and four feet in diameter, which produced fifty to sixty spikes of bloom every year. It is altogether a noble and very useful plant.—*China, Cochin China, and India*.

FIG.—*Bot. Reg.*, t. 1485; *Bot. Mag*, t. 4139; *Knowles and West, Fl. Cab.*, t. 75; *Maund, Botanist*, iv. t. 186; *Hort. Parad.*, ii. t. 4.

SYN.—*A. cornutum*, *Roxb.*

A. odoratum cornutum, *Hort.*, is a handsome free-flowering variety distinct in growth from the preceding. Its floral racemes are about twelve inches long, furnished with pink and white flowers, which are produced in May, June, and July, and continue for upwards of three weeks in bloom.—*India*.

A. odoratum majus, *Hort.*, is like *A. odoratum* in its growth, and differs only in the larger and longer spikes of flowers; it makes a fine exhibition plant, and may be retarded very easily without the slightest injury.—*India*.

FIG.—*Gartenfl.*, viii. t. 273.

A. odoratum purpurascens, *Hort.*, is a somewhat scarce variety, and one of the very best. It is robust in habit, with broad dark green leaves, and is a free bloomer, producing long massive racemes of large flowers, which are white, tipped with bright pink; it blossoms during May and June.—*India*.

A. pachyphyllum, *Richb. f.*—A fine plant, imported along with *A. crassifolium*. It has short very thick fleshy leaves, blunt and unequally bilobed at the apex, and short racemes of handsome light crimson-lake flowers, of which the sepals and petals are oblong-ligulate, the spur and column white, and the small insignificant lobes of the lip painted with purple.—*Burmah*.

A. quinquevulnerum, *Lindley*.—A splendid free-flowering Orchid of free habit, less compact-growing than many other species; the ligulate leathery light green leaves are rounded and obliquely emarginate at the apex, with a small interjected apiculus. The racemes are pendent, densely flowered, longer than the leaves, the flowers having the sepals and petals white, spotted with rosy purple, and marked with five deep rosy purple spots at the tips; the tip of the lip is green, the sides pink, and the middle a deep crimson: it blooms in July or August, and lasts two or three weeks in bloom. There are several varieties, some with much richer coloured flowers than the others. This plant was formerly extremely rare, but it has recently been imported in large quantities, so that cultivators will now have an opportunity of testing the beauty of this distinct *Aërides*—*Philippine Islands: Manilla*.

FIG.—*Lindl. Sert. Orch.*, t. 30; *Past. Mag. Bot.*, viii. 241; *Jennings, Orch.*, t. 30.

A. quinquevulnerum Farmeri, *Williams*, is a variety of the preceding, producing long spikes of white flowers; it grows like *A. quinquevulnerum*, and blooms about the same time. This plant first came under our notice at Nonsuch Park, Cheam, the seat of W. F. G. Farmer, Esq.; it is extremely rare.—*Manilla*.

A. Reichenbachii, *Linden*.—A beautiful species allied to *A. virens* and *A. quinquevulnerum*, the latter of which it resembles in habit and foliage. It has long dense drooping racemes of flowers, of which the sepals are white blotched with purple, the dorsal one cuneate-ovate, with a large spot near the apex, and the lateral ones bluntly triangular; the linear falcate petals are also white with small dots of purple, and having a large purple spot near the apex; the lip is trifold, white dotted with purple, with the yellow side lobes erect and dolabriform, and the middle one cuneate-ligulate. The disk of the lip runs out behind into a conical incurved spur, which is white below, green at the tip.—*Borneo*.

FIG.—*Xenia Orchid*, ii. t. 104.

A. Reichenbachii cochinchinensis, *Hort*.—A variety which has the inflorescence more dense; the sepals are not blotched, but neatly striped at the apex, and the yellow of the lip is much deeper. It has been flowered by Sir Trevor Lawrence, Bart., M.P., and proves to be a very grand thing.—*Cochin China*.

A. Robbelenii, *Rchb. f.*—According to Prof. Reichenbach, this is a fine novelty presenting some new features. It has the habit of *A. quinquevulnerum*, and produces erect racemes a foot in length bearing as many as twenty-five very fragrant flowers as large as those of the species just named, the sepals and petals greenish white with white tips, the petals often toothletted, the lip rosy, with yellow oblong side lobes lacerated on the upper edge, as is the much longer oblong curved middle lobe. The flowers have a short conical spur.—*Philippine Islands*.

A. Rohanianum, *Rchb. f.*—This novelty has not yet flowered in cultivation, but is said to be a grand thing, near to *A. Reichenbachii*, its racemes being longer and denser. The sepals are described as being white, rose, or mauve rose, always edged with white; the segments of the lip are narrow,

white, and having two purple lines running through the centre, accompanied by two purple blotches; the spur, which is projected in front, is orange-coloured with numerous small purple spots.—*Eastern Asia*.

A. roseum, *Loddiges*.—A handsome profuse-flowering species of slow growth, but reaching two to three feet high, with light green foliage a foot long, truncate and toothed at the apex, and long branching spikes of white flowers tinted with rosy magenta, the rhomboid lip deeper in the centre, and twice as long as the ovary. We have seen the flower spikes two feet long, with three or four branches on each spike; it is a profuse bloomer, and has been exhibited with from thirty to forty spikes. It makes one of the finest of exhibition plants, flowering about June and July, and continuing in blossom for three or four weeks.—*India*.

FIG.—*Pact. Fl. Gard.*, t. 60; *Bot. Mag.*, t. 4049; *Lem. Jard. Fl.*, ii. t. 200; *Id. Illust. Hort.*, t. 88; *Gartenfl.*, t. 267.

SYN.—*A. affine*, Hook. et Hort.

A. roseum superbum, *Moore*.—This is a splendid variety of the preceding, the colour being richer and the flowers much larger. The plant is more compact in growth, and is of a free-flowering habit, producing a long branched spike.

FIG.—*Warner, Sel. Orch. Pl.*, 3 ser. t. 22.

A. rubrum.—A very nice cool-house species, with dark green foliage; a very distinct plant, not so showy as many of the preceding ones, but well worth growing; indeed, any one that can appreciate *Saccolabium ampullaceum* would like this, the colour being similar and the spikes longer. This plant should be grown in the *Odontoglossum House*.—*Madras Hills*.

A. Schröderi.—See AËRIDES MACULOSUM SCHRÖDERI.

A. suavissimum, *Lindley*.—A distinct and desirable species of free growth, having light green foliage ten inches long, spotted with brown, and very long drooping spikes of deliciously fragrant flowers, of which the sepals and petals are white tipped with rosy pink, the incurved spur tipped with deep rose, and the lip, which has a very small bifid middle lobe, has a blotch of pale lemon-yellow in the centre. The blossoms are developed in July, August, and September, and last in good condition for three weeks. We have flowered

several varieties of this species, some of which have proved much better than others.—*Straits of Malacca*.

FIG.—*Past. Fl. Gard.*, t. 66 ; *Lem. Jard. Fl.*, t. 213.

SYN.—*A. flavidum*.

A. suavissimum maculatum, *Williams*.—A very handsome form of the preceding, and like it deliciously fragrant; the sepals and petals are white, profusely spotted with pink, as also is the lip. It bloomed very freely in the collection of the late Thomas Dawson, Esq., of Meadow Bank.

A. testaceum.—See *AÆRIDES WIGHTIANUM*.

A. Thibautianum, *Rehb. f.*—A handsome free-growing species, with somewhat the appearance of *A. quinquevulnerum*; it produces, however, a very different inflorescence, the floral raceme being very long, with the flowers rather openly set upon it; the sepals and petals are of a beautiful rose colour, and the lip bright amethyst. It is sometimes called *A. Huttoni*.—*Java*.

SYN.—*Aërides Huttoni*; *Saccolabium Huttoni*.

A. Vandarum, *Rehb. f.*—A rare and distinct slender-growing plant, in habit resembling *Vanda teres*, but the leaves, which are straight and cylindrical, are much more slender than those of that species; the flowers, which are produced in pairs from the side of the stem opposite the leaves, are larger than those of *A. crispum*, pure white, with a slight tinge of pink on the inner surface of the column. This plant has been cultivated in our gardens for several years under the erroneous name of *A. cylindricum*.—*India: Coimbatore*.

FIG.—*Bot. Mag.*, t. 4982; *Orchid Album*, iii. t. 116.

SYN.—*A. cylindricum*, Hook, non Wight.

A. Veitchii, *Hort.*—A beautiful species of the *A. affine* group. The leaves are about eight inches long, of a dark green colour, and covered with small spots resembling those of *A. Lobbii*. The flowers are in long drooping branched racemes, and are set on the rachis like so many little pearly spotted shells, the colour being white, beautifully dotted with soft rosy pink; it blooms during June and July, and lasts about three weeks in good condition.—*India*.

A. virens, *Lindley*.—A handsome and desirable fragrant-blossomed species, of free growth. The leaves are obliquely rounded at the apex, of a bright light green colour, eight



AËRIDES VANDARUM.

inches long. The flowers are borne on long drooping racemes, and are of a light peach colour, spotted with purple, the lip being spotted with crimson; it blooms in April, May, and June, the flowers remaining long in perfection.—*Java*.

FIG.—*Bot. Reg.*, 1844, t. 41; *Pact. Mag. Bot.*, xiv. 197; *Orchid Album*, iv., t. 160.

A. virens Dayanum, *Hort.*, is a remarkably fine variety with very long flower racemes, which bloom about the same time as those of *A. virens* itself.—*India*.

A. virens Ellisii, *Williams*, resembles *A. falcatum* in habit and appearance, but does not present the metallic blue tint on its leaves, being of a somewhat pale green; the leaves are about six inches long and one and a half broad. The racemes are eighteen to twenty inches long, bearing upwards of three dozen large flowers, the sepals and petals of which are white suffused with rose and tipped with amethyst, the lower sepals being very round and broad; the lip is large, its side lobes white beautifully freckled towards the base with short lines of amethyst, while the middle lobe is broad, deep rich amethyst in colour, and the spur is stout, curved upwards, and tipped with brown; it blooms early in June and lasts long in full beauty.—*Java*.

SYN.—*A. Ellisii*.

A. virens grandiflorum, *Hort.*, is a magnificent variety with flowers larger than those of *A. virens*, white spotted with pink, and more graceful in their manner of growth; it blooms during April and May, and continues from three to four weeks in beauty.—*India*.

A. virens superbum, *Hort.*, is another fine variety, the growth of which is the same as that of *A. virens*, except that the spikes and flowers are longer and of a brighter colour; it blooms about the same time, and remains long in perfection.—*India*.

A. Warneri.—See AËRIDES CRISPUM WARNERI.

A. Wightianum, *Lindley*.—A beautiful little plant, quite distinct in character and resembling *Saccolabium curvifolium* in habit. The leaves are lorate, unequally bilobed with an intermediate cusp, and short erect racemes of pale yellow flowers, the broad oblong rounded front lobe of the lip white,

with purple crests on the fleshy disk, and dotted with lilac ; it blossoms during the summer months.—*India, Ceylon.*

FIG.—*Bot. Mag.*, t. 5138 ; *Flore des Serres*, t. 1452.

SYN.—*A. testaceum* ; *Vanda parviflora*.

A. Williamsii, *Warner*.—A grand and distinct species extremely rare in collections. The leaves are broad dark green and drooping, and the racemes of flowers are produced in great abundance, measuring from two to three feet in length, and often becoming branched ; the colour of the flowers is a pinkish white ; it blooms in June and July, and makes a fine Orchid for purposes of exhibition, on account of its free-flowering character, while from its delicate colour it associates well with other kinds. This species first flowered in the collection of the late C. B. Warner, Esq., of Hoddesdon.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 21.

AGANISIA, *Lindley*.

(Tribe Vandææ, subtribe Cyrtopodieæ.)

A small genus of some half-dozen Tropical American Orchids which have a close affinity with *Zygopetalum*, but the flowers are usually smaller, and the column is not prolonged at the base, but is apodous.

Culture.—This plant is best grown in a pot, with peat and good drainage. It requires a liberal supply of water at the roots, and the hottest house. It is a very scarce plant, and is propagated by dividing the bulbs.

A. pulchella, *Lindley*.—A rare and pretty dwarf Orchid, having a creeping rhizome, with very small pseudobulbs at intervals, each furnished with a solitary oblong five-ribbed leaf eight inches long, and producing from the base of the bulb erect racemes of flowers an inch and a half across, which are white, with a blotch of crimson at the base, and a larger patch of yellow in the centre of the lip ; it blossoms at different times of the year, and lasts two or three weeks in perfection.—*Demerara*.

FIG.—*Bot. Reg.*, 1840, t. 32.

ANGRÆCUM, *Thouars.**(Tribe Vandeeæ, subtribe Sarcantheæ.)*

A very curious genus of Orchids, of which some score or more species are known, many of them being very handsome, and such as ought to be in every collection. In habit they resemble the *Aërides*, having like them the stems clothed with evergreen leathery distichous foliage, which in some kinds is regularly curved and very graceful, while the flowers are produced in long racemes from the leaf-axils; these flowers are characterised by their spreading sepals and petals, and by the long—sometimes very long—slender spur to the lip, which has a spreading entire or three-lobed limb. Even when not in bloom, the plants are objects of interest, and give a noble appearance to the house in which they are grown. The flowers are not so much prized as they ought to be, because they are produced at the wrong season for exhibition; but, blooming as most of the large kinds do in winter, they are invaluable to those who look for the beauty of ornamental flowering plants at that period. The blossoms continue from six weeks or more in perfection. If in vigorous health the plants generally flower every year, and also produce young plants at the base. The latter, if required, should be taken off when rooted; if not, they should be left on, in order to make a finer specimen.

The species are for the most part found in Tropical and Southern Africa, and in the Mascaren Islands.

Culture.—The *Angræcums* require the same treatment as the *Aërides*, and the potting material should be similar. Like them, too, they are best grown in the East Indian house. To this rule, however, *A. falcatum* is an exception, as it succeeds best in the Mexican house.

A. apiculatum, *Hooker*.—A pretty dwarf species, introduced in 1844 by Mr. Whitfield. It resembles *A. bilobum* in its general aspect, having short stems, with distichous obovate-lanceolate, obliquely acuminate, striated, deep green leaves, and pendulous racemes of about a dozen flowers, which are white, with a slender pointed spur about two inches long.—*Sierra Leone*.

FIG.—*Bot. Mag.*, t. 4159.

A. articulatum, *Rchb. f.*—A very pretty dwarf species, related to *A. bilobum*, with cuneate-oblong, unequally-bilobed leaves, about six inches long, and producing stout peduncles, bearing at the end a raceme of creamy-white flowers, which are polymorphous, with a filiform spur, which is sometimes as long as, sometimes three times as long as the ovary. Introduced by the late Rev. W. Ellis.—*Madagascar*.

A. bilobum, *Lindley*.—An elegant little Orchid, of very compact growth, having a short rooting stem, furnished with cuneate-obovate dark green reticulately-veined leaves, which are deeply bilobed at the apex, and much shorter than the drooping racemes of ten to twelve flowers, which are of a blush-tinted white, with a slender bifid spur about two inches long; it blooms from October to December, and remains two or three weeks in good condition. We have grown this plant on a block, but it does best in a basket, where the roots may obtain plenty of moisture.—*New Guinea: Cape Coast Castle*.

FIG.—*Bot. Reg.*, 1841, t. 35.

A. bilobum *Kirkii*, *Rchb. f.*—This little gem was sent to us in 1882, by Sir John Kirk, in honour of whom it is named. The plant is a dwarfer grower than *A. bilobum*, having narrower leaves, ending in two divergent lobes, and bears drooping racemes of pure white flowers, which are furnished with slender pale brown spurs, two and a-half to three inches long. It is a pretty subject for basket culture.—*Zanzibar*.

FIG.—*Orchid Album*, iv., t. 162.

A. caudatum, *Lindley*.—A singular and free-flowering species of very compact growth, with pale green drooping lorate, channelled, emarginate leaves, ten inches long, and long flexuose racemes, a foot or more in length, of greenish yellow flowers, tinted with brown, the labellum being pure white, obovate-cuneate with a long point, and furnished with

a tail of pale olive green colour, about nine inches long. We have sometimes seen twelve or more of these curious flowers on a spike; its season of blooming is from June to September, and it continues in perfection a long time. It is still, and always has been, a rare plant.—*Sierra Leone*.

FIG.—*Bot. Reg*, t. 1844; *Bot. Mag.*, t. 4370.

A. Chailluanum, *Hook f.*—This is a very distinct and rare plant, interesting, like its congeners, because of the tail-like spurs with which the flowers are furnished. The leaves are leathery, ligulate, blunt and very unequally blotched at the apex, six or eight inches long, one or two broad, dark green. The flowers are white, with narrow sepals, petals, and lip, and a yellowish green spur three to four inches long, produced about a dozen together in pendulous racemes during August and September. It succeeds best grown on a block of wood with a little moss.—*West Africa*.

FIG.—*Bot. Mag.*, t. 5589.

A. citratum, *Thouars*.—A beautiful and free-flowering dwarf species, admirably adapted for basket culture. It has a very short stem, smooth broad bright green, close-set oblong-lanceolate leaves, and slender pendulous racemes of small but pretty flowers of a pale yellowish white, closely and evenly set in two rows along the rachis. It is a compact-growing plant, and until within the last few years was extremely rare.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5624.

A. crenatum, *Rehb. f.*—This is a very rare plant, and quite distinct. The flowers resemble those of *A. Chailluanum* in colour and shape, but are much smaller, as is also the growth of the plant; it flowers in June and July.—*West Africa*.

A. cryptodon, *Rehb. f.*—A distinct species, comparable in regard to habit and foliage with *A. Chailluanum*, and in its flowers, which are white and borne in lax racemes, is equal to *A. Ellisii*. The latter have ligulate acute petals, a lanceolate lip, and a filiform spur three times as long as the stalked ovaries, which together with the base of the spur are reddish-white, the rest of the spur being white.—*Madagascar*.

A. descendens, *Rehb. f.*—A fine species which comes near *A. Ellisii*, but differs in its oblong-ligulate leaves being obscurely

bilobed at the apex, its stronger spur which is more than four times longer than the pedicels, its cuneate ovate acuminate lip, and its shorter hairy column. The flowers, which are white, are produced on a drooping many-flowered raceme.—*Madagascar*.

A. eburneum, *Thouars*.—A strong-growing free-flowering Orchid of noble aspect, with densely packed, broadly ligulate obliquely bilobed distichous leaves, which are eighteen inches long, leathery in texture, and of a light green colour. The flowers, which have green sepals and petals and spur, and a broad cordate cuspidate lip of ivory whiteness, are produced on upright racemes eighteen inches long; it blooms during the winter months, and if kept free from damp will last five or six weeks in perfection, on which account it becomes very valuable.

FIG.—*Bot. Reg.*, t. 1522; *Bot. Mag.*, t. 4761; *Pact. Mag. Bot.*, xvi. 90 (woodcut); *Gard. Chron.*, 1873, 217, fig. 46; *Batem. 2nd Cent. Orch. Pl.*, t. 111; *Orchid Album*, i., t. 41.

SYN.—*A. superbum*, *Thouars*—f. *Rchb.*

A. eburneum superbum, *Hort*.—A fine variety of *A. eburneum*, brought home by the late Rev. W. Ellis, of Hoddesdon. It is stronger in growth than the type, and the flowers, which are ivory white, and very large, open about the same time as those of *A. eburneum*, and continue a long time in beauty.—*Madagascar*.

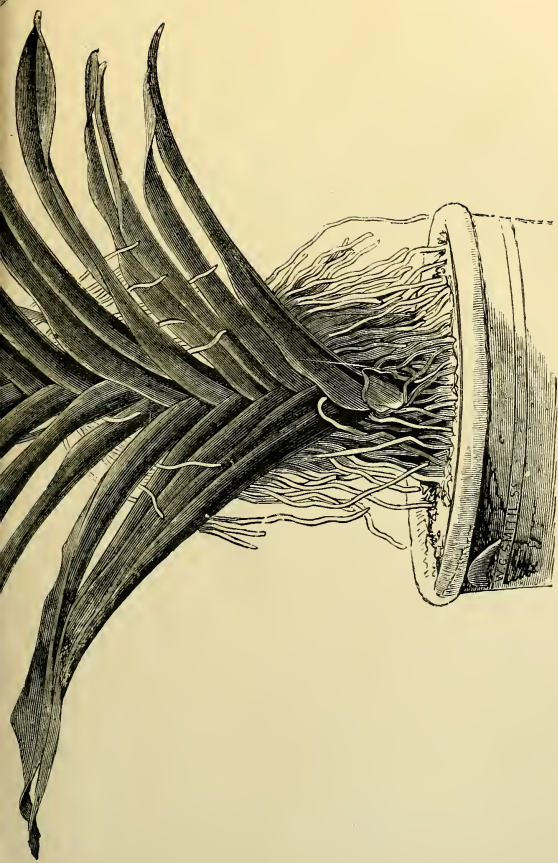
A. eburneum virens, *Hook*.—A free-flowering variety, the flower spikes of which are not so stiff, and are therefore more graceful, than those of *A. eburneum*. The plant has dark green foliage, about ten inches long, and the blossoms have green sepals, petals, and spur, with the cordiform cuspidate lip white, greenish down the centre; they are smaller than those of *A. eburneum* itself, and are in perfection during December and January.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5170; *Pact. Fl. Gard.*, i. 25, fig. 9, 10.

SYN.—*A. virens*; *A. eburneum*, *Thouars*—f. *Rchb.* *A. Brongniartianum* (*Pescatorea*, t. 16) is, perhaps, the same plant.

A. Eichlerianum, *Kranzlin*.—A well-marked plant related to *A. infundibuliforme*. It has tall leafy stems, furnished with elliptic obliquely obtuse leaves, and bears large solitary flowers, the sepals and petals of which are lance-shaped, light green, and the large helmet-shaped obcordate lip is white,





ANGRÆCUM EBURNEUM.





NAT. SIZE

X.2.



W. S. S.

ANGRÆCUM ELLISII.



with a triangular apiculus in the notch, and an erect conical spur, as long as the sepals.—*Loango, W. Africa.*

FIG.—*Garten-Zeitung*, 1882, 434, fig. 102.

A. Ellisii, *Williams*.—This beautiful species was introduced to this country by the late Rev. W. Ellis, whose name it bears, and is undoubtedly one of the finest species we have in cultivation. The leaves are distinctly arranged in a distichous manner, and about ten inches in length, broadly ligulate, dark green on the upper side, paler below, and deeply and unequally bilobed at the apex. The flowers grow in arching racemes two feet long, bearing from eighteen to twenty-four flowers, pure white and very fragrant, the sepals and petals reflexed, and the spur of the lip of a light cinnamon colour and six inches long. The profile of the flower is an exact resemblance of a cockatoo. It requires the temperature of the East Indian house.—*Madagascar.*

FIG.—*Floral Mag.*, n.s., t. 191; *Gard. Chron.*, n.s., iii. 277, fig. 54.

A. falcatum, *Lindley*.—This is a very elegant compact-growing species, with narrow dark green leaves; the flowers are freely produced, very fragrant, pure white, and furnished with a very long spur. This species requires exceptional treatment as to heat, since it succeeds in a much lower temperature than the other *Angræcums*.—*Japan.*

FIG.—*Bot. Mag.*, t. 2097.

SYN.—*Eceoclades falcata*.

A. fastuosum, *Richb. f.*—A fine new species very distinct in character, with cuneate-oblong leaves, three inches broad, blunt and unequally lobed at the end, very rugose on the surface, and with a cartilaginous margin; the flowers are numerous, in racemes, equalling those of *A. caudatum*, of a fine ivory white, with ligulate-oblong sepals and petals, an obovate lip, and a filiform spur two to three inches long. The flowers have the fragrance of tuberose.—*Madagascar.*

A. fuscatum, *Richb. f.*—A handsome and distinct plant, having cuneate-oblong leaves, blunt and unequally bilobed at the tip, and many-flowered lax racemes of blossoms, of which the peduncles, ovaries, and bracts are cinnamon-coloured; the flowers, which are nearly equal to those of *A. caudatum*, have ochre-coloured sepals, white petals and lip, and a brown

filiform flexuose spur more than twice as long as the ovaries.—*Madagascar*.

A. Grantii.—See *ANGRÆCUM KOTSCHYI*.

A. Hildebrandtii, *Rchb. f.*—An elegant but very small-growing plant, with ligulate unequally bilobed leaves and spreading lax racemes of yellow-orange flowers, having an oblong-acute lip and a filiform clavate spur shorter than the ovary.—*Comoro Isles*.

A. Kotschyi, *Rchb. f.*—One of the most distinct of the newer *Angræcums*, and one of small dimensions, flowering while young. It has broad polymorphous spatulate, unequally bilobed leathery leaves, of a dark shining green; and the flowers, which are produced in many-flowered pendulous racemes, are creamy white, each with a pandurate lip, and a remarkable spirally-twisted reddish spur several inches in length. It flowers in October.—*Tropical Africa*.

FIG.—*Gard. Chron.*, N.S., xiv. 456; *Id.*, 693-4, fig. 131.

SYN.—*A. Grantii*.

A. modestum, *Hook f.*—A pretty small-growing species in the way of *A. apiculatum* and *A. bilobum*, with elliptic-oblong subacute leaves, and pendulous racemes bearing pretty flowers, which are pure white, remarkable for their slightly hairy column, and having the rachis and pedicels pale brown, instead of green.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 6693.

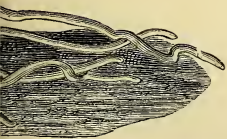
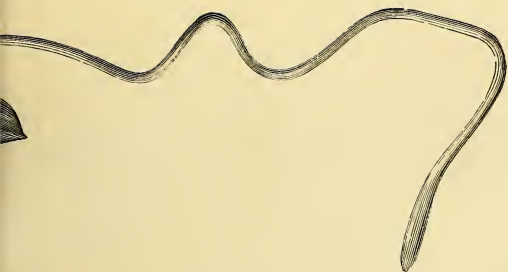
A. pellucidum, *Lindley*.—A bold-habited plant, making distichous tufts of bright green shining oblong leaves a foot to a foot and a half in length, and producing long spikes of small white flowers which “are as delicate and transparent as if they were flakes of snow fixed by frost in the very act of melting,” each part of the lip being studded and bordered with little crystalline elevations, and the whole fabric of the blossoms as fragile as a thin plate of glass; it blooms in winter, which makes it an acquisition at that dull season. It requires to be kept in the warm house, and makes a good basket or block plant, being in growth very much like a *Phalænopsis*.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1844, t. 2.

SYN.—*Listrostachys pellucida*.

A. pertusum, *Lindley*.—This is a very distinct and pretty





ANGRÆCUM KOTSCHYL.







ANGRÆCUM SESQUIPEDALE.



species, seldom to be found, however, in collections. It somewhat resembles an *Aërides* in its growth. The distichous leaves are lorate, with an obliquely bilobed apex, rather narrow, channelled above, fleshy and dark green. The spike is pendulous, longer than the leaves, secund, densely packed with white flowers, which have a short pale yellowish spur about as long as the lip; it blooms during the late autumn and winter months.—*Sierra Leone*.

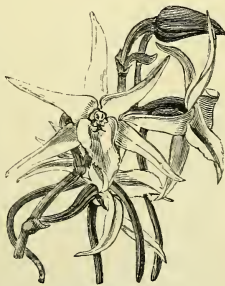
FIG.—*Bot. Mag.*, t. 4782.

SYN.—*Listrostachys pertusa*.

A. Scottianum, *Rehb. f.*—A very distinct and pretty species, which has been introduced to this country by Sir John Kirk, and has been flowered by the late Mr. Scott, of Walthamstow, after whom it is named. It has a terete elongated rooting stem, and is the only *Angræcum* as far as we know with terete leaves, which are subdistichous, semi-cylindrical, and subacute. The flowers are produced from the axils of the leaves on one or two flowered peduncles, sometimes as long as the leaves, and are large pure white, in shape similar to those of *A. eburneum*, but rounded and abruptly mucronate at the apex of the lip, the slender tapering spur six inches long and of a pale brownish yellow colour; it flowers in June and July.—*Comoro Isles*.

FIG.—*Bot. Mag.*, t. 6723; *Gard. Chron.*, N.S., xiv, 137, fig. 30; *Flor. Mag.*, N.S., t. 421.

A. sesquipedale, *Thouars.*—A wonderful and noble plant of great beauty, and certainly the finest species of the genus yet discovered. It was brought to England by the late Rev. W. Ellis, of Hoddesdon, from Madagascar, where he found it growing on trees. The stem is simple and rooting; the leaves close-set, distichous, leathery, oblong, blunt and bilobed at the apex, keeled, and of a dark green colour. The flowers are of a clear ivory white, and very large, a foot across, with a greenish tail or spur from twelve to eighteen inches in length hanging from the flower. The peduncles are axillary



ANGRÆCUM SESQUIPEDALE.

and bear from one to four of these fragrant gigantic flowers, which are produced in November, December, and January, and last about three weeks in beauty. There are two varieties of this species, one having larger flowers than the other and blooming later in the season.

FIG.—*Bot. Mag.*, t. 5113; *Gard. Chron.*, 1857, 253 (woodcut); *Id.* 1873, 255 (woodcut); *Illust. Hort.*, xiii, t. 475; *Flore des Serres*, tt. 1413—14; *Warner, Sel. Orch. Pl.*, i., t. 31; *Jennings, Orchids*, t. 3.

SYN.—*Aëranthus sesquipedalis*.

A. *superbum*.—See ANGRÆCUM EBURNEUM.

A. *virens*.—See ANGRÆCUM EBURNEUM VIRENS.

ANÆCTOCHILUS, *Blume*.

(Tribe Neottieæ, subtribe Spiranthææ.)

These charming little tropical Orchids are peculiar in habit, having neither erect stems, nor pseudobulbs, nor acaulescent crowns, but having instead small fleshy stems or rhizomes, which creep on the mossy surface of the soil, producing at intervals ovate or ovate-lanceolate leaves, and rooting from the joints where the leaves are produced. Their beauty consists in the metallic reticulations which cover their leaf-surface, and not in their flowers, which are small and grow in erect spikes from a few inches to a foot in height; they have their dorsal sepal connivent with the petals into a kind of helmet, and the lip extended behind into a spur and having a fimbriated claw and a two-lobed limb. The name is sometimes written *Anæctochilus*, but Blume writes it as we have adopted above; he has in some of his works called the genus *Anecochilus*, and in others *Anectochilus*. The species, which Bentham and Hooker set down as about eight in number, are found in India and the Malayan Archipelago. In the following pages we have noted the various forms of *Anæctochili* we have met with in cultivation.

Culture.—The genus *Anæctochilus* is one of the most remarkable of the class of variegated Orchids, and to its culti-

vation, which is not generally well understood, we will now address ourselves. All the varieties are remarkable for their dwarf compact habit, perfect form, and great beauty: they vary in height from two to six inches, and their leaves, which are well defined, vary from two to five inches in length, including the stalks, which, like the stems, are short and fleshy. The foliage of all the species is singularly rich and beautiful. In some it resembles the richest olive or purple velvet, regularly traversed with a network of golden lines. In others the leaf is of the most lively green, covered with silver tracery.

As regards cultivation, the plants require sand and peat mixed with moss. The white sandy ground from which they spring should be enlivened occasionally by small growths of moss, which sets off the plant to much advantage, especially when looked at through a bell-glass, under which the delicacy, richness, and softness of their appearance are increased. Few visitors walk through a house containing any of these plants without bestowing on them more than ordinary attention, and expressing admiration of their beauty.

The whole of the species require treatment very different from that given to any other Orchids, and different growers operate in different ways, but we have not found any mode of management to succeed better than the one first laid down by us many years ago, and which is being followed by many who have *Anæctochili* growing in great perfection. They are certainly difficult to cultivate, and many fail with them—a circumstance we attribute to their being kept too close. The glass case in which they are grown should always have a little air, by tilting or opening the glass about one or two inches; this will benefit them very much, and make them more vigorous, for when too much confined in the case or bell-glass, they grow up spindly and damp off in the stem; the latter, being

fleshy, requires more substance and hardihood. We have seen *Anæctochili* grown in bottom heat, which we find to be injurious ; they succeed in it for a time, but not long ; they grow too fast, and become so weak as often to die altogether. Some few plants which we once had in bottom heat we removed to a cooler house without it, and under cooler treatment they improved very rapidly.

The finest collection we ever saw was under the care of the late Mr. Toll, when gardener to the late J. A. Turner, Esq., of Manchester. The plants were grown under bell-glasses in the stove, but no bottom heat was applied. Mr. Turner purchased a plant of each kind from us some years ago ; these had been grown and propagated, and he had large pots full of them, many plants of a kind being placed together. This shows how well they may be grown without bottom heat. We have also seen them doing well in other places without bottom heat ; in short, they may be grown without having an Orchid house at all, any common stove will do, or even a well-heated pit. We have frequently sold collections to gentlemen who have no other Orchids, but who have bought these for the express purpose of growing them for the decoration of the dinner-table, on which they have a beautiful appearance by artificial light. As the taste for table decoration is increasing, plants such as these will doubtless be more sought after for that purpose ; and the subjecting of them to exposure for a few hours in a warm room will do them little harm, provided they have glasses over them with a ventilator at the top to let out moisture, so as to keep the leaves dry. As they are generally grown in small pots, they can be plunged in handsome vases with ornamental glass tops, and when done with, taken back into the heat. For room work let the foliage be dry, and there should not be much moisture at the roots. We should not, however, advise them to be used in the way

just described on a frosty night ; but during mild weather it will not do them any more harm than taking them to a flower-show. It was for years our custom, when living with the late C. B. Warner, Esq., at Hoddesdon, to show *Anectochili* at the Regent's Park and Chiswick exhibitions under bell-glasses, and we never found them injured by any such changes. We, however, always took care to prepare them before starting, by not giving them too much water, and by putting them in a cooler house, which should be done with all plants of a tender kind before they are taken to a show ; they will seldom sustain injury if treated in a proper way before leaving a warm house. The plants in question were shown for several years, and were grown without bottom heat and under bell-glasses in the shade. We mention this to show how many years *Anectochili* may be grown on, when subjected to the treatment best suited for them.

When they get out of health we have found that the best way is to turn them out of their pots and examine the roots ; if in a bad state below, wash the stem and roots, and repot in fresh soil. Thus treated we have known them to improve and do well for some time, provided they have not been allowed to get too much out of order before being seen to ; if so, there may be little hope that the care bestowed on them will be of any use. These plants, unlike some Orchids, have no thick woody pseudobulbs to support them ; their small fleshy stems require constant attention to keep them in a thriving state, but with care they may be grown to perfection. The flowers are small and unattractive, and their development often injures the plants by weakening them, on which account we always pinch them off when they appear, and find that this induces the stems to make lateral shoots freely.

These plants require to be grown in a warm house or pit, where the temperature ranges, in winter, by night from 55°

to 60° (a few degrees higher would not do them any harm), while the warmth may rise to 65° by day, and by sun heat to 70°; during March, April, and May the night temperature may range from 60° to 70°, and afterwards a few degrees higher will not be injurious. From March to October is the best time for growth, during which they will require a good supply of moisture at their roots; in fact, they should never be allowed to get dry, for then they will most likely perish; but from October to March they should only have sufficient water to keep the soil damp. They succeed best under bell-glasses, or in a glass case, with a little air always on to keep the atmosphere fresh and sweet. Some will do without glasses, if in a warm shady close house. We grow them in sphagnum, chopped into small pieces, with a little good fibrous peat, and silver sand, all well mixed together. Clean river sand will, however, answer the same purpose, if they are provided with good drainage.

These plants do not require large pots, as they do not make much root, but they succeed well in small pots; and if bell-glasses are used, the small pot may be plunged into a larger one, so that the bell-glass may fit the outer one. If grown in cases, put them in small pots, and arrange them in the case by placing good drainage at the bottom and sphagnum on the top of the drainage, with some sand on the top of the moss to set the pots on; then arrange the kinds in the case so that the contrast of the different colours may have a good effect. The pots should be perfectly clean, with thorough drainage at the bottom, and should be covered with a little moss, and filled up with the material recommended. In placing the roots in the pots, raise the stem a little above the rim. Established plants may be repotted once a year, and the end of February or the beginning of March will be found the best time for doing this. The glass or case in which

they grow should be kept perfectly clean, in order that they may have plenty of light, but no sun, the sun's rays being injurious to them.

They are propagated by cutting the plants into pieces just below the first joint, and so as to have a root attached to each piece. For this purpose strong plants should be selected, and, in cutting, care must be taken that the bottom piece has two eyes, one to root from, and the other to push into a shoot; place them in small pots in the material already named. The "bottom," or plant which has been cut, should be put under a bell-glass, or placed in the case, where it will soon throw up a young shoot, which is best left on till well rooted, and may then be cut off the old plant, and treated like the portion first removed, leaving behind the old part, which will throw up again, and form another plant from the bottom eye.

The *Anæctochili* are attacked by different kinds of insects. Red spider is very destructive to them, and, if allowed to increase, soon spoils the foliage, but if constantly looked after it may be kept in check. Upon the first symptoms of the appearance of this marauder, take the plants out of the case, and examine the under sides of the leaves, and rub them over with a sponge. It is not advisable, however, to do this except there is really a necessity for it. The thrips is another enemy which must be kept under in the same way, or by fumigation, taking the glasses off for a short time. Cockroaches, too, should not be allowed to get near them, or they will work great mischief by eating the young stems; they must be sought after by candle-light, or killed by placing some of Chase's beetle poison in different parts of the house. The latter is sold in boxes, and should be laid down about twice a week till the cockroaches are destroyed. In smoking be careful not to give too strong a dose. The best way is to

fumigate three times, with an interval of one night between each operation, till both thrips and spider are destroyed.

The same mode of treatment is suitable for the following genera, most of which are close allies of the present:—*Dossinia*, *Goodyera*, *Hæmaria*, *Macodes*, *Microstylis*, *Monochilus*, and *Physurus*—which see.

A. argyroneurum, *Hort. Ang.*—This extremely pretty little plant has the ground colour of the leaves light green, mottled with a darker hue, and the veins form a beautiful silvery network.—*Java*.

SYN.—*A. Lobbii*, *Hort.*, non *A. Lobbianus*, *Planchon*.

A. Boylei, *Hort. Williams.*—A very beautiful and distinct species allied to *A. regale*. The leaves are ovate-acuminate, two inches long by two inches broad, olive green, netted and pencilled over the entire surface with gold.—*India*.

A. Bullenii, *Hort. Low.*—This charming species grows six inches high, and has ovate-lanceolate leaves two and a half inches in length, the ground colour a dark bronzy green, marked through the entire length with three broad distinct lines of coppery red, varying at times to golden stripes.—*West Borneo*.

A. concinnum, *Hort. Bull.*—A distinct species having its leaves ovate acuminate, rounded at the base, of a dark olive green colour, netted and striped with shining coppery red.—*Assam*.

A. Dayi.—See DOSSINIA MARMORATA DAYI.

A. Dominii, *Hort. Veitch.*—A hybrid between *Goodyera discolor* and *Anæctochilus xanthophyllum* (*A. Friderici-Augusti*) possessing a fine vigorous constitution; the leaves are of a dark olive green, with a pale yellow coppery streak down the centre, the main ribs being marked by pale lines.—*Garden hybrid*.

A. Eldorado, *Hort.*—A distinct species, and one which is very difficult to cultivate, requiring a good deal of care to keep it in a healthy condition. It appears to be of deciduous habit, and is often lost by being thrown away when supposed to be dead, whereas, if left, it would push up again. The foliage is dark green, with a small tracery of a lighter colour.

This plant should not be allowed to get too dry at the roots when at rest ; if so, it will die.—*Central America*.

A. Friderici-Augusti, *Rehb. f.*—A splendid and also a free-growing species, very distinct from any other in cultivation. It attains a height of five inches, and has leaves two and a half inches long and an inch and a half broad, the ground colour being a dark velvety green, with broad orange and green stripes down the centre, and covered with a beautiful golden network.—*Ceylon*.

SYN.—*A. xanthophyllum*.

A. Heriotii, *Hort. Williams.*—This is a very strong-growing species, with leaves three and a half inches long and two and a half broad, of a dark mahogany colour, having reticulations of a golden hue and well defined, and with a shadow of network showing through the surface.—*India*.

A. hieroglyphicum, *Hort. Bull.*—This neat-growing and pretty species has small ovate-elliptic leaves of a dark green colour marked with silvery grey blotches, hieroglyphic-like in character.—*Assam*.

A. intermedium, *Hort. Ang.*—A fine distinct species, and one of freer growth than some others. It grows three inches high, and has leaves two and a half inches long, one and a half inch broad, with a soft silky surface, the colour being dark olive, striped and veined with gold. This will do well without a glass, if in a warm house, and shaded from the sun.—*Ceylon*.

A. javanicum, *Hort. Ang.*—A species of less interest than many others, but still worth cultivating on account of its distinctness of colour. It grows four inches in height, and has leaves about two inches long and one and a half inch broad, of a dark velvety olive green ground colour, with blotches of a lighter green and faint golden reticulation, the under surface pinkish. The flower scape is a span high, bearing a spike of small pink flowers.—*Java*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 31, fig. 3; *Belg. Hort.*, 1861, t. 18.

SYN.—*Argyrorchis javanica*.

A. latimaculatum, *Hort. Ang.*—A distinct and free-growing kind, having dark green leaves with silvery markings ; it will succeed well without the protection of a bell-glass in a warm moist atmosphere.—*Borneo*.

A. Lobbianum, *Planchon*.—See *ANÆCTOCHILUS ROXBURGHII*.

A. Lobbii, *Hort*.—See *ANÆCTOCHILUS ARGYRONEURUM*.

A. Lowii.—See *DOSSINIA MARMORATA*.

A. Nevillianum, *Hort. Low*.—A distinct and pretty species, which grows about three inches high, and has oblong-ovate leaves an inch and a half long, of a rich dark velvety copper or bronzy hue, marked with two rows of oblong pallid blotches. It is a free grower.—*Borneo*.

A. Petola.—See *MACODES PETOLA*.

A. querceticola.—See *PHYSURUS QUERCETICOLA*.

A. regale, *Blume*.—One of the handsomest species of the genus, and the one which has been longest in cultivation, having been for many years grown under the name of *A. setaceum*, which does not belong to it, the true *A. setaceum* of Blume having leaves of a velvety green, without the golden veins conspicuous in this plant, which in Ceylon is called Wana Rajah, equivalent to King of the Woods. It grows four inches high, and has roundish ovate leaves two inches long, and an inch and a half broad. The surface is of a beautiful velvety bronzy green, veined in regular lines, and covered with a network of gold. There are several varieties of this charming plant, all of which are free growers.—*Ceylon* and *Java*.

FIG.—*Bot. Mag.*, t. 4123; *Bot. Reg.*, t. 2010; *Flore des Serres*, t. 15; *Blume, Orch. Arch. Ind.*, tt. 12, 17; *Belg. Hort.*, 1861, t. 18.

SYN.—*A. setaceum*, Lindley et Hort., non Blume.

A. regale cordatum, *Hort*.—A rare and remarkably handsome variety, growing three inches high, and having leaves two inches long and an inch and a half broad; it resembles the former, but is rounder in the leaf, and the gold markings are broader.—*Java*.

SYN.—*A. setaceum cordatum*.

A. regale grandifolium, *Hort*.—A beautiful and very rare kind, growing two and a half inches high, and having leaves two inches long and an inch and a half broad. The foliage is light green, beautifully laced and banded with a network of gold.—*Java*.

SYN.—*A. setaceum grandifolium*.

A. regale inornatum, Moore.—A very distinct form of this handsome plant, the leaves of which are of the usual form, and of the same bronzy green colour, but are marked only by the longitudinal veins and are destitute of the golden reticulation. This dark rich velvety hue, with but few and slight markings, gives it a very distinct appearance.—*Java*.

FIG.—*Bot. Mag.*, t. 5208.

SYN.—*A. setaceum inornatum*.

A. Reinwardtii, Blume.—A very handsome species in the way of *A. regale*. The leaves are of a rich deep velvety bronze, beautifully and distinctly intersected with bright golden lines.—*Java*.

FIG.—Blume, *Orch. Arch. Ind.*, t. 12, fig. 2; *Belg. Hort.*, 1861, t. 18.

A. Roxburghii, Lindley.—A very beautiful and distinct free-growing species, attaining a height of three inches, and having ovate leaves two and a half inches long and an inch and a half broad, the colour towards the margin being a dark olive or bronzy green, with coppery reticulations, and a broad band down the centre of pale bright green, reticulated with golden veins. The flowers are white and rather showy for the size of the plant, growing in erect spikes six to ten inches high. The name appears to have been applied to several different plants; and those known as *A. intermedium* and *A. setaceo-pictum* are sometimes included as varieties.—*Java*, *Singapore*, and *India*.

FIG.—Wallich, *Tent. Fl. Nep.*, t. 27; *Flore des Serres*, t. 519; Blume, *Orch. Arch. Ind.*, t. 12b, fig. 2; *Belg. Hort.*, 1861, t. 18.

SYN.—*A. Lobbianum*, Planchon; *Chrysobaphus Roxburghii*.

A. Ruckeri, Hort. Low.—This is a remarkably handsome species. The leaves are broadly ovate, with a bronzy green ground colour, marked with six rows of distinct silvery grey spots running down the entire length of the leaves. It looks distinct from most others.—*Borneo*.

A. striatum.—See MONOCHILUS REGIUM.

A. Turneri, Hort. Williams.—This is one of the most beautiful of the genus, and possesses the advantage of being a strong and vigorous grower. The leaves are large, of a rich bronzy ground colour, freely marked with golden and coppery-red reticulations.—*Java*.

A. Veitchii.—See MACODES PETOLA.

A. xanthophyllum.—See ANECTOCHILUS FRIDERICI-AUGUSTI.

A. zebrinum, *Hort. Bull.*—An elegant dwarf-growing species, with ovate lanceolate leaves, of a deep olive green, striped with about three light copper-coloured lines.—*India*.

ANGULOA, *Ruiz et Pavon.*

(Tribe Vandeeæ, subtribe Cyrtopodieæ.)

These are stately plants with large pseudobulbs about eight inches high, and broad plicate leaves a foot or more long; their flower-scapes are about twelve inches high, and issue from the base of the bulbs just as they begin to grow. The flowers are large and beautiful, with thick fleshy connivent sepals, which often give them a subglobular outline, but though remarkably showy, they have no pretence to the graceful beauty which is the charm of most Orchids; theirs, on the contrary, is a solid, massive beauty, which is very effective in contrast with other types. The plants make good subjects for exhibition, especially *A. Clowesii* and *A. Ruckeri*, which are all the more valuable from the colour of their flowers, being somewhat different from that of most Orchids. The flowers have some fancied resemblance to a bull's head, whence in its native home it is called *El Torito*. There are several recognised species, natives of the Andes of Colombia and Peru.

Culture.—These plants are all best grown in pots, with rough fibrous peat, good drainage, and plenty of moisture at the roots in the growing season. The cool-house is the most suitable place for them, as they succeed best in a cool temperature. They ought to have a good season of rest, and during this time they should be kept rather dry, till they

begin to show signs of growth. They are propagated by dividing the pseudobulbs just before they begin to grow.



ANGULOA CLOWESII.

A. Clowesii, *Lindley*.—A charming distinct and free-growing species resembling in the shape of its flower a large Tulip. The sepals and petals are bright yellow, the lip pure white or yellow tipped with orange; it blooms in May, June, and July, and lasts long in perfection if kept in a cool-house. The lip of this plant is very remarkable, being beautifully balanced on a kind of hinge, so that the flower when shaken produces a rattling sound caused by the lip striking the sepals; the lip is three-lobed, the middle lobe pilose, infundibuliform-labiate, and tridentate. The flowers are fragrant.—*Colombia*.

FIG.—*Bot. Reg.*, 1844, t. 63; *Bot. Mag.*, t. 4313 (orange-lipped var.); *Warner, Sel. Orch. Pl.*, i. t. 33; *Pescatorea*, t. 17; *Moore, Ill. Orch. Pl.*, *Anguloa*, t. 2.

A. Clowesii macrantha, *Hort*.—A fine variety with larger flowers, growing about the same height as the preceding. The flowers, which are bright yellow spotted with red, are produced in July, and, if kept dry, continue three or four weeks in perfection. A scarce plant.—*Colombia*.

A. dubia, *Rchb. f.*—A very distinct novelty, with flowers resembling those of *A. uniflora* in shape, but being of the colour of those of *A. Clowesii*—yellow, the sepals and petals

covered inside with small purple spots; the lip is white, with purple blotches inside at the base. The flowers are produced in May and June. Professor Reichenbach says this plant may be a hybrid between *A. uniflora* and *A. Clowesii*; it resembles the latter in growth, and was introduced by us along with it.—*Colombia*.

A. eburnea, *Williams*.—A magnificent species, which will make a valuable addition to our cool-house Orchids. It has large dark-coloured bulbs, with bright green leaves, a foot and a half high, producing flowers as large as those of *A. Clowesii*, but of the purest white, except the lip, which is spotted with pink. This is a very rare plant.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 133.

A. media, *Rehb. f.*—An interesting addition to the genus, being a hybrid supposed to have been obtained by the crossing of *A. Clowesii* and *A. Ruckeri*. The sepals and petals are orange yellow outside, brownish purple within, the lateral sepals having a central line of orange, and much orange at the base. The lip has the side lobes reddish brown, with the disk ochre-coloured, and the anterior lobe short as in *A. Clowesii*. Raised by J. C. Bowring, Esq., Windsor Forest.—*Garden hybrid*

A. Ruckeri, *Lindley*.—A handsome Orchid of bold habit, with large plicate leaves and rich dark flowers, of which the sepals and petals have crimson spots on a yellow ground, and the lip is deep crimson. It flowers in June and July, and lasts two or three weeks in good condition.—*Colombia*.

FIG.—*Bot. Reg.*, 1846, t. 41; *Moore, Ill. Orch. Pl.*, Anguloa, t. 3; *Warner, Sel. Orch. Pl.*, ii. t. 10.

A. Ruckeri retusa, *Rehb. f.*—A remarkable variety, with the flowers lemon-yellow outside, covered with dark purple blotches within; the lip has its side lobes abrupt and rectangular, and its middle lobe small, reflexed, and hairy.—*Colombia*.

A. Ruckeri sanguinea, *Lindley*.—This very fine variety is precisely like the type in regard to its habit, but the flowers are of a deep rich blood colour; it is very rare in cultivation.—*Colombia*.

FIG.—*Bot. Mag.*, t. 5384; *Bateman, 2nd Cent. Orch. Pl.*, t. 144; *Orchid Album*, i. t. 19; ? *Gartenflora*, t. 106; *Belg. Hort.*, iii. t. 31; *Ill. Hort.*, 3 ser., t. 427.

SYN.—*A. purpurea*; *A. Hohenlohii*; ? *A. Ruckeri Wagneri*.

A. superba.—See *PERISTERIA HUMBOLDTII*.

A. Turneri, *Williams*.—This is a most beautiful and distinct species. The flowers are of a pretty pink, and are densely spotted on the interior both of the sepals and petals with bright rose colour. It flowers in May and June.—*Colombia*.

A. uniflora, *Ruiz et Pavon*.—A well-marked and pleasing species, which blossoms very freely. The flowers are smaller than those of *A. eburnea*, and are white, produced in June and July, lasting two or three weeks in a perfect condition. In this species the lip is smooth.—*Peru, Colombia*.

FIG.—*Bot. Reg.*, 1844, t. 60; *Bot. Mag.*, t. 4807; *Fl. Peruv. Prod.*, 118, t. 26; *Bateman, 2nd Cent. Orch. Pl.*, t. 159; *Moore, Ill. Orch. Pl., Anguloa*, t. 1; *Gartenflora*, t. 1137.

A. virginalis, *Linden*.—A rare and pretty species, which grows about a foot high, and has dark green bulbs; the blossoms, which are white, are spotted all over with dark brown; they are produced in June and July, and last three weeks in bloom.—*Colombia*.

ANSELLIA, *Lindley*.

(Tribe *Vandee*, subtribe *Cymbidiæ*.)

Noble free-flowering epiphytal Orchids, growing about three feet high, and blooming in winter, when they produce large panicles of flowers which, if kept in a cool-house, last long in perfection. The flowers are characterised by subequal spreading sepals and petals, by the short column being wingless and produced at the base into a short broad two-lobed foot, and by the distichous-leaved stems terminating in a panicle of flowers. Some three or four species or well-marked varieties are known in Tropical Africa, extending to Natal.

Culture.—The best compost in which to grow these plants is rough fibrous peat, with a good addition of leaf-mould and sand, and good drainage. They require good-sized pots, as they root very freely, and are of easy culture, provided they get the heat of the East Indian house while growing, and a

good supply of water at the roots. Care is, however, necessary in watering, for the young growths are apt to rot if water lies in the heart. All of them are propagated by dividing their stems after they have finished their growth, or just after they have done blooming.

A. africana, Lindley.—A free-flowering and noble ever-green Orchid, producing upright stems from three to four feet high, with light green five-ribbed foliage. The flowers are produced in January on drooping branching spikes from the apex of the stems, and have the yellow sepals and petals spotted all over with dark brown; lip yellow. We have seen upwards of a hundred flowers on one spike, and they keep in beauty for two months. This species was first found in Fernando Po, on the stem of a palm-tree, by the late Mr. John Ansell, to whom the genus is dedicated.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1846, t. 30; *Bot. Mag.*, t. 4965; *Gartenflora*, t. 95; *Paxton, Mag. Bot.*, xiii. 241, with tab.

A. africana gigantea, *Rchb. f.*—A very fine variety, producing upright spikes from the top of the bulbs; it flowers about the same time, and is of the same colour as the type only larger, lasting a long time in perfection; very rare.—*Natal*.

A. africana lutea, *Rchb. f.*—A very distinct variety, resembling the others in appearance, but not so strong in growth, and producing clusters of smaller light yellow flowers from the top of the bulbs.—*Natal*.

FIG.—*Bot. Mag.*, t. 4965, fig. 3.

SYN.—*A. natalensis*; *A. gigantea* (Hooker).

ARACHNANTHE, Blume.

(Tribe Vandeeæ, subtribe Sarcantheeæ.)

Epiphytal plants, with leafy stems, loose racemes of showy flowers, of which the sepals and petals are spreading, and an articulated lip, bearing a minute conical spur. The few species are found in the Malayan Archipelago.

Bentham and Hooker include *Vanda Cathcartii* in this genus.

Culture.—This small genus of very curious and highly interesting plants requires the same treatment as *Aërides* and *Angræcum*.

A. moschifera, *Blume*.—A very peculiar and rare plant, somewhat like a *Renanthera* in habit. The flowers are large, creamy white, or lemon colour, with purple spots, and very much resemble a spider, from whence comes the generic name; they are very delicately scented with musk, and continue in perfection a long time. The old spike should not be cut, as it continues to produce flowers from its point for a long time.
—*Java*.

FIG.—*Blume, Rumphia*, iv. tt. 196, 199; *Blume, Bijdr.*, 365, t. 26.

SYN.—*Renanthera Arachnites*; *R. Flos aëris*; *Arachnis moschifera*; *Epidendrum Flos aëris*.

ARPOPHYLLUM, *Llave et Lexarza*.

(Tribe Vandææ, subtribe Pleurothallidææ.)

This genus of terrestrial Orchids has erect stout one-leaved stems, the leaf-sheath embracing the stem. The scapes or peduncles are terminal, and bear an erect spike of numerous small prettily-coloured flowers, the parts of which are concave and shell-like, with a broad column and eight pollen masses. There are some half-dozen species found in Mexico and Central America, and of these only three, with which we are acquainted, are worth growing. All three are of stately and handsome habit, with bold evergreen foliage, and beautiful upright spikes of flowers, charmingly arranged, looking not unlike rows of small highly-coloured shells clustering round the spike, which is a foot or more in length. *A. giganteum* makes a fine exhibition plant, and the colour is distinct from that of most Orchids.

Culture.—The species all require the heat of the Mexican house. They are best grown in pots, in peat with good drainage, as they require a liberal supply of water at the roots when growing, and to be placed as near the light as possible,

care being taken not to give too much shade, as the more light they get the better they will bloom. They are propagated by division.

A. cardinale, *Linden et Richb. f.*—A very distinct species, with ensiform leaves two feet long, of a dark green, and glossy above. The flowers are produced in cylindrical racemes a foot long, and consist of light rose-coloured sepals and petals, and a deep rose red lip. It blooms during the summer months, and lasts three or four weeks in perfection.—*New Grenada*.

FIG.—*Pescatorea*, t. 45.

A. giganteum, *Lindley*.—A noble species, and certainly the finest of the genus, having dark evergreen ensiform drooping leaves, and a graceful habit. The flower spikes, which are produced from the top of the bulbs, grow from eight inches to a foot high; the blossoms are beautiful dark purple and rose; they are produced during April and May, and last three weeks in perfection. If required for exhibition, this should be kept at the coolest end of the house, for it will generally come in too early if not kept back.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 39.

A. spicatum, *Llave et Lex.*—A pretty evergreen Orchid, with arcuate keeled leaves, and an erect spike of dark red flowers, which continue in beauty three or four weeks during the winter months.—*Mexico*.

FIG.—*Bot. Mag.*, t. 6022.

ARUNDINA, *Blume*.

(Tribe Epidendreæ, subtribe Cœlogyneæ.)

A genus of terrestrial Orchids, of considerable beauty. They have erect reed-like leafy stems invested by the leaf-sheaths, and terminal loose racemes of large showy flowers, in which the sepals are spreading and the lip sessile, spurless, concave at the base surrounding the column. The few species are found in India and the Malay Archipelago.

Culture.—This is a free-growing and free-rooting Orchid, but having only thin reed-like stems, and no fleshy pseudo-

bulbs to draw upon for support, it requires to be potted in richer soil than many others. That best suited to it is good rough fibrous peat and loam mixed together. The plants should be grown in the cool end of the East Indian house, and must have a good supply of water during the growing season, the soil being also kept moderately moist when they are at rest. They need plenty of light, but require shading during strong sunshine. They are propagated by dividing the crowns, and also by taking off and potting the young plants produced on the stems.

A. bambusæfolia, *Lindley*.—A fine evergreen terrestrial Orchid, with reed-like stems, three to five feet high, producing its flowers from the top of the stem about July, and continuing to bloom for some time during summer and autumn. The leaves are ensiform, pale green; and the flowers, which grow several together on a terminal spike, are large, with pale magenta rose sepals and petals and a rich rose lip striped with orange lines on each side the white throat.—*India: Nepal, Burmah, &c.*

FIG.—*Griffith, Not. Pl. Asiat.*, iii. t. 314; *Wight, Icon. Pl. Ind. Or.*, v. t. 1661; *Orchid Album*, iii. t. 139.

SYN.—*Cymbidium bambusifolium*; *Bletia graminifolia*.

A. densa, *Lindley*.—An attractive species, with stems three feet high, clothed with lanceolate subequal stem-sheathing leaves, and bearing a close terminal head of handsome rosy-violet flowers, with a crimson-bordered lip; these flowers are as large as those of *A. bambusæfolia* and sweet-scented.—*Singapore.*

FIG.—*Bot. Reg.*, 1842, t. 38.

ASPASIA, *Lindley*.

(Tribe Vandææ, subtribe Oncidiææ.)

This is a small genus of epiphytes containing plants of dwarf habit. The pseudobulbs are broad and oval, and, like the leaves, dark green. The flowers are in racemes on axillary peduncles; the sepals are spreading, and at the back,

with the petals, adnate to the base of the column, but not spurred. The few species are Tropical American. Reichenbach includes the genus in *Odontoglossum*.

Culture.—These plants require the same treatment as the *Miltonias*.

A. lunata superba, *Hort*.—This beautiful variety of an old acquaintance in our gardens bloomed some years ago with us, and proved to be very fine. The sepals and petals are long, white at the ends, and spotted with chocolate; the lip is rather large, subquadrate, white, with the centre deep violet. A compact-growing plant, well deserving a place in any collection.—*Brazil*.

FIG.—(*A. lunata*) *Xenia Orch.*, i. t. 34; *Pact. Fl. Gard.*, i. 108, fig. 74.
 SYN.—(*A. lunata*) *Aspasia odorata*; *Odontoglossum lunatum*.

BARKERIA, *Knowles and Westcott*.

(Tribe Epidendreae, subtribe Lælieae.)

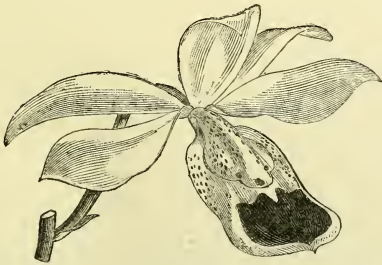
These plants are now often included in the genus *Epidendrum*, but for the purposes of the cultivator it is more convenient to keep them separate. They have stems somewhat thickened and fleshy, or narrow fusiform pseudobulbs, leafy above; the column is connate with the base of the lip, sometimes very shortly so, and more rarely for half its length. They are deciduous, losing their leaves during their season of rest, and though small growing, are free in producing flowers, which are both rich and delicate in colour. The few species are from Central America.

Culture.—The *Barkerias* merit a place in every collection. They are compact-growing, with upright slender bulbs, from the top of which the flower stems are produced. These plants succeed best on flat blocks of wood, so that the plants can be tied on the top without any moss; they send out their thick fleshy roots very freely, and will soon cling to the blocks. They require to be grown in a cool-house, where they can

receive air every day during their season of growth. The Mexican house will be the most suitable place for them, and during their season of growth a good supply of water—twice a day in summer will not be too much for them, but during their season of rest very little water will suffice—only enough to keep their stems or bulbs from shrivelling, about two or three times a week. They should be suspended from the roof, near the glass, where they can receive plenty of light and a good supply of sun.

B. cyclotella, *Richb. f.*—A very beautiful plant, with short leafy stems as thick as a quill, distichous ligulate-oblong acute leaves, and a terminal raceme of very showy flowers, which have deep magenta sepals and petals, and a broad emarginate lip of the same rich magenta round the margin, the central portion being white. It is a deciduous species, and blooms in February and March, the plant continuing for six weeks in bloom.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 148.



BARKERIA ELEGANS.

B. elegans, *Knowles and Westc.*—A splendid species, of which the leaves are lanceolate, and the erect racemes of flowers, few in number, are produced during the winter season. The sepals and petals are dark rose, the lip is whitish, broadly obovate, having on the disk an oblong callus ending in three elevated lines, this being covered by the large

spathulate yellowish purple dotted column, beyond which in front is a large blotch of deep reddish crimson. It is one of the best of the genus, and rare, having flowers nearly as large as those of *B. spectabilis*. There are two or three varieties in cultivation.—*Mexico*.

FIG.—*K. & W. Floral Cab.*, t. 49; *Bot. Mag.*, t. 4784; *Fl. des Serres*, t. 959; *Illust. Hort.*, t. 23; *Pescatorea*, t. 10; *Floral Mag.*, 2 ser., t. 394.

B. Lindleyana, *Bateman*.—A very distinct and handsome species, with slender stems a foot high, having elliptic oblong acute leaves, and long erect racemes of rather large flowers, which are of a rosy purple colour, the lip, which is oblong-quadrate and apiculate, being rich purple at the tip, with a blotch of white in its centre; it blooms in September and October, and lasts long in good condition.—*Costa Rica and Mexico*.

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 28; *Bot. Mag.*, t. 6098; *Paxton, Mag. Bot.*, xiii. 193, with tab.; *Jennings, Orch.*, t. 14.

B. Lindleyana Centeræ, *Endr. et Rich. f.*—A beautiful variety with longer pseudobulbs, and larger purple-lilac flowers, intensely purple at the tip, the disk yellowish white spotted with purple, the column lilac beautifully blotched with deep purple.—*Costa Rica*.

B. melanocaulon, *Rich. et Gal.*—A pretty and free-flowering Orchid. It has erect terete dark purple stems, and elliptic acute leaves; the flowers are produced on an upright spike, and have the sepals and petals rosy lilac, the lip reddish purple with a blotch of green in the centre. It produces its blossoms from June to September, and will continue in perfection a long time. A very rare and desirable species.—*Costa Rica*.

FIG.—*Rich. et Gal., Ann. Sc. Nat.*, t. 19; *Ann. de Gand*, 1848, t. 212.

B. Skinneri, *Bateman*.—A beautiful free-flowering Orchid, with erect stems a foot high, clothed with distichous lanceolate rather fleshy leaves, and bearing erect cylindrical racemes, six to nine inches long, of large deep rose-coloured blossoms. The flower spikes are sometimes two feet long, each bearing as many as from twenty to thirty flowers. It will continue in blossom from November to February, and is a valuable Orchid for winter blooming.—*Mexico and Guatemala*.

FIG.—*Bot. Mag.*, tt. 3951, 4094; *Bot. Reg.*, t. 1881; *Paxton, Mag. Bot.*, xv. 1, with tab.

B. Skinneri superba, *Hort.*—This far surpasses the type in the size of the flowers and of the raceme, as well as in the brilliancy of its colour; moreover, it frequently produces a branched inflorescence, no doubt from its stronger growth and constitution. The stems grow about a foot high, the flower spike proceeding from the top when the growth is nearly completed, and attaining the height of from twelve to eighteen inches, bearing a large number of flowers of a dark rosy colour, somewhat deeper-tinted in the lip, which is marked towards the base with yellow streaks.—*Guatemala*.

FIG.—*Floral Mag.*, t. 185; *Warner, Sel. Orch. Pl.*, i. t. 38.

B. spectabilis, *Bateman*.—A charming species, having cylindrical stems four or five inches high, each bearing two fleshy lanceolate acute leaves. The flowers proceed from the top of the stem in a raceme consisting of eight or ten spreading blossoms, which are nearly three and a half inches wide; the lip is white at the base and in the centre, rosy lilac at the point and margin, and richly marked with small blood red dots. It blooms in June and July, and lasts three or four weeks in perfection if kept in a cool-house. This makes a splendid plant for exhibition. We have seen specimens at the Chiswick and Regent's Park shows with as many as twenty spikes on one plant. A very distinct and desirable Orchid.—*Mexico and Guatemala*.

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 33; *Bot. Mag.*, t. 4094; *Paxton, Mag. Bot.*, x. 169, with tab.

BATEMANNIA, *Lindley*.

(Tribe Vandeeæ, subtribe Cyrtopodieæ.)

This is a small genus of dwarf, compact-growing plants, generally of free-flowering habit. They have short stems which scarcely become thickened into pseudobulbs, ample plicately-venose leaves, and large flowers on recurved peduncles. The dorsal sepal is free, erect, and concave, and the lateral ones adnate to the produced foot of the column, with which the lip is articulated. The species are mostly showy plants, and well worth growing, as they are easily accommodated.

Culture.—The *Batemannias* will do either in pots, or on blocks with moss. If grown in pots, peat and moss form the

best material for potting. They should be placed in the *Cattleya* house, with a good supply of water in the growing season, and be shaded from the sun.

B. Beaumontii, *Rchb. f.*—A pretty dwarf-growing plant, with pyriform tetragonal pseudobulbs, plicated cuneate-oblong light green leaves, and erect one or two-flowered peduncles; the flowers are two inches in diameter, light green marked throughout with longitudinal stripes of pale olive brown, the lip white with light lilac-purple dots and streaks, trifid, the semioblong toothed side lobes incurved, and bearing on the disk between them about seven long parallel acute crests.—*Brazil: Bahia.*

FIG.—*Xenia Orch.*, iii. t. 215.

SYN.—*Stenia Beaumontii*; *Galeottia Beaumontii*.

B. Burtii, *Endr. et Rchb. f.*—This remarkable and beautiful plant, which is almost stemless, has leaves which measure a foot in length, and from two to two and a half inches in breadth, and are of a dark green colour. The peduncles are solitary, radical, erect, one-flowered, and the flowers are three inches across, yellow in the centre, the sepals and petals triangular oblong, reddish brown with brownish yellow chequered spots, the two petals having in addition a large dark brown radiating blotch at the base; the basal part of the stalked trowel-shaped lip is white, the apex dark brown; the claw bearing a transverse semilunar two-lobed white auricle, cut into incurved setiform dark purple teeth. It has the peculiarity of throwing the roots out from between the bottom leaves. This species was first flowered in the collection of the late W. B. Hume, Esq., of Winterton, Yarmouth.—*Costa Rica.*

FIG.—*Bot. Mag.*, t. 6003; *Floral Mag.*, 2 ser., t. 101; *Warner, Sel. Orch. Pl.*, ii. t. 35.

B. grandiflora, *Rchb. f.*—This extremely curious and very pretty Orchid was introduced some quarter of a century ago, but is not often to be met with. It has ovate pseudobulbs some three or four inches long, bearing two large broadly lanceolate leathery leaves. The peduncle comes up with the young growth, bearing a raceme of three or four flowers of curious structure; the sepals, of which the lateral ones are much the smaller, and the spreading petals, are olive green striped with reddish brown; the lip is white, with reddish



BATEMANIUS



MELEAGRIS.

purple streaks, and toothed margin and veins; the basal part orange-yellow with red streaks, developed into a semicircular frill or ruff with sharp-pointed teeth in the middle, and having two acute toothed white side lobes.—*New Grenada*: 4,000 ft. elevation, therefore not a cool Orchid.

FIG.—*Bot. Mag.*, t. 5567; *Bateman, 2nd Cent. Orch. Pl.*, t. 172.

SYN.—*Galeottia grandiflora*.

B. Meleagris, *Rchb. f.*—A beautiful and interesting species, having a short erect stem, with the broadly-lanceolate leaves a foot long arranged in two close opposite rows; the peduncle is axillary, bearing one flower three to four inches in diameter, of which the sepals and petals are ovate acuminate, broad at the base, tessellated, pale yellow on the basal half and purplish brown upwards; the two lateral sepals folded inwards on the inner margin at the base. The lip is about half the size of the petals, similar in form, but with a distinct claw, white tipped with purplish brown, and having at the base of the claw a crescent-shaped plate, fringed with long stiff yellowish hairs. It is a scarce Orchid, blooming in June and July, and lasts a long time in beauty.—*Brazil*.

FIG.—*Bot. Reg.*, 1839, t. 14; *Maund, Bot.*, iii, t. 146; *Xenia Orch.*, i, t. 66, figs. 1, 2.

SYN.—*Huntleya Meleagris*.

B. Wallisii, *Rchb. f.*—This showy plant was at first considered to be only a variety of *B. Burtii*, but has since been established as a distinct species. It has a running rhizome, which sometimes grows up 40 ft. high. The flowers are light greenish yellow outside, greenish brown inside, yellow at the base of the sepals, but having scarlet stripes at the base of the petals; lip greenish with a brownish tint at the apex, the bristles of the callus also being greenish. The lateral sepals are nearly four inches long, and broad in proportion. It flowers during the summer months.—*Costa Rica*.

B. Wallisii major, *Rchb. f.*—This magnificent variety is a perfect giant, the flowers measuring as much as five and a half inches in diameter. It was first flowered by Sir Trevor Lawrence, Bart., M.P., in September, 1883, and is wonderfully distinct and handsome in appearance. The rhizomes are creeping, and the leaves distichous. The sepals and petals are ovate-lanceolate acuminate, white at the base, and of a rich chestnut brown in the upper part, having a distinctly tessellated appearance, caused through the veins being very prominent

and of a darker colour than the ground; the petals have some radiating stripes of deep purple at their lower extremities; the lip is lance-shaped, dark chestnut brown, reticulated, with a margin of blackish-purple. M. Roezl states that "it grows in a temperature of 75°—85° F. all the year round, in deep shade, in an atmosphere saturated with moisture, and where rain falls so constantly that the plant is almost always wet." It, as well as the type, ought to be in every collection.—*Costa Rica*.

BLETIA, *Ruiz et Pavon*.

(Tribe Epidendreae, subtribe Bletieae.)

The species belonging to this genus are terrestrial, a few only being worth growing. The flowers of these are produced very freely when they are thoroughly established, and are valuable for cutting and bouquet work, on account of their pleasing colour, and the long time they last in water. The pseudobulbs are round or flattened, often tuberiform, and from these proceed the long narrow deciduous leaves. The sepals are free, and the lip spurless, its lateral lobes erect, parallel or spreading at the apex; the column is longish and footless. About a score of species are known inhabiting Tropical America, China, and Japan.

Culture.—All the species are of easy culture, and may be grown in the Mexican house or cool frame where there is a little heat. The best material for growing these plants in is a mixture of loam and leaf mould, with about two inches of drainage in the bottom of the pot, covered with a layer of moss or rough peat; the pots should be filled with the mould to within an inch of the top, the bulbs placed on the top of the mould, and just covered over. They require a good supply of water in the growing season, but not much heat. After their growth is finished, give them a good season of rest; and keep them rather dry till they begin to grow.

These plants require to be well grown to make them flower

freely. The colour of the flowers is distinct from that of most of our Orchids, and produces a good effect in a house; and although they are not thought much of by many Orchid-growers, they are well worth the care that is bestowed upon them on account of their pleasing colours.

B. campanulata, *Llave*.—The blossoms of this species are of a deep purple, with a white centre, and they grow in a few-flowered raceme. It flowers at different times of the year, and lasts long in perfection.—*Mexico; Peru*.

B. hyacinthina, *R. Brown*.—A handsome tuberous plant, with long lanceolate plicate leaves, and slender scapes a foot high bearing flowers of a beautiful rose-purple; the lip is white, streaked with red in the centre, and spotted and broadly edged with deep crimson. It proves to be hardy under congenial treatment.—*China; Japan*.

FIG.—*Sm. Exot. Bot.*, i. t. 60; *Bot. Mag.*, t. 1492; *Loddiges, Bot. Cab.*, t. 1968; *Garden*, 1879, t. 205; *Blume, Orch. Arch. Ind.*, t. 6, fig. 1; *Thunb. Icon. Fl. Jap.*, t. 9.

SYN.—*Cymbidium hyacinthinum; Bletia japonica*.

B. hyacinthina albo-striata, *Siebold*.—This is exactly similar in habit to *B. hyacinthina*, but with all the nerves white, producing a very pretty striped variegation, and as it succeeds well in a cool-house it will be a valuable acquisition.—*Japan*.

B. patula, *Graham*.—A fine species, with roundish bulbs or tubers, lanceolate plicate leaves a foot and a half long, and long erect scapes three feet high, bearing many (20) flowers in a terminal raceme. The flowers are large, spreading, upwards of two inches across, and of a reddish lilac or rose colour, with the six lamellæ on the disk white. It blooms in March or April. This plant should be placed in the *Cattleya* house during the growing season, but must be removed to a cooler place to rest.—*West Indies*.

FIG.—*Bot. Mag.*, t. 3518; *Paxt. Fl. Gard.*, ii. 69, fig. 169.

B. Shepherdii, *Hooker*.—A robust-growing species, with broadly lanceolate dark green leaves a foot and a half long, and branching flower scapes two to three feet high. The flowers are of a deep reddish purple, marked down the centre of the lip with from five to seven creamy yellow lamellæ. It blooms during the winter months, and remains in perfection three or four weeks.—*Jamaica*.

FIG.—*Bot. Mag.*, t. 3319; *Paxton, Mag. Bot.*, ii. 146, with tab.

B. Sherrattiana, *Bateman*.—A charming species, resembling *B. patula* in habit. It has flattened corm-like pseudobulbs, plicate lanceolate acuminate leaves, and erect scapes three feet high, bearing a raceme of large showy flowers of a bright rose-colour; the lip, which is three-lobed, with the lateral lobes rounded and flat, and the middle one smaller and reniform, is of a deeper rosy purple with three orange-coloured lamellæ down the white centre. It is a most desirable acquisition to the terrestrial section of Orchids. When growing, it should be kept in the cool-house.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5646.

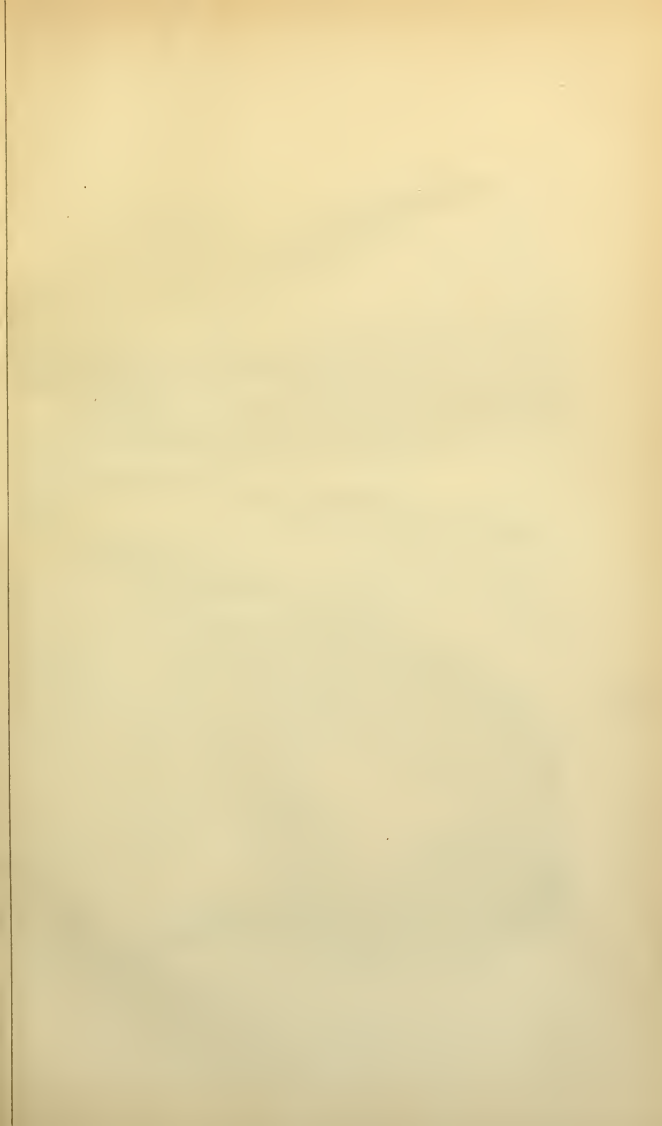
BOLLEA, *Reichenbach fil.*

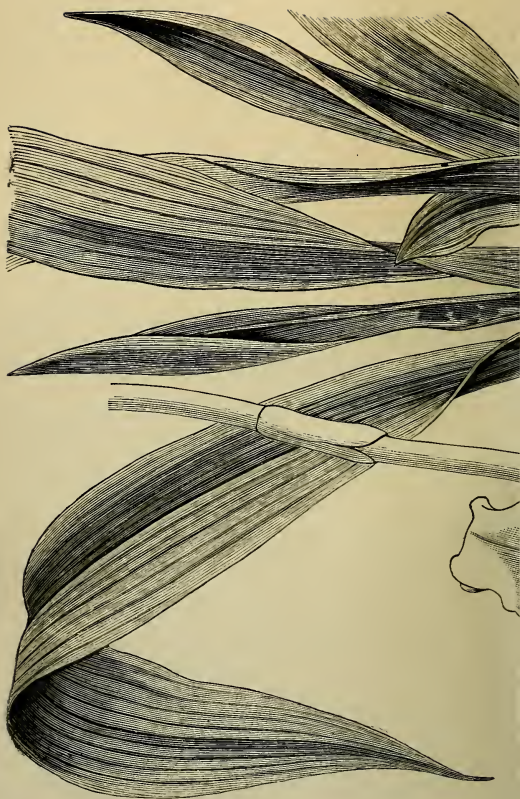
(Tribe Vandææ, subtribe Cyrtopodiææ.)

In their manner of growth the species of *Bollea* are much like those of *Pescatoria*, but the flowers are quite different. Both Reichenbach and Bentham and Hooker regard the group as a section of *Zygopetalum*. Their chief peculiarities consist in their one-flowered scapes, their broad sepals and petals, their ample rounded shortly clawed lip, which has a prominent crest on the disk, and their short thick column, which has the anther-bed entire and subcucullate. The species are not numerous, and all inhabit Tropical America.

Culture.—These plants succeed well in the warm-house in a mixture of peat and moss, and they require a good supply of water during the time of growth. Many persons cultivate them in pots, but we have found them do well on blocks, especially those formed of fern stems, but treated in this way they require an abundant supply of water when growing.

B. cœlestis, *Rehb. f.*—In growth this species resembles *B. Lalindei*, but the colouring of the flower is altogether brighter and more distinct. The leaves are close-set, distichous, and cuneate-oblong; the scapes fifteen to eighteen inches high; the flowers large, three to four inches across, the oblong acute sepals and the shorter petals light blue at the base, deeper mauve in the middle, the marginal tips white; the lip is deep violet in front, the prominent basal







BOLLEA PATINII.



callus yellowish white, consisting of fifteen nearly contiguous lamellæ. The boat-shaped column is of a fine deep violet blue, except the base, which is yellow. This will form a fine distinct exhibition plant. It flowers in June and July, and will last a long time in perfection.—*Colombia*.

FIG.—*Belg. Hort.*, 1879, t. 9; *Bot. Mag.*, t. 6458.

B. Lalindei, *Rchb. f.*—A very distinct plant of recent introduction. The leaves are elliptic lanceolate, narrowing to the base, five-nerved, a foot long, distichous; the scapes are solitary; the flowers are about three inches across, the sepals and petals in plants flowered by us lilac at the base, pale rose in the upper part, with the tips straw-colour, and the lip golden yellow, with about thirteen close-set lamellæ; but in those described by Professor Reichenbach they were of a bright violet, the upper sepal tipped with green, the lower halves of the lateral sepals brownish purple, the lip deep orange, and the column deep purplish. The column is very peculiar, being broader than the lamellate disk, arched and rose-coloured.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 6331.

B. Lawrenceana, *Rchb. f.*—A beautiful and delicately-coloured species, resembling *B. calestis* in growth. The plant is dwarf, almost stemless, with distichous broadly ligulate acuminate leaves more or less keeled; and axillary scapes, each supporting a solitary flower, which measures three and a half to four inches across, white distinctly blotched with violet or mauve at the tips of both the sepals and the petals, the white being continued outside the blotch so as to form a narrow margin. The lip is much shorter than the other parts, squarish with the sides revolute, the apex of an intense rich velvety purple, the basal callus large, bright yellow, white on each side. The broad hooded white column is also a conspicuous object in the centre of the flower.—*Colombia*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 13; *Xenia Orch.*, iii. t. 221.

B. Patinii, *Rchb. f.*—A fine and distinct plant, having some resemblance to *B. Lalindei*, but with larger flowers less brightly coloured. The leaves, which are distichous, are nervose, broadly oblong-ligulate, narrow at the base, and acute at the apex. The scapes spring from the leaf-axils, and are decurved, each bearing a solitary flower upwards of three inches across; the dorsal sepal and the obtuse petals, all

of which are oblong and undulated, are of a rosy-pink, while the two lower sepals are pink along the upper half, and deep rose along the lower side; the short lip is yellow, as is the frill of about thirteen lamellæ on the disk, and has the large convex pink column arching over it.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 147; *Gard. Chron.*, n.s., iii. 8, fig. 1.

BRASSAVOLA, *Robert Brown*.

(Tribe Epidendrææ, subtribe Læliææ.)

Epiphytal plants, with somewhat thickened stems, bearing one or two fleshy subterete or thickly linear leaves, and terminal showy flowers, of which the sepals are long and spreading, the lip sessile, its basal lobes folded over the column, and its front lobe abruptly expanded. There are about a dozen species, natives of Brazil, the West Indies, and Mexico, but only a few that are sufficiently showy to be worth growing by the majority of amateurs.

Culture.—These plants are of easy culture, and grow best in a little moss on blocks of wood suspended from the roof; a liberal quantity of water is necessary during the growing season, but afterwards much less will suffice. They are best grown in the warmest house, and are propagated by dividing the plants.

B. acaulis, *Lindley*.—A very interesting species, with rush-like foliage, and a compact stemless habit of growth, strikingly different from all others except *B. glauca*. The flowers are large, with the sepals and petals long, narrow, and greenish or creamy white, the lip being large, heart-shaped and pure white, with the base of the tube spotted with dull rose. They are produced in September, and remain a long time in beauty.—*Central America*.

FIG.—*Past. Fl. Gard.*, ii. 152, fig. 216.

SYN.—*Bletia acaulis*.

B. Digbyana, *Lindley*.—A fine compact evergreen species, about six inches high, with stem-like compressed pseudo-bulbs, bearing a solitary elliptic glaucous fleshy leaf, and from its base a peduncle supporting one very large flower

five inches wide and six inches deep; the sepals and petals are oblong spreading, pale green with a purplish tinge, and the cucullate cordate lip is creamy white, tinged with purple at the tip, the margin deeply and beautifully fringed. It produces its solitary flowers, which are deliciously fragrant, during the winter months from the top of the bulb, and continues for about two or three weeks in bloom.—*Honduras*.

FIG.—*Bot. Mag.*, t. 4474; *Bot. Reg.*, 1846, t. 53; *Flore des Serres*, t. 237.
 SYN.—*Bletia Digbyana*.

B. Gibbsiana, *Williams*.—This is a beautiful and distinct species, well worthy of general cultivation. It is an erect plant, belonging to the terete-leaved section, though in the present species the leaves are somewhat broad and very thick. It is a most profuse bloomer, producing three flowers upon each spike, which are large and white, spotted with chocolate. The temperature of the Cattleya house suits it best, and it should be potted in peat and sphagnum moss.—*Native Country not known*.

B. glauca, *Lindley*.—A desirable compact evergreen Orchid, with a slowly creeping rhizome, from which proceed coriaceous oblong retuse glaucous leaves, having a short pseudobulb-like petiole; a solitary large flower is developed from the leaf axil, and of this the spreading sepals and petals are pale green, and the expanded cordate lip pure white with some pink streaks in the throat. It blooms in February or March, and lasts two or three weeks in perfection. This is found rather difficult to flower in some collections, but it blooms every year if the plant is strong, producing one large flower from a sheath at the top of the pseudobulb.—*Mexico and Guatemala*.

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 16; *Bot. Mag.*, t. 4033; *Bot. Reg.*, 1840, t. 44.

SYN.—*Bletia glauca*.

B. lineata, *Hooker*.—The present plant, which is allied to *B. acaulis*, is too much neglected by Orchid growers. It has very short cylindrical stems, long, very deep green semiterete tapered leaves, channelled above, and large and very fragrant flowers, with the sepals and petals creamy white, and the large cordate lip pure white. It is a pendulous plant, and requires to be grown on a block, in the Cattleya house.—*Guatemala; Central America*.

FIG.—*Bot. Mag.*, t. 4734.

SYN.—*Bletia lineata*; *Brassavola Matheana*.

B. venosa, Lindley.—A pretty free-flowering small and compact species. It has fleshy lanceolate semicylindrical leaves and three-flowered scapes of white flowers having greenish sepals; these are produced at different times of the year. It grows best on a block suspended from the roof of the house.—*Central America*.

FIG.—*Bot. Mag.*, t. 4021; *Bot. Reg.*, 1840, t. 39.

SYN.—*Bletia venosa*.

BRASSIA, Robert Brown.

(Tribe Vandaeæ, subtribe Oncidieæ.)

This genus is nearly allied to *Oncidium*, differing in the narrow very much elongated sepals and petals; in the shorter undivided lip, which is sessile at the base of the column, plane, bilamellate at the base; and in the short wingless column. The flowers are in loose simple racemes. In some of the species they are dull-coloured, so that the genus is not in great repute with Orchid-growers; but, nevertheless, there are a few kinds that are showy, free-flowering, and last a long time in bloom, and which ought to be in every collection. All have dark green pseudobulbs, and evergreen foliage a foot or more in length. The species inhabit Tropical America, Brazil, the West Indies, New Grenada, and Mexico, and are about a score in number.

Culture.—The *Brassias* are evergreen plants of easy culture, and will do either in the East Indian or Cattleya house. The flowers are produced from the side of the pseudobulbs on long drooping spikes. They are best grown in pots, with rough fibrous peat and good drainage, for they require a liberal supply of water at the roots in the growing season, though later on just enough water to keep their bulbs plump will suffice. They should never be allowed to shrivel. They are propagated by dividing the plants when they begin to grow.

B. antherotes, *Rchb. f.*—A very ornamental species, growing about eighteen inches high, with oblong monophyllous pseudobulbs, and radical scapes bearing racemes of numerous large

firm-textured flowers, the long narrow sepals and petals deep yellow with purple-brown blotches at the base, and the lip brighter yellow spotted over the disk and central portion, half as long as the sepals, and marked on the disk with an oblong-ligulate orange-coloured crest. It flowers in May and June, and lasts about three weeks in blossom.—? *New Grenada*.

FIG.—*Orchid Album*, iv. t. 159.

B. Gireoudiana, *Rchb. f. et Warsc.*—A very handsome species of a genus that is rather neglected by Orchid-growers, and a plant of easy culture and good robust habit. Its pseudobulbs, are stout oblong two-edged; the leaves are oblong acute with a cuneate base, of a light green colour, and the scapes are two feet high, bearing racemes of many flowers, which are large, bright yellow spotted with red.—*Costa Rica*.

FIG.—*Xenia Orch.*, i. t. 32.

SYN.—*Oncidium Gireudianum*.

B. guttata, *Lindley*.—A very pretty species, considered by some botanists to be synonymous with *B. Wrayæ* and a mere variety of *B. maculata*. It produces its flowers on spikes two to three feet long; the sepals and petals yellowish green blotched with brown, and the broad lip yellow spotted with brown; it blooms from May to August, and continues flowering for about two months.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 4003.

B. Keiliana, *Rchb. f.*—A very distinct plant of dwarf compact growth, remarkable for its boat-shaped bracts, longer than the ovaries. The flowers, which grow in a loose many-flowered raceme, have the sepals and petals at first yellow, and then turning to a beautiful brownish orange, cinnabarine when dried; the lip being whitish. This plant succeeds well in the *Cattleya* house.—*New Grenada: St. Martha*.

SYN.—*Brassia cinnamomea*, fide *Rchb.*; *Oncidium Keilianum*.

B. Lanceana, *Lindley*.—A free-flowering Orchid, blooming at different times of the year, and bearing yellow fragrant blossoms lightly spotted with brown, which last three weeks in perfection. It has ovate-oblong pseudobulbs, broadly lanceolate striated leaves, and long racemes of flowers, the peduncle or scape springing from the base of the bulb. There are two varieties of this plant, one named *maerostachya* much better than the other, having larger and brighter coloured flowers.—*Guiana; South Brazil*.

FIG.—*Bot. Mag.*, t. 3577; *Id.* t. 3794 (var.); *Bot. Reg.*, t. 1754.

SYN.—*Oncidium suaveolens*.

B. Lawrenceana, *Lindley*.—A handsome species, blooming abundantly from June to August, and having long racemes of very fragrant flowers, in which the petals are much shorter than the sepals, which are fully three inches long, the lip oblong-lanceolate acuminate and wavy, with two pubescent connate lamellæ truncate in front. The colour of these flowers is bright yellow tinged with green at the base and spotted with reddish-brown; they last three or four weeks in good condition, if kept dry.—*Brazil*.

FIG.—*Bot. Reg.*, 1841, t. 18; *Moore, Ill. Orch. Pl.*, Brassia, t. 1.

SYN.—*Oncidium Lawrenceanum*.

B. Lawrenceana longissima, *Rehb. f.*—A very striking variety of the species, in which the sepals are very much lengthened out. The pseudobulbs are oblong, much compressed, three and a half inches long, the leaves six to eight inches long, oblong-lanceolate, and the peduncles radical, many-flowered. The sepals are as much as seven inches long, dark orange-yellow, with large deep red-purple blotches, the ovate-lanceolate pointed lip three inches long, pale yellow, with a row of purple spots surrounding the two truncate pubescent lamellæ of the disk. The petals are much shorter than the sepals. It is deserving of a place in every collection.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 5748.



BRASSIA MACULATA.

B. maculata, *R. Br.*—The original species and type of the genus. It is a rather showy free-flowering plant, with oblong, compressed pseudobulbs, oblong acute stoutish leaves, and racemes one to two feet high of handsome flowers, which spring from the axils of accessory leaves sheathing the bulbs; the flowers are large, the sepals and petals yellowish spotted with reddish brown, the roundish mucronate lip white spotted with purple towards the base, the basilar lamellæ pubescent produced into a tooth at the summit. It flowers in May and June.—*Jamaica*.

FIG.—*Bot. Mag.*, t. 1691 (inaccurate); *Paxt. Mag. Bot.*, vi. 5, with tab.

B. maculata major, *Hort.*—A very free-flowering form of the older species. The sepals and petals are greenish yellow spotted with brown, and the lip is white spotted with dark brown; it flowers in May and June, and lasts for five weeks in bloom if kept in a cool-house.—*Jamaica*.

B. verrucosa, *Lindley.*—A curious species, in which the upper part of the flower is pale green, and the lip white, marked with green warts. It blossoms abundantly in May and June.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 22.

SYN.—*Oncidium verrucosum*.

B. verrucosa grandiflora, *Williams.*—A very fine variety, of stronger growth than the typical *B. verrucosa*, and with flowers twice the size, and of a lighter colour. This is one of the best of the genus we have seen, and is well worth place in every collection.—*Guatemala*.

BROUGHTONIA, *Robert Brown.*

(Tribe Epidendreae, subtribe Lælieæ.)

A small genus of epiphytes, which is included in *Epidendrum* by Reichenbach. It belongs to the series of *Lælieæ* having four pollen masses, and thus technically comes near to *Cattleya*, with which it agrees in the lip folding over the apodous column, but differs in having the ovary produced into a long hollow neck or cavity. Some three or four species are known, natives of the West Indies; *B. sanguinea*, the most familiar species, is common in the Islands of Cuba and Jamaica, more especially the latter, where it grows on rocks fully exposed to the influence of the sun.

Culture.—This plant succeeds best suspended from the roof on a block of wood, with a little moss, and as near the light as possible. It requires a good supply of heat and moisture in the growing season. It is propagated by separating the pseudobulbs.

B. sanguinea, *R. Brown*.—A very compact-growing evergreen epiphyte, with roundish ovate clustered pseudobulbs, bearing one or two linear oblong leaves, from between which springs the peduncle, eight to twelve inches high, supporting a raceme of from six to nine flowers of a very rich crimson, the sepals narrow lanceolate, keeled, the petals broadly ovate, and the lip roundish cordate; these flowers are produced during the summer months, and last a long time in good condition. This plant ought to be in every collection, on account of the distinct and brilliant colour of its flowers.—*Jamaica*; *Cuba*.

FIG.—*Bot. Mag.*, t. 3076; *Id.*, t. 3536 (as *coccinea*); *Loddiges, Bot. Cab.*, t. 793.

SYN.—*Epidendrum sanguineum*.

BULBOPHYLLUM, *Thouars*.

(Tribe Epidendreae, subtribe Dendrobieae.)

The flowers in this genus are in general more curious than beautiful. The plants mostly have creeping rooting rhizomes, with pseudobulbs in the axils of the scarious sheaths, one or two leaves from the top, and a raceme or umbel of numerous small flowers on a peduncle springing from the base of the bulbs. In a few instances they are larger and solitary. The flowers are in many cases curious, particularly the labellum or lip, which is articulated and movable, the least breath of air or the slightest cause of motion being sufficient to set up a tremulous or dancing movement in this organ. Of the numerous species which are widely dispersed in Asia, Africa, America, and Australia, only a few are worth the attention of the amateur cultivator. The name is more commonly written *Bolbophyllum*, but the form we have adopted is the original orthography of Du Petit Thouars.

Culture.—The Bulbophyls are chiefly valued as curiosities; they require but very little room, and thrive best on small blocks of wood with a little moss, suspended in a warm part

of the house; the roots require a good supply of water. They are propagated by separating the pseudobulbs.

B. auricomum, *Lindley*.—In this plant the pseudobulbs are an inch and a half high, the leaves deciduous, and the flowers small, light green, in a spike ten inches long, drooping like a *Pholidota*; they are white and deliciously fragrant and are produced in January.—*India*.

B. barbigerum, *Lindley*.—A curious and charming dwarf-growing plant, with dark green oblong fleshy leaves, and small orbicular pseudobulbs, from the base of which grows the peduncle, supporting a raceme of some eight to ten flowers. The sepals are narrow, greenish brown; the petals minute, not apparent, but the lip is most extraordinary; it is a long narrow yellowish body, with two deep purple beards of fine hairs at the point, and from its tip a brush of long purple threads, so delicate that the least disturbance of the air sets them in motion. Besides all this, the lip is so loosely attached at the base as to be moved with the slightest breath, which gives it the appearance of a living thing. It lasts long in bloom.—*Sierra Leone*.

FIG.—*Bot. Reg.*, t. 1942; *Bot. Mag.*, t. 5288.

B. Lobbii, *Lindley*.—The flowers of this species are large, the sepals and petals deep tawny yellow, the upper sepal spotted at the back with purple. It produces its solitary flowers on radical scapes from the base of the ovate one-leaved pseudobulbs during the summer months, and lasts long in beauty. *B. Henshallii* is a pale variety.—*Java*.

FIG.—*Bot. Mag.*, t. 4532; *Paxt. Fl. Gard.*, i. 154, fig. 98; *Lem. Jard. Fl.*, t. 63; *Gard. Mag. Bot.*, iii. 269 (var. *Henshallii*).

SYN.—*Sarcopodium Lobbii*.

B. maculatum, *Hort*.—An interesting and pretty species; it has long obtuse bright green leaves, and pale yellow prettily spotted flowers. It is of easy culture, and must be kept in the warm house.—*India*.

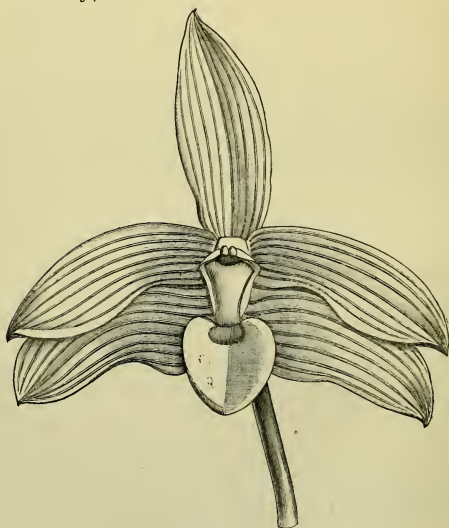
B. reticulatum, *Bateman*.—This is a very singular Orchid, the handsomest of the genus, the leaf being three to five inches long, and somewhat heart-shaped, with the nerves of a deeper green than the rest of the surface, giving it a beautifully

reticulated appearance; the flowers, which are borne in pairs, are white, striped inside with purple, and the lip is spotted with the same colour. It is easy of culture, delighting in the strong heat of the East Indian house.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5605; *Batem. 2nd Cent. Orch. Pl.*, t. 190.

B. saltatorium, *Lindley*.—A curious dwarf Orchid with flowers of a greenish brown colour, produced at different times of the year, and lasting some time in perfection. The plant should be grown in the East Indian house.—*West Africa*.

FIG.—*Bot. Reg.*, t. 1970.



BULBOPHYLLUM SIAMENSE.

B. siamense, *Richb. f.*—A very pretty species, and well adapted for those who, having but little space, devote it to the small-growing kinds. The pseudobulbs are ovate, the

leaves longer and stouter than those of *B. Lobbi*, and the flowers pale nankin yellow striped with purplish brown, the hinged lip being yellow streaked with purplish black lines, and having a deep yellow disk. It should be grown in a pot, with peat and sphagnum moss.—*Siam*.

FIG.—*Refug. Bot.* ii., t. 116.

BURLINGTONIA, *Lindley*.

(Tribe Vandææ, subtribe Oncidiææ.)

There are some beautiful species in this genus, all of which, except *B. decora*, are of a very compact habit of growth. They have pseudobulbs, terminated by one or two evergreen leaves, four to six inches high, and produce their delicately-coloured flowers mostly on drooping spikes from the side of their pseudobulbs. They have the dorsal sepals free, and the lateral ones connate, petals resembling the dorsal sepal, and a lip furnished with a conspicuous incurved spur. The few species, which are by some referred to *Rodriguezia*, are all found in Tropical America.

Culture.—These plants ought to be in every collection, however small, as they require but little room, and may be easily grown to perfection. They thrive best in small baskets or pans with sphagnum moss and potsherds, and require a good supply of heat and moisture while growing. They need but little rest, and should never be suffered to get too dry at the roots. They are propagated by division.

B. Batemanni, *Hort*.—A very pretty species, in general appearance resembling *B. candida*. The flowers are white and deliciously scented, but the lip, instead of being tinted with yellow, as is so usual in the genus, is of a beautiful mauve colour.—*South America*.

B. candida, *Lindley*.—A handsome free-flowering compact-growing species, with very small ovate pseudobulbs, oblong leaves, and drooping spikes of flowers, which are large,



fragrant, white, except on the upper part of the lip, which is yellow, and has several fleshy lamellæ in two series on the disk. It flowers in April and May, and sometimes at other seasons, lasting about three weeks in perfection. To grow this species in perfection a good supply of moisture is necessary at the roots; indeed, it should never be allowed to get dry.—*Demerara*.

FIG.—*Bot. Reg.*, tt. 1927, 1929; *Floral Mag.*, t. 548; *Orchid Album*, i. t. 18.

BURLINGTONIA CANDIDA.

B. decora, *Lemaire*.—A beautiful free-flowering species of somewhat straggling habit, as it makes long wiry growths between each of the ovate two-edged pseudobulbs, from which the roots proceed. The leaves are linear-oblong, leathery; and the flowers are produced on lax upright spikes, and are of a delicate white, pencilled with light rose, the sepals and petals convergent, and the large white lip roundish and bilobed. It blooms during the winter months, and succeeds best in a basket, or on a block suspended from the roof.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4834; *Batem. 2nd Cent. Orch. Pl.*, t. 110; *Lemaire, Jard. Fl.*, t. 188; *Fl. des Serres*, t. 716; *Pact. Fl. Gard.*, iii. 99, fig. 278.

SYN. *B. amœna*.

B. decora picta, *Hooker*.—This is a very fine form of the preceding, stronger in growth, with much larger flowers, richer in colour, and altogether a superior variety. It produces its beautiful flowers on branching spikes, some of them bearing as many as twenty blossoms.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5419.

B. Farmeri, *Hort*.—This is a very pretty species, and well worthy of general cultivation. It resembles *B. candida* in habit and appearance, and is a very free bloomer, producing its elegant white and yellow flowers in early summer. It succeeds best grown on a block or in a basket with sphagnum moss, suspended from the roof in the *Cattleya* house.—*Native Country not known*.

B. fragrans, *Lindley*.—A charming species, the flowers of which are deliciously fragrant, the perfume resembling that of

the hawthorn. They grow in erect racemes, and have the sepals and petals white, and the lip white stained with yellow down the centre; they are produced in April and May, on a drooping spike, and last three or four weeks in beauty if kept free from damp.—*Brazil*.

FIG.—*Orchidophile*, Oct. 1884, p. 297, photograph.

B. Knowlesii, *Hort.*—A beautiful species, somewhat similar in habit to *B. venusta*, very dwarf and compact. The flowers are white, slightly tinged with pinkish lilac, and produced in long racemes. It blooms during the autumn, and continues in perfection a long time. A scarce Orchid.—*Native Country not known*.

B. Leeana, *Williams.*—A very distinct and beautiful species, producing drooping spikes of flowers. In growth it resembles *B. fragrans*, but is somewhat stronger, with ligulate ancipitous pseudobulbs and linear-lanceolate leaves a foot long. It produces ten or more flowers on a spike; the sepals and petals are cream-colour with a yellow mid-line, and flushed with pale rosy purple, the lip cream-colour spotted with rosy purple of different shades, the crest yellow of two long linear keels, each having four small lateral keels spreading outwards. The blossoms have a delicious perfume. It flowers in January and February.—*Rio Negro*.

SYN.—*Rodriguezia Leeana*.

B. venusta, *Lindley.*—A very pretty species, with rigid dark green leaves, and pendulous racemes of flowers, which are white, with yellow down the centre of the lip. It blooms at different times of the year, and lasts two or three weeks in good condition.—*Brazil*.

FIG.—*Ill. Hort.*, t. 188; *Sertum Orch.*, t. 2.

CALANTHE, *Robert Brown.*

(Tribe Epidendreae, subtribe Cœlogyneae.)

There are some beautiful species belonging to this genus, and consequently these plants are great favourites. They are of easy culture, having bold evergreen foliage—except in the case of the *vestita* group—*C. vestita*, *C. Veitchii*, *C. Turneri*, *C. Williamsii*, and *C. Regnierii*, which are deciduous, losing their

leaves during the season of rest. The latter deciduous group is sometimes separated from *Calanthe* as a distinct genus under the name of *Preptanthe*. *Limatodes* is also included as a near ally of *C. vestita* by Bentham and Hooker. Nearly all the species have striking and attractive flowers, one peculiarity of which is that the claw of the lip is, in most cases, connate with the column.

The evergreen species are, for the most part, rather large upright-growing plants with plaited leaves, which in some of them are as much as a foot and a half long and six inches broad. In this group the long erect floral racemes come up between the leaves and are developed along with them. The deciduous species, on the other hand, produce their flowers after the leaves and bulbs are completed. When the blooming period is passed, the pseudobulbs should be allowed to go to rest in a leafless condition until the season for again starting into growth.

Culture.—The majority of the *Calanthes* are terrestrial Orchids, and are consequently best grown in pots, with loam, leaf mould, and rotten dung mixed together. When they are planted, two inches of drainage should be put at the bottom of the pot, then a layer of moss or rough peat; after which the pot should be filled up with the mould, so as to leave the plant about level with the rim. They succeed best when grown in the Indian house, and require well watering at the roots in their growing season, so that the mould is never allowed to get dry. A little manure water should be given when in vigorous growth once a week, but it must not be used too strong. But little rest is required by the evergreen kinds, and during the resting period only enough water to keep the soil slightly damp will be required. The deciduous species require a thorough resting period, after the pseudobulbs are matured and completed and the flowering season is past,

as at this season they lose their roots. They require to be repotted in spring, the best time for which is just as they begin to start into growth. These plants are very much subject to the brown and white scale, which should be diligently sought for and destroyed, as if they are allowed to accumulate the plants will not thrive. They are propagated by separating the bulbs. The following are the most beautiful of the species.

C. bella, *Rehb. f.*—A distinct hybrid, which, as Professor Reichenbach remarks, deserves an honourable place amongst these useful and ornamental plants which do so much to enliven our dull, short winter days. It was raised in Messrs. Veitch & Sons' nursery, the parents being *C. Turneri* and *C. Veitchii*, the latter species being the father. The pseudobulbs resemble those of *C. vestita*. The flowers are produced in long arching racemes, and are as large as those of *C. Turneri*; the sepals white, the petals of a delicate blush, and the broad deeply-cleft four-lobed lip of a delicate blush-pink, with an intense carmine crimson blotch surrounded by a zone of white, the column also being of a deep crimson; the spur is pale yellow. It received a 1st-class Certificate at South Kensington in December, 1881.—*Garden hybrid.*

C. curculigoides, *Lindley*.—This is an extremely rare and beautiful species which we have not for a long time seen in flower. The leaves are large, evergreen, and plaited. The flower spike is erect, bearing a head of bloom similar to that of *C. veratrifolia*, but the flowers, instead of being white as in that species, are of a beautiful orange yellow, and are produced in summer and autumn.—*Malacca, Penang, Singapore, Java.*

FIG.—*Bot. Reg.*, 1847, t. 8; *Bot. Mag.*, t. 6104; *Breda, Orch. Jav.*, t. 7; *Floral Mag.*, 2 ser., t. 349.

C. Dominii, *Lindley*.—A good and distinct hybrid, which grows in the same way as *C. Masuca*. The sepals and petals are lilac, the lip deep purple. It is the first of the hybrid Orchids raised in this country, and its production is due to Mr. Dominy, who obtained it as a cross between *C. Masuca* and *C. furcata*. It is a fine free-blooming plant. The seeds were

obtained in 1854, and the young seedlings were in flower two years later.—*Garden hybrid*.

FIG.—*Bot. Mag.*, t. 5042.

C. furcata, *Bateman*.—A showy evergreen Orchid with ovate oblong deeply plicate leaves, and erect spikes, three feet long, bearing a profusion of creamy white flowers, which last in perfection six weeks; these flowers, which are very freely produced, usually open in June, July, and August, and render it a good plant for exhibitions. It differs from *C. veratrifolia* chiefly in the larger lateral lobes of the lip.—*Philippines; Java*.

C. Masuca, *Lindley*.—A desirable and free-flowering evergreen Orchid, producing its flowers on a spike two feet long. The sepals and petals are of a deep violet colour, and the lip a rich purple. It blooms in June, July, and August, and lasts six weeks in perfection. This is a good plant for exhibition, the colour being very distinct.—*Nepal, Sikkim, Neilgherries*.

FIG.—*Bot. Reg.*, 1844, t. 37; *Bot. Mag.*, t. 4541; *Wight, Icon.*, iii, t. 918; *Lem. Jard. Fl.*, t. 62; *Moore, Ill. Orch. Pl.*, *Calanthe*, t. 2; *Bateman, 2nd Cent. Orch. Pl.*, t. 139.

SYN.—*Bletia Masuca*.

C. Masuca grandiflora, *Williams*.—A very scarce variety, with evergreen foliage, producing gigantic flower spikes from three to four feet high, which continue blooming for three months; sepals and petals deep violet, shading off to lilac; lip very rich deep purple. Its long continuous blooming season makes it valuable.—*India*.

C. porphyrea, *Rehb. f.*—This handsome and distinct hybrid has been raised in the collection of Sir Trevor Lawrence, Bart., M.P., at Dorking, and is the result of a cross between *Limatodes labrosa* and *Calanthe vestita rubro-oculata*. We have not yet seen this novelty, but Professor Reichenbach describes the sepals and petals as being of a most exquisite dazzling purple, while the lip is yellowish marked with small purple spots at the base, and on the anterior part of a fine purple; the spur is ochre-coloured. It flowers during the winter months.—*Garden hybrid*.

C. Regnieri, *Rehb. f.*—A very charming plant introduced by M. Regnier, of Paris. The growth of the pseudobulbs and

general appearance of the plant resemble those of *C. Turneri*, as do also the flowers, but the lip differs in having the middle lobe shorter, wedge-shaped, and emarginate, instead of deeply parted, and instead of being white with a pink eye, it is wholly rosy pink, which contrasting with the white sepals and petals has a most striking and charming effect. It flowers at the same time as *C. Turneri*.—*Cochin China*.

C. Regnieri fausta, *Rehb. f.*—A very fine variety of this novel species, having the deepest and warmest crimson at the base of the lip and on the column of any form of *C. Regnieri* as yet known, the marking on the disk of the lip forming a three-lobed blotch. It has been recently introduced by us.—*Cochin China*.

C. Sanderiana, *Hort. Sander*.—A very pretty plant in the way of *C. Veitchii*, bearing strong many-flowered spikes; sepals and petals rose-coloured, lip bright rosy crimson, similar in shape to that of *C. Regnieri*. Flowers during the spring months.—*Cochin China*.

C. sandhurstiana, *Gosse*.—A well-marked and very handsome plant, raised by Mr. P. H. Gosse, of Sandhurst, Torquay, between *Limatodes rosea* and *Calanthe vestita rubro-oculata*. It has much of the character of *C. Veitchii*, being of the same parentage, but is said to be of stronger growth. The peduncles support long racemes ("forty-one grand flowers") of very beautiful flowers, which are of large size, and of a rich rosy crimson, much deeper than in *C. Veitchii*, and have besides a beautiful eye-spot on the lip. It is one of the darkest-coloured forms of this set of *Calanthes*, and likely to have a great future before it; indeed Professor Reichenbach calls it a "magnificent" and a "glorious" thing, and such it was judged to be when exhibited at South Kensington by Sir Trevor Lawrence, Bart., on December 9th, 1884, by the award of a 1st-class Certificate.—*Garden hybrid*.

C. Sedeni, *Veitch and Rehb. f.*—A very handsome hybrid, raised in Messrs. Veitch & Sons' establishment by Mr. Seden, and named in compliment to him. It was raised between *C. Veitchii* and *C. vestita rubro-oculata*, and has pseudobulbs resembling those of the latter, and racemes of large flowers, in which the sepals and petals are of a brighter and higher tint of rose than those of the former, and the lip is of the same

colour with a very dark purplish blotch at the base surrounded by an area of white.—*Garden hybrid*.

SYN.—*Preptanthe Sedeni*.

C. Sieboldi, *Dene*.—An elegant evergreen dwarf-growing cool-house species, with broad dark green plaited leaves, and erect spikes, scarcely taller than the leaves, bearing a loose raceme of large yellow flowers. A distinct and desirable species.—*Japan*.

FIG.—*Rev. Hort.*, 1855, 381, with tab.; *Gartenflora*, t. 635.

C. Textori, *Miquel*.—A very distinct plant, in habit of growth resembling *C. veratrifolia*. The flowers also resemble those of that species, the sepals and petals creamy white, washed with violet on the petals and column, and also on the base of the lip, where the calli are orange or brick red. It afterwards changes to ochre-colour, excepting the pale lilac base of the sepals and petals and the column. It flowers in June.—? *Eastern Islands*.

C. Turneri, *Rchb. f.*—A very handsome species with jointed pseudobulbs, producing longer flower spikes and larger flowers, and these in greater quantity than in the older and better known *C. vestita*. The flowers are more compact in shape, the colour being pure white with a deep rose-coloured eye. A peculiar feature of this plant is, that it blooms after the forms of *C. vestita* are over, which makes it all the more valuable.—*Moulmein, ? Java*.

C. Turneri nivalis, *Hort.*—An elegant variety, with pure white flowers, which are in no way different from those of the typical form save in being entirely destitute of the colour on the lip. It flowers in winter, and is especially valuable for wedding bouquets, or any other purpose for which pure white flowers are wanted. It is a late flowering sort, blooming contemporaneously with *C. Turneri*.—*Burmah*.

C. Veitchii, *Lindley*.—A beautiful mule, raised between *Limatodes rosea* and *Calanthe vestita*, by Mr. Dominy. It is a deciduous plant, and grows like *C. vestita*. The flower spikes are usually from two to three feet high, gracefully arching; and the numerous large blossoms are of a rich rose colour. This has proved to be one of the best and most useful of Orchids for winter decoration. The pseudobulbs are

generally from six inches to a foot high, according to their strength. Every grower of Orchids ought to have at least a dozen or more of this fine decorative species for winter blooming.—*Garden hybrid*.

FIG.—*Bot. Mag.*, t. 5375; *Batem. 2nd Cent.*, t. 106; *Floral Mag.*, t. 280; *Jennings, Orch.*, t. 48; *Orchid Album*, i. t. 31; *Gartenflora*, t. 731.

C. veratrifolia, *R. Br.*—A noble evergreen species familiar to cultivators. It has broad plicate leaves; and the spikes of flowers, which are delicate white, frequently attain the height of two or three feet; it blooms freely from May to July, and will continue blooming for two months. The flowers should be kept free from damp, for if they get wet they are apt to become spotted. This makes one of the finest of exhibition plants; it is a very old species, but no collection should be without it.—*Ceylon; India; Australia*.

FIG.—*Bot. Reg.*, t. 720; *Griff. Icon.*, t. 283, fig. 4; *Bot. Mag.*, t. 2615; *Loddiges, Bot. Cab.*, t. 958.

C. veratrifolia macroloba, *Rehb. f.*—This is a great improvement on *C. veratrifolia*, having the flowers much larger in size and of greater substance, pure white, the basilar lobe exceedingly broad, with the lateral calli much developed; it flowers in May and June.—Imported by us from the *Pacific Islands*.

C. vestita, *Lindley*.—A deciduous species of great beauty, and exceedingly valuable for decorative purposes. It has large squarish silvery grey pseudobulbs, broadly lanceolate nervose leaves, which grow up and become matured after the flowering is over, and tall radical scapes of charming creamy white flowers, which in some forms have a coloured spot on the base of the lip. The forms which usually represent the type in collections are those named *luteo-oculata* and *rubro-oculata*, which are more fully described below. No collection should be without the varieties of this plant, which are all such fine subjects for winter blooming, and so useful for cutting for



CALANTHE VESTITA.

room decoration, that one cannot have too many of them. We have had plants of this species with thirty spikes, and frequently the spikes have borne from twenty to thirty flowers on each, continuing in perfection for three months. The varieties mentioned below are all of a highly ornamental character.—*India*: Moulmein.

FIG.—*Wight Icon.*, v. tt. 1751, 1752; *Paxt. Fl. Gard.*, i. 106, fig. 72; iii. 38, woodcut of plant.

SYN.—*Preptanthe vestita*; *Cytheria Griffithii*.

C. vestita igneo-oculata, *Rchb. f.*—This variety has been exhibited by Sir Trevor Lawrence, Bart., M.P., and is said to be quite distinct, the base of the column being purplish, over which is a dazzling flame colour, the blotch at the base of the lip being of the same colour; it is a much stronger grower than *C. vestita rubro-oculata*, and retains its foliage until it flowers.—*Borneo*.

C. vestita luteo-oculata, *Veitch*.—A charming variety, in which the sepals and petals are white, and the lip is of the same colour, with a blotch of yellow in the centre. The flower spikes are produced from October to February, and are very durable; it is nearly equal to *C. v. rubro-oculata* in point of beauty, and very useful for winter decoration.—*Burmah*.

FIG.—*Bot. Mag.*, t. 4671; *Paxton, Mag. Bot.*, xvi. 129, with tab.; *Lem. Jard. Fl.*, t. 333; *Fl. des Serres*, t. 816; *Id.* tt. 1308—9, fig. 1; *Warner, Sel. Orch. Pl.*, i. t. 29, upper fig.

C. vestita oculata gigantea, *Rchb. f.*—This is a very showy *Calanthe*, and, like *C. Turneri* and *C. Williamsii*, blooms after the other varieties are over. It is a strong grower, and the foliage remains green during the time of flowering. It yields gracefully arching spikes from three to four feet long, which produce an abundance of large flowers of a soft creamy white colour with a white lip, the base of the column blotched with dazzling fiery red. It blooms in March and April, and lasts in perfection for a long period. This fine variety was exhibited by the late Mr. Spiers, when gardener to Sir Trevor Lawrence, and received a first class certificate. We learnt from Mr. Spiers that *C. vestita oculata gigantea*, when in full beauty, bore on one spike as many as thirty expanded flowers, with more to open, whilst the leaves were still green. "The bulb carrying the spike," he wrote, "is now breaking freely, so that it would appear that it will

require no rest. I shall simply re-pot it without disturbing the roots. A curious fact with this variety is that its roots remain plump and do not die off every year as in the old species."—? *Borneo*.

C. vestita rubro-oculata, *Veitch*.—A charming free-flowering deciduous Orchid, producing, from October to February, long drooping flower spikes, which are clothed with soft white hairs, and rise from the base of the silvery green pseudobulbs before the latter produce their leaves. The flowers are upwards of two inches across; the sepals and petals delicate white, the lip of the same colour, with a blotch of rich crimson in the centre.—*Moulmein*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 29, lower fig.; *Flore des Serres*, tt. 1308—9, fig. 2.

C. Williamsii, *Moore*.—This new and handsome plant has been introduced by us, and is very charming. The flowers are from two to two and a half inches in diameter; the dorsal sepal is white, the base of the lateral sepals white on the upper side, and rosy pink on the lower; the petals are white, bordered with rosy pink, and pencilled with the same colour on the lower halves; the lip is entirely of a deep rosy crimson with an intense crimson eye. It flowers during winter months.—*Eastern Asia*.

FIG.—*Orchid Album*, iii. t. 134.

CAMAROTIS, *Lindley*.

(Tribe *Vandææ*, subtribe *Sarcantheæ*.)

A small genus of scandent Orchids, having narrow coriaceous leaves, and flowers with a thick fleshy lip, which is hollowed out near the tip somewhat in the form of a slipper. They are included by Bentham and Hooker in the Indian and Australasian genus, *Sarcochilus*.

Culture.—The temperature of the East Indian house is required for their successful culture. They succeed best grown in sphagnum and suspended in baskets, and require care to grow them well. They may be planted either in pots or baskets with moss, but the latter are preferable; and they require a good supply of heat, and moisture over the roots

and leaves during the period of growth, but need very little rest, and should never be allowed to shrivel.

C. purpurea, Lindley.—A beautiful upright growing plant, with distichous oblong-linear emarginate leaves three to four inches long. It produces its flower spikes, which are about eight inches long and many-flowered, from the side of the stem; the blossoms are pale rose-coloured, the lip being of a deeper rosy crimson, and they appear from March to May, lasting two or three weeks in beauty. A fine specimen of this species was shown at the Chiswick and Regent's Park Exhibitions in 1850. This single plant, on which there were more than a hundred spikes of flowers, was exhibited by R. S. Holford, Esq., Tetbury, Gloucestershire. It is to be regretted that we do not see this plant so well cultivated as it was some few years ago, for it is a fine object when grown like Mr. Holford's plant.—*India: Sylhet, Khasya.*

FIG.—Lindl. *Sert. Orch.*, t. 19; Paxton, *Mag. Bot.*, vii. 25, with tab.

CATASETUM, L. C. Richard.

(Tribe Vandææ, subtribe Stanhopiææ.)

A genus of very remarkable Orchids, with short stem-like pseudobulbs, large plicate leaves, and erect or pendulous spikes of quaint-looking polygamo-trimorphous flowers, often large, but seldom very attractive in character. There are nearly forty known species from Tropical America and Mexico, many of which are in cultivation, but they can scarcely be regarded as favourites with Orchid-growers. The separation of the sexes gives rise to flowers which have been taken to belong to totally distinct genera, *e.g.*, *Monachanthus* and *Myanthus*.

Culture.—The *Catasetums* thrive best in the Cattleya house. They should be potted in a compost of peat with good drainage, and we have found them succeed best in baskets suspended from the roof. They should not receive too much water when growing, and when the growth is complete just sufficient should be given to keep them from shrivelling.



CATASETU



SCURRA.



C. Christyanum, *Rehb. f.*—A very distinct and curious species, first flowered by Thos. Christy, Esq., F.L.S., of Sydenham. It has stout fusiform stems, lanceolate-lorate plaited leaves, and produces strong erect flower spikes containing about a dozen flowers, the sepals and petals of which are of a dull chocolate brown, the lip and column being of a bright green; it blossoms during the autumn months.—*Brazil.*

FIG.—*Orchid Album*, ii. t. 83.

C. macrocarpum, *Richard.*—This is a grand Orchid, and was communicated to us by W. Macdonald, Esq., of Perth, who flowered it in 1884; but in common with others of the genus it has not received much attention though very remarkable in structure. The flowers are about four inches in diameter; sepals and petals broad, pale yellowish green, densely spotted with purplish brown, reminding one of those of *Paphinia grandis*; lip deep orange yellow, densely spotted with brown, green on the lower portion of the outside; flowers in June. There are many varieties of this plant.—*Tropical America, east of the Andes.*

FIG.—*Bot. Mag.*, t. 2259; *Id.*, t. 3329 (*tridentatum*); *Bot. Reg.*, t. 840; *Hook Ex. Fl.*, tt. 91—2; *Lodd. Bot. Cab.*, t. 1344 (*Claveringii*).

SYN.—*C. tridentatum*; *C. Claveringii*.

C. scurra, *Rehb. f.*—This curious plant is well worthy of cultivation, owing to its compactness of habit, and the elegance and perfume of its flowers. The pseudobulbs are about an inch and a half high, ovate acute, becoming much wrinkled, the leaves about six inches long, oblong-lanceolate, and of a lively green, and the flowers five or more together in a drooping raceme. The flowers are of pale straw colour or waxy white with green veins, and they emit a most grateful perfume, which has been compared to that of lemons or roses. The lip is very peculiar in structure; it is trifid, the side lobes erect with bent borders, rhomboid and denticulate, the middle lobe with a short broad linear stalk, expanded into a subreniform blade with crisped and toothletted edges.—*Demerara; Panama.*

FIG.—*Gard. Chron.*, N.S., vii. 304, figs. 50, 51.

CATTLEYA, Lindley.

(Tribe Epidendreæ, subtribe Lælicæ.)

The species of this popular genus rank among our finest Orchids; they are general favourites, and we are glad to find that they are now being extensively introduced and cultivated, and that new species and varieties are being obtained through the unflinching energy of our hybridisers and collectors. The pseudobulbs are in many cases elongated and thickened, assuming the form of club-shaped stems; and the dark massive evergreen foliage when in a healthy condition, together with the compact habit of growth, renders the plants peculiarly attractive. Some of the sorts have only a single leaf at the top of each stem, while others have two, and in some instances three. The flowers are large, elegant in form, and scarcely surpassed in this brilliant family for their sparkling richness and depth of colour, the most frequent tints of which are violet, rose, crimson, magenta, white, yellow, mauve, and purple, with their intermediate shades. The flower scape, which is enclosed in a sheath, rises from the top of the stem, and a single spike sometimes contains as many as nine perfect flowers—we have seen as many as thirty.

The whole of the *Cattleyas* are on scientific grounds referred by Prof. Reichenbach to *Epidendrum*; but it is not necessary to overload our pages by quoting this synonymy.

Culture.—The plants generally begin to make their growth for the next season as soon as the flowering is over; but some of them, such as *C. Walkeriana*, *C. violacea*, *C. superba*, and several others, flower while making their growth. We have found *Cattleyas* thrive best in pots and baskets, with the exception of *C. Walkeriana*, *C. marginata*, *C. citrina*,

C. Aclandia, *C. superba*, and other small growing kinds, which grow best on blocks with a small quantity of moss, or in small pans with the same compost as for pots. If the accommodation is limited, all the kinds may be grown on blocks, but they will then require more attention, and seldom thrive so well as they do in pots or baskets. They require a good depth of drainage; so that the pots or pans should be filled about half full of potsherds, and these covered with a layer of moss, the remaining space being filled up with peat, a few lumps of charcoal being added, taking care always to have the plants elevated well above the rim.

We grow nearly all the *Cattleyas* in the Brazilian house, and are accustomed to give them a good supply of heat and atmospheric moisture, and not too much water at the roots while they are growing. Water applied to the roots about three times a week will be sufficient for those in the most vigorous state of growth; too much water is apt to cause the bulbs to rot. We find it a good plan, while the *Cattleyas* are in vigorous growth during the summer months, to frequently syringe between the pots on every fine warm day. So long as the soil remains moist, no water is required; and when the surface of the soil becomes dry, water should be applied to the roots—not to the bulbs, as it is apt to injure them greatly. When the plants have made their growth they should be allowed to rest, and be kept rather dry, giving them just sufficient water to prevent their shrivelling.

Cattleyas require all the light possible, therefore a thin shading should be used; even this need only be lowered when the sun is shining during the hottest part of the day, as a little morning or afternoon sun, say up till eight o'clock in the morning and after four or five in the afternoon, in the summer time, will be found very beneficial to them; also keep the plants as near the light as possible, and give them

plenty of ventilation during fine weather, but avoid cold draughts.

A season of rest is very advantageous to the plants, causing them to flower more freely and to grow more vigorously afterwards. Those plants which are growing on blocks will require a good supply of water at their roots every



CATTELYA ACLANDIAE.

day during summer, and twice or three times a week in winter.

Cattleyas require to be kept perfectly clean and free from insects. They are subject to the white scale, which should never be allowed to establish itself, as it is then difficult to remove, and the plants are in great danger of being injured. In order to keep the plants free, they should be carefully looked

over every three or four weeks, and sponged with clean water of the same temperature as that of the house. They are also subject to the attacks of thrips; this pest should be kept down by fumigating with tobacco paper. They are propagated by dividing the plants.

The following list comprises the most beautiful and valuable species and varieties of this splendid genus; and a collection which embraces these will seldom if ever be without one or more of them in flower.

C. Aclandiæ, *Lindley*.—A charming Orchid, of dwarf habit, the terete striated stems seldom being above six inches high, and crowned by a pair of fleshy oblong elliptical leaves. The flowers are large, olive-green, heavily blotched with dark purple, the lip magenta purple, with darker veins, and the exposed column dark purple. It flowers in June or July, and remains long in perfection. There are some fine specimens of this plant in the country. It is a species apparently subject to much variation, some plants proving very free-flowering, though it is generally rather shy-blooming, and difficult to cultivate, and is best grown in a small basket, or on a block, and as near the glass as possible.—*Brazil*.

FIG.—*Bot. Reg.*, 1840, t. 48; *Bot. Mag.*, t. 5039; *Paxton, Mag. Bot.*, ix. 1, with tab.; *Fl. des Serres*, t. 674; *Orchid Album*, ii. t. 69; *Ill. Hort.*, t. 565; *Bateman, 2nd Century*, t. 119.

C. amabilis, *Hort*.—A magnificent free-flowering species, growing about eighteen inches high, making two growths in one year, and blooming from the one that is formed in spring, the spikes producing from three to five blossoms, which remain about four weeks in perfection. The sepals and petals are delicate pink, and the lip is large, of the richest crimson. Undoubtedly the finest of the group represented by *C. intermedia*, which it closely resembles; it blooms during the summer months, and makes a fine exhibition plant. Very rare.—*Brazil*.

C. Amesiana, *Hort*.—A hybrid obtained by Messrs. Veitch & Sons, and exhibited by them in December, 1883, at one of the meetings of the Royal Horticultural Society. It is a cross between *C. crispa* and *C. maxima*, and has flowers very similar in form to those of *C. exoniensis*. The

sepals and petals are blush white, the lip rich magenta crimson ; it flowers in December.—*Garden hybrid*.

C. amethystoglossa, *Linden et Rehb. f.*—A beautiful and distinct species, growing from two to three feet high, in the way of *C. Leopoldii*, with terete stems, slightly thickened upwards, and two oblong-lanceolate leaves on the top of the stems, from between which are produced spikes with seven to ten flowers, each measuring more than five inches across ; indeed we have had them when very strong with as many as twenty-seven flowers. The sepals and petals are suffused with light rose, and spotted with rich magenta purple, while the lip is deep magenta purple. It blooms in March, April, and May, and will last five weeks in perfection. There have been a good many plants of this beautiful species imported during the last few years, and many varieties have bloomed ; indeed it is seldom that two plants flower exactly alike. See note under *C. guttata Prinzii*.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 2 ; *Bot. Mag.*, t. 5683 ; *Ill. Hort.*, t. 538 ; *Rev. Hort.*, 1869, 212, with tab.

C. amethystoglossa sulphurea, *Hort.*—A very pretty variety of this fine Orchid, resembling in every respect the plant figured in Mr. Warner's book above quoted as *C. amethystoglossa*, except that the ground colour of the flower is of a pure lemon colour, the spotting being as in the type ; the lip is broad, and of a rich cream colour.—*Brazil*.

FIG.—*Gard. Chron.*, 1866, 315, with fig. (?)

C. aurea.—See *CATTLEYA DOWIANA AUREA*.

C. bicolor, *Lindley*.—A beautiful and free-flowering Orchid of vigorous growth, with slender terete striated stems eighteen inches to two feet high, diphyllous, the leaves oblong-lanceolate, and the flowers on a terminal peduncle. The sepals and petals are pale green, with a lurid coppery brown tinge, the oblong-cuneate lip rich rose purple, remarkable from the absence of side lobes, the exposed column being pink. It blooms in September, producing as many as eight or ten flowers on a spike, and remaining a long time in perfection. There were two beautiful varieties of this plant in the collection of the late T. Dawson, Esq., of Meadow Bank.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4909 ; *Dict. of Gard.*, 281, fig. 384 ; *Sertum Orch.*, t. 5 ; *Lem. Jard. Fl.*, t. 379.

C. Boissieri, *Hort.*—In this handsome species the leaves are of a short broad oblong form, and the flowers have soft rosy-lilac sepals and petals, and a broad lip with a beautiful curving yellow blotch extending half-way down and nearly across it.—*New Grenada*.

C. Bluntii, *Low.*—This is truly a most chaste and beautiful *Cattleya*. It was first flowered by John Day, Esq., Tottenham, and was named after the collector, Mr. H. Blunt. In its stems and leaves, as well as in the habit of growth, it resembles *C. Mendelii*, and the flowers are also similar in form to those of that species. The sepals and petals are pure white, and the lip white, with a yellow stain in the throat; it flowers during the summer months.—*Colombia*.

C. Brabantia, *Veitch.*—This is one of the Messrs. Veitch and Sons' hybrids, the result of a cross between *C. Aclandiae* and *C. Loddigesii*, and requires the same treatment as its parents, which are both natives of the warmer parts of Brazil. It is a sturdy dwarf-growing variety, with terete stems, a pair of ligulate-oblong leaves, and comparatively large flowers, in which the rose-coloured sepals and petals are thickly blotched with blackish purple, and the lip has its lateral lobes white, curved over the broad rose-coloured column, and its front lobe retusely reniform, of a magenta purple. It was first exhibited at the Brussels International Show in 1864.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 360.

C. Brymeriana, *Rehb. f.*—This is a fine novelty, introduced by Messrs. Low & Co., and named in honour of W. E. Brymer, Esq., M.P., Ilsington House, Dorchester. It is similar in growth to a short-bulbed *Lælia elegans*, the flowers being medium sized; the sepals and petals are of a pale rosy purple, and the lip—which has a narrow closely-folded tubular base nearly two inches long, yellowish below, and pale lilac with the front part veiny magenta-purple above, and a clear yellow throat cut off abruptly in front—has the anterior lobe transversely roundish oblong, emarginate, and of a rich magenta-purple; this anterior lobe is remarkable for its squareness.—*Brazil*.

FIG.—*Orchid Album*, iv., t. 184.

C. Brysiana.—See *LÆLIA BRYSIANA*.

C. bulbosa.—See *CATTLEYA WALKERIANA*.

C. calummata, *André*.—A very beautiful and distinct hybrid, raised by M. Bleu of Paris, between *C. amethystina* and *C. Aclandiae*. The stems are stronger than those of *C. Aclandiae*. The sepals and petals are bluish white, spotted with violet-purple, as in *C. amethystoglossa*, and the lip is a rich violet-purple in the centre, passing to a lighter tint of the same colour on either side. This plant is said to flower twice a year.—*Garden hybrid*.

FIG.—*Revue Hort.*, 1883, 564, with tab.; *Orchid Album*, iv. t. 166.

C. candida, *Hort*.—A desirable free-growing species, allied to *C. intermedia*. It grows about a foot high, making two growths in a year, and blooms from both, producing three or four flowers on a spike; the sepals and petals are white, delicately shaded with pink, and the lip is of the same colour with a dash of yellow in the centre. It flowers from July to November, and lasts three or four weeks in good condition, if the flowers are kept free from damp. This plant has become very rare in cultivation.—*Brazil*.

C. Chamberlainiana, *Richb. f.*—This new hybrid *Cattleya* is a cross between *C. guttata Leopoldii* and *C. Dowiana*, and is named in honour of the Right Hon. Joseph Chamberlain, M.P. The growth of the plant resembles that of *Leopoldii*, but is considerably dwarfer. The flowers have brownish purple sepals, rich purple petals, and a lip like *Leopoldii* of a rich purple-magenta; it flowers in the latter part of the summer.—*Garden hybrid*.

C. chocoensis, *Linden et André*.—A very handsome but variable species, with oblong clavate stems, solitary oblong cuneate emarginate leaves, and large fragrant flowers, which are not expanded like the majority of *Cattleyas*, but somewhat campanulate in shape; the sepals and petals are large and broad, fringed at the edges, pure white, the lip yellow, stained in front with rich magenta-purple. The different varieties of this species appear to vary considerably in their colour and markings; thus in some the yellow is much reduced, and the purple tint predominates, even extending over the lateral lobes. The half-closed flowers, however, are always characteristic.—*New Grenada: Choco*.

FIG.—*Ill. Hort.*, 3 ser., t. 120.

C. citrina, *Lindley*.—A beautiful dwarf plant, with small ovate pseudobulbs and a pair of ligulate-lanceolate glaucous leaves. The flowers, which are large for the size of the plant, are bright yellow, fragrant, and produced from the top of the bulb, sometimes in pairs; it blooms from May to August, and lasts three or four weeks in perfection. This is best grown on a block of wood; the plant should be tied to the block, with the leaves hanging downwards, as it is found growing beneath the branches of trees in its native country. It succeeds best in the Mexican house, as near the glass as possible.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3742; *Pescatorea*, t. 9; *Flore des Serres*, t. 1689; *Warner, Sel. Orch. Pl.*, iii. t. 18.

C. crispa, *Lindley*.—A splendid free-growing Orchid with one-leaved subcylindrical angulate stems about a foot and a half high, flowering in July, August, and September; the flowers have the sepals and petals blush white, and the lip white, with a rich crimson stain on the front lobe. A single spike frequently produces four or five flowers, which continue in perfection for two or three weeks. This is a fine plant for exhibition in July and August. The colour of the flower is remarkably attractive, and it always produces a good effect in a collection.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1172; *Bot. Mag.*, t. 3910; *Pact. Mag. Bot.*, v. 5, with tab.; *Belg. Hort.*, iv. t. 11.

SYN.—*Lælia crispa*.

C. crispa Buchananiana, *Williams and Moore*.—We have here undoubtedly the finest form of this grand Orchid; it is named in honour of J. Buchanan, Esq., of Oswald Road, Edinburgh, a great enthusiast among Orchids. In habit of growth it resembles the type, but the flowers are much larger, and the lip, instead of being pointed and much curled, is very broad and well opened, of a rich purplish crimson.—*Brazil*.

FIG.—*Orchid Album*, ii. t. 81.

C. crispa delicatissima, *Williams*.—This chaste variety was first flowered by Sir T. Lawrence, Bart., M.P., but since then several plants have passed into our hands. It resembles the type in every respect, except that the flowers are pure white, save a few faint markings of rose on the lip which are almost invisible. A very unique plant, flowering in July and August.—*Brazil*.

C. crispa purpurea, *Williams*.—A superb variety of vigorous habit, producing very large flowers, which have the sepals and petals white with a faint tinge of blush, and the much broader blunter lip richly blotched with deep purple breaking out into radiating lines towards the margin.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl., ii. t. 9.*

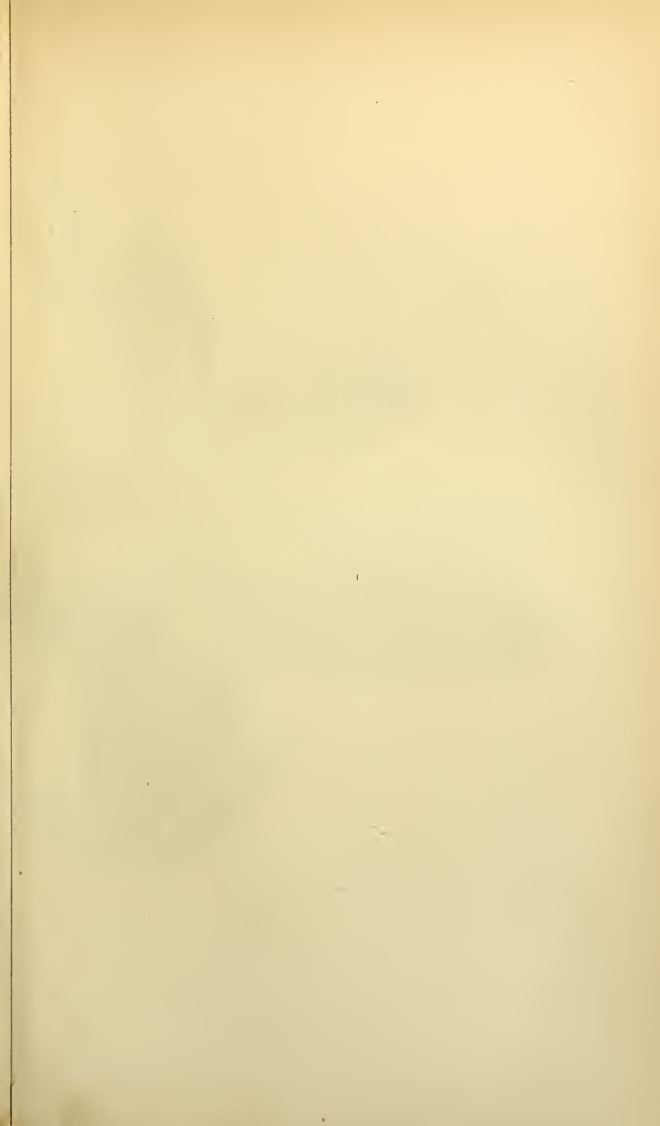
SYN.—*Laelia crispa purpurea*.



CATTLEYA CRISPA.

C. crispa superba, *Hort*.—A magnificent variety, the flowers of which are larger than those of the type, and have the sepals and petals pure white, and the lip rich crimson, beautifully fringed. We consider this, when true, to be one of the finest *Cattleyas* in cultivation, but many are sold under the name which have no claim to it. It blooms in July and August, and will last from two to three weeks in beauty.—*Brazil*.

C. Dawsoni, *Warner*.—This very fine and rare *Cattleya*, named in honour of the late T. Dawson, Esq., of Meadow Bank, in whose splendid collection it first flowered, appears as





CATTLEYA



OLOSA.



if it were an intermediate form between *C. labiata* and *C. Mossiæ*. It grows a foot or more high, the leaves being of a dark green colour, and of unusual thickness. The very large flowers are produced in clusters of three or four, and are as much as six or seven inches in diameter; the sepals and petals delicate purplish rose; the lip large, its upper part straw colour or yellow, the rest being of a beautiful deep roseate hue, and fringed at the margin. The flowers are of good substance, and consequently last a long time in perfection. It is one of the grandest of its class, and is beautifully figured in Mr. Warner's splendid volume, quoted below.—Supposed to be from *Brazil*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 16.

C. Devoniana, *Veitch*.—This beautiful hybrid, for which we are indebted to the skill of Mr. Dominy, is in growth like *Lalia elegans*, forming thin terete stems, each bearing two leaves some six or eight inches long. The flowers are upwards of five inches in diameter, and are produced in September; the sepals and petals are white, tinged with pink, which becomes deeper towards the points, and the lip is deep rosy purple.—*Garden hybrid*.

C. dolosa, *Rchb. f.*—A very pretty dwarf-growing species, with the subfusiform stems five or six inches long, the leaves oblong, in pairs, about four inches long and two and a half inches broad; the flowers are of a beautiful rosy magenta colour, with a yellow disk to the lip, which has the side lobes very much developed. This species is nearly allied to *C. Walkeriana*, and is sometimes regarded as a variety of that species, but differs in flowering from the apex of the pseudobulb and not from a leafless bulb, as in *C. Walkeriana*.—*Brazil: Minas*.

FIG.—*Gard. Chron.*, N.S., v. 430, figs. 78, 79.

C. Dominiana, *Lindley*.—A beautiful acquisition, obtained as a hybrid between *C. labiata* and *C. amethystina*, the latter a form of *C. intermedia*. In habit it somewhat resembles *Lalia elegans*, but is less robust. The flowers are six inches in diameter. The sepals and petals are white, delicately shaded with pink, the lip rosy purple, edged with white, and having a deep orange blotch in the throat.—*Garden hybrid*.

C. Dominiana alba, *Veitch*.—This plant resembles *C. Dominiana* in all but the colour of the flowers, in which the sepals

and petals are broad, white, faintly shaded with lavender, and the lip is pure white, with a lilac blotch in the centre.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 367.

C. Dominiana lutea, *Veitch*.—An elegant variety, in which the flowers have the sepals and petals of a delicate blush, and the lip white in front, suffused with yellow, the disc being yellow, streaked with rose.—*Garden hybrid*.

C. Dowiana, *Bateman*.—This superb species was imported from Costa Rica in 1864, and flowered the following autumn. It has stout clavate sulcate monophyllous stems, about a foot high, oblong obtuse leaves, and very large flowers, of which the sepals and petals are of a bright nankin colour, suffused on the under sides with crimson, and the lip a rich bright dark crimson-purple, beautifully streaked with gold. *C. Dowiana* is undoubtedly the most gorgeous of its family, bearing spikes of five or six flowers each. We do not find this plant so free-blooming as others, and only a very few people grow it well. We have bloomed fine plants, but have found them best grown in baskets as near the light as possible, at the warmest end of the *Cattleya* house, and they must have a copious supply of water during the growing season. This is a plant that no collection should lack.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 5618; *Warner, Sel. Orch. Pl.*, ii. t. 27; *Ill. Hort.*, t. 525; *Flore des Serres*, tt. 1709–10; *Bateman, 2nd Cent.*, t. 191; *Jennings, Orch.*, t. 33; *Belg. Hort.*, 1869, tt. 13–14.

C. Dowiana aurea, *Williams and Moore*.—A very beautiful and distinct form of *C. Dowiana*, differing from the type in its being devoid of crimson on the sepals and petals, and in the lip having more yellow in it; the sepals and petals are primrose yellow, the lip rich velvety purple-crimson, distinctly veined with golden yellow; it flowers during the autumn, and lasts for a couple of weeks in beauty. We have found this variety more free-flowering than *C. Dowiana*.—*Colombia*.

FIG.—*Orchid Album*, ii. t. 84; *Illust. Hort.*, 3 ser., t. 493.

SYN.—*Cattleya aurea*.

C. Edithiana, *Warner*.—A splendid variety, in habit like *C. Mossiæ*, and growing a foot high, with dark green foliage. The flowers are very large, measuring from six to seven inches in diameter; the sepals and petals are light mauve, and the lip also is mauve, striped with white, the discal part buff. The

flowers are produced in May and June, and remain in perfection three or four weeks. The only example we have seen of this is in the collection of Mr. Warner, at Broomfield.—*Brazil*;

C. Eldorado, Linden.—This species is a very beautiful object, and a valuable addition to our Orchid collections. In growth it resembles *C. quadricolor*. Its short clavate stems terminate in a solitary oblong-ligulate leaf and a two-flowered peduncle, the flowers being remarkable for their somewhat narrow sepals and petals, which are white just tinted with pink, the lip white at the base, where it is closely folded round the column, the expanded portion lobed and crenate at the edges, deep purplish magenta in the front, half the throat being heavily stained with orange. Its flowers are produced during the late summer and early autumn months.—*Rio Negro*.

FIG.—*Flore des Serres*, t. 1826.

C. Eldorado alba.—See *CATTLEYA VIRGINALIS*.

C. Eldorado splendens, Linden.—This is a very beautiful and superior form of the preceding, with very large flowers. The sepals and petals are clear rose, the latter broad and serrated at the edges, the lip large, emarginate, having a rich deep orange throat, succeeded by a circle of white, which is again followed by rich violet-purple, extending to the front and round the whole margins, where it is finely saw-toothed. The front portion of the lip has somewhat of a quadrate outline. It is a most desirable plant, and should be in every collection.—*Rio Negro*.

FIG.—*Illust. Hort.*, 3 ser., t. 7.

C. Eldorado ornata, Rchb. f.—This new variety, which flowered in 1883 with W. Lee, Esq., Downside, Leatherhead, has very dark purple sepals and petals, and a large dark purple blotch covering the end of each petal; the lip is as in the type; it flowers during the autumn months.—*Rio Negro*.

C. exoniensis, Rchb. f.—A splendid garden hybrid, obtained in the nursery of Messrs. Veitch & Sons, and for the raising of which we are indebted to Mr. Dominy. It had for its parents *C. Mossiæ* (seed parent) and *Lælia purpurata*, and like them has clavate monophyllous stems, and gorgeous flowers. The sepals and petals are in shape like those of *C. Mossiæ*, and tinted with delicate blush; the lip is much

enlarged in front, undulated, and of an intense rich velvety rose-purple with a white margin, the throat deep orange or golden yellow, with two purplish veins in the central part of the base, and the broad anterior part traced over with darker veins. It blooms in August and September. There are several variations amongst the seedlings, differing much in colour.—*Garden hybrid*.

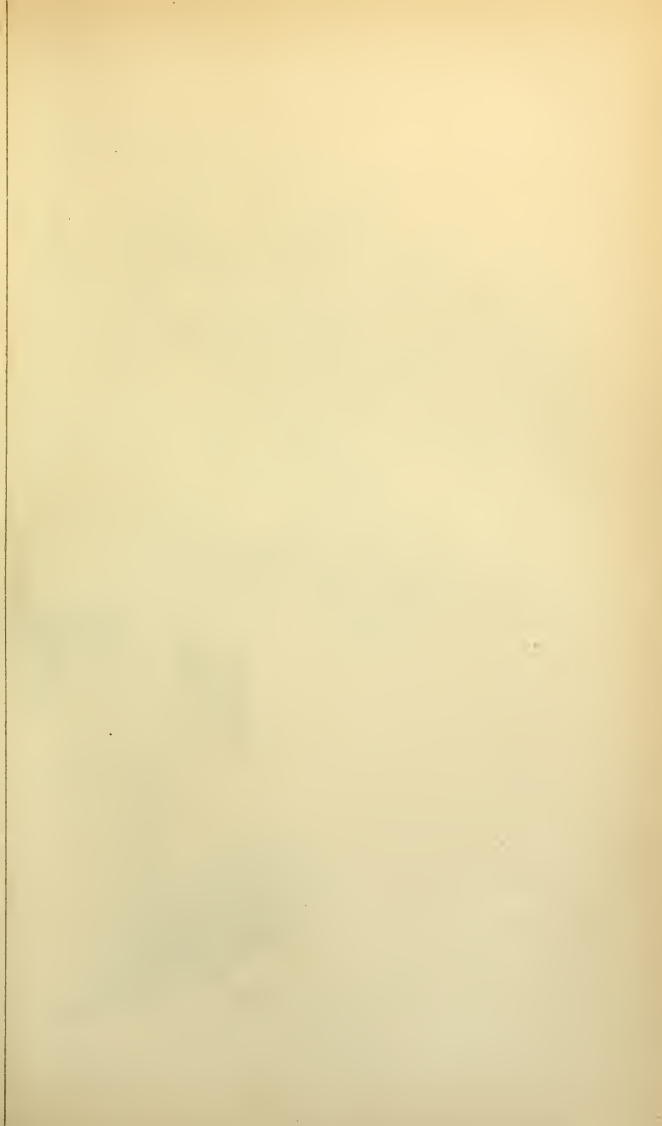
FIG.—*Floral Mag.*, t. 269; *Warner, Sel. Orch. Pl.*, ii. t. 36; *Jennings, Orchids*, t. 1.

SYN.—*Lælia exoniensis*.

C. fausta, *Richb. f.*—A charming hybrid, the happy result of a cross between *C. exoniensis* and *C. Loddigesii*, the latter the seed-bearing parent. The plant is intermediate in character between the parents. It has flowers of a pretty rosy lilac colour; the lip white with a large yellow disk, extending the whole length of the throat, tipped with crimson. It blooms about the end of November, and on that account will be very valuable. This was raised in Messrs. Veitch & Sons' nursery at Chelsea. In one variety noticed by Professor Reichenbach under the name of *radians* there are numerous dark purplish bars or streaks radiating from the centre of the lip, and distributed over the whole of the anterior portion. This variety is represented in the *Gardeners' Chronicle* (as quoted below) at fig. 57a.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 1873, 289, fig. 57. The figure in *Floral Mag.* 2 ser., t. 189, given under this name, cannot be a true representation of the plant.

C. Gaskelliana, *Richb. f.*—A grand addition to the already numerous group allied to *C. labiata*, the well-rounded flowers measuring seven inches across. In its manner of growth it varies considerably, in some cases resembling *C. Mossia* and *C. Mendelii*, and in others partaking of the broad leaf and short bulb of *C. Warneri*. In the colouring and form of its flowers it also varies considerably. The first blossoms of it that were seen in this country much resembled a pale form of *C. Mendelii*, others resembled the old and rare *C. labiata pallida*, and we have seen some varieties as dark as *C. Warneri*. The saddle-shaped blotch on the lip is in some instances a bright deep yellow, approaching to orange, and in others a lemon yellow. It is at any rate a most desirable plant, be it species, sub-species, or variety, and will be found useful in all collections, flowering as it does during the early autumn months. It is named in honour of H. Gaskell, Esq.,





CATTLEYA

AS EXHIBITED BY



FIGAS.

T. LAWRENCE.



of Liverpool, a great admirer of this class of plants, and who has a fine collection of them.—*Brazil*.

C. gigas, *Linden et André*.—This is undoubtedly one of the finest *Cattleyas* known, its flowers being amongst the largest and the most beautifully coloured, measuring seven to eight inches broad, and nine to ten inches deep. It has short fusiform stems, each bearing one oblong leathery leaf, and it produces from four to five flowers on a peduncle. The flowers are very handsome, the sepals and petals pale rose, and the lip large and broad, of a rich deep purple or violet in front, and having a large yellow eye-like blotch on each side of the throat. The plant is not so free-flowering as many *Cattleyas*. We have had the best success with it when it was grown in a basket or pot suspended from the roof, as near the light as possible, at the warm end of the *Cattleya* house. It flowers in May, June, and July.—*New Grenada*.

FIG.—*Ill. Hort.*, 3 ser., t. 178; *Floral Mag.*, 2 ser., t. 144; *Warner, Sel. Orch. Pl.*, iii. t. 7; *Gard. Chron.*, n.s., xiv. 268, fig. 50; *Id.*, xvii. 343, fig. 53.

C. gigas burfordiensis, *Hort*.—An exceedingly handsome variety of this grand Orchid, exhibited by Sir Trevor Lawrence, Bart., M.P. The flowers measure fully eight inches across; the sepals and petals are of a beautiful rosy lilac colour, and the lip is large and flat, three inches in diameter, and of a deep amethyst colour, margined with dark rosy purple, the throat orange-coloured, and the portion which encircles the column of a rich rosy purple.—*Colombia*.

C. gigas Sanderiana, *Hort*.—This is a fine form of *C. gigas*, coming from a new locality. It resembles *C. gigas* in growth, but frequently has red-tinted bulbs. It is, as far as we have at present seen, a much freer-flowering form than the type, and is equal in size and colour to the best forms of *C. gigas*; the lip is a deep magenta-purple. It flowers in July and August.—*Colombia*.

FIG.—*Gard. Chron.*, n.s., xx. 401, fig. 62.

C. granulosa, *Lindley*.—A free-growing species, having slender terete stems, a pair of oblong lanceolate leaves, and large olive-green flowers, with rich brown spots; the lip whitish, spotted with crimson, and having its surface broken up into numerous granulations. It blooms in August and September, and remains long in perfection. This is not so

showy as many of the *Cattleyas*; but where there is room it is worth growing, on account of its distinct colours.—*Guatemala*.

FIG.—*Bot. Reg.*, 1842, t. 1; *Bot. Mag.*, t. 5048; *Annales de Gand*, 1846, t. 103.

C. guatemalensis, *Moore*.—A very distinct and pretty Orchid, whose flowers, though not so large as those of many of the species, are yet from their curious colour—which is in the sepals and petals rosy purple and buff, and in the lip reddish purple with an orange disk marked with a few crimson lines—amply compensated for as to size, and being produced in large racemes, the plant becomes a very desirable addition to any collection. It is similar in habit to *C. Skinneri*, and requires the same kind of treatment.—*Guatemala*.

FIG.—*Floral Mag.*, t. 61.

C. guttata, *Lindley*.—A free-growing Orchid, attaining about twenty inches in height, with slender terete stems, two oblong fleshy leaves, and a nine to ten-flowered raceme of handsome flowers, the sepals and petals of which are greenish yellow beautifully spotted with crimson, the lip white stained with purple. This is a very distinct species, and when well grown will produce as many as nine or ten flowers on a spike. It blooms in October and November, lasting two weeks in perfection.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1406; *Loddiges, Bot. Cab.*, t. 1715; *Trans. Hort. Soc.*, 2 ser., ii. 177, t. 8; *Annales de Gand*, 1848, t. 175.

SYN.—*C. sphenophora*, *C. elatior*.

C. guttata Leopoldii, *Linden et Rehb. f.*—A charming variety, whose terete stems reach about twenty inches in height, and bear a pair of short dark green leaves; it generally has from six to ten flowers on a spike, and is a free-blooming kind, producing its fragrant flowers after it has made its growth. The sepals and petals are brownish or bronzy green, spotted with crimson, the lip rich velvety purple. We have seen this with thirty flowers on one head, a condition in which it was exhibited at Regent's Park by Mr. Page, when gardener to the late W. Leaf, Esq., Streatham, in whose collection it was grown; this was the finest spike we ever remember to have seen. It continues in perfection about three weeks, making a fine plant for exhibition on account of its distinct colour.—*Brazil: Bahia*.

FIG.—*Pescatorea*, t. 43; *Ill. Hort.*, t. 69; *Orchid Album*, i. t. 16; *Flore des Serres*, tt. 1471—2.

C. guttata lilacina, *Rchb. f.*—This beautiful variety was flowered by Sir T. Lawrence, Bart., M.P., in June, 1881. It is quite distinct from the type, the sepals and petals being blush white, irregularly spotted with magenta, and the lip large and well fringed, of a bright magenta-crimson. It flowers in June and July.—*Brazil*.

C. guttata Prinzii, *Rchb. f.*—A very beautiful and distinct form, growing about a foot high, and having white sepals and petals, which are flushed with rosy magenta, and faintly spotted with a darker tint of the same colour, the broadly expanded deeply crenate-lobed lip being of a bright purplish crimson. It flowers in June and July. Prof. Reichenbach quotes, as a synonym of this, the *C. amethystoglossa* of British gardens, a view which his figure, here quoted, does not appear to confirm; nor does the habit of the plant, for *C. amethystoglossa* grows as much as three feet in height. *C. guttata Keteleeri* seems from the figure to be the same as the present variety.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 172; *Rev. Hort.*, 1875, 350, with tab. (*guttata Keteleeri*).

C. guttata Williamsiana, *Rchb. f.*—A fine variety, flowered by W. Lee, Esq., Leatherhead. In this the lip is pale rosy lilac, with dark rosy purple front lobe; the sepals and petals dull purple, faintly striped towards the margins, and in some cases spotted with deep purple. Flowers in June.—*Brazil*.

C. Harrisoniana, *Bateman*.—A free-growing Orchid, attaining the height of twenty inches, and blooming in abundance from July to October. The flowers, which will last in good condition for three weeks, are of a beautiful rose colour, having on the lip a slight tinge of yellow. This is a noble plant, and amply repays the care required to grow it well.—*Brazil: Rio Janeiro*.

FIG.—*Paxton, Mag. Bot.*, iv. 247, with tab. (*Harrisonæ*); *Annales de Gand*, 1845, t. 5.

C. Harrisoniana violacea, *Hort.*—A charming variety, which grows about two feet high, and makes two growths in one year, flowering on both, in July, August, and September; it will last in bloom four weeks if kept in the coolest house. The sepals and petals are of a beautiful violet, and the lip is of the same colour, with a little yellow in the centre. It

makes a fine exhibition plant, the colour being very different from that of many other Orchids.—*Brazil: Rio Janeiro.*

C. intermedia, *Graham*.—A beautiful Orchid of the two-leaved set, of neat habit, one to two feet high, and a free grower. The sepals and petals are delicate rose colour, and the lip is of a rich rosy purple. It blooms in May and June, and lasts for three or four weeks in perfection if kept in a cool place. This species frequently produces as many as nine flowers on a spike, and makes a fine plant for the May and June shows. There are several varieties of *C. intermedia*.—*Brazil.*

FIG.—*Bot. Reg.*, t. 1919; *Bot. Mag.*, t. 2851; *Maund, Bot.*, iv. t. 195; *Paxton, Mag. Bot.*, i. 151, with tab.; *Lem. Jard. Fl.*, t. 379; *Ann. de Gand.*, 1848, t. 201.

SYN.—*C. amethystina*.

C. intermedia superba, *Hort*.—A splendid variety, growing about fourteen inches high, and making two growths in one year, but only flowering from that made in the spring. The sepals and petals are delicate rose, the lip broad and of the richest purple; from four to six blossoms are produced on a spike. It makes a fine plant for exhibition, and will last about four weeks in perfection.—*Brazil.*

C. intricata, *Rehb. f.*—In habit this species comes nearest to *C. intermedia*, the flowers being somewhat intermediate between *Laelia elegans* and *C. intermedia*; the sepals and petals are of the lightest whitish rose; and the lip resembles that of *L. elegans picta*, only that the side lobes are white, and the blade of the central lobe, which has an abrupt stalk, of the deepest purple. It flowers in June and July.—*Brazil.*

C. labiata, *Lindley*.—One of the finest of the *Cattleyas*, a free-blooming species, growing about twenty inches high. The stems are club-shaped, monophyllous, and the flowers are large, often six or seven inches in diameter, three or four on a spike, with broad rose-coloured sepals and petals, and a rich magenta-crimson lip. It blooms in October and November, and will continue in perfection three or four weeks. The finest specimen we ever saw was in the collection of the late R. Hanbury, Esq., the Poles, near Ware, the plant being cultivated in a large tub, about two feet across. This superb kind was first flowered by the late Mr. Cattley, of Barnet, in honour of whom the genus is named. This species, though one of the first introduced, is very rare, indeed there are very few specimens of the true species in the country. Several

beautiful forms such as *Gaskelliana*, *Percivaliana*, *Warneri*, &c., are sometimes referred to as sub-species of *C. labiata*, but we have thought it more convenient to treat of them under their separate names.—*Brazil*.

FIG.—*Lindl. Coll. Bot.*, t. 33; *Bot. Reg.*, t. 1859; *Bot. Mag.*, t. 3998; *Loddiges, Bot. Cab.*, t. 1956; *Hook. Ex. Fl.*, t. 157; *Paxt. Fl. Gard.*, i. t. 24 (vars.); *Paxton, Mag. Bot.*, iv. 121, with tab.; *Id.*, vii. 73 (var. *atropurpurea*), with tab.; *Flore des Serres*, tt. 1893—4; *Jennings, Orch.*, t. 45; *Orchid Album*, ii. t. 88; *Knowles and Westc., Floral Cab.*, t. 26; *Gartenflora*, t. 146 (var. *superba*).

C. labiata candida, *Lindley*.—One of the finest of the *Cattleyas* when well bloomed; it grows about a foot high, and has light green foliage. The flowers are large, but produced sparingly, and often deformed, but when well expanded they are magnificent, a single bloom sometimes measuring seven inches across. The sepals and petals are pure white, while the lip is of the richest crimson, beautifully fringed; it flowers during June and July, and will continue three or four weeks in perfection. This was first flowered at Sion House, and is hence often called the Sion House *Cattleya*.—*Brazil*.

FIG.—*Paxt. Fl. Gard.*, i. t. 24, fig. 1.

C. labiata pallida, *Williams*.—A beautiful variety, whose growth is shorter than that of the preceding, and which blooms in August. The leaves grow erect, and of a light green colour. In the flowers the sepals and petals are light pink, and the lip crimson, beautifully fringed. A useful variety on account of its flowering earlier than *C. labiata*, and if the flowers are kept dry, it will remain three weeks in good condition. The finest plant we ever saw of this variety is in the collection of the Comte de Germiny in France; this had at the time we saw it no less than forty-eight expanded flowers, and did great credit to M. Rondeau, the gardener.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 121.

C. labiata Pescatorei, *Hort*.—A very beautiful variety, of free-blooming habit, with light green foliage, and pale rose-coloured flowers, with a rich crimson lip. This, which is distinct from the old form of *C. labiata*, blooms during the autumn, and continues three weeks in perfection.—*Brazil*.

C. labiata picta, *Lindley*.—A very charming variety, with large flowers, which have the sepals and petals lilac-rose blotched with crimson, and the lip of a very rich deep crimson,

white on the margin on the upper side, where the lateral lobes meet; the petals are remarkably broad.—*Brazil*.

FIG.—*Pact. Fl. Gard.*, i. t. 24, fig. 2.

C. Lemoniana, *Lindley*.—A pretty species in the way of *C. Mossiæ*, but distinct in its growth, the leaves being shorter. It grows about a foot high, and has light green foliage. The flowers are pale pink, with yellow in the centre of the lip, and are produced during the summer, lasting for three or four weeks in bloom. Reichenbach includes it under *C. labiata*.—*Brazil*.

FIG.—*Bot. Reg.*, 1846, t. 35.

C. lobata, *Lindley*.—A charming species, very much like *C. crispa* in growth, but shorter in both stem and leaf. The flowers are of an uniform deep rich rose. It is a shy-flowering plant, producing its blooms in May and June, and continuing about three weeks in perfection. This plant, which one seldom meets with at exhibitions on account of its shy-flowering properties, is exceptionally often seen in great perfection at the Manchester shows, so famed for their Orchidic displays. There is a variety called *C. lobata superba*, which flowers more freely, and its spikes are larger. We exhibited a fine plant of this variety with seven spikes of blossom at our great International Horticultural Exhibition in 1866.—*Brazil*.

FIG.—*Lindl. Gard. Chron.*, 1848, 403, with woodcut.

SYN.—*C. Boothiana*.

C. Loddigesii, *Lindley*.—A free-flowering and desirable species, which grows a foot or more in height, and has terete stems, a pair of ovate-oblong leaves, and medium-sized flowers, in which the sepals and petals are pale rose colour tinged with lilac, and the lip light rose marked with yellow. It blooms in August and September, producing three or four flowers on a spike, remaining long in perfection.—*Brazil*, *Beunos Ayres*.

FIG.—*Loddiges, Bot. Cab.*, t. 337; *Lindley, Coll. Bot.*, t. 37; *Hook, Ex. Fl.*, t. 186.

C. Loddigesii maculata, *Williams*.—A very pretty spotted variety, having minute deep purple spots over the entire surface of the flower; very distinct.—*Brazil*.

C. Manglesii, *Rchb. f.*—A Veitchian hybrid, the result of a cross between *C. speciosissima* and *C. Loddigesii*. The flower is larger and brighter than in *C. Loddigesii*, and the lip is beauti-

fully waved and toothed on the margin, white with a yellow line on the disk, and two small pale purple blotches, light purple on the margin.—*Garden hybrid*.

C. Mardellii, *Seden*.—This fine hybrid has stems about four and a half inches long, terminated by two leaves. The sepals and petals are bright magenta, the lip three-lobed, opening out on both sides of the column, the side lobes pale magenta, almost white towards the middle; down the centre of the throat is a broad bright yellow stripe, while the front of the lip is rich bright magenta-purple. A very handsome high-coloured plant, flowering in June. Raised at Messrs. Veitch & Sons'.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 437.

C. marginata, *Pinel*.—A handsome dwarf-growing species, about six inches high, the stems cylindracco-fusiform and one-leaved. The flowers are large, usually solitary, but sometimes two on a spike; sepals and petals rosy crimson; lip deep rose, margined with white. It produces its blossoms in September and October, and lasts three weeks in perfection. It is a very desirable plant, and ought to be in every collection, however small, as it requires but very little room. It grows best suspended from the roof of the cool-house, on a block of wood, with a little sphagnum moss, and it requires a good supply of water at the root in the growing season. There are many varieties of this species, and some of them are very beautiful in colour.—*Brazil*.

FIG.—*Paxton, Mag. Bot.*, x, 265, with tab.; *Ill. Hort.*, t. 193; *Florist*, 1850, 91, t. 34.

SYN.—*C. pumila major*; *C. spectabilis*.

C. Marstersonia, *Seden*.—A hybrid raised at Messrs. Veitch & Sons', between *C. labiata* and an unnamed seedling *Cattleya*. The stems are about eight inches long, two-leaved, somewhat resembling *C. superba*. The flowers are intermediate in aspect between *C. Loddigesii* and *C. labiata*, amethyst-coloured, the lateral lobes of the lip yellowish white with a delicate amethyst border, and the middle lobe an intense rich purple.—*Garden hybrid*.

C. maxima, *Lindley*.—A magnificent species, growing from a foot to eighteen inches high, distinct in character, with furrowed club-shaped stems, bearing two oblong submarginate leaves, and producing from five to ten flowers on a spike in November and December, continuing in perfection for three weeks. The sepals and petals are bright rose, the lip richly

variegated, with dark crimson veins down the centre. Of this species there are many varieties, and many plants have been imported within the last few years.—*Ecuador, New Grenada, Colombia, Peru.*

FIG.—*Bot. Mag.*, t. 4902; *Bot. Reg.*, 1846, t. 1; *Flore des Serres*, t. 2136; *Ill. Hort.*, 3 ser., t. 29; *Bateman*, 2nd Cent., t. 131; *Xenia Orch.*, i. t. 95; *Gard. Chron.*, N.S., xxii., 620, fig. 108.

C. maxima aphlebia, *Rchb. f.*—Flowers similar in shape to those of the type, but having no purple veins upon the lip. The yellow disc is surrounded by light purple. Imported by Mr. Bull.—*New Grenada.*

C. maxima, Backhousei, *Rchb. f.*—A very distinct and desirable variety, having plump short bulbs, with stiff upright leaves. The flowers are much richer in colour than those of the type. It was first flowered many years ago by Messrs. Backhouse & Sons, of York.—*Colombia.*

C. Mendelii, *Backhouse.*—A very fine species of recent introduction, having short clavate stems, solitary oblong leaves, and very handsome flowers, something in the way of *C. Trianae*. The sepals and petals are large and broad, varying in colour from white to a light pink, and the lip is large, of a rich magenta colour; it flowers in April and May. This is undoubtedly one of the finest introductions of late years, and makes a very distinct plant for exhibition. There are many very handsome varieties.—*Colombia.*

FIG.—*Floral Mag.*, 2 ser., t. 32.

C. Mendelii grandiflora, *Williams and Moore.*—A magnificent variety of this species, with flowers eight inches across. The sepals and petals are white, of fine substance, and very broad, the lip broad and well fringed, rich magenta-rose, white and frilled at the edge, the throat lemon yellow marked with pale magenta-rose lines; it flowers in May and June.—*Colombia.*

FIG.—*Orchid Album*, i. t. 3.

C. Mendelii Jamesiana, *Hort.*—A very beautiful form, having deep blush sepals and petals, the latter marked at the tips with a bright magenta stripe, widest towards the upper end; the lip is bright amethyst, the throat yellow veined with dull purple.—*Colombia.*

FIG.—*Orchid Album*, iv. t. 178.

C. Mendelii superbissima, *Hort.*—This gorgeous variety was first flowered by R. Smith, Esq., Brentham Park, Stirling,

and is probably the finest form of this beautiful *Cattleya* in cultivation. The flowers are very large, and of fine substance; the sepals and petals broad, pale blush colour, the lip rich bright amethyst, much crisped and frilled at the edge, and the throat rich yellow.—*Colombia*.

C. Mitchellii, *Rehb. f.*—This fine hybrid is the result of a cross between *C. quadricolor* and *C. guttata Leopoldii*, obtained by Mr. Mitchell, gardener to Dr. Ainsworth, of Manchester. It is of compact growth, the stems being about a foot long, each bearing two leaves, of a dark green colour, and considerably narrower than those of *C. Leopoldii*; the sepals and petals purplish violet, with the front lobe deep purple-magenta, and the lateral lobes light purple tipped with the same colour as the front lobe of the lip; disk orange, edged with white at the sides. It is a very distinct plant, and will form a fine addition to this lovely class.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 337.

C. Morganæ, *Williams and Moore*.—This is one of the most chaste of all *Cattleyas*, and is named after Mrs. Morgan, of New York, a great admirer of Orchids. In growth it resembles *C. Mendelii*, and it flowers quite as freely. The sepals and petals are snow white, the lip white, beautifully fringed, and having a distinct bright magenta blotch towards the apex, the throat orange-coloured with darker radiating stripes; its flowers are produced in May and June, and last six weeks in beauty.—*Colombia*.

FIG.—*Orchid Album*, i. t. 6.

C. Mossiæ, *Hooker*.—This magnificent and free-flowering species has oblong furrowed stems, which grow a foot or more high, are surmounted by solitary oblong leaves, and spikes of several magnificent flowers; the plants bloom from March to August, and if kept in a cool place last in perfection for three or four weeks. The flowers are very large, a single one being six inches across, in some of the varieties still larger, and three or four growing on one spike. There are many varieties of this plant, with blossoms of various shades of colour, from white and pale pink to crimson and rose purple. This species makes a noble plant for exhibition. We have seen specimens of *C. Mossiæ* at the Chiswick and Regent's Park shows, with from thirty to forty flowers upon a

single plant. Many of the varieties here recorded bloomed in the rich collection of Robert Warner, Esq., who makes this species one of his especial favourites, and where we have seen as many as six hundred of these beautiful flowers open together. Many of these forms are very distinct. The best of those here noticed were named and described in the *Gardeners' Chronicle* in 1864 by Mr. Thomas Moore, of the Chelsea Botanic Garden. The varieties are all from the same country as the parent.—*La Guayra*.

FIG.—*Bot. Mag.*, t. 3669; *Bot. Reg.*, 1840, t. 58; *Gard. Chron.*, n.s., xx, 530, fig. 89.

C. Mossiæ Alexandræ, *Williams*.—A very distinct and beautiful variety of the light-coloured section; sepals and petals pale blush; lip white, distinctly spotted and veined with bright magenta; throat rich bright orange marked with crimson-purple. These markings on the white ground give to the flower a most distinct and charming appearance.

C. Mossiæ Arnoldiana, *Hort.*, *Sander*.—This variety was flowered in 1884 by R. P. Percival, Esq., Southport. The lip is rather narrow, the basal part having dark purple stripes, the middle and anterior part, excepting the extreme front, with a light mid line and very fine orange stripes on a lighter ground; front portion sulphur yellow, with a very few small purple lines.

C. Mossiæ aurea, *Moore*.—A small-flowered variety, with the sepals and petals blush, less spreading than in most other forms; lip small, strongly marked with buff-orange at the base, extending forward at the front edge, and having broken violet-rose lines in the centre, surrounded by a very broad pale margin, which is almost white inwards, and tinged with blush on the extreme edge.

C. Mossiæ aurea grandiflora, *Moore*.—A large-flowered form; sepals and petals blush; lip marked with a bar and a few broken lines of violet-rose, very much stained with orange at the base, and towards the upper part of the margin.

C. Mossiæ aureo-marginata, *Moore*.—Large-flowered; sepals and petals deep blush; lip with deep violet-rose centre and yellow base, the yellow stain continued so as to form a broad margin to the upper expanded portion of the lip.

C. Mossiæ Blakei, Moore.—Sepals and petals deep blush, the latter frilled towards the points; lip orange-buff at the base, and mottled violet-rose in front, the markings passing out nearly to the edge, so that there is no sharply-defined pale frill.

C. Mossiæ complanata, Moore.—A large-flowered variety, remarkable for the almost total absence of frilliness on the petals, and especially on the lip; sepals and petals rather deep blush; lip broad and spread out at the apex, a good deal stained with orange at the base, but faintly mottled and veined with purple over the centre, leaving a broad pale blush-tinted edge.

C. Mossiæ conspicua, Moore.—Large-flowered; sepals and petals blush; lip richly marked with violet-rose, dashed with orange at the base, and having an irregular broadish pallid border; it blooms in great profusion.

C. Mossiæ elegans, Moore.—Rather small in size, but lively and effective in colouring; sepals and petals deep blush; lip small, with bright orange-yellow base, and the central portion marked sparingly with veins of violet-rose surrounded by a broad pale edge.

C. Mossiæ fimbriata, Moore.—One of the largest-flowered of the whole series, and prettily though not heavily marked; sepals and petals rather pale blush, the latter broad and a good deal frilled throughout; lip very much frilled, marked with a bright orange stain at the base, and in front decorated with broken veins of violet-rose on a white ground, the extreme edge being blush; the lip is thus distinctly edged with blush.

C. Mossiæ flammea, Moore.—Rather small, but richly coloured, the petals and lateral sepals less spreading than in other forms; sepal and petals deep blush, the latter frilled towards the tip; lip small, very deep rich orange at the opening, dense violet-rose in the centre, the orange intermingling therewith, and producing a fiery crimson, the purple broken up with white in front, and irregularly margined with blush.

C. Mossiæ grandiflora, Moore.—A large-flowered variety; sepals and petals blush, the petals less frilled than in some

forms ; lip a deep rich purple-rose, slightly stained at the base with orange, and having a narrow even edge of pale blush.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 16, fig. 1.

C. Mossiæ grandis, *Moore*.—The largest of all the forms in respect to the size of its lip ; sepals and petals pale blush ; lip mottled violet-rose, with an irregular blush-coloured edge ; the base stained with buff-orange. This is beyond doubt one of the finest varieties of *C. Mossiæ*.

C. Mossiæ Hardyana, *Williams and Moore*.—The most remarkable and handsome form of *C. Mossiæ* that has yet come under our notice. It is named in honour of G. Hardy, Esq., Timperley. The flowers are large, having very irregular markings ; sepals and petals pale blush rose, irregularly blotched and veined with magenta-purple ; lip beautifully frilled, the front portion striately marked with rich magenta-purple, surrounded by an irregular margin of white, traversed by veins of pale purple ; throat orange-yellow. Like the rest, it flowers during the summer months.

FIG.—*Orchid Album*, iii. t. 125.

C. Mossiæ Helenæ, *Moore*.—Remarkable for its high-coloured flowers ; sepals and petals deep blush, mottled with dark purple-rose ; the lip a rich motley purple, orange at the base, and parti-coloured at the margin.

C. Mossiæ kermesina marginata, *Williams*.—This magnificent variety has rich peach-coloured sepals and petals, with a large beautifully fringed carmine lip, edged with white.

C. Mossiæ Lawrenceana, *Moore*.—Large-flowered, with erect stalks ; sepals and petals blush, the petals very broad and considerably frilled ; lip large, rich deep violet-rose, slightly stained with orange in the interior, veined and mottled in front, with a narrowish and nearly even frill of blush. It is in the way of the variety *splendens*, but rather smaller in the lip, with the throat more expanded.

C. Mossiæ magnifica, *Williams*.—In this variety the flowers are of a very fine form, from eight to nine inches in diameter ; sepals and petals of a deep rose colour ; lip orange, streaked with purple. Like all the varieties of *C. Mossiæ*, if kept free from the damp, it will remain a long time in bloom.

C. Mossiæ majestica, *Williams*.—This is a remarkably fine flower; the sepals and petals are broad, the latter measuring upwards of nine inches from tip to tip, and of a dark rose-colour; lip large and spreading, having the edge beautifully fringed; ground colour dark rose, stained at the base with soft orange, and variously blotched and streaked in front with violet-purple. In habit of growth it is also very distinct; the pseudobulbs are about three inches high, bearing a broad single leaf some six inches long.

C. Mossiæ Marianæ, *Moore*.—Small-flowered, but very distinct and chaste, and very rare; sepals and petals white; lip with a bright yellow stain at the base, prettily mottled with violet-rose in the centre, and broadly and evenly margined with white. Although this variety is not so large-flowered as many others, it is one of the most elegant and pleasing of all the kinds, and is worthy of a place in every collection.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 24.

C. Mossiæ marmorata, *Moore*.—One of the finest light-coloured sorts, and one of the largest-flowered; sepals and petals pale blush, the latter very broad; lip large, light rose, broken up into marbled markings covering the whole surface, except a narrow fringe at the edge; it is a good deal stained with deep orange at the base, and the margin is not only strongly frilled, but conspicuously fringe-toothed.

C. Mossiæ McMorlandii, *Williams*.—A fine variety, growing about a foot high, and having dark green foliage. The flowers are about six inches in diameter, the sepals and petals of a beautiful light rose, the lip yellow and fringed; it blooms in June and July, and remains three or four weeks in perfection. Very distinct, and makes a fine exhibition plant.

C. Mossiæ Mooreana, *Warner*.—A beautiful variety, well marked by the clearly-defined narrow white border of its lip, in the way of the var. *Marianæ*; sepals and petals very pale blush, lip dense violet-rose, moderately stained with orange at the base, and having a narrow even frill of white.

C. Mossiæ Napoleonis, *Moore*.—A very telling variety from its roseate tinge and the erect habit of its full-sized flowers; sepals and petals deep blush; lip large, of a mottled purple in front, and deep-orange at the base, with a broad margin of pale blush.

C. Mossiæ Pottsii, *Williams*.—A most lovely and unique variety of this ever-varying species ; it was bloomed in 1884 by Arthur Potts, Esq., of Chester. The flower is about seven inches in diameter ; the petals are broad blush, beautifully feathered in the centre with a broad band of magenta-purple, most irregular in shape, the sepals are marked in the same way, the lip is large and broad, its anterior part deep magenta-purple, broadly margined with blush white ; throat yellow.

C. Mossiæ purpurata, *Moore*.—Large-flowered ; sepals and petals deep blush ; lip large, of a very dense and nearly uniform violet rose, orange at the base, and having a pale frill or margin.

C. Mossiæ Reineckiana, *Hort*.—A very chaste and rare form, having flowers seven inches in diameter ; sepals and petals of fine substance, pure white ; lip lilac-mauve, beautifully fringed ; throat bright yellow veined with crimson-purple.

C. Mossiæ Rothschildiana, *Moore*.—One of the larger-flowered forms ; sepals and petals blush ; lip very bright orange at the base, with rosy purple lines and splashes over the centre, and a broad irregular white margin ; the petals are finely denticulate.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 16, fig. 3.

C. Mossiæ splendens, *Moore*.—Large-flowered ; sepals and petals blush ; lip rich full purple-rose, with orange base, the margins blush, and very much frilled.

C. Mossiæ striata, *Moore*.—A curiously marked sort ; sepals and petals deep blush, with paler veins, producing a motley striated appearance ; lip motley rose, striped throughout with dark purple-rose, the margin paler and venosely striated, the orange tint confined to the base.

C. Mossiæ superba, *Moore*.—Dark blush sepals and petals, the latter narrow and very slightly frilled ; lip large, prominently stained with deep orange at the base, the front part brighter, and the centre veined and somewhat mottled with violet-rose, leaving a broadish irregular pale margin.

C. Mossiæ venosa, *Moore*.—A very handsome variety, distinct-looking from there being very little orange present, and from the markings of deep violet-rose being evenly distributed ; sepals and petals deep blush, the petals becoming

paler towards the margin; lip marked with lines of violet-rose, beautifully fringed, extending nearly to the margin; the base very slightly stained with orange.

C. Mossiæ Victoriæ, *Moore*.—A very large and beautiful variety; the sepals and petals large, of a blush tint; the lip deep purple-rose, with bold orange markings at the base, and narrow even margin of blush.

C. Mossiæ Williamsii, *Moore*.—A large-flowered variety; sepals and petals blush white; lip finely mottled with rose, stained with orange at the base, and having a broad pale margin; the flowers are amongst the palest in the series, and very beautiful.

C. nobilior, *Rehb. f.*—A very pretty species in the way of *C. Walkeriana*, but having larger oblong bulb-stems and a pair of oblong leaves; the sepals and petals are delicate rosy lilac, the lip of the same colour, having a large primrose-coloured blotch.—*Brazil*.

FIG.—*Ill. Hort.*, 3 ser., t. 485; *Gard. Chron.*, n.s., xix. 728, fig. 120.

C. Percivaliana, *Rehb. f.*—This novelty is a distinct form of the *C. labiata* section, in the way of *C. Mossiæ*, which it resembles very much in growth. The flowers as far as we have seen are, however, smaller than in that species, but are darker and richer in colour in the best varieties. It is a plant that varies very much. The sepals and petals are deep blush, the lip much fringed, intense magenta-crimson margined with blush pink, the throat richly marked with crimson and golden yellow lines; it flowers in January and February.—*Colombia*.

FIG.—*Orchid Album*, iii. t. 144; *Gard. Chron.*, n.s., xxi. 178, fig. 35.

C. Percivaliana alba, *Hort.*—A pure white variety of this novelty, first flowered by Mr. Percival in February, 1884, and exhibited by him at South Kensington shortly afterwards; the sepals and petals are pure white, and the lip white with an orange stain in the throat.—*Brazil*.

C. porphyroglossa, *Linden et Rehb. f.*—This is a most distinct species, similar in growth to *C. bicolor*; the sepals and petals are Indian red suffused with yellow, the lip entirely covered by lamellæ and papulæ, bright amethyst, the lateral lobes covering the column pure white.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 171, t. 172, fig. 2.

C. pumila, *Hooker*.—A charming free-blooming species with very short oblong stems, about six inches high, bearing a solitary oblong-lanceolate leaf, and flowering in September, remaining for three or four weeks in perfection. The blossoms are proportionately large, deep purplish lilac with a purplish crimson lip, often edged with white. It is similar to *C. marginata* in its habit of growth. This plant succeeds best in the cool house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3656; *Bot. Reg.*, 1844, t. 5; *Warner, Sel. Orch. Pl.*, ii. t. 32; *Gard. Chron.*, 1854, 804, with fig. (monstrous form).

SYN.—*Lælia pumila*.

C. quadricolor, *Lindley*.—A very rare and pretty species, which grows about ten inches high, and produces its blossoms on the young growths in May and June. The stems are narrow compressed monophyllous, the leaves strap-shaped, and the charming flowers have the sepals and petals light rose and the lip rosy crimson edged with white, the throat yellow. There are two varieties of this plant in cultivation.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5504; *Batem, 2nd Cent.*, t. 108; *Ill. Hort.*, t. 514.

C. quinquecolor, *Hort*.—This pretty variety is the result of a cross between *C. Aclandiae* and *C. Forbesii*. The sepals and petals are light olive green spotted with brown and dark chocolate; the lip is carmine-rose veined with deeper rose, and having an elongated bar of yellow on the disk.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 511.

C. Rollissoni.—See *CATTLEYA WARSCEWICZII DELICATA*.

C. Schilleriana, *Rchb. f.*—A charming species, much like *C. Aclandiae* in growth; the foliage is, however, darker and rounder. It blooms during the summer months from the young growths, the flowers being large, remaining in perfection three or four weeks, if kept dry. They are deep rosy mahogany colour, in some forms spotted, the lip having darker stripes and shadings and being edged with pink.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5150 (var. concolor); *Jennings, Orch.*, t. 25; *Flore des Serres*, t. 2286; *Xenia Orch.*, ii. t. 111 (white-lipped); *Florist*, xii. 193, t. 153. (?)

C. Schilleriana *Regnelli*, *Williams*.—This is sometimes considered distinct from the preceding, but although well

marked, it is evidently very closely allied to that plant. The stems are usually about four or five inches high, the leaves in pairs, or sometimes in threes, thick, fleshy, and dark green. The flowers are borne upon upright spikes, from three to five in a cluster, measuring nearly four inches in diameter; sepals and petals somewhat oblong, spathulate, green suffused with olive green and spotted with brownish purple; the front lobe of the lip large, rich amethyst shaded with purple and bordered with white, the base yellow, streaked with purple. It should be placed upon a block with a little sphagnum moss, and suspended from the roof at the warmest end of the Cattleya house, shaded from the direct rays of the sun, and supplied with water liberally during the growing season; during the winter less heat will suffice, but it must by no means be allowed to get dry. It is a very desirable plant, as it blooms twice in the year, first in the month of July, and again about the end of September or the beginning of October.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 22.

SYN.—*C. Regnellii*.

C. Schofieldiana, *Rehb. f.*—This is a most handsome and distinct addition to this popular genus, and was first flowered by G. W. Law-Schofield, Esq., of Rawtenstall, near Manchester, in honour of whom it was named by Professor Reichenbach. It is an evergreen species, having stems and leaves similar to those of *C. guttata Leopoldii*, but not quite so strong as those of that plant. The sepals and petals are pale tawny yellow, having a flush of purple and a tinge of green, the whole of the surface densely spotted with crimson-purple; the lip is two and a half inches long, covered with lamellæ and papulæ of a bright magenta-purple, the lateral lobes white tinged with rose; it flowers in August.—*Brazil*.

FIG.—*Orchid Album*, ii. t. 93.

C. Schröderiana, *Rehb. f.*—A very distinct and curious *Cattleya*. The stems are nearly four inches high, having two well-marked joints, two leaved, the leaves oblong-ligulate. The flowers are about the size of a good *Lælia majalis*, of a mauve-purple colour, somewhat in the way of *C. dolosa*, but having thinner bulbs of equal thickness throughout, and not spindle-shaped as in that species; it flowers during the summer months.—? *Brazil*.

C. Sedeniana, *Veitch*.—A beautiful Veitchian hybrid, the parents being *C. crispera* and *C. granulosa*; it is tall in habit;

the flowers are large and handsome; the sepals and petals are light rose, shaded with green, and the lip has a white fimbriated margin, and a purple centre with darker veins. A desirable plant.—*Garden hybrid*.

C. Skinneri, *Bateman*.—A beautiful and free-flowering plant, growing about a foot high, and blooming in March, April, and May. The blossoms are rosy purple, and remain three weeks in perfection, if kept dry. This fine species of *Cattleya*, when grown strong, will produce as many as nine or ten flowers on a spike. It is one of the finest Orchids that can be grown for the May exhibitions, the colour being distinct and different from that of any other *Cattleya*. One of the finest plants of this species we ever saw was flowered by G. Hardy, Esq., Pickering Lodge, Timperley, and had numerous spikes, some bearing as many as ten flowers; it was in beautiful health, splendidly flowered, and measured some three feet in diameter. This plant was named *C. Skinneri oculata*.—*Guatemala, Costa Rica*.

FIG.—*Bot. Mag.*, t. 4270; *Bateman, Orch. Mex. et Guat.*, t. 13; *Paxton, Mag. Bot.*, xi. 193, with tab.; *Gard. Chron.*, n.s., xxi. 548, fig. 107.

C. Skinneri alba, *Rehb. f.*—A most charming and delicate form of this fine *Cattleya*, having pure snow white flowers, produced in the same way as those of the type. We received a grand spike of this from Mr. Hill, gardener to Sir Nathaniel de Rothschild, Tring Park, Tring.—*Costa Rica*.

FIG.—*Orchid Album*, iii. t. 112.

C. speciosissima Lowii, *Anderson*.—This is a very handsome form of the *C. labiata* section. The stems are oblong and deeply channelled, each bearing an ovate shining leaf; flowers large, frequently measuring eight inches in diameter, borne upon a somewhat short spike three or four together; sepals and petals broad soft flesh colour, the latter being the broadest with erose edges; the lip forms a circle, through closing over the column, the front portion being of an intense amethyst colour, varied with white and yellow markings towards the centre, where are also several lines of bright amethyst. It is a gem amongst *Cattleyas*, but it is not so free-flowering as some of the other kinds.—*Venezuela*.

C. speciosissima regina, *Rehb. f.*—A distinct and handsome variety, flowered by Sir T. Lawrence, Bart., M.P., in 1884;



CATTELYA TRIANÆ.

the ovary, column, sepals, and petals are of a rich purple colour; lip dark mauve-purple, having the two lateral yellow spots usual in the type. Professor Reichenbach thinks this one of the grandest *Cattleyas* ever seen.—*Venezuela*.

C. superba, *Lindley*.—This truly beautiful plant is a slow-growing species, usually attaining ten inches high, with club-shaped stems and a pair of short thick ovate-oblong obtuse leaves. It flowers in June and July, and the blossoms, which are very fragrant, and of a deep rose colour, with a rich magenta-crimson lip, will remain in bloom for three weeks; it produces three to six flowers on a spike, and is a very distinct species. It requires plenty of water at all times, and should never be allowed to get into a shrivelled state—if so, it is very difficult to restore it to a healthy condition; it requires more heat than the other *Cattleyas*, and is best grown on a block of wood or basket with live sphagnum moss, but is difficult to propagate.—*British Guiana*.

FIG.—*Bot. Mag.*, t. 4083; *Sert. Orch.*, t. 22; *Paxton, Mag. Bot.*, ix. 265, with tab.; *Warner, Sel. Orch. Pl.*, i. t. 24; *Flore des Serres*, t. 926.

C. superba splendens, *Lemaire*.—A distinct variety of the preceding. The flowers are much larger, the sepals and petals being considerably longer than in the form originally introduced; sepals and petals deep rich purplish rose; lip white at the base, magenta-crimson in front, and having in addition several lines or crests of golden yellow towards the middle. It is altogether a very distinct and handsome variety, and forms a fine companion to the type when the two are grown side by side.—*Rio Negro*.

FIG.—*Ill. Hort.*, t. 605; *Orchid Album*, i. t. 33.

C. Trianæ, *Linden et Rehb. f.*—This lovely winter-blooming *Cattleya*, of which there are an immense number of varieties, all of them beautiful, and some of them particularly so, resembles *C. Mossiæ* in its habit of growth, but generally attains larger dimensions. The leaves are of a light green. The flowers are produced during the winter months, and measure six to eight inches in diameter. The sepals and petals are usually blush; the lip blush, or pale rose colour outside; the throat orange or yellow, and the front rich rosy purple, more or less intense. This is considered by many to be a variety only of *C. Warszewiczii*; but whether a species, sub-species, or

variety, it is a really charming Orchid. The numerous varieties all come from the same country.—*New Grenada*.

FIG. *Orchid Album*, i. t. 45 ; *Dict. of Gard.*, 283, fig. 386.

C. Trianæ Atalanta, *Marshall*.—This extremely fine variety was flowered by Mr. Wilson, gardener to W. Marshall, Esq., and was exhibited at one of the meetings of the Royal Horticultural Society, when it received a first-class certificate. The sepals are upwards of three inches long and about an inch broad, white shaded with rose ; the petals are of the same colour, but broader and less pointed ; the lip three inches long, pale rose with a broad band of orange in the throat.

C. Trianæ Backhousiana, *Backhouse*.—A very chaste and beautiful variety, which was imported by Messrs. Backhouse & Son, of York. The sepals and petals are blush pink ; the lip large, and having a large bright magenta stain on the anterior part ; the throat marked with pale yellow. This is one of the finest of the dark varieties, and bears very large flowers.

C. Trianæ Colemanni, *Williams*.—This fine variety was flowered by E. J. Coleman, Esq., Stoke Park, Slough. The flowers measure eight inches across, the sepals and petals tipped with rose ; the lip is prettily fimbriated, and of a deep rose colour, and the throat beautifully striped with various shades of yellow. This is a very free-flowering plant, and a grand addition to the already large number of varieties of this species.

FIG.—*Floral Mag.*, 2 ser., t. 176.

C. Trianæ Corningii, *Williams*.—A most beautiful variety, and one that should be in every collection. It grows about the same height as *C. Trianæ*, and produces several large flowers on a spike ; sepals and petals pure white, slightly tinged with pale rose ; lip white, with a slight blotch of orange on the anterior part. This is one of the most delicate-looking forms of *C. Trianæ* we have seen. It is named after E. Corning, Esq., of Albany, New York, a great admirer of this noble class of plants.

C. Trianæ Dodgsoni, *Williams*.—A grand variety, with flowers from eight to nine inches in diameter ; sepals and petals pure white ; lip deep violet-crimson, slightly margined with pale pink ; throat orange-yellow. This variety was

flowered in the collection of the late R. B. Dodgson, Esq., Beardwood, Blackburn, and is the most distinct of the light varieties we have yet seen. There have been several plants of *C. Trianae* sold under this name, but they have always proved inferior to this variety. When the Beardwood collection was sold by auction the original plant realised the large sum of 185 guineas.

FIG.—*Floral Mag.*, 2 ser., t. 64.

C. Trianae formosa, *Williams*.—A very fine large-flowered variety of this favourite type. The sepals and petals are of a fine bold form, blush pink; the lip large, two and a quarter inches in diameter, rich rosy magenta with a fine frilled margin; throat orange veined with deeper orange; it flowers in February.

FIG.—*Orchid Album*, iii. t. 108.

C. Trianae Hardyana, *Rehb. f.*—This novelty is described by Professor Reichenbach as having white petals washed with a whitish purple, especially on the middle part; the anterior part of the lip is of the warmest purple, and has a light border of purple extending round the wavy margin, and there is a light ochre-coloured central line with two anterior streaks. This variety was first flowered by Geo. Hardy, Esq., Pickering Lodge, Timperley, in honour of whom it was named.

C. Trianae Hillii, *Williams*.—This beautiful variety was flowered in the collection of C. G. Hill, Esq., of Nottingham. It is a very fine and distinct sort, the flowers large and of fine form; the sepals and petals are pure white, the lip rich magenta, and the throat yellowish.

C. Trianae Io, *Marshall*.—The flowers of this variety are of the full size; the sepals and petals are clear rose, the petals very finely serrated at the margins; the lip is large, rich deep purple shaded with violet, with a marginal band of rosy purple, the edges beautifully crisp; throat orange-coloured.

C. Trianae Leeana, *Sander*.—A very large-flowered and distinct variety, named in honour of W. Lee, Esq., Downside, Leatherhead. The flowers are about seven inches in diameter; the sepals and petals three inches across, rosy lilac; the lip two inches in diameter in the fore part, deep magenta-mauve, faintly margined with lilac-rose; the throat is very large and

open, and has the peculiarity of being striped with orange. This is one of the best of the large-flowered section.

C. Trianæ marginata, *Williams*.—A distinct and large-flowered variety, with the blossoms six inches in diameter; sepals and petals blush white; anterior portion of lip bright magenta-purple, broadly margined with white, and beautifully fringed; throat orange; very distinct and deliciously scented.

C. Trianæ Osmani, *Williams*.—This gorgeous variety produces very large flowers of great substance, and bears as many as five blossoms on a spike; they measure seven inches across; the sepals are one inch broad, the petals two and a half inches, both sepals and petals being of a bright rosy magenta colour; the lip is large, two and a half inches across, of an intense magenta-crimson, having a velvety appearance, this brilliant colour being narrowly margined with the same colour as that of the sepals and petals. The colour is well carried back into the throat, terminating in an acute point, the throat being slightly marked with yellow. This variety which was flowered in the collection of the late R. B. Dodgson, Esq., Beardwood, Blackburn, under the care of Mr. Osman, after whom it is named, generally produces its blossoms a little later than the ordinary forms of *C. Trianæ*. When the Beardwood collection was sold by auction the original plant was purchased by ourselves for the sum of 215 guineas, after a spirited competition.

FIG.—*Floral Mag.*, 2 ser., t. 361.

C. Trianæ quadricolor, *Hort*.—A very high-coloured and charming variety, having broad and well-formed sepals and petals, which are of a bright rosy magenta colour; the lip is large and well formed, its anterior part intense magenta-crimson, the throat rich orange. The upper portion of the lip, which encloses the column, is of the same colour as the sepals and petals, but of a darker tint.

C. Trianæ reginæ, *Williams*.—Flowers large and compact, six inches in diameter; the sepals are three-fourths of an inch wide, the petals two and a quarter inches, pure white, slightly flushed towards the centre; lip two inches in diameter, bright magenta-purple, broadly margined with white; throat pale yellow.

C. Trianæ rosea, *Hort*.—A most distinct and desirable kind,

having deep rose-coloured sepals and petals, and a bright rosy lilac lip, which colour is carried back, and is suffused over its entire surface, saving a yellow blotch at the entrance to the throat. This variety forms a pleasing companion both to the light and dark-coloured forms.

C. Trianæ Russelliana, *Williams*.—A very fine form of this winter-blooming species. The sepals are three and a half inches long and upwards of an inch broad; the petals upwards of two inches broad, waved at the edges and recurved, white tinged with rose; the lip two inches across the centre, with the edge beautifully frilled; and the throat bright orange. The colouring, which is well carried back into the throat, is intense crimson-magenta, this colour being as dark at the margin as at the base. We saw a grand plant of this in Baron Schröder's collection at Staines, bearing sixteen flowers, and a most effective plant it was, being in vigorous health. This is without doubt one of the finest of the dark-lipped varieties.

C. Trianæ splendidissima, *Williams and Moore*.—A most beautiful and chaste variety, having flowers six inches in diameter; sepals and petals pure white, the petals two and a half inches across, the sepals broad and of good substance; lip two inches across, rich deep magenta, beautifully frilled, the colour being carried to the margin, and well back into the throat, which is orange and white.

FIG.—*Orchid Album*, iv. t. 150.

C. Trianæ Williamsii, *Moore*.—One of the most distinct forms of this grand *Cattleya*. A very free-flowering and vigorous-growing kind; sepals and petals blush white, very broad and of good substance, the petals distinctly veined with rosy magenta, especially towards the centre; lip nicely fringed, of an intense crimson-purple. This colour commences from the edge of the lip, and is carried far back into the throat, as well as on to that part of the lip which encloses the column; in the throat is a slight blotch of yellow about an eighth of an inch wide. The leaves of this variety are often tinted with bronze colour.

C. Veitchiana, *Hort*.—A garden variety, raised at Chelsea, produced between *C. crispa* and *C. labiata*. The petals are of a pale pink, the sepals being a richer and brighter shade of the same colour; lip deep rich crimson-purple with yellow centre. It blooms during the spring months.—*Garden hybrid*.

C. velutina, *Rehb. f.*—This is a plant of very distinct character. It was first flowered by J. Broome, Esq., of Didsbury, Manchester. The plant resembles *C. bicolor* in growth; the sepals and petals are pale orange, spotted and streaked with purple; the lip orange at the base, white with violet veins in front, where the surface is velvety. The flowers are very fragrant, which is an additional recommendation.—*Brazil*.

FIG.—*Orchid Album*, i. t. 26; *Gard. Chron.*, 1872, 1259, figs. 288—9.



CATTELEYA VELUTINA.

C. veriflora, *Hort.*—This splendid hybrid was exhibited by Sir Trevor Lawrence, Bart., in March, 1877, at the Royal Horticultural Gardens, South Kensington. Its origin is not known, but it seems to be between *C. labiata* and *C. Trianae*, and was bought as a seedling at Stevens' Auction Rooms. The stems are short and thick, about six inches long, of a light green colour; the leaves are about eight inches in length, and of the same colour; the sepals and petals are rosy violet; the lip deep magenta, margined with rose, with the throat orange. This variety is a good addition to the winter-flowering section of the genus.—*Garden hybrid*.

C. virginalis, *Linden et André*.—This is a white variety of *C. Eldorado*, and is a very chaste and most desirable plant. The sepals and petals are snow white; the lip and column of the same colour; the throat bright orange. This plant flowers during August and September, a season when Orchid flowers are becoming scarce; and its blossoms are deliciously sweet-scented.—*The Amazon country*.

FIG.—*Ill. Hort.*, 3 ser., t. 257.

C. virginalis rosea, *Williams*.—This desirable variety is like the preceding in every respect, saving that it bears a distinct rosy purple blotch on the front of the anterior portion of the lip; it blooms during August and September.—*The Amazon country*.

C. Wageneri, *Rchb. f.*—A splendid free-flowering *Cattleya*, being a white-flowered form of the *Mossia* section, and with flowers equal to those of that species in size. The sepals and petals are white; the lip also white, with a rich yellow patch in the centre. A fine plant for exhibition, producing blossoms in June and July, and lasting about three weeks in perfection. A very rare plant.—*La Guayra*.

FIG.—*Xenia Orch.*, i. t. 13.

C. Walkeriana, *Gardner*.—A truly elegant dwarf species, with bulb-like stems about four inches high, bearing an oblong-elliptic obtuse leathery leaf, and large rose-coloured flowers the lip, which is of a richer rose than the other parts, having a slight tinge of yellow. There are generally two flowers produced on a spike, each measuring five inches across, the flowers being produced during the winter on distinct slender stems, which are either leafless or bear only rudimentary leaves; the blossoms last four or five weeks in beauty, which is longer than those of any other *Cattleya*, besides which they are sweet-scented, and will fill the house with their perfume. We always grow this plant suspended from the roof, in a place where there is plenty of light, but not too much sun, on a block of wood, surrounded by a little sphagnum moss.—*Brazil*.

FIG.—*Bot. Reg.*, 1847, t. 42; *Paxton, Mag. Bot.*, xv. 49, with tab.; *Paxt. Fl. Gard.*, i. t. 3; *Pescatorea*, t. 41; *Orchid Album*, iv. t. 154; *Gard. Chron.*, n.s., xxii. 780, figs. 132, 133.

SYN.—*Cattleya bulbosa*.

C. Wallisii.—See *CATTLEYA VIRGINALIS*.

C. Warneri, Moore.—One of the finest of all *Cattleyas*, and belonging to the *labiata* section, resembling that species in its manner of growth, and producing blossoms equal to it in size. It is a very useful species for summer exhibitions. The flowers are very large, more than six inches across, the sepals and petals of a beautiful rose, the lip large, of a rich crimson, and finely fringed. This rare plant was first flowered in the rich collection of R. Warner, Esq., and we thought it the finest and most magnificent *Cattleya* that had ever come under our notice; there are, however, many fine varieties of this type. The true and original form is that figured in Mr. Warner's handsome volumes of Orchid illustrations.—*Brazil*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 8; *Floral Mag.*, t. 516; *Gard. Chron.*, N.S., xx. 372, fig. 57.

C. Warscewiczii, *Rchb. f.*—A magnificent species which grows about a foot high, and has light green foliage, in the way of *C. Trianae*. The flowers are large; sepals and petals purplish white; lip rich crimson. Of this there are also many varieties; it blossoms during the winter months, and continues three or four weeks in perfection.—*New Grenada*.

FIG.—*Xenia Orch.*, i. t. 31.

C. Warscewiczii delicata, Moore.—A magnificent variety in the way of *C. Trianae*, but still very distinct. It grows about a foot high, and bears blossoms six inches across; sepals and petals white; lip large, with a beautiful yellow centre and tinge of rose, white on the outside; it blooms in December and January, and is very useful during winter, continuing in perfection three or four weeks. This appears to be the same as the plant figured by Mr. Moore in 1861, in the *Floral Magazine*, under the name of *Cattleya Rollissoni*.—*Brazil*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 4; *Floral Mag.*, t. 8.

SYN.—*C. Rollissoni*.

C. Warscewiczii delicata superba, Hort.—This grand variety was bloomed by Mr. W. Moore, when gardener to the Earl of Shrewsbury, at Alton Towers. It is by far the finest of its class we have ever seen; the lip is very large and finely expanded, and the sepals and petals are broad and pure white.—*Brazil*.

C. Whitei, Hort. Low: *Rchb. f.*—This new *Cattleya* was found on a tree together with *C. labiata* and *C. Schilleriana*,

so that it is possibly a hybrid between these two plants. Mr. W. Davis, gardener to H. Gaskell, Esq., of Woolton, Liverpool, says:—"In growth it resembles *C. labiata*, and it has the double sheath generally seen in the true autumn-flowering variety. It has made a much stronger growth this year (1884), the bulb being about six inches high and the leaf about five inches long, and I have no doubt that as the plant gets stronger it will make a much larger bulb." Professor Reichenbach observes that the dried flower reminds one of *Cattleya labiata*. The sepals are of a deep rosy tint with a flush of olive green more evident on the outer side and at the tips; the petals are much broader and undulated, and of a deeper and brighter tint of rich rosy magenta; and the lip has the two angular side lobes pale blush towards the base, the reflexed borders and apex of a refined purplish rose colour; the throat is of the finest orange colour with purple lines running down the tube; the anterior broad roundish reniform lobe is prettily undulated and denticulate, and of a rich magenta-rose, veined closely on the extreme edge, which is pale rose, with deep crimson-magenta veins, these extending backwards in a wedge-shaped form to just within the orange throat. We received a three-flowered inflorescence from H. Gaskell, Esq., in July, 1883. It is deliciously sweet-scented, and is decidedly one of the most beautiful and distinct of the high-coloured *Cattleyas* that has come under our notice.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 115.

CHYSIS, Lindley.

(Tribe Epidendrææ, subtribe Bleticææ.)

This is a beautiful genus, containing some six or eight reputed species. They are deciduous epiphytes, losing the leaves during their season of rest. The stems are thick, fleshy, and fusiform, about a foot long, producing their showy flowers in lateral racemes, with the young growth. The flowers are showy, with the parts spreading, the lip having large erect side lobes, and a reflexed middle lobe. The species inhabit Mexico and Colombia.

Culture.—These plants will do on blocks of wood, but they grow much finer in baskets or pots, with peat, moss, and potsherds. All the species require a liberal supply of heat and moisture in their growing season, except *C. aurea*, which we have found to succeed best in the cool house; but after they have finished their growth, they should be removed into a cooler house till they begin to grow again, and then be taken back to coolest end of the East Indian house. During their season of rest they require very little water. They are propagated by dividing the plants just as they begin to grow.

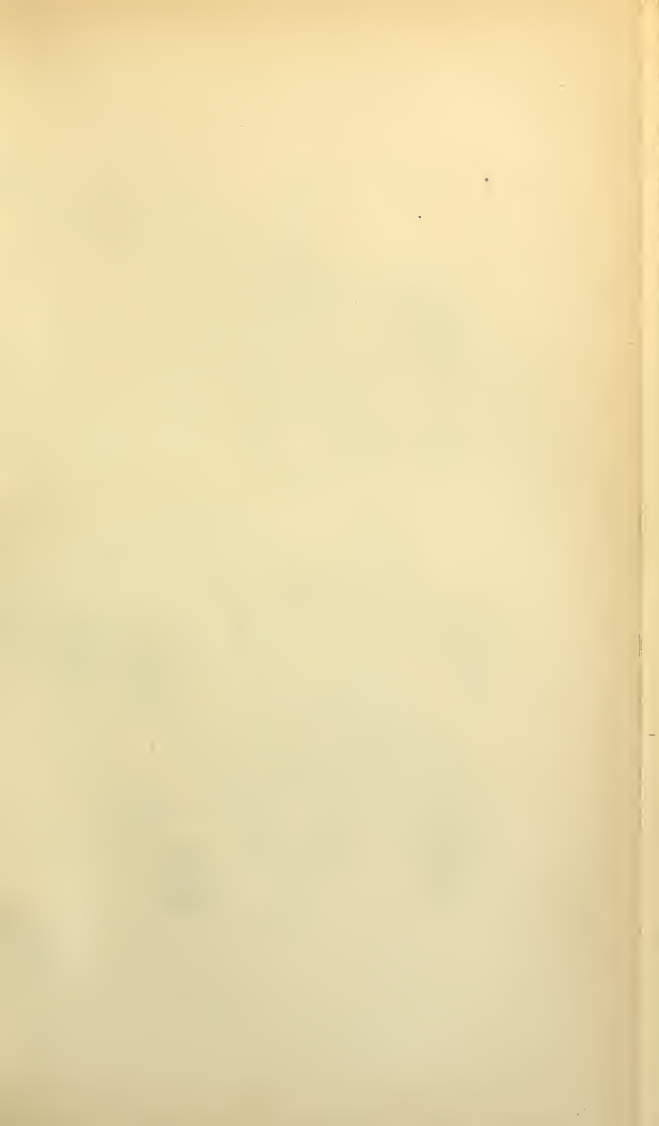
C. aurea, *Lindley*.—A charming Orchid, producing its flowers on a short spike, generally twice a year. The stems are pendulous subclavate, clothed with fuscous scales, the leaves ovate-lanceolate, nervose, undulate, and the blossoms, which grow in drooping racemes, are yellow, the lip being marked with crimson. It flowers at different times of the year, and lasts about a fortnight in beauty.—*Venezuela*.

FIG.—*Bot. Reg.*, t. 1937; *Bot. Mag.*, t. 3617.

C. bractescens, *Lindley*.—A fine species, with fusiform fleshy stems, ovate-lanceolate plicate leaves, and nodding racemes of waxy flowers, sometimes six together, each flower measuring two or three inches across, and having white sepals and petals, while the lip is yellow inside and white outside, its emarginate plicate front lobe being marked with crimson lines, and its disk bearing five or seven fleshy lamellæ between the erect side lobes. It blooms in April and May; lasts two or three weeks in perfection, and makes a good show plant.—*Mexico*.

FIG.—*Bot. Reg.*, 1841, t. 23; *Flore des Serres*, t. 675; *Bot. Mag.*, t. 5186; *Batem. 2nd Cent.*, t. 138; *Rev. Hort.*, 1859, 294.

C. Chelsoni, *Rehb. f.*—A very fine hybrid raised from *C. Limminghei* probably crossed with *C. laevis*, which it very much resembles. The flowers are in bold drooping racemes, the sepals and petals nankin-yellow with a blotch of purplish-brown in the upper half, and the lip whitish with the numerous violet-purplish blotches of *C. Limminghei*; the column is whitish, with many small purplish dots. This form was





CHYSIS C



ELSONI.

raised in Messrs. Veitch's Royal Exotic Nursery, Chelsea.—*Garden hybrid.*

FIG.—*Floral Mag.*, 2 ser., t. 297 (yellow lip).

C. lævis, *Lindley*.—A beautiful species, in which the fusiform pendent stems are fifteen inches long, producing from the young growths in June pendulous racemes, each bearing eight or more flowers; the sepals and petals are yellow in the lower and orange in the upper part, and the lip is yellow spotted and blotched with crimson, the side lobes falcate, and the middle lobe roundish and frilled, with a crest of five fleshy lamellæ on the disk. It will last about a fortnight in good condition, and is the finest of all the species of *Chysis*.—*Mexico.*

FIG.—*Batem. Orch. Mex. et Guatem.*, t. 31; *Illust. Hort.*, t. 365; *Warner, Sel. Orch. Pl.*, ii. t. 14.

C. Limminghei, *Rchb. f. and Linden*.—A charming species with fusiform stems, which grow a foot high, broadly lanceolate nervose leaves, and drooping racemes of delicate flowers, which are white heavily tipped with pale purplish-rose, and are produced very freely along with the young growth in May and June, continuing in perfection for about three weeks. The lip has the tall oblique side lobes yellowish externally, and yellow striped with red inside, and the roundish-oblong front lobe pale purplish-rose blotched and striped with deep purple, while the disk bears five lamellæ digitately disposed. This makes a good exhibition plant, but requires a cool house to keep it back for late flowering.—*Central America.*

FIG.—*Illust. Hort.*, t. 240; *Bot. Mag.*, t. 5265; *Warner, Sel. Orch. Pl.*, i. t. 34.

C. undulata, *Hort*.—An exceedingly rare and handsome species, of which the pseudobulbs are some eighteen inches in height. The racemes consist of from ten to twelve flowers, which have the sepals and petals of a lively orange-yellow, and the lip cream coloured with numerous lines of pink.—*Native Country not known.*

CIRRHOPELALUM, *Lindley*.

(Tribe Epidendreæ, subtribe Dendrobieæ.)

Small-growing epiphytes, with creeping rhizomes bearing one-leaved pseudobulbs in the axils of scariose sheaths. The scapes are leafless, produced at the side of the pseudobulbs, and bear at the top a raceme of flowers which is contracted into an umbel. They are widely scattered, being found in India, China, the Malayan Archipelago, Australia, and the Mascaren Islands. About thirty species are known. Reichenbach refers them all to *Bulbophyllum*.

Culture.—The plants forming this genus are peculiar in the construction of their flowers, and a few kinds ought to be in every collection. They are small compact evergreen plants, and will do either in pots or on blocks of wood with moss. If grown in pots, fibrous peat and sphagnum, with good drainage and a liberal supply of water in the growing season, is necessary for their well-being; but a very little moisture will suffice when they are at rest. They require the heat of the East Indian house, and to be kept as near the light as possible.

C. Cumingii, *Lindley*.—A curious Orchid, introduced by Mr. Cuming, which, although introduced many years ago, is yet a scarce plant. It has small tetragonal pseudobulbs, oblong-obtuse leaves, and numerous dimidiately umbellate flowers on wiry scapes, the blossoms arranged in a circle; the lateral sepals, which are much enlarged, are of a bright ruby colour, the dorsal sepal and petals are beautifully fringed, and the lip has an oscillatory motion when touched. It is easily grown, and should find a place in every collection.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 4996.

C. Medusæ, *Lindley*.—Amongst the strange and varied forms which the flowers of Orchids present, this species has one of the most remarkable. It is a dwarf-growing plant,

the pseudobulbs ovate, tetragonal, the thick fleshy leaves oblong, and the flowers, though not large, capitate and very numerous; the sepals are dull pale yellow spotted with pink, and drawn out into long drooping threads at the apex, so that the inflorescence looks like a head with long hair hanging down, from whence its name has been derived. It should find a place in every collection for its perfectly unique appearance.—*Singapore*.

FIG.—*Bot. Reg.*, 1842, t. 12; *Vr. Illust. Orch.*, t. 12; *Bot. Mag.*, t. 4977; *Belg. Hort.*, viii. t. 12; *Moore, Ill. Orch. Pl., Cirrhopetalum*, t. i.; *Batem. 2nd Cent.*, t. 148.

C. Pahudii, *Vriese*.—This is another very curious and interesting plant. The habit is dwarf, the leaves dark green, the flowers arranged in an umbel, large, reddish brown, with bright red dots; the sepals and petals are turned back, giving it a most singular appearance. It should be grown on a block of wood in the East Indian house.—*Java*.

FIG.—*Vriese, Illust. Orch.*, tt. 3, 11.

CLEISOSTOMA, *Blume*.

(Tribe Vandeæ, subtribe Sarcantheæ.)

A genus of epiphytal plants, with leafy stems, clothed with distichous spreading leathery leaves, usually flat but sometimes terete, and lateral peduncles bearing simple or branched racemes, the flowers for the most part small, and therefore such as are not much esteemed by the majority of Orchid fanciers, but nevertheless there are some of the species which would form ornaments in our collections. Some fifteen species are described—Indian, Malayan, or Australian.

Culture.—They require the same treatment as *Aërides*.

C. crassifolium, *Lindley*.—This distinct plant has close-set thick leathery much recurved leaves, resembling those of a *Vanda*; it produces its nodding panicles of sea-green, rosy-lipped flowers from the axils of the leaves; and although the individual flowers are small it is a charming plant.—*India*: probably *Moulmein*.

FIG.—*Part. Fl. Gard.*, iii. t. 29; *Lem. Jard. Fl.*, t. 397.

C. Dawsonianum, *Rchb. f.*—In general appearance this resembles a *Renanthera*. The leaves are arranged in a distichous manner, are light green in colour, and about six inches long; and the flowers, which are thick and fleshy, are borne in branched racemes some twenty or more together. The sepals and petals are light yellow, banded with brown, the lip deeper yellow, blotched and streaked with brown.—*Moulmein*.

CÆLIA, *Lindley*.

(Tribe Epidendreae, subtribe Erireae.)

A small genus of epiphytes, the base of whose stems eventually thickens into pseudobulbs. They have narrow elongate plicately venose leaves, and from the base of the bulbs dense racemes of moderate-sized flowers on short erect scapes distinct from the foliage. The four or five known species are natives of the West Indies, Central America, and Mexico.

Culture.—These plants do best in pots, in a compost of peat and moss, with a little charcoal added, and should be grown in the *Cattleya* house.

C. bella, *Rchb. f.*—A very pretty species, furnished with roundish-ovate compressed pseudobulbs, three or four ensiform nervose leaves, and short upright radical scapes bearing from four to seven funnel-shaped fragrant fleshy flowers, of which the sepals and petals are creamy white, broadly tipped with rich magenta, and the lip is yellow, with a rather prominent front lobe. It flowers during the autumn months.—*Guatemala*.

FIG.—*Lem. Jard. Fl.*, iii. 325; *Orchid Album*, ii. t. 51; *Bot. Mag.*, t. 6628.

SYN.—*Bifrenaria bella*; *Bothriochilus bellus*.

C. macrostachya, *Lindley*.—An erect-growing distinct species, with rather large and nearly globose pale green glabrous pseudobulbs, which are invested at the base with coarse brown scaly envelopes, and bear at the top about three large lanceolate membranous plicate leaves a foot or more in length, sheathing at the base. From the base of the pseudobulbs

arises the flower scape, which is about a span high, clothed with large ovate involute brownish scales, and surmounted by a cylindrical raceme, nine or ten inches long, crowded with rather small bright rosy red flowers in the axils of long narrow brownish bracts. The concave fleshy sepals are oblong-acute, corrugated externally, deep rosy red, the oblong-ovate petals, as long as the sepals, are blush white, and the reflexed oblong-acute lip is white, continued below into a two-lobed blunt spur. It blooms in August, and with its long cylindrical flower spikes is very effective.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4712.

CÆLOGYNE, *Lindley*.

(*Tribe Epidendreae, subtribe Cœlogyneae*.)

There are numerous species of *Cœlogyne*, many of them very beautiful, the colour of the flowers being of a most delicate hue, and often richly marked; whilst other kinds are inconspicuous and not worth growing. They are pseudobulbous and evergreen plants, the bulbs from one to six inches high, two-leaved, the flowers being generally produced with the young growth, and the leaves being perfected when the flowering is over. The lip is sessile, the base concave, and folded over the elongated apodous column. The flowers of some are very large, measuring as much as three inches across. Some of our botanists include in this genus the group *Pleione*, which we have kept distinct. About fifty species are known, inhabiting India, the Malayan Archipelago, and Southern China.

Culture.—These plants, with the exception of *C. Mas-sangeana*, which does best in a basket on account of the drooping character of its spikes, do best grown in pots, with peat and moss. Some of them will do on blocks, but pot or basket culture is to be preferred. They require good drainage, and an abundance of water at their roots in their growing season. Some are best grown in the East Indian house, others

will do in the cool house, and others with the *Cattleyas*, but after these have finished their growth a cooler house will do for them. During their period of rest they should have but little water. They are propagated by dividing the pseudobulbs.

C. asperata, *Lindley*.—A fine evergreen species, attaining rather a large size. It has tall oblong attenuate pseudobulbs, with a pair of stalked lanceolate leaves, growing about two feet high. The large flowers are produced on a drooping raceme about a foot long, twelve or more of them together, and are of a pale creamy yellow, the lip richly marked with brownish yellow veins springing from a rugged bright orange central ridge; they are fully three inches in diameter, and are produced in June or July, lasting two weeks in good condition. This should be grown in the *Cattleya* house, and requires a large pot to grow it in perfection, being one of the freest of all the *Cælogynes*.—*Borneo*.

FIG.—*Pescatorea*, t. 7; *Paxton, Mag. Bot.*, xvi, 225, with tab. (bad).
 SYN.—*C. Lowii*.

C. barbata, *Griffith*.—This is a most useful winter-flowering species, and according to Dr. Lindley the finest of the genus. The pseudobulbs are roundish-ovate, light green, with leaves of a thick leathery texture and oblong-lanceolate form, produced two from each bulb. The flower scapes are erect, producing a flexuose raceme of several flowers, which open in succession, the individual blossoms being from two to three inches across. The sepals and petals are pure white, the lip is also white, distinctly bearded round the margin with a fringe of pale sepia-coloured hairs, and of a darker sepia brown in the centre, where they cover the veins, and form three shaggy crests. It flowers in January and continues blooming for several weeks. This species thrives best in the cool house, and requires an abundant supply of moisture.—*Northern India: Bhotan, Khasya*.

FIG.—*Orchid Album*, iii. t. 143; *Griff. Not. Plant. Asiat.*, t. 291.

C. ciliata, *Hort*.—A very pretty plant, well worthy of cultivation, for autumn blooming. It is a compact-growing species, making pseudobulbs about four inches high, with light green leaves, and producing in great profusion its white and yellow flowers, which have some brown markings.—*India*.

C. corrugata, Lindley.—This is a very pretty species, and interesting as being one of the cool Orchids from the hilly districts of India, which will grow freely and bloom with *Odontoglossums*. It is a free-growing compact plant, with ovate wrinkled pseudobulbs bearing a pair of broad oblong leaves, and producing erect racemes of lovely pure white flowers of considerable size; the lip is yellow inside, striped with orange. It should be grown in a pot, with an abundance of drainage.—*India: Khasya, Neilgherries.*

FIG.—*Bot. Mag.*, t. 5601; *Batem. 2nd Cent. Orch. Pl.*, t. 188; *Wight, Icon.*, t. 1639.

C. corymbosa, Lindley.—A very distinct and beautiful species, having large flowers three to four inches across, which are produced in an upright corymbose raceme which is thrown up with the young growth. The pseudobulbs are oblong, terete, the leaves oval, narrowed into a petiole, and the sepals and petals ligulate-lanceolate, creamy white, the lip being white, with two bright yellow ocellate spots or eyes surrounded by brown margins; the throat is also marked with yellow and brown. It flowers during June and July.—*India: Khasya hills, at 4,000 to 5,000 feet elevation.*



CŒLOGYNE CRISTATA.

C. cristata, *Lindley*.—A magnificent Orchid, dwarf and of evergreen habit, with leaves about six inches long. The flowers, six or eight together, proceed from the base of the oblong angulate pseudobulbs in a drooping raceme, each flower being three or four inches across, with charmingly undulated lanceolate sepals and petals; the colour pure white, with a prominent blotch of yellow on the crests of the lip. It blossoms in February and March, and will continue in perfection four or five weeks if the flowers are kept free from damp. This plant, which is largely grown for cut flowers, is the finest of the genus, and in fact one of the finest of all Orchids, and ought to be in every collection. We have seen on a specimen grown in the collection of J. Buchanan, Esq., Edinburgh, as many as 600 flowers at one time; and on another, grown by Mr. Cross, at Melchet Court, seventy-five spikes are recorded as being produced, the specimen measuring five feet across. We find it make its growth best in the cool house, but after this is completed we place the plants in the *Cattleya* house, as if left in the cool the flower spikes are apt to damp and turn black.—*North India*.

FIG.—*Bot. Reg.*, 1841, t. 57; *Pescatorea*, t. 25; *Gartenflora*, t. 245; *Warner, Sel. Orch. Pl.*, i. t. 35; *Flore des Serres*, t. 1807; *Jennings, Orch.*, t. 7; *Paxt. Fl. Gard.*, iii. 171, fig. 312; *Gard. Chron.*, n.s., vii. 597, fig. 95 (specimen plant); *Moore, Ill. Orch. Pl.*, Cœlogyne, t. 4.

C. cristata alba, *Moore*.—This fine novelty is in all respects similar to the type, except that instead of having the yellow blotch on the lip, its flowers are everywhere of a pure white. It blooms during winter and spring, and lasts from two to three weeks in perfection.—*India*.

FIG.—*Orchid Album*, ii. t. 54.

SYN.—*C. cristata hololeuca*.

C. cristata citrina, *Williams*.—This is a very distinct variety, which invariably flowers some two or three weeks later than the type, which is a decided advantage, as it prolongs the flowering season, and it also differs in having the centre of the lip stained a delicate lemon-colour, and not deep yellow as in the ordinary form of the species.—*Nepal*.

SYN.—*C. cristata Lemoniana*.

C. cristata major, *Williams*.—A very large-flowered, superior variety, with much broader and stouter sepals and petals, and with flowers altogether larger and superior to the type.—*India*.

C. Cumingii, *Lindley*.—A pretty species with ovate pseudobulbs, a pair of lanceolate five-nerved leaves, and erect short racemes of handsome flowers, which are snow white, except in the middle of the lip, where they are yellowish, with the tips of the three crisped lamellæ and of the two short scale-like crests orange-coloured. It lasts long in beauty.—*Singapore*.

FIG.—*Bot. Reg.*, 1841, t. 29; *Bot. Mag.*, t. 4645; *Lem. Jard. Fl.*, t. 337; *Fl. des Serres*, t. 764; *Moore, Ill. Orch. Pl.*, Cœlogyne, t. 3.

C. Dayana, *Rchb. f.*—In this species the pseudobulbs are long, narrow, pyriform, with stalked oblong acuminate leaves. The long pendulous inflorescence bears nearly two dozen flowers, of which the sepals and petals are ligulate-acute, and the lip broad, three-lobed. The colour is a light ochre-yellow, with numerous dark brown collateral longitudinal broad stripes on the lateral lobes of the lip, and on the same light ochre ground a crescent-shaped half ring of dark brown opening towards the base on the middle lobe; two plaited keels run from the base of the lip to the base of the mid-lobe, where they are divided into six similar keels, covered with the most lovely denticulated undulations. It flowers during the summer months.—*Borneo*.

C. elata, *Lindley*.—This is a very old species, introduced some fifty years ago, but it is nevertheless a real beauty. The flowers, which are of medium size and drooping, are borne in erect racemes, which spring with the sword-shaped striated leaves from the apex of the tall oblong angulate pseudobulbs, and have the sepals and petals narrowish pure white, and the lip white with a forked yellow band in the centre, and two longitudinal deep orange crisped crests on the disk. It is found at an altitude of 8,000 to 9,000 feet on the slopes of Tongoo, near Darjeeling. It flowers during April and May, and should be grown in the cool house.—*North India*.

FIG.—*Bot. Mag.*, t. 5001; *Wall. Pl. Asiat. Rar.*, iii. t. 218.

C. fuscescens, *Lindley*.—A beautiful species, one of the finest of the genus. The pseudobulbs are elongate, terete, three to four inches long, the broad oblong plicate leaves in pairs, and the flowers in short nodding five to eight-flowered racemes. The sepals and petals are brownish green, the dorsal sepal broadest, and the lip marked with four cinnamon spots, one on each of the small lateral lobes, and two at the base of the middle lobe, where there are also three elevated lines or

crests. It flowers in autumn and winter, and lasts in bloom for a considerable time.—*North India: Burmah, Moulmein.*

FIG.—*Bot. Mag.*, t. 5494 (var. *brunnea*); *Batem. 2nd Cent.*, t. 104 (var. *brunnea*).

C. Gardneriana, *Lindley*.—A very distinct species, growing about a foot high, with flask-shaped dark green pseudobulbs, a pair of broadly lanceolate five-nerved leaves, and a long lateral or terminal drooping distichous raceme of peculiar long-petalled half-closed white flowers with a yellow lip, each having a broad brownish bract at its base. It blooms during the winter months, and lasts three or four weeks in good condition. It should be grown in the *Cattleya* house.—*India: Nepal, Khasya, &c.*

FIG.—*Orchid Album*, iv. 153; *Paxton, Mag. Bot.*, vi. 73, with tab. (poor); *Wall, Pl. Asiat. Rav.*, i. t. 38.

C. Goweri, *Rehb. f.*—This is a pretty and delicate species of considerable beauty. The pseudobulbs and leaves resemble those of *C. ocellata*; the racemes are pendulous, bearing several flowers, of which the sepals and petals are pure white, and the lip white, with a stain of pale yellow on the disk. It blooms during March and April.—*Assam.*

C. Lowii.—See *CÆLOGYNE ASPERATA*.

C. Massangeana, *Rehb. f.*—This exceedingly handsome and remarkable evergreen species was first flowered by M. D. Massange, Château de Baillonville, Marche, Belgium, in honour of whom it has been named. It is both vigorous in growth and free-flowering, producing its blossoms twice a year, and continuing several weeks in perfection. The pseudobulbs are pear-shaped, three to four inches in height, two-leaved; and the drooping flower scapes, which are produced from the base of the bulbs, are generally from one and a half to two feet long and bear two dozen or more flowers, of which the sepals and petals are light ochre-yellow, and the lip of a beautiful maroon-brown with bright yellow veins, the middle lobe creamy white at the edge, with a large brown disk, and having three light yellow keels extending from the base to the tip. This plant is best grown in a basket suspended from the roof of the *Cattleya* house; and when treated in this way the long drooping spikes have a charming effect.—*Assam.*

FIG.—*Orchid Album*, i. t. 29; *Floral Mag.*, 2 ser., t. 373; *Gard. Chron.*, n.s., xvii. 369, with fig.

C. media, *Hort.*—A pretty small-growing species, with short round bulbs, leaves seven inches long, and flowers on spikes ten inches high; the sepals and petals are creamy white, the lip yellow and brown. It blooms during winter, and lasts in perfection three or four weeks. The plant grows well on a block, or in a pot in fibrous peat.—? *India*.

C. ocellata, *Lindley.*—A very pretty and desirable species, suitable either for pot or basket culture. The pseudobulbs are ovate and subangulate, furnished with a pair of lanceolate leaves. The flowers, which are produced in drooping racemes from the apex of the bulbs, are pure white with the exception of the lip, which has on each lateral lobe a large ocellated yellow spot, margined with a narrow orange border, three smaller ocellated spots occurring on the disk; the throat is striped with purplish brown. It flowers in February and March.—*North India*.

FIG.—*Bot. Mag.*, t. 3769 (starved).

C. ocellata maxima, *Rehb. f.*—This variety is, according to Professor Reichenbach, “a great beauty, and is far stronger than the common plant.” We can fully endorse this opinion, having distributed the plant, and flowered it on several occasions. Its blossoms are produced on drooping racemes, which sometimes contain as many as eight flowers. The colour is the same as in *C. ocellata*, but the lateral blotches on the lip are spread widely apart, and the flowers are larger. The bulbs are much larger than those of *C. ocellata*, being two or three inches high, and about three inches in circumference. It is very sweet-scented, a single plant perfuming a whole house. It flowers during March and April, and lasts a long time in beauty.—*India*.

FIG.—*Floral Mag.*, 2 ser., t. 365.

C. ochracea, *Lindley.*—A very old species, having pure white very sweet-scented flowers. The pseudobulbs are small, oblong, with two or three lanceolate leaves, and the flowers grow in erect racemes of about seven or eight together. The lip has two horse-shoe shaped blotches on its disk, which are bright ochraceous-yellow bordered with orange. It may be grown either in a pot or a basket.—*North-East India*.

FIG.—*Bot. Reg.*, 1846, t. 69; *Bot. Mag.*, t. 4661; *Batem. 2nd Cent.*, t. 145; *Iem. Jard. Fl.*, t. 342; *Moore, Ill. Orch. Pl.*, Cœlogyne, t. 2.

C. odoratissima, *Lindley*.—An elegant dwarf cool house Orchid, growing only about eight or ten inches high, and producing abundance of its white and delicately honey-scented blooms in winter—a season when white flowers are so desirable. It has ovate wrinkled pseudobulbs an inch long, usually two linear-lanceolate leaves, and filiform peduncles arising from the apex of the bulbs, and bearing about three of its pure white flowers. It comes from the north side of the hills of Madras, and is impatient of heat.—*South India and Ceylon*.

FIG.—*Bot. Mag.*, t. 5462; *Wight, Icon. Pl. Ind. Or.*, tt. 1640, 1641; ? *Xenia Orch.*, ii. t. 155 (*C. trifida*).

C. pandurata, *Lindley*.—A curious and very striking Orchid, which when in bloom is one of the most interesting species we know. It grows eighteen inches high, and has oblong-ovate compressed shining pseudobulbs, from the base of which the long drooping flower spikes proceed. The individual flowers are large, with pale green sepals and petals, and a singularly warted greenish yellow lip marked with broad black veins, ending in a broad triangular black blotch towards the front, while on the disk are two deep double warted crests which converge towards the middle and lose themselves in a patch of rugged two-lobed warts.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5084; *Batem. 2nd Cent.*, t. 160; *Fl. des Serres*, t. 2139; *Xenia Orch.*, ii. t. 121; *Orchid Album*, ii. t. 63.

C. Parishii, *Hooker*.—The flowers of this species at first sight resemble those of a miniature *C. pandurata*, being much smaller in all their parts. The cylindraceo-tetragonal pseudobulbs are four to five inches in length and half an inch in diameter; they are surmounted by two broad ovate-oblong nervose leaves, and the six-flowered raceme is terminal on the pseudobulbs. The flowers are yellowish green, the three-lobed pandurate lip green with a few black spots, and the dilated roundish front lobe undulately crisped; the disk bears three elevated lines, and there are some elegant fringes on the front part of the lip. It blooms during April and May.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5323.

C. plantaginea, *Lindley*.—A distinct and desirable species, with elongate terete pseudobulbs, oblong-lanceolate undulate leaves, and pendulous racemes of flowers, which are of a

greenish yellow, having a white lip streaked with brown, the middle lobe crested with perpendicular fringed plates.—*India.*

C. speciosa, *Lindley*.—A free-flowering evergreen plant, growing about eight inches high. The plant has ovate-oblong ribbed monophyllous pseudobulbs, oblong-lanceolate five to seven-nerved leaves, and short erect peduncles bearing two or more flowers, which are nearly four inches in diameter, and are developed at different times of the year, lasting long in bloom. The sepals and petals are pale tawny or olive green. The lip which is large and broad oblong in form, is very handsome, yellow outside, variously blotched and veined inside with deep crimson or pitch-brown, except the broad apex, which is white, and fringed as well as crested; two deep crests, nearly as long as the lip, are very prominent along the centre, and copiously fringed with stellated hairs. There are two varieties of this species, one of which is far superior to the ordinary form. These plants are very useful, as they are almost always in flower.—*Java.*

FIG.—*Bot. Reg.*, 1846, t. 23; *Bot. Mag*, t. 4889; *Moore, Ill. Orck. Pl.*, *Cœlogyne*, t. 5; *Vr. Ill. Orck.*, tt. 1, 11; *Blume, Bijdr.*, t. 51.

SYN.—*Chelonanthera speciosa.*

C. viscosa, *Richb. f.*—A rare species, nearly allied to *C. flaccida*, yet very distinct from that plant. The pseudobulbs are fusiform, bearing dark green leaves, which are tapered towards the base. The sepals and petals are white, and the lip is white, with the side lobes broadly streaked with rich brown. It blooms during summer.—*India.*

COLAX, *Lindley*.

(Tribe Vandeaë, subtribe Cyrtopodiaë.)

A small genus, nearly related to *Lycaste* and *Maxillaria*, but separated from them by the subglobose, not ringent flowers, and by the flat spreading segments of the perianth. The group includes two Brazilian species.

Culture.—The species here named is well deserving of attention. It should be potted in peat and sphagnum with good drainage, and placed in the *Cattleya* house.

C. jugosus, Lindley.—A very interesting plant, with elongate-ovoid pseudobulbs two to three inches long, lanceolate acuminate leaves six to nine inches long, of a dark green, and handsome flowers two or three on a spike, and about two inches in diameter; the sepals are pale cream colour, the petals white, with numerous transverse blotches of rich dark chocolate-purple, and the lip white, smaller than the petals, velvety, and covered with fleshy ridges, three-lobed, the lateral lobes rounded erect, minutely dotted with purple, the middle lobe semicircular, streaked and splashed with dark blackish purple.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5661; *Illust. Hort.*, 3 ser., t. 96; *Xenia Orch.*, i. t. 41.
 SYN.—*Maxillaria jugosa*.

COMPARETTIA, Pæppig et Endlicher.

(Tribe Vandeeæ, subtribe Oncidieæ.)

This is a small genus, of slender dwarf-growing pseudobulbous plants with solitary leathery leaves and drooping racemes of showy flowers, which are peculiar in having a spur to the sepals and a double spur to the lip, the latter being included in that of the sepals. The species here described are the best that have come under our notice. They are very pretty evergreen plants, and distinct from any other Orchids. The few known species come from the Andes of South America, and Central America.

Culture.—The species of this genus should be grown in the Cattleya house, where they can be well shaded from the sun. They are best grown on blocks of wood, or in baskets, with live sphagnum moss, and suspended from the roof, with a liberal supply of moisture in the growing season—in fact, they never should be allowed to get dry, or they will suffer. The flowers proceed from the base of the pseudobulbs, and continue in beauty a considerable time.

C. coccinea, Lindley.—A charming little plant, with the habit of a strong *Sophronitis grandiflora*. The pseudobulbs

are small, and bear oblong leathery leaves, which are bright green above and purplish beneath; from the apex of the young growing bulbs issues a slender terminal scape supporting a nodding raceme of from three to seven brilliant scarlet and orange flowers, rendered more conspicuous by their broad flat obovate lip, and their very long subulate spur. It blooms during the months of November and December; and is doubly valuable at this season on account of its brilliant colours.—*Mexico, Brazil.*

FIG.—*Bot. Reg.*, 1838, t. 68; *Maund, Bot.*, iv. t. 186; *Illust. Hort.*, t. 472; *Moore, Ill. Orch. Pl.*, *Comparettia*, t. 1.

C. falcata, *Pæp. et Endl.*—A pretty plant, similar in habit to *C. coccinea*. It has smooth oblong clustered pseudobulbs, bearing each a solitary lanceolate leaf, and from the base of the leaf a filiform pendent scape, with an open raceme of deep crimson flowers, which have a broadly obovate lip and a subulate spur. It does not require great heat.—*Peru.*

FIG.—*Bot. Mag.*, t. 4980; *Pæp. et Endl., Nov. Gen.*, i. t. 73.

C. macroplectron, *Rehb. f.*—This very handsome species is exceedingly floriferous. It has small oblong truncate compressed pseudobulbs, with the angles rounded, and short bright green oblong ligulate leaves. The drooping flower spikes are produced from the base of the bulbs, and bear five or more flowers. The sepals and petals are rose colour, distinctly spotted with rosy purple, while the lip, which is very large in comparison to the sepals and petals, is magenta rose, marked with a few rosy purple spots at the base and softening off towards the margin. In addition to this the flowers are furnished with a spur about two inches long. The blossoms are produced in July and August. We have seen a fine specimen of this in the collection of F. A. Philbrick, Esq., Q.C., Oldfield, Bickley, which bore several spikes of its charming flowers.—*New Grenada.*



COMPARETTIA MACROPLECTRON.

FIG.—*Orchid Album*, ii. t. 65; *Bot. Mag.*, t. 6679.

C. speciosa, *Rehb. f.*—A very beautiful species, bearing loose racemes of numerous large flowers, which are remarkable for their broad lip and long spur. The sepals and petals are light orange with a cinnabar glow; and the lip has the front lobe subquadrate and emarginate, about one and a quarter inch wide, with a very short claw and a small keel between the basal auricles, the colour being of the finest cinnabar, orange at the base. The spur is minutely pilose, and more than an inch and a half in length. It has been flowered and exhibited by Sir Trevor Lawrence, Bart., M.P., and awarded a first-class certificate.—*Ecuador*.

CORYANTHES, *Hooker*.

(Tribe Vandææ, subtribe Stanhopiææ.)

The flowers of these plants are very extraordinary-looking objects. They are of large size, and before they open are of the shape of a Chinese foot; after opening, the large sepals, which at first are spread out, soon collapse, as do the smaller petals; the lip is pendulous from the end of a stout arm or claw, beyond which, at the base, it is developed into a hood-like body (hypochil), and at the apex terminates in a helmet-shaped pouch (epichil), the hinder part of which (mesochil) is involute; the pouch is connected with the hood by a hollowed fleshy stalk, which in some of the species is encircled by transverse fleshy folds and ridges; near the base of the arm are a pair of finger-like lobes which secrete a sweet fluid, and this, as long as the flower is in vigour, continues to drip from them into the pouch. The plants are evergreen and pseudobulbous; the leaves lanceolate plicate, ten inches long, and two or three inches broad. They produce their flowers from the base of the bulbs on a drooping spike, four or five together. The few species, some five or six altogether, are found in Tropical South America.

Culture.—These plants grow best in baskets with moss and peat and good drainage, and require a liberal supply of water

at the roots during their period of growth, and also a good brisk heat. They are found growing on the outside branches of trees, where they get more sun than many of our Orchids, and we believe the reason why we have been rather unsuccessful with this genus is that we have treated them in a similar manner to *Stanhopeas*, and given them too much shade. After their growth is finished, they should be kept rather dry, but not so much so that their bulbs may become at all shrivelled. They are propagated by division of the pseudobulbs.

C. macrantha, *Hooker*.—One of the best of the genus, the flowers being of a rich yellow, speckled with red, the hood of the lip and a portion of the pouch rich brownish yellow. It blossoms in May, June, and July, and lasts about three or four days in perfection. This plant ought to be in every collection.—*Caracas*.

FIG.—*Bot. Reg.*, t. 1841; *Pescatorea*, t. 30; *Hook.*, *Bot. Miscell.*, t. 80; *Paxton*, *Mag. Bot.*, v. 31, with tab.; *Hart*, *Parad.*, ii. t. 4.

SYN.—*Gongora macrantha*.

C. maculata, *Hooker*.—This species has flowers of a light yellow, spotted with dull crimson; the hood is yellow, and the pouch blotched on the inner side with dark purple. It blooms during the summer months, and lasts but three days in beauty.—*Demerara*, *Venezuela*.

FIG.—*Bot. Mag.*, t. 3102; *Id.*, t. 3747 (var. *Parkeri*); *Maund*, *Bot.*, v. t. 228; *Moore*, *Ill. Orch. Pl.*, *Coryanthes*, t. 1 (var. *Albertinæ*).

C. maculata punctata, *Lindley*.—A very distinct and showy variety, having large flowers, which, like those of its congeners, are very peculiar in shape. The sepals and petals are pale ochre-yellow, thickly spotted with deep wine purple; the lip has a hood-shaped body near the base, to which a large helmet-shaped pedunculate appendage is attached; the hood is yellowish, spotted and blotched with deep wine purple, the pouch more heavily marked, the purple colour almost covering the anterior side. This plant has been recently well flowered by W. Macdonald, Esq., Woodlands, Perth. It blossoms during October and November.—*Demerara*.

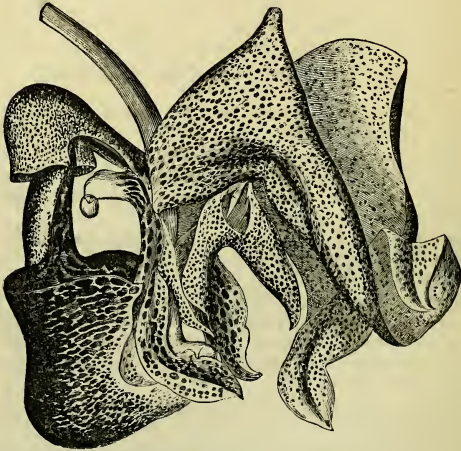
FIG.—*Orchid Album*, iii. t. 98; *Bot. Reg.*, t. 1793.

C. speciosa, *Hooker*.—This singular species, which is quite

characteristic, grows about a foot high. The large grotesque flowers are pale yellow, the cup satiny orange, and the pouch reddish or tawny yellow; they are produced in April or May, and last three or four days in bloom.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2755; *Annales de Gand*, 1846, t. 51 (var. *vitellina*)
Batem. Orch. Mex. et Guat., t. 36.

SYN.—*Gongora speciosa*.



CORYANTHES MACULATA PUNCTATA.

CYCNOCHES, *Lindley*.

(Tribe Vandææ, subtribe Stanhopiææ.)

A very singular genus of plants, whose flowers are of a most peculiar form, usually bearing more or less resemblance to a swan. They are not thought much of by many cultivators of Orchids, but some are well worth growing, as they are of easy culture, and produce their flowers freely. The stems, which are thick and fleshy, are from six to ten inches high, and have

three or four large plicato-venose leaves with a sheathing base, which, being deciduous, are lost as soon as they have finished their growth. The large peculiar-shaped flowers are produced in erect or nodding racemes from the base of the pseudobulbs; they have spreading sepals and petals, a fleshy lip contracted at the base, and a very long slender arcuate column, which is somewhat thickened at the apex. Some eight or ten species of Tropical America are known.

Culture.—They are best grown at the coolest end of the East Indian house, in pots, with rough fibrous peat and good drainage, and should have a liberal supply of water at the roots in their growing season; afterwards they may be kept much cooler, and should be placed near the glass, to receive all the light possible. They are very impatient of moisture during their season of rest, being speedily destroyed if at all over-watered. When they begin to grow they must be moved back into heat. They are propagated by dividing the pseudobulbs when they begin to start.

C. aureum, *Lindley*.—A very attractive and noble species, known to many by the name of the Golden Swan Orchid. The flowers are closely set in a long drooping raceme, and are rather large, with lanceolate flat sepals, petals of similar form but rolled back from the tip, and a small short-stalked lip with a roundish disk, the edge of which is broken up into short curved processes, forked at the point, the two lower ones larger and distinct. It will succeed well under the treatment recommended above.—*Central America*.

FIG.—*Pact. Fl. Gard.*, iii. t. 75; *Lem. Jard. Fl.*, t. 264.

C. barbatum, *Lindley*.—A singular and curious plant which appears to connect *Cycnoches* with *Gongora*. It has ovate compressed pseudobulbs $1\frac{1}{2}$ inch long, solitary elliptic oblong plicate leaves, and radical dark purple scapes a foot long, terminating in a drooping raceme of equal length, bearing many (50—80 fide Rehb.) narrow-petalled but large and handsomely spotted flowers, of an orange-yellow dotted with dark purple,

the lip white tinged with yellow, and spotted with blood-red, formed of two portions, the hypochil or basal part with two large rounded wings, and the front or epichil cordate ovate and jointed on to the hypochil. The column is very long, slender, and arched, enlarged and hooded at the apex.—*Costa Rica, New Grenada.*

FIG.—*Bot. Mag.*, t. 4479.

SYN.—*Polycynis barbata.*

C. chlorochilon, *Klotzsch*.—A very interesting species, with the usual fleshy stems and ribbed leaves, the flowers of which are of a yellowish-green colour, having a large bright yellow blotch on the lip; they are produced in June or July, and last three weeks in good condition if kept dry.—*Demerara.*

FIG.—*Lindl. Sert. Orch.*, t. 16; *Hart, Parad.*, i. t. 2.

C. Loddigesii, *Lindley*.—A very curious Orchid. It has short fusiform stems, covered by the sheathing bases of the distichous broad lanceolate leaves, and produces its large attractive fragrant flowers from the top of the stem in drooping racemes of six or eight together; they are four inches across, the sepals and petals of a brownish green, the former with darker spots, and the latter spotless, but bearing some resemblance to the expanded wings of a swan; the trowel-shaped lip is whitish or flesh-coloured, spotted with blood-red. This plant often produces two kinds of flowers on one plant very distinct from each other. It blooms in July and August, and continues in perfection for three weeks. Sir W. J. Hooker compares the long curved column thickened at the end to the inflated throat of the dreaded Cobra de Capella. A desirable species, which ought to be in every collection.—*Surinam.*

FIG.—*Bot. Reg.*, t. 1742; *Bot. Mag.*, t. 4215; *Id.*, t. 3855 (var. *leucochilum*); *Lodd. Bot. Cab.*, t. 2000; *Knowles and Westc., Floral Cab.*, t. 15; *Hart, Parad.*, ii. t. 13.

C. pentadactylon, *Lindley*.—This is a curious species with fusiform fleshy stems, and broad plicate leaves. The flowers are very large, in short upright racemes, the colour being yellowish-green, banded transversely with bold blotches of brown. It flowers at different times of the year, and lasts long in beauty.—*Brazil.*

FIG.—*Bot. Reg.*, 1843, t. 22.

C. ventricosum, *Bateman*.—A free-flowering Orchid, with fleshy stems about a foot high, covered by the sheathing

bases of the lanceolate plaited leaves, and having drooping racemes of flowers proceeding from amongst the upper leaves, the individual blossoms large and sweetly scented, with broadish sepals and petals which are greenish yellow, the lip white, the base presenting a blackish callosity where its short claw connects it with the column. This species sometimes sports to *C. Egertonianum*. It blooms in June, July, or August, lasting fresh about three weeks.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 5; *Bot. Mag.*, t. 4054 (var.); *Maudsl. Bot.*, ii. t. 54.

CYMBIDIUM, Swartz.

(Tribe Vandææ, subtribe Cymbidiææ.)

Of the numerous species of this genus, but few are admissible into a choice selection of Orchidaceous plants; nevertheless, some of them are very handsome and delicate in colour. They are all evergreen plants, with close-set tufts of long leathery or shorter fleshy leaves; some of them large-growing plants, with short pseudobulbs, from which the leaves and flowers proceed. The flowers are large, loosely racemose, the racemes being often long and pendulous. Some thirty species are described, chiefly from India, the Malayan Archipelago, and China, but a few outlying species occur in Africa, Australia, New Caledonia, and Japan.

Culture.—They succeed best grown in the *Cattleya* house, and are generally free-flowering plants, some of them producing pendulous spikes as much as two feet long. They require plenty of pot room, as they send out thick fleshy roots very freely. We grow them in rough fibrous peat and loam, with good drainage, and a liberal quantity of water at the roots during their period of growth, but allowing them less water afterwards. Propagation is effected by dividing the pseudobulbs.

C. affine, *Griffith*.—This distinct species is of recent introduction, and flowers when in a very small state. The growth is somewhat in the way of that of *C. eburneum*, but the leaves are considerably broader. The flowers are deliciously scented, and are produced in racemes upon upright scapes; they are intermediate in size between those of *C. eburneum* and *C. Mastersii*; the sepals and petals white, the lip white, blotched with crimson-purple on its anterior part, and the lower part of the throat also crimson-purple; crests golden yellow.—*India: Assam and Khasya*.

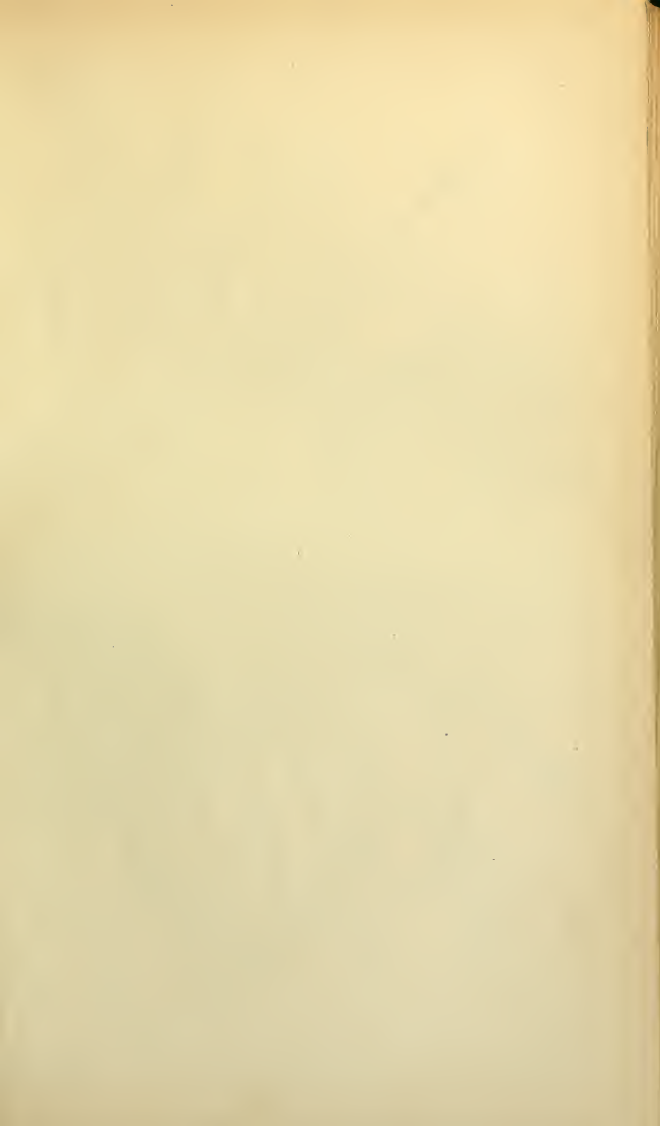
FIG.—*Orchid Album*, iii. t. 140; *Floral Mag.*, 2 ser., t. 346; *Griff. Notul.* iii. t. 291.

C. Dayanum, *Rehb. f.*—A very distinct and pretty kind, somewhat resembling *C. eburneum* in appearance. It has tufts of very long (4 ft.) narrow thick-textured leaves, and many-flowered racemes, which are not erect as in *C. eburneum*, but pendent; the flowers are yellowish white, marked with port wine-coloured streaks in the centre of the sepals and petals, and a border and numerous small streaks of the same colour on the lip.—*Assam*.

C. Devonianum, *Paxton*.—A very distinct as well as rare and handsome species named in honour of the Duke of Devonshire. It has roundish-oblong pseudobulbs, ovate leathery lanceolate leaves, and radical peduncles bearing a drooping raceme of fifteen or more flowers; the sepals and petals are pale greenish yellow slightly spotted with crimson-purple, the lip bluntly ovate, being of a purplish crimson with a large blackish purple spot on each side. It blooms during April and May.—*India*.

FIG.—*Orchid Album*, iv. t. 170; *Paxton, Mag. Bot.* x., 97, with tab.

C. eburneum, *Lindley*.—A remarkably handsome evergreen species, one of the finest of the genus. It is of very compact growth, forming graceful tufts of distichous linear-lorate foliage. The spike is erect, about six inches high, the flowers very large and fragrant, with pure white sepals and petals, and a lip of the same colour, with a crispy front lobe, and having a bold band of yellow in the centre, behind which is a long yellow fleshy pubescent crest. It blooms in February and March, and lasts a long time in perfection. A specimen shown by Mr. Mill, gardener to Lord Rendlesham, bore twenty-nine of its beautiful flowers, as shown in the *Gardeners' Chronicle* cited below.

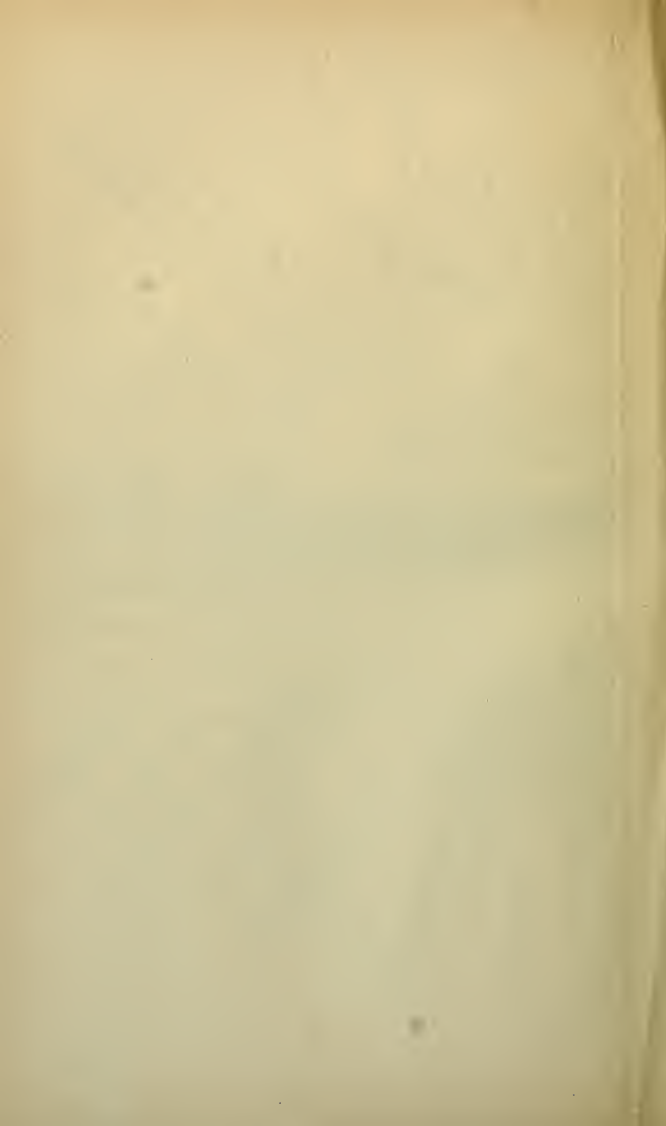




CYMBIDIUM



EBURNEUM.



There are three varieties ; of these a very pretty one grown by J. Day, Esq., Tottenham, is of smaller growth than the type, the flowers not so large, but the sepals and petals pure white, as also is the lip, which has a blotch of yellow in the centre and rose-coloured spots on each side.—*Khasya* : elevation 5,000—6,000 feet.

The variety *Williamsianum*, *Rchb. f.*, has the front lobes of the lip and the tips of the side lobes light purple.

FIG.—*Bot. Reg.*, 1847, t. 67 ; *Bot. Mag.*, t. 5126 ; *Batem. 2nd Cent.*, t. 177 ; *Paxton, Mag. Bot.*, xv. 145, with tab. ; *Jennings, Orch.*, t. 16 ; *Warner, Sel. Orch. Pl.*, i. t. 27 ; *Gard. Chron.*, n.s., xvii. 497, fig. 78 (specimen p'ant).

C. elegans, *Lindley*.—A very rare and curious species producing many-flowered nodding racemes of pale yellow blooms, which have the peculiarity of remaining half closed. It is nevertheless worthy of cultivation on account of the distinct colour of its flowers, which are produced in autumn. It is one of the bulbless group, with linear-ensiform leaves and cylindraceous flowers, which are spotted inside the lip with blood-red.—*India : Nepal*.

FIG.—*Lindl. Sert. Orch.*, t. 14.

C. giganteum, *Wallich*.—This species, though not so handsome as some others, nevertheless makes a good plant for winter blooming. It is a rather large-growing kind, with numerous distichous ensiform leaves, which become dilated at the base and closely invest the large oblong pseudobulb. The sepals are radical, two to three feet long, many-flowered and nodding ; the flowers are fragrant, rather large, yellowish green, striped with purple, and the lip yellow, densely spotted, sometimes round the margin only, with bright crimson ; they are produced during the winter season, and last long in perfection, if kept dry.—*Nepal*.

FIG.—*Lindl. Sert. Orch.*, t. 4 ; *Bot. Mag.*, t. 4844 ; *Paxton, Mag. Bot.*, xii. 241, with tab.

C. Hookerianum, *Rchb. f.*—An attractive species, similar in its habit of growth to *C. giganteum*. It is bulbless, with tough leathery strap-shaped distichous leaves, two feet long, striped with yellow along their sheathing base. The scape is radical, erect, nodding in the upper floriferous part. The individual blossoms are very large, four to five inches in diameter, the sepals and petals yellowish green, and the lip straw-coloured, deeper yellow at the margins, near which, on the crispy ciliate

front lobe, are large blotches of rich crimson-purple, while the flat fringed acute-angled side lobes are covered with smaller crimson dots; a pair of velvety crimson-spotted lamellæ occupy the disk. It should be grown in a pot, and kept in a cool house, for which it is well adapted.—*Sikkim Himalaya*.

FIG.—*Bot. Mag.*, t. 5574; *Batem. 2nd Cent.*, t. 187.

C. Huttoni, *Hook. fil.*—A rare and very remarkable-looking species, growing twelve to eighteen inches high, with elongate ovoid furrowed pseudobulbs, tipped by two oblong obtuse thick leathery leaves, and crowded drooping ten-flowered racemes of flowers, on scapes springing from the base of the pseudobulbs; they are very singular in aspect, ringent, the sepals yellow, closely transverse-streaked with broken chocolate lines, the petals wholly of a chocolate brown, and the three-lobed lip greenish yellow, dotted all over with chocolate. Externally the flowers are of an olive green colour.—*Java*.

FIG.—*Bot. Mag.*, t. 5676.

C. Lowianum, *Richb. f.*—A very distinct and beautiful species, producing long drooping racemes of from eighteen to twenty flowers. These flowers are larger than in *C. giganteum*, about four inches across; the sepals and petals yellowish green, with several faint sepia brown lines, and the lip cream-coloured, with the large erect side lobes yellow, and having on the anterior part a large velvety-maroon blotch margined with yellow. It flowers in February and March. This plant was at first thought to be a variety of *C. giganteum*, but Professor Reichenbach now believes it to be specifically distinct. There are several varieties.—*India: Burmah*.

FIG.—*Floral Mag.*, 2 ser., t. 353; *Gard. Chron.*, N.S., xi. 404, fig. 56.

C. Mastersii, *Griffith.*—A handsome species, much like *C. eburneum* in its tufted distichous narrow ensiform leaves, and its manner of growth, but the flowers, which are produced on upright spikes, are very different in shape, white, with a yellow centre, and have the throat and anterior lobe of the lip spotted with rosy purple; they are almond-scented. This blooms during the winter, and continues long in flower.—*India*.

FIG.—*Bot. Reg.*, 1845, t. 50; *Lem. Jord. Fl.*, t. 289; *Pact. Fl. Gard.*, iii. t. 78; *Floral Mag.*, 2 ser., t. 391.

C. Mastersii album, *Richb. f.*—A pretty and chaste variety of the preceding, having pure white flowers, which are deliciously

fragrant. This, according to Professor Reichenbach, is distinct from the old spotted form. Flowers during the winter months.—*India*.

C. Parishii, *Richb. f.*—A very handsome and distinct novelty, having fusiform fleshy stems, and distichous foliage similar to that of *C. eburneum*, but broader. The flowers, which are sweet-scented, and produced on upright spikes generally three together, are about the same size as those of *C. eburneum*. The sepals and petals are creamy white, the lip white, with an orange-coloured central band, and ornamented by numerous violet-purple spots; the centre of the front portion of the lip is of a bright orange-colour. This species is extremely rare; on one occasion we paid as much as a hundred guineas for a single plant. It flowers during July and August.—*Moulmein*.

FIG.—*Orchid Album*, i. t. 25; *Xenia Orch.*, iii. t. 224.

C. pendulum, *Swartz.*—A very elegant species of large growth, with distichous tufts of leathery ensiform strongly furrowed leaves, two to three feet long, and very long pendulous racemes of moderate-sized yellowish olive-tinted flowers, having the side lobes and tip of the lip rosy red, the disk clear white, with two yellow crests on its surface. It blooms in July or August, and lasts long in beauty.—*Sylhet*.

FIG.—*Bot. Reg.*, 1840, t. 25; *Id.*, 1844, t. 24 (*var. brevilabre*); *Roxb. Corom. Pl.*, i. t. 44.

C. pendulum atropurpureum, *Hook. fil.*—A fine and very distinct variety of *C. pendulum*, producing splendid racemes of flowers, from two to three feet in length, and having the sepals and petals of a rich deep purple, yellowish green externally, and the recurved lip white tinged with rose, and marked with a few crimson-purple spots, the disk yellowish, with two parallel lamellæ. It flowers in May and June, and remains a long time in perfection.—*Philippine Islands, Borneo*.

FIG.—*Bot. Mag.*, t. 5710.

C. tigrinum, *Parish.*—A very pretty plant of dwarf habit, with small roundish-ovate pseudobulbs, oblong lanceolate, slightly twisted leaves, five or six inches long, and radical scapes, bearing a few (about three) large flowers, of an olive-tinted yellowish green, spotted with red; the lip clawed, three-

lobed, the recurved oblong apiculate middle lobe white marked with crossbars of crimson-purple, and the erect side lobes also striped with purple. The plant is quite unlike the other species referred to this genus.—*Tenasserim Mountains*, 6,000 feet elevation.

FIG.—*Bot. Mag.*, t. 5457.

CYPRIPEDIUM, *Linnaeus*.

(Tribe *Cypripediæ*.)

This remarkably distinct genus consists partly of terrestrial and partly of epiphytal species, the tropical kinds included in this chapter belonging to the latter series. The various hardy and half-hardy kinds representing the terrestrial group produce erect leafy deciduous stems with the leaves strongly ribbed; while the more numerous race of tropical species have mostly very short stems, bearing leathery leaves, from among which the one or two-flowered scapes spring up, all these having one-celled ovaries with parietal placentæ. There is a third group of tropical kinds (all American) which have leathery leaves, tall branching flower stems, and three-celled ovaries, with axile placentation. These latter are referred by some of our highest authorities to the genus *Selenipedium*, but for garden purposes they are more conveniently retained in one group. *Selenipedium* is thus separated from *Cypripedium* by its three-celled ovaries with axile placentæ, *Cypripedium* itself having a one-celled ovary with parietal placentation. Many of the species have beautiful foliage as well as flowers, and on this account are worth a place in every collection. The form of the flower is curious, the usually conspicuous parts being the dorsal sepal erect and highly coloured, two spreading often elongated petals, and a slipper-formed pouch or lip, on account of which latter the genus is generally called Our Lady's Slipper. The tropical kinds are almost all dwarf, compact, and evergreen, the leaves of some being beautifully

chequered. They produce their flowers from the centre of the leaf-tufts, on an upright scape, and rise from six inches to a foot high or more, the branching *Selenipediums* sometimes reaching two or three feet in stature.

There are now a large number of hybrid *Cypripediums* which are very fine and distinct, but whether they are all to be considered as improvements on the existing species is purely a matter of taste. Some of them certainly are so.

Culture.—These plants are of easy culture, and require but little space. The majority of the species are best grown in the East Indian house; some kinds, however, do better in a cooler place, and will thrive in a warm greenhouse. We grow them all in pots with rough fibrous peat, sphagnum moss, charcoal, and sand mixed together. They all require a liberal quantity of water during their period of growth; and as they need but little rest, they never should be allowed to get too dry at the roots. The *Cypripediums*, unlike many Orchids, have no thick fleshy bulbs to supply them with nourishment, and hence require a constant artificial supply. They are propagated by dividing the plants.

C. albo-purpureum, *Rehb. f.*—A handsome hybrid, of branching habit, obtained by Mr. Seden from *C. Schlimii* crossed with *C. Dominicanum*. It is of vigorous growth, the long green linear-lorate leaves forming a spreading tuft from which the flower stems arise. The flowers are considerably larger than in *C. Sedeni*; the elongate-ovate dorsal sepal has a slight pinkish tinge on its margin, and the petals, which are from five to six inches long, are pinkish throughout, and twisted, hanging down beyond the lip. The pouch of the lip, which is rounded at the end, is of a dull crimson-red, the inflected edges at its base being ivory-white with pinkish borders, and nearly covered by rosy-coloured spots. The staminode is a light pink, adorned on each side by many bristles.—*Garden hybrid.*

FIG.—*Veitch, Cat.*, 1882, 9, with fig.; *Garden*, xxi. 332, with fig.

SYN.—*Selenipedium albo-purpureum.*

C. Argus, *Rchb. f.*—This is a very distinct species, resembling *C. barbatum* in growth. The oblong-lanceolate sub-distichous dark green leaves are handsomely tessellated with yellow-green. The scapes are from one and a half to two feet high, and bear one large showy flower, of which the dorsal sepal is whitish striped with green, the linear-oblong petals, about three inches long, whitish, striped with green towards the base, rose-coloured towards the tip, heavily spotted with dark purple spots, many of which are ocellate; the lip purplish brown, green on the under-side. It flowers in March and April, and is peculiar in the well-marked ocellate spots on the petals.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 6175; *Floral Mag.*, 2 ser., t. 220.

C. Arthurianum, *Rchb. f.*—A small-growing hybrid, the result of a cross between *C. insigne* and *C. Fairrieanum*. It has ligulate leaves and flowers, having the general appearance of *C. insigne* *Maulei*. The dorsal sepal is pale yellowish green, veined and spotted with blackish crimson; the petals are veined with deep crimson, and are turned downwards like those of *C. Fairrieanum*; the lip is veined and mottled with brown on a pale greenish yellow ground.—*Garden hybrid*.

C. Ashburtoniæ, *Rchb. f.*—A very distinct hybrid variety, the result of a cross between *C. barbatum* and *C. insigne*. The leaves are ligulate, bidentate at the apex, dark green, faintly reticulated. The dorsal sepal is large, and somewhat as in *C. barbatum*; the petals ligulate, white tinged with green, and veined with purple; lip pale purple, tinged with yellow, and slightly blotched with purple. This distinct variety was obtained by Mr. Cross, when gardener to Lady Ashburton, of Melchet Park, Romsey.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 1871, 1647, fig. 348; *Gartenflora*, t. 976.

C. barbatum, *Lindley*.—A pretty species, with beautifully spotted leathery oblong-acute channelled leaves, and purple downy scapes bearing each a solitary flower, which has the broad back sepal white striped with purple and green, the linear-oblong fimbriate petals a good deal stained with purple, and having a series of black hairy warts along the upper edge, and the saccate lip dark brownish purple. It produces its flowers at different times of the year, lasting six weeks in bloom. There are many varieties of *C. barbatum*, some being

much brighter in colour than others.—*Malay Peninsula: Mount Ophir.*

FIG.—*Bot. Mag.*, t. 4234; *Bot. Req.*, 1842, t. 17; *Flore des Serres*, t. 190; *Moore, Ill. Orch. Pl.*, *Cypripedium*, t. 8; *Ann. Sc. Nat.*, iii, t. 13.

C. barbatum nigrum, *Hort.*—A charming variety, producing finely variegated foliage. The flowers are larger than those of any of the other forms of *C. barbatum*, and in colour much darker. This variety is sometimes called *giganteum*, in consequence of its large flowers. It blooms in July and August, and continues six weeks in bloom.—*Mount Ophir.*

C. barbatum superbum, *Hort.*—A fine variety which grows in the same way as *C. barbatum*, but the foliage is brightly variegated. The flowers are handsomer, the lip being very dark, and the dorsal sepal purer white towards the apex; it lasts about six weeks in perfection. This makes a fine plant for exhibition.—*Mount Ophir.*

C. barbatum Warnerianum, *Moore.*—A very beautiful and compact-growing variety, with small distichous oblong acute distinctly-tessellated foliage. The dorsal sepal is large, recurved towards the apex, white striped with green towards the base, and marked with a broad transverse band of vinous crimson; the petals are fringed, and have a number of bearded warts along the upper edge, their upper halves being pale green striped with dark green, and the lower halves white towards the base, the remaining portion bright purple tipped with white; the lip deep brownish purple. This plant flowers when very young, in fact every small shoot may be depended upon to produce its spike. It flowers in March, April, and May, lasting six weeks in perfection.—*India.*

FIG.—*Warner, Sel. Orch. Pl.*, iii, t. 11.

C. biflorum, *Hort.*—A handsome plant in the way of *C. barbatum*, but with more elegantly variegated foliage. It grows four inches high; the blossoms are produced on a scape ten inches long, two flowers sometimes appearing on one stem; the dorsal sepal is very handsome, the upper part being white, while the other parts of the flower are purplish brown. It blooms in February and March, and will keep six weeks in good condition.—*India.*

C. Boxallii, *Rehb. f.*—A very distinct and welcome addition to the large group of acaulescent species. In growth it

resembles *C. villosum*, as well as in the shape of its flowers. The leaves are broadly ligulate, deep green; the dorsal sepal is greenish, broadly margined with white and heavily spotted with blackish purple nearly to the top; the petals are yellowish green marked with reddish brown veins; the lip also is yellowish green lightly tinged with dull purple. It flowers in January and February. The whole of the flower has a peculiar glazed appearance as in *C. villosum*. This should be grown in the cool house.—*Burmah*.

FIG.—*Illust. Hort.*, 3 ser., t. 345.

C. calophyllum, *Rehb. f.*—This hybrid was raised by Messrs. Veitch between *C. barbatum* and *C. venustum*. The leaves are large, with beautiful dark tessellation. The dorsal sepal is similar to that of *C. barbatum*, but has greener nerves; the petals are like those of *C. venustum*, having the same wart-like bodies, and strong bristles on the margins; the lip in shape and colour is akin to that of *C. venustum*, but is much browner than in that species.—*Garden hybrid*.

C. calurum, *Rehb. f.*—A very handsome noble and free-flowering hybrid raised between *C. longiflorum* and *C. Sedeni* in Messrs. Veitch's nursery. It forms a thick tuft of elongate channelled acute green leaves, with tall branched brownish red stems, bearing in succession large showy flowers, the dorsal sepal of which is pale green with longitudinal purple ribs, the petals two and a half inches long, pale green edged with rosy red near the base, and wholly bright rosy red at the apex, narrower and more twisted than in *C. Sedeni*; the lip is deep wine crimson externally, and very handsome. It belongs to the *Selenipedium* group.—*Garden hybrid*.

FIG.—*Orchid Album*, iii. t. 136; *Florist and Pomol.*, 1884, 145, with tab.
 SYN.—*Selenipedium calurum*.

C. cardinale, *Rehb. f.*—A very beautiful hybrid raised in the establishment of Messrs. Veitch & Sons; it is a cross between *C. Sedeni* and *C. Schlimii album*, and has the appearance of a gigantic *C. Schlimii*. The dorsal sepal is bluish white faintly striped with green, the petals bluish white with a patch of crimson-purple hairs towards the base; and the lip is similar in shape to that of *C. Schlimii*, but about an inch in diameter; it flowers in December.—*Garden hybrid*.

SYN.—*Selenipedium cardinale*.





CYPRIPEDIUM CAUDATUM.

C. caricinum, *Lindley*.—A very curious and elegant Orchid, having a singular grassy or sedge-like appearance, and long creeping rhizomes, totally distinct from those of any of the other species. It grows a foot or more in height, the flower-spike rising clear of the stiff narrow channelled foliage, and producing from four to seven flowers of a pale green colour, the sepals and petals having a white margin, and the ends being blotched with rich brown, the latter narrow, deflexed and twisted, and the oblong lip beautifully marked on the inner margin by a row of black dots. The staminode is bordered with black hairs resembling a pair of whiskers. A very remarkable plant, and well adapted for growing in the cool house with *Odontoglossums*.—*Peru*.

FIG.—*Bot. Mag.*, t. 5466; *Flore des Serres*, t. 1648.

SYN.—*C. Pearcei*; *Selenipedium caricinum*.

C. caudatum, *Lindley*.—This is one of the most remarkable of Orchids, owing to its singularity of character and appearance, and has no doubt created a greater sensation than any other member of its genus. The plant is a stemless evergreen, the ensiform distichous leaves are of a light green colour, and the flower scapes, which rise from the centre of the plant, and are produced after the leaf growth is completed, grow from a foot to eighteen inches high. The sepals and petals are yellowish, marked with brown, the long tail-like petals, which are the most extraordinary part of the plant, often reaching, when fully developed, to the length of thirty inches, and being more deeply coloured towards the end; the lip is of a reddish brown, with the basal part yellow, beautifully spotted with reddish brown. The plant blooms during the months of April and May, and lasts in perfection for several weeks if the flowers are kept from damp.—*Chiriqui, Peru*.

FIG.—*Paxt. Fl. Gard.*, i. t. 9; *Warner, Sel. Orch. Pl.*, ii. t. 1; *Hook, Ic. Pl.*, vii. tt. 658, 659; *Gard. Chron.*, n.s., iii. 211, fig. 40 (specimen) *Garden*, iii. 313, with fig.; *Flore des Serres*, t. 566; *Pescatorea*, t. 24.

SYN.—*Selenipedium caudatum*.

C. caudatum roseum, *Hort*.—A variety which grows in the same way as the type, and blossoms at the same time, but the flowers are of a dark rose, intermixed with the yellow and green. It has all the beauty of the species, with additional charms, especially brilliancy of colour; it is sometimes called *C. Warscewiczii*.—*Panama*.

SYN.—*Selenipedium caudatum roseum*.

C. chloroneurum, *Rchb. f.*—A very distinct and free-growing hybrid, raised by Mr. R. Warner, of Broomfield. It has beautifully variegated foliage, and the flowers are large and well expanded, the dorsal sepal of a bright lively pale green colour reticulately veined with darker green and bordered with white; the oblong petals are also green suffused on the distal upper half with purple, and furnished with a few black marginal warts near the base; and the lip is large, heavily stained with wine-purple and freely marked with reticulations of a darker purple. It flowers during January and February.—*Garden hybrid.*

FIG.—*Orchid Album*, i. t. 37.

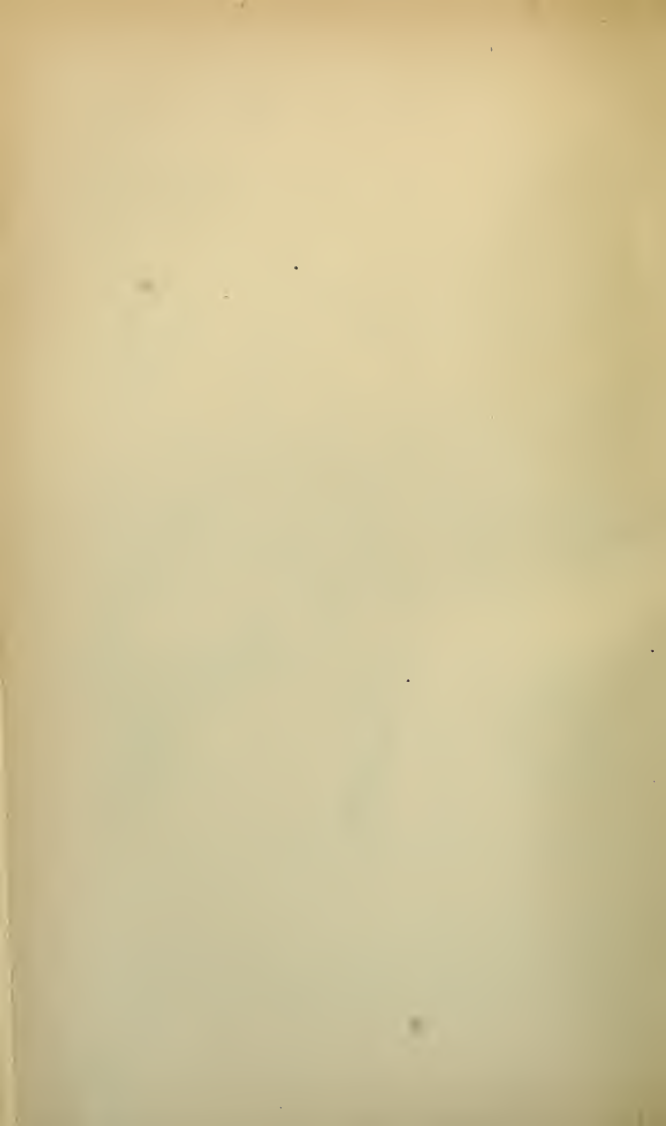
C. ciliolare, *Rchb. f.*—A distinct and handsome species, having foliage in the way of *C. Argus* and flowers similar to those of *C. superbiens*, but it is not so handsome as that species. The dorsal sepal is smaller and curved forward, and is traversed longitudinally with green veins on a white ground suffused with purple; the petals are purplish, and densely spotted with black on the lower halves; and the lip is dull purple, and covered with a sort of down. The hairs on the margins of the sepals and petals are more numerous and denser than in *C. superbiens*. It blossoms in April and May.—*Malay Archipelago.*

C. conchiferum, *Rchb. f.*—According to Professor Reichenbach this plant has the appearance of a giant *C. caricinum*, with some attributes of *C. Roezlii* as to colour, breadth of petals, leaves, and extension of bracts. The flower has an oblong triangular dorsal sepal, whitish, veined with pale yellowish green; the petals are ribbon-like, twisted, narrow, white veined with green at the base, brownish crimson towards the tips; and the lip is of a pale olive green, with the inflexed side lobes spotted and freckled with brown, and covered at the top with shining green warts. This is the result of a cross between *C. caricinum* and *C. Roezlii*, and was raised by J. C. Bowring, Esq., Windsor Forest. It is a *Selenipedium*.—*Garden hybrid.*

C. concolor, *Parish MS.*—A very distinctly marked plant of the stemless section. The leaves are leathery, oblong obtuse, beautifully variegated above and reddish purple beneath. The scape is short, pubescent, purple, usually two-flowered, the flowers cream-coloured and finely speckled with minute



CYPRIPEDIUM CONCOLOR.



crimson dots. The sepals and petals are broad, and the lip comparatively small. We have seen this plant as imported, and from its appearance should judge that it grows naturally among limestone rocks. We therefore recommend some of that material to be mixed with the peat and sand used for potting.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5513; *Batem. 2nd Cent. Orch. Pl.*, t. 153; *Illustr. Hort.*, t. 444; *Gard. Chron.*, 1865, 626, with fig.; *Id.*, n.s., xix. 19, fig. 3, back figure; *Flore des Serres*, t. 2321; *Florist and Pomologist*, 1870, 149, with fig.

C. Crossianum, *Rehb. f.*—A fine garden hybrid raised by Mr. Cross, of Melchet Court, between *C. insigne* and *C. venustum*. The leaves are oblong, blotched with dark green upon a glaucous ground. The scape is purplish, hairy; the dorsal sepal broadly ovate, white with green lines and numerous blackish dots near the base; the petals are ligulate, brownish copper-coloured, with blackish dots towards the basilar half, and the lip brownish yellow with greenish veins.—*Garden hybrid*.

C. Curtisii, *Rehb. f.*—A very beautiful acaulescent species, very nearly related to *C. superbiens* and *C. ciliolare*; the lip is, however, much larger than in the latter and has acute side angles. The distichous leaves are broad, oblong acute, recurved, boldly chequered with oblong dark green blotches on a dull green ground. The scape is downy, dull wine-purple, and the flowers large, distinct in character, and showy; the dorsal sepal is short and acuminate, greenish with a white border, and numerous greenish purple nerves; the petals are linear-oblong, acute, deflexed, recurved at the tips, greenish on the upper, whitish on the lower halves, indistinctly veined with purple and thickly spotted with small magenta-purple dots, as well as profusely fringed with short blackish hairs; the spots are smaller than in *C. ciliolare*, but continued around the apex. The lip has a large oblong bluntly rounded pouch of a dull wine-purple colour with a few darker purple veins. It flowers in June and July. This fine species was discovered by Mr. Curtis.—*Sunda Isles*.

FIG.—*Orchid Album*, iii. t. 122.

C. Dayanum, *Rehb. f.*—A charming plant, the foliage of which is beautifully but sparsely variegated, and very distinct from any other of the variegated class. The flowers, which are large, are produced in May and June, and last a long time in perfection. The sepals are white with close

green veins, the petals ligulate, acute, ciliated, purplish tinged with green, and the acute-lobed lip dull purple. This species is not so showy in the blossoms as some others, but the foliage is most beautiful. Two varieties have been flowered by John Day, Esq., one having darker foliage than the other, and the flowers also of a darker colour.—*Borneo*.

FIG.—*Fl. des Serres*, t. 1527; *Xenia Orch.*, iii. t. 201; *Id.*, t. 209, fig. 3.

C. Dominicanum, *Rchb. f.*—This is one of the many startling results of hybridising realised by Mr. Dominy, whose name it worthily bears; it seems exactly intermediate between its parents, *C. caricinum* and *C. caudatum*. The leaves are linear-elongate, broader than in *C. caricinum*, and the flower stems are erect, bearing three flowers at one time; these are of yellowish green tinged with coppery brown, the lip deep reddish brown in front with darker reticulations, yellowish green behind, the incurved mouth also yellowish with many dark purple dots in groups. In shape the flowers resemble those of *C. caricinum*, whilst in size they are intermediate. It is a valuable addition to this fine genus.—*Garden hybrid*.

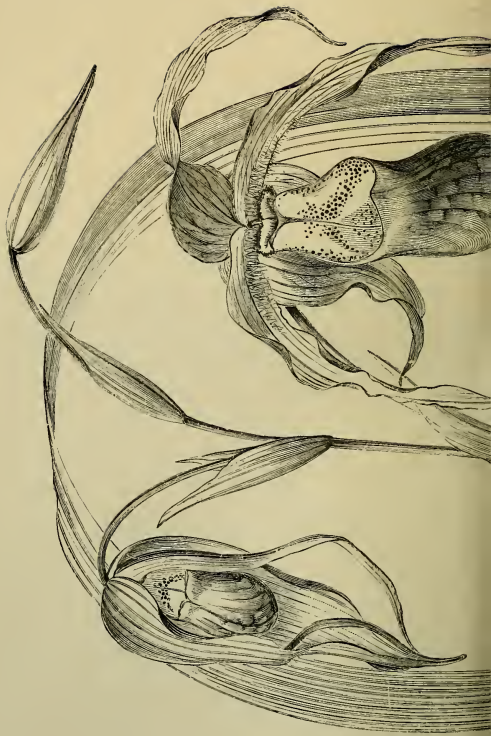
FIG.—*Floral Mag.*, t. 499; *Veitch, Cat.*, 1873, 12, with fig.; *Florist and Pomol.*, 1874, 57, with fig.; *Garden*, iii. 491, with fig.

SYN.—*Selenipedium Dominicanum*.

C. Druryi, *Beddome*.—A most distinct and desirable species of the stemless group, having stout ligulate acute leaves about nine inches in length and an inch and a half in breadth. The flowers are produced singly on an erect brownish hairy scape. The dorsal sepal is greenish yellow, covered on the outside with dark glandular hairs, and having a purplish brown stripe down its centre; the petals are broad ligulate, bent somewhat downwards, greenish yellow, and like the dorsal sepal having a purplish brown central stripe, marked also with small dark spots near the base; and the lip is pale yellow with numerous brown spots on its channelled base. It was introduced by Colonel H. Drury, and flowers during May and June.—*India: South Travancore Mountains*.

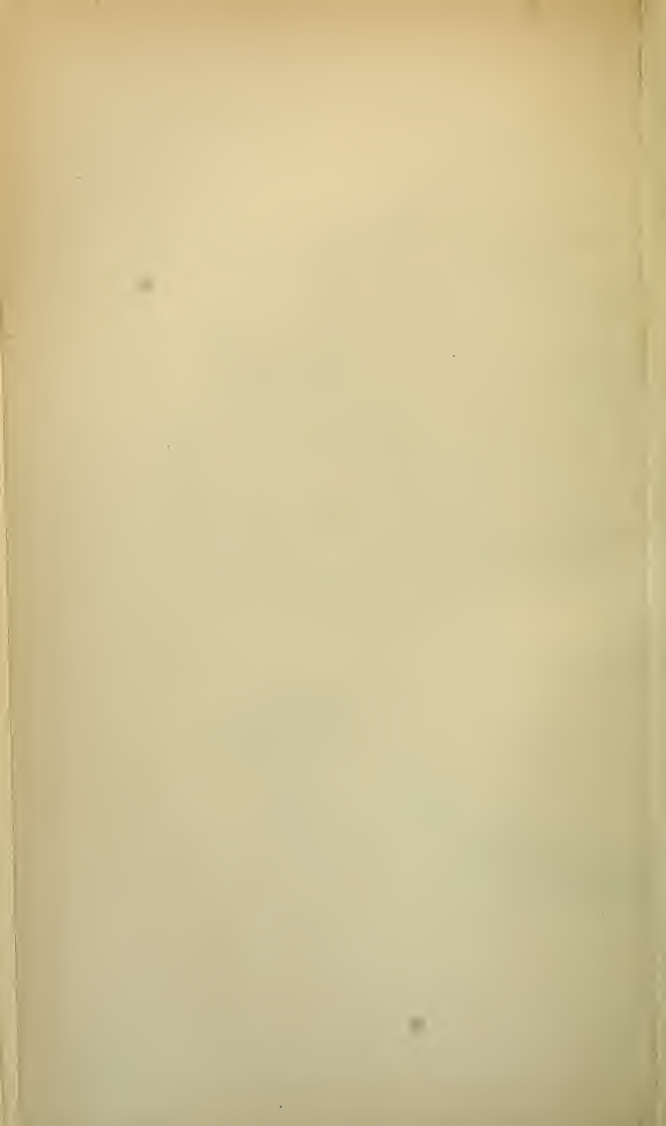
FIG.—*Bedd. Icon. Pl. Or.*, t. 112; *Ill. Hort.*, 3 ser., t. 265; *Floral Mag.*, 2 ser., t. 425.

C. euryandrum, *Rchb. f.*—A very distinct hybrid between *C. Stonei* and *C. barbatum*. The plant is of a robust habit of growth, and has deep green faintly tessellated ligulate

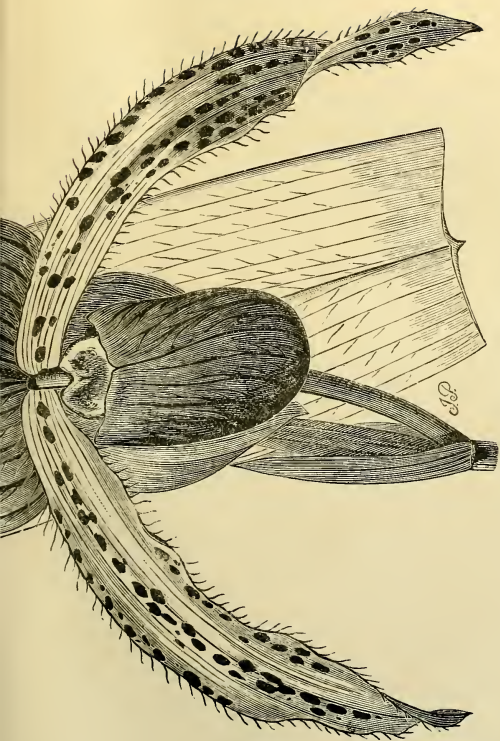




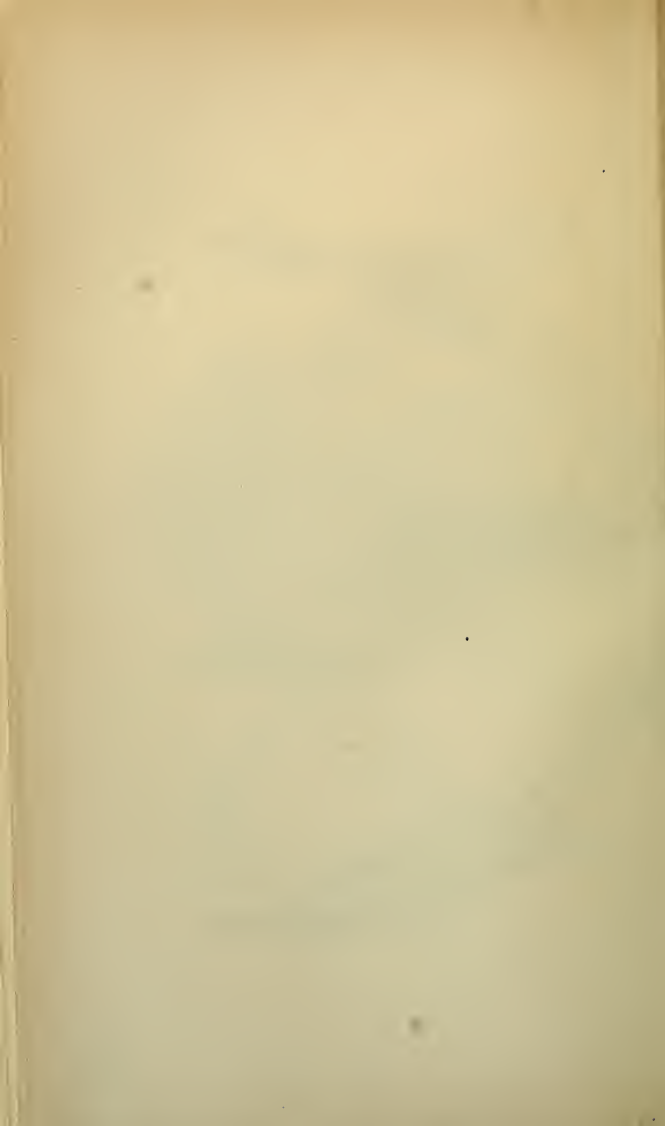
CYPRIPEDIUM DOMINIANUM.







CYPRIPEDIUM EURYANDRUM.





CYPRIPEDIUM GODEFROYÆ.

leaves, unequally acute at the apex. The flower scapes are stout and hairy, bearing from two to three flowers, of which the dorsal sepal is very broad, roundish and convex, white stained with crimson and striped with deep crimson-purple and green, and the broadly ligulate ciliate petals are much longer than those of *C. barbatum*, whitish at the base, with many large purplish spots throughout, mostly ranged in lines; the lip is like that of *C. barbatum*, but much larger, brownish crimson. This variety was raised by Mr. Seden, in Messrs. Veitch's nursery at Chelsea.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1880, 10, with fig.; *Garden*, xix. 636, with fig.

C. Fairrie anum, *Lindley*.—A beautiful rare and distinct species of the stemless type. The leaves are distichous, loriform channelled, of a light green colour, and the scapes green and pilose, the flowers produced very freely during the autumn months, and continuing in perfection for six weeks. They are large, with a dark purple ovary; the broad spreading dorsal sepal greenish white, beautifully veined with dark purple; the petals, which are oblong-lanceolate, white, striped with green and edged with purple, are peculiarly deflexed and curved like the horns of a buffalo; and the large lip is brownish green with purple reticulations. This plant is seldom seen doing well, the reason, we believe, being that it usually gets too much heat, for with us it succeeds best in the *Cattleya* house.—*Assam*.

FIG.—*Orchid Album*, ii. t. 70; *Bot. Mag.*, t. 5024; *Batem. 2nd Cent. Orch. Pl.*, t. 140; *Xenia Orch.*, ii. t. 133; *Flore des Serres*, t. 1244; *Garden*, iii. 431, with fig.; *Id.*, vi. 69, with fig.; *Id.*, xxiv. 442, with fig.

C. Godefroyæ, *Godefroy*.—This is a very interesting addition to the group represented by *C. concolor* and *C. niveum*, and is in some respects intermediate between these two species. The plant, which is acaulescent, has ligulate oblong leaves, from four to eight inches in length, purplish red beneath, and tessellated in a variable manner, with light and dark green on the upper surface. The flowers, which stand each on a hairy purple spotted scape, are very charming, the roundish dorsal sepal and the deflexed oblong ovate bluntly emarginate petals white, heavily spotted with chocolate purple, while the lip is pouch-shaped, barely an inch long, white, marked all over with chocolate-purple spots, those of the outer surface being brighter.—*Eastern Asia*.

FIG.—*Orchid Album*, iv. t. 177; *Orchidophile*, i. 830, with fig.; *Florist and Pomologist*, 1884, 37, with fig.; *Veitch, Cat.*, 1884, 18, with fig.; *Garden*, xxv. 396, with fig.

C. grande, *Rchb. f.*—A truly grand hybrid of the *Selenipedium* group, raised by Mr. Seden, from *C. Roezlii*, fertilised by *C. caudatum*. It is the most robust-habited variety which is known, and a most striking plant. The leaves are sword-shaped, two to two and a half feet long, and of a bright glossy green. The scape, which is many-flowered, grows three feet high, and stout in proportion. The flowers are large, with a remarkably extended lip; the elongate ovate incurved dorsal sepal is yellowish white, marked with yellowish green veins; the petals are ribbon-like, upwards of a foot long, pendulous, broadest at the base, where they are yellowish white and hairy, the narrow pendent portion crimson; and the lip is large and prominent, narrow at the base, where the infolded lobes are whitish spotted with crimson, the front portion greenish yellow, paler and whitish beneath. The staminode is pale yellow, slightly flushed with crimson below, and fringed on its upper edge with blackish crimson hairs. It is a plant of exceptional merit.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1884, 7, with fig.

C. Harrisianum, *Rchb. f.*—This is one of the hybrids raised by Mr. Dominy, and comes from *C. villosum* fertilised by *C. barbatum*. The result has been a plant in many respects intermediate, of which there are several varieties. The leaves are ligulate, tridentate, and tessellated with dark and light green, as in the latter, while they also have the polished appearance of the former. The flowers, which grow on a hairy scape, are larger than those of *C. barbatum*, but inferior in size to those of *C. villosum*; the upper sepal is broad and shining, dark purple, tipped with white; the ligulate spreading petals are rich purple and glossy; and the lip is claret-coloured, tinged with green, the mouth of the sac fringed with bristles. We find this succeeds well in the *Cattleya* house.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 431; *Veitch, Cat.*, 1870, 24, with fig.; *Florist and Pom.*, 1871, 57, with fig.

C. Haynaldianum, *Rchb. f.*—This species, which is named after Dr. Haynald, Archbishop of Kaloesa, in Hungary, comes very near to *C. Lowii*. It has long distichous suberect dark green coriaceous leaves, and hairy green scapes, one to one and a half foot high, and two or more flowered. The flowers are large and showy; the dorsal sepal yellowish green at the base blotched with bold patches of brown, and pinkish white

on the upper part; the petals are fully three inches long, spathulate-oblong, greenish yellow, margined with pale pink towards the tips, and heavily blotched with brown in the lower half; and the saccate biauriculate lip is green tinged with pale purple. It blooms during February and March.—*Philippine Islands: Manilla.*

FIG.—*Bot. Mag.*, t. 6296; *Xenia Orch.*, iii. t. 212.

C. hirsutissimum, *Lindley*.—A beautiful bold-habited species of the stemless section. It has pale green distichous elongate ligulate carinate leaves, a foot or more in length, and glabrous. The flowers proceed from the centre of the young growths, on green hairy scapes a foot long, the whole back of the flower densely hirsute, the sepals being all ciliated. The dorsal sepal is rhomboidal-cordate, dark purplish green with a broad green margin; the petals are large, broadly spathulate, very blunt, ciliated, the narrowed claw-like base undulated, green dotted with purple, the front part wholly purple; and the lip large, deep green tinged with purple. The blossoms, which often measure six inches across, open in March, April, and May, and last six weeks in perfection.—*India: Bhotan, Assam.*

FIG.—*Bot. Mag.*, t. 4990; *Batem. 2nd Cent. Orch. Pl.*, t. 149; *Flore des Serres*, t. 1430; *Warner, Sel. Orch. Pl.*, i. t. 15; *Xenia Orch.*, ii. t. 132; *Belg. Hort.*, vii. 353, with tab.

C. Hookeræ, *Richb. f.*—One of the dwarfer stemless section, the leaves of which are most beautifully variegated, being of a bright dark green, finely tessellated with irregular yellowish green spots or bands; they are broadly oblong-ligulate, and fleshy-coriaceous in texture. The flowers are somewhat deficient in size compared with others, and, if not very showy, are certainly pretty; the sepals are yellowish with a green centre; the petals spreading, ciliate, spathulate, the narrow part undulated, green with small purple spots, and the upper part acute, rosy purple; and the lip is green suffused with dull purplish brown. The staminode is purple with pale margins.—*Borneo.*

FIG.—*Bot. Mag.*, t. 5362; *Batem. 2nd Cent. Orch. Pl.*, t. 123; *Flore des Serres*, t. 1565.

C. insigne, *Wallich*.—A well-known good old species of the acaulescent group, furnished with distichous ligulate light green leaves, and producing its solitary flowers on purple hairy scapes during the winter months, lasting six weeks in bloom. The broadly ovate dorsal sepal is greenish below,

thickly spotted with purple-brown and tipped with white; the oblong-obovate petals and the saccate lip are greenish, more or less tinged with olive brown. This is a most useful species for autumn-flowering, and should be largely grown on account of the long-lasting properties of its flowers; it thrives best when grown in the cool house.—*India: Nepal, Sylhet, Khasya.*

FIG.—*Lindl. Coll. Bot.*, t. 32; *Lodd. Bot. Cab.*, t. 1321; *Hooker, Ex. Fl.*, t. 34; *Bot. Mag.*, t. 3412; *Maund, Bot.*, ii. t. 56; *Florist and Pom.*, 1870, 280, with fig.; *Orchid Album*, iii. t. 155; *Blume, Rumphia*, t. 195; *Griff. Pl. Asiat.*, t. 322; *Hart, Parad.*, i. t. 1.

C. insigne albo-marginatum; *Hort.*—This is a very peculiar and beautiful variety, having flowers of a yellowish caste. The dorsal sepal, which is entirely margined with white, is quite devoid of the spotting usually found in the type.—*India.*

C. insigne Maulei, *Moore.*—A very handsome variety of *C. insigne*, which has the same habit of growth, but has shorter and smaller foliage. It flowers at the same time with the type, but is much handsomer, the broad incurved dorsal sepal being more tapered below, pure white on the upper half, heavily and regularly spotted with purple above and purple-brown below, the spots larger and bolder, so that the whole flower is richer in colour, while the lip is broader, and of a light olive brown. The blossoms will continue in perfection six weeks. This was introduced by Messrs. Maule & Sons, Bristol, after whom it is named. There seems to be some confusion in gardens between it and the following (see *Gard. Chron.*, n.s., viii. 684).—*India.*

FIG.—*Floral Mag.*, t. 57; *Flore des Serres*, t. 1564 (poor); *Gard. Chron.*, n.s., xviii. 716, fig. 126; *Garden*, xxi. 444, t. 342, left-hand fig.

C. insigne punctatum violaceum, *O'Brien.*—This choice variety is a still finer plant than *C. insigne Maulei*, the flowers, which on the whole are rather smaller, being superior in size as regards the breadth of the dorsal sepal, the white portion of which is equally broad and conspicuous, the purple spotting being considerably bolder and more marked; the lip, moreover, is smaller and narrower, and of a darker chestnut brown. It was first bloomed by Messrs. E. G. Henderson & Son, and is found in some collections under the name of *C. Chantinii*.—*Nepal.*

FIG.—*Revue Hort.*, 1878, 130, with tab. (*Chantinii*); *Gard. Chron.*, n.s., xviii. 716, fig. 127; *Garden*, xxi. 444, t. 342, right-hand fig.; *Orchidophile*, v. 36, with tab. (*Chantinii*).



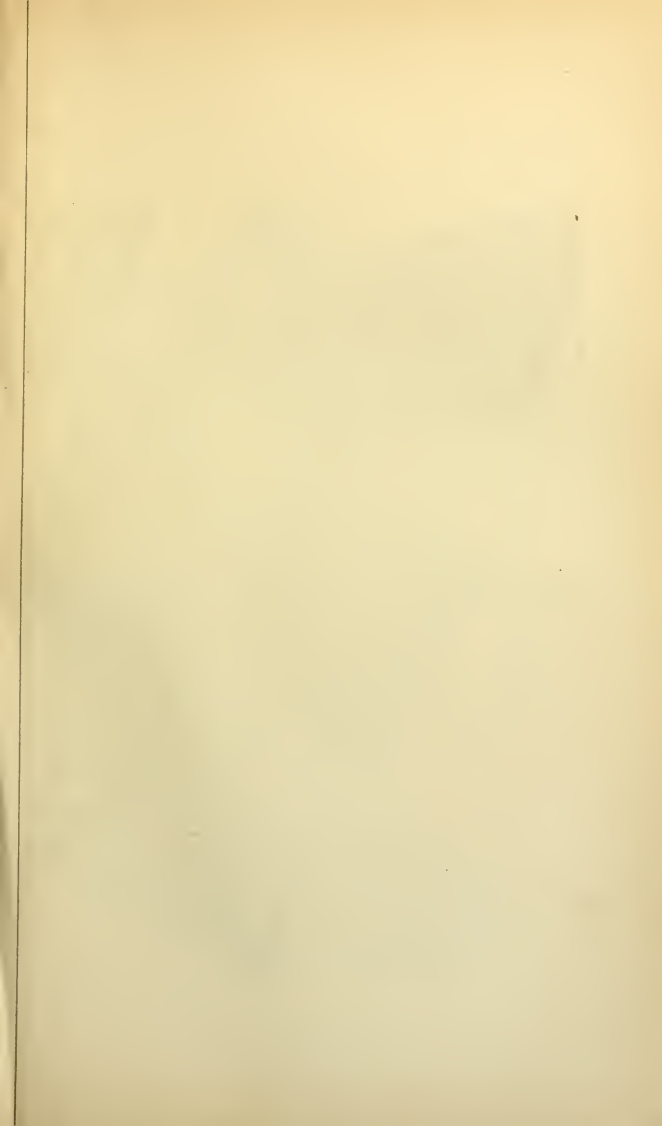
CYPRIPEDIUM INSIGNE MAULEI.





CYPRIPEDIUM INSIGNE PUNCTATUM VIOLACEUM.









CYPRIPEDIUM LAWRENCEANUM.

C. lævigatum.—See CYPRIPIEDIUM PHILIPPINENSE.

C. Lawrenceanum, *Rchb. f.*—This remarkably handsome species was introduced by Mr. F. W. Burbidge to the collection of the Messrs. Veitch, and was named in honour of Sir Trevor Lawrence, Bart., M.P., a gentleman whose great love of Orchids fully entitles him to such a compliment. It is one of the stemless kinds, with distichous broadly oblong acute channelled leaves, about a foot long, and of a most ornamental character, being tessellated with a bright whitish green on a dark green ground, the markings having a very distinct and striking appearance. The flowers are produced singly or in pairs on an upright purple downy scape, and are large and showy, the dorsal sepal being very broadly ovate, white striped with numerous shining broad purplish lines; the petals horizontal, broadly linear-oblong, about half an inch wide and two and a half long, ciliate, green tinged with purple at the tip, the margins dotted with several dark purple hairy warts, the lower halves flushed with pale wine-red; and the lip two inches long, almost cylindrical, of a purplish brown above, yellowish green below. It flowers during the summer months.—*Borneo*.

FIG.—*Orchid Album*, t. 22; *Bot. Mag.*, t. 6432; *Veitch, Cat.*, 1879, 9, with fig.; *Florist and Pom.*, 1880, 112, with fig.; *Gard. Chron.*, N.S., xix. 777, fig. 131.

C. Leeanum, *Veitch*.—A well-marked hybrid between *C. Spicerianum* and *C. insigne Maulei*. In its neat habit of growth, and in various other points, it takes most after *C. Spicerianum*. It has green leaves resembling those of that species, and rather taller scapes bearing the handsome flowers, which have the dorsal sepal broadly oval, flat, pure white, similar in form to *C. insigne Maulei*, but having a distinct broad dotted line down its centre, and the base emerald green with radiating spots of mauve colour running upwards into the white part; the petals are similar to *C. insigne Maulei*, and the lip a shining brownish red. This is a very distinct and desirable plant, and was raised by Mr. Seden, and exhibited by Messrs. Veitch & Sons, in January, 1884. Its name commemorates W. Lee, Esq., of Downside, one of our most zealous cultivators of Orchids.—*Garden hybrid*.

C. longifolium, *Warscz. et Rchb. f.*—This is a very stately plant, somewhat robust in growth, producing a distichous tuft of long strap-shaped dark green carinate leaves, and a

many-flowered puberulous scape, furnished with spathaceous lanceolate bracts. The flower spike produces a quantity of flowers, but as far as we have seen but one is fully expanded at a time; the dorsal sepal is ovate lanceolate, pale yellowish green, faintly streaked with purple, the lower sepal large; the petals are elongate-lanceolate, several inches long, green, with a red marginal band, bordered with white; and the lip is oblong-ovoid with a wide mouth, green suffused with shining purplish brown. It is not a very showy plant.—*Central America: Chiriqui.*

FIG.—*Bot. Mag.*, t. 5970; *Florist and Pomologist*, 1871, 120, with fig.

SYN.—*C. Reichenbachianum*; *Selenipedium longifolium*.

C. Lowii, *Lindley*.—A curious and beautiful Orchid of the stemless section. The leaves are oblong-ligulate, slightly notched at the apex, light green. This species produces its flowers on a spike, generally two or more together—sometimes eight or ten on native specimens, but we have never seen so many on cultivated plants. It blooms during the spring and summer, and continues in perfection for two or three months if kept in a cool house. The dorsal sepal is ovate, narrowed to the base, downy outside, pale green with a purplish tinge; the petals are long, spathulate, ciliated, the basal half greenish spotted with purple, wholly purple towards the broader end; and the lip is large, smooth, bluntly oblong, purplish green, and shining. It grows naturally upon very high trees.—*Borneo.*

FIG.—*Gard. Mag. Bot.*, i:297, with tab.; *Flore des Serres*, t. 375; *Florist and Pom.*, 1870, 109, with fig.; *Ann. de Gand*, 1848, t. 195.

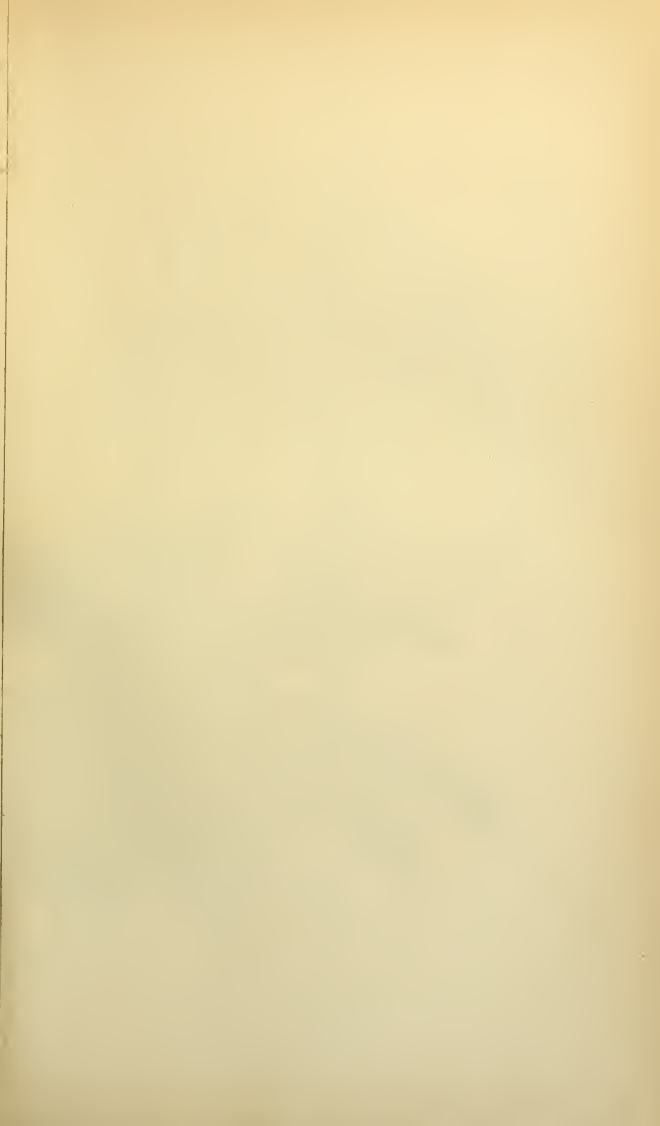
C. marmorophyllum, *Rchb. f.*—A very curious and interesting hybrid between *C. Hookeræ* and *C. barbatum*. Professor Reichenbach describes the leaves as being quite those of *C. Hookeræ*. The scape is tall as in that species, purple. The upper sepal has the broad base and transverse shape of that of *C. barbatum*, and near the margin is washed with purple, in the centre with green, all the nerves being green; the petals are bent down, like those of *C. Hookeræ*, are more purple, and are bordered with bristles, having two warts on each superior limb; and the lip has the side angles a little more developed than in *C. Hookeræ*, the inflexed margins being covered with shining warts.—*Garden hybrid.*

C. Meirax, *Rchb. f.*—A distinct and beautiful small-growing hybrid of the stemless group, raised by Mr. R. Warner,



CYPRIPEDIUM LOWII.







CYPRIPEDIU



MICROCHILUM.

Broomfield. The leaves are oblong-lanceolate, acute, faintly mottled with transverse markings above, and of a wine-purple beneath. The flowers are medium-sized, on dark purple hairy scapes; the dorsal sepal is broad ovate, ciliate at the base, bluish white with green and purple stripes or nerves; the petals are linear-oblong, ciliate, purplish crimson with green nerves; and the glossy lip is yellowish green in front, veined and barred with crimson-purple, the point margined with deep wine-purple. It blooms during the winter and spring months, as it completes its growth, and the flowers last six weeks or more in perfection.—*Garden hybrid*.

FIG.—*Orchid Album*, ii. t. 95.

C. melanophthalmum, *Rchb. f.*—One of Mr. R. Warner's fine hybrids. It is a free-growing, free-blooming variety of the dwarf distichous leaved group, the leaves in this case being of a pale dull green with coarse elongate reticulations of a darker green. The flowers are medium-sized, with green scapes clothed with purplish down, the dorsal sepal being whitish flushed with Indian purple towards the base, and having green nerves; the petals are glossy, linear-oblong, acute, the upper half Indian purple with green nerves, the lower half a much paler tint of the same colour, and having several blackish wart-like spots on the base and margins, which latter are strongly ciliated. It flowers during the winter and spring months.—*Garden hybrid*.

FIG.—*Orchid Album*, iii. t. 109.

C. microchilum, *Rchb. f.*—A very interesting and free-growing hybrid between *C. niveum* and *C. Druryi*. The plant is of compact dwarf habit, with ligulate recurving finely tessellated leaves. The flowers are broader than those of *C. niveum*, and have the upper sepal roundish, apiculate, white with a central spotted bar, and slight indications of other lines, several dark cinnamon stripes being evident outside; the petals are broad roundish oblong, white with a dark crimson stripe down the centre, and several lines of small spots on each side; and the lip is very small, laterally compressed, white veined with pale green. Raised by Mr. Seden.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1834, 19, with fig.

C. Morganianum, *Rchb. f.*—This grand hybrid is a cross between *C. superbiens* and *C. Stonei*, and at first sight much

resembles the rare *C. Stonei platytanum*. The ligulate obscurely tessellated leaves are in the way of those of *C. Stonei*. The scapes are three-flowered. The dorsal sepal is elliptic apiculate, whitish tinged with red, and having dark red veins; the petals broad, ligulate, whitish sulphur colour with numerous dark brownish purple spots and blotches inside, while the lip is similar to that of *C. superbiens*, but longer, brownish mauve above and yellowish white below. This novelty was raised by Mr. Seden in Messrs. Veitch's Nursery, and is named in honour of Mrs. C. Morgan, of New York, an enthusiastic collector of Orchids.—*Garden hybrid*.

FIG.—*Garden*, 1883, t. 372.

C. nitens, *Rchb. f.*—A hybrid raised between *C. villosum* and *C. insigne Maulei*. According to Professor Reichenbach, it is theoretically a very valuable addition to the rich series of *Cypripediums*, and practically it may be regarded as an improved edition of *C. insigne Maulei*. It has the leaves of *C. villosum*, dark green. The dorsal sepal is quite as in *Maulei*, but far larger; the petals are ligulate, wavy, light brown and ochre colour, reticulate, and very glossy, and the lip has a narrow subconical sac with long lateral horns as in *C. villosum*.—*Garden hybrid*.

C. niveum, *Rchb. f.*—A lovely dwarf-growing species, with close-set distichous oblong acute or emarginate leaves, which are purple beneath and dull green above, marked with pallid oblong spots. The scapes are about six inches high, slender, purplish, and downy. The flowers are satiny white inside, speckled on the petals with a few minute dots of purple, and having the exterior of the suborbicular cuspidate dorsal sepal streaked with bright red at the back; the lip is exactly ovoid, with the mouth contracted. It blooms during summer, and sometimes produces two flowers on a spike. Every one who sees it is charmed with it, as it is very free-blooming. A grand plant for exhibition purposes.—*Malayan Archipelago: Tambelan Islands*.

FIG.—*Bot. Mag.*, t. 5922; *Ill. Hort.*, 3 ser., t. 83; *Floral Mag.*, t. 543; *Jennings, Orch.*, t. 28; *Gard. Chron.*, N.S., xix. 19, fig. 3, front figure; *Journ. of Hort.*, 2 ser., xx. 339, with figs.; *Garden*, ix. 524, t. 23; *Florist and Pom.*, 1871, 156-7, with figs.

C. cœnanthum, *Rchb. f.*—This variety is the result of a cross between *C. insigne Maulei* and *C. Harrisianum*. The

leaves are ligulate, tridentate at the apex, dark green. The scape is covered with dark hairs, and bears a solitary medium-sized flower. The dorsal sepal is broad, whitish green at the base with violet nerves, marked, as in *Maulei*, with rows of purple-coloured blotches; the petals are port-wine colour flushed with violet, yellowish with dark blotches towards the base; the lip also is port-wine colour. Raised by Mr. Seden.—*Garden hybrid.*

C. pardinum, *Rchb. f.*—A beautiful Lady's Slipper of the stemless tessellated set. The leaves are ligulate, mottled with various shades of green on the upper side, purplish beneath. The flowers are rather large, and from two to three are produced upon a spike. The dorsal sepal is white striped with bright green; the petals are oblong-ligulate, acute, the lower portion yellowish green, spotted with purplish black warts, the upper end of a coppery reddish purple, the edges fringed with fine hairs; and the lip pale yellow with green veins. It bears some resemblance to *C. venustum*.—*Assam.*

FIG.—*Floral Mag.*, 2 ser., t. 51.

C. Parishii, *Rchb. f.*—A very distinct and noble-looking plant, with a habit of growth like that of *C. philippinense*. The leaves are distichous, broadly loriform, leathery, the apex obliquely obtuse, dark green above, paler below. The flower spike, bearing from three to six large flowers, is stout, often two feet high, and hairy. The flowers have ovate pale green and greenish straw-coloured sepals, and drooping twisted petals four to five inches long, green with marginal purple hairy warts at the base, the upper two-thirds deep purple with an obtuse ciliated apex; lip green stained with purple. It should be grown in the East Indian house.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5791; *Orchid Album*, ii. t. 86; *Gard. Chron.*, 1869, 814, with fig.

C. Pearcei.—See CYPRIPEDIUM CARICINUM.

C. philippinense, *Rchb. f.*—This grand species, which is better known in gardens by its English synonym, *C. laevigatum*, was discovered by Mr. J. G. Veitch growing upon the roots of *Vanda Batemanni*; it bloomed for the first time in this country in the spring of 1865. The long thick distichous oblong-ligulate or sword-shaped leaves have a polished surface. The

flower scape is tall, hairy, bearing three or four large showy flowers. The dorsal sepal is hairy externally, broadly ovate, white heavily striped with purple; the petals are five or six inches long, narrow, tapering, greenish streaked with brown at the base, the margins crenulate with dark hairy glandular spots, the anterior parts chocolate and much twisted; the lip is small, dull greenish yellow.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 5508; *Batem. 2nd Cent. Orch. Pl.*, t. 101; *Flore des Serres*, tt. 1760-61; *Belg. Hort.*, 1867, t. 6; *Floral Mag.*, t. 298; *Gard. Chron.*, 1865, 914, fig. a.

SYN.—*C. lævigatum*.

C. politum, *Rehb. f.*—A very distinct and richly-coloured hybrid of the acaulescent group, raised by Mr. R. Warner. The leaves are rather large, oblong acute, of a palish green, with numerous dark green chequered markings. The flowers are equal to those of a good *C. Argus*; the dorsal sepal is ovate, acute, glossy, whitish with a reddish wash, nerves green, with a central bar of deep red from the base upwards; the petals are linear-oblong, two and a half inches long, glossy, ciliated with black hairs, wine-red, greenish towards the base, where they are marked with several Indian purple warts; and the lip is narrowly pouch-shaped, suffused in front with purplish red, marked with numerous green nerves, greenish on the sides, the inflexed margins ochre-coloured with brown warts. It is a very free-blooming kind, flowering in January and February.—*Garden hybrid*.

FIG.—*Orchid Album*, i. t. 36.

C. purpuratum, *Lindley*.—A pretty stemless species, with beautifully tessellated oblong acute foliage, and producing its flowers during the winter months. The flowers are large, very much in the way of those of *C. barbatum*, but differ in the broad oval-oblong acute, ciliated, not verrucose petals, which are brownish purple streaked with deeper lines and closely dotted at the base with dark purple; the dorsal sepal, which has more pure white at the end, is acuminate, with revolute edges, and is boldly striped with purple on a white ground. Sir W. J. Hooker thinks Dr. Wight's figure quoted below rather belongs to *C. barbatum*.—*Malay Archipelago*.

FIG.—*Bot. Reg.*, t. 1991; *Bot. Mag.*, t. 4901; *Flore des Serres*, t. 1158; *Wight, Icon. Pl. Ind.*, v. t. 1760 (?); *Hart, Parad.*, i. t. 1.

C. Reichenbachianum.—See *CYPRIPEDIUM LONGIFOLIUM*.

C. Robbelinii, *Rehb. f.*—This fine plant is a near neighbour of *C. philippinense*, according to Professor Reichenbach, but the leaves are narrower, and the scape more hairy. The dorsal sepal is narrow, whitish, with five long and three very short dark purple lines; the lip is light yellow, the staminode light ochre. This plant appears to have been first bloomed in this country by Mr. Cypher, of Cheltenham, by whom it was exhibited at the Regent's Park Exhibition in May, 1884. It was introduced by Mr. Sander through his collector, M. Röbbelin, who states that the plant is found near the sea, growing on stones without any shade, the strongest and most compact plants being those which are entirely exposed to the full sun.—*Philippine Islands*.

C. Roezlii, *Rehb. f.*—This magnificent species resembles *C. longifolium* in habit. The scape or flower-stem grows three feet high, and bears many flowers. The leaves are two feet long, two inches broad, ligulate keeled, and of a bright green. The flowers are very large, the dorsal sepal yellowish green, with a suffused rosy purple border, the lateral sepals flesh-coloured, the linear-lanceolate petals spreading, green, with a bright red-purple border and tip, and the lip three inches long, with the saccate portion greenish yellow. It blooms during March, April, and May; indeed it may be called a perpetual bloomer.—*New Grenada*.

FIG.—*Ill. Hort.*, 3 ser., t. 138; *Floral Mag*, 2 ser., t. 119; *Bot. Mag.*, t. 6217; *Gartenflora*, t. 754.

SYN.—*Selenipedium Roezlii*.

C. Schlimii, *Linden.*—A very beautiful species, quite distinct from most others in its style of growth, as well as in its flowers. The leaves are ligulate, acute, eight inches long, light green. The flower stem is hairy, longer than the leaves, branching, bearing as many as eight flowers, which are two inches across; the sepals and petals white beautifully mottled and striped with dark rose, and the lip white with a large blotch of deep rose on the front of the pouch. This is a difficult plant to cultivate. The imported plants appear as if they had been growing beside streams of water which are subjected to being flooded, for the leaves are frequently coated to a great extent with deposited mud; and it would, therefore, appear that our difficulties with this plant have arisen chiefly from an insufficient supply of water. We pot in peat, adding a little turfy loam and sand, with good drainage, and take care that

water does not lodge in the heart of the plant. It is best grown at the cool end of the Cattleya house.—*Colombia*; *New Grenada*: *Ocana*.

FIG.—*Bot. Mag.*, t. 5614; *Batem. 2nd Cent. Orch. Pl.*, t. 200; *Ill. Hort.*, 3 ser., t. 183; *Pescatorea*, t. 34; *Flore des Serres*, t. 1917; *Xenia Orch.*, i. t. 44.

SYN.—*Selenipedium Schlimii*.

C. Schlimii albiflorum, *Lemaire*.—A very pretty variety, differing from the type in being more robust and free-growing in habit, with shorter leaves. The flowers have the sepals and petals white dashed with delicate pink at the base, and the lip is white suffused with rose, more deeply coloured opposite the column, which is bright yellow. It flowers during the winter months.—*Colombia*.

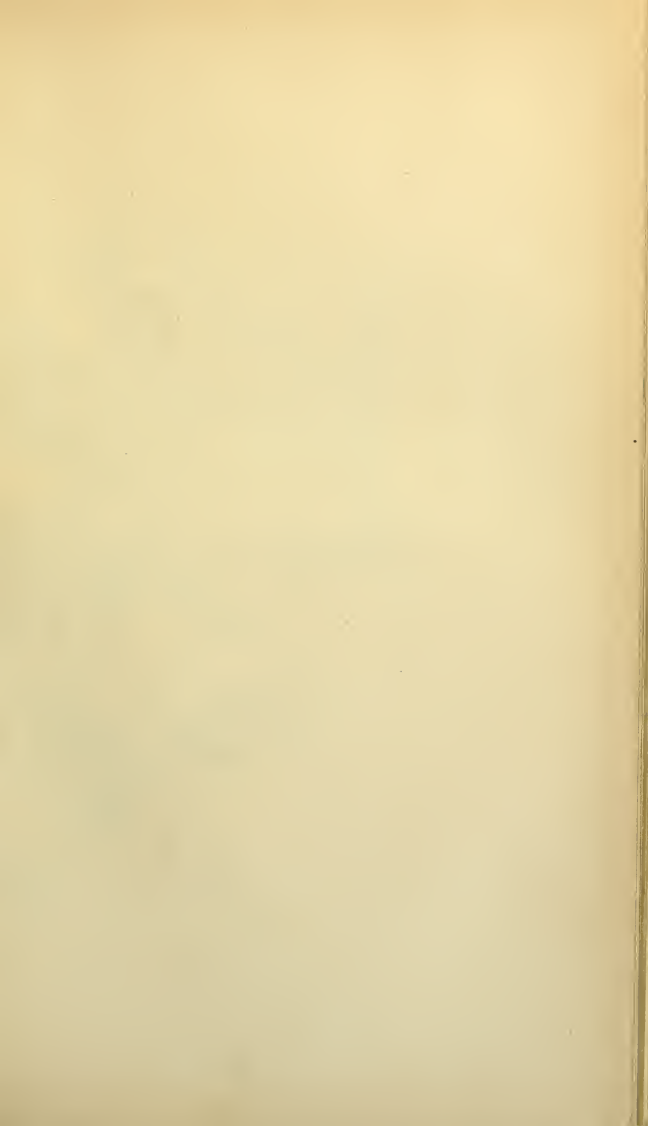
FIG.—*Ill. Hort.*, t. 183.

C. Schröderæ, *Rchb. f.*—A very distinct and beautiful hybrid between *C. caudatum* and *C. Sedeni*, raised by Mr. Seden, and named by Messrs. Veitch in compliment to the Baroness Schröder. A fine specimen of it was exhibited by Mr. Ballantyne, gardener to Baron Schröder, The Dell, Staines, in December, 1883. It is a really grand plant, with leaves as in *C. Sedeni*, and a branching stem with several large and high-coloured flowers. The dorsal sepal is pale reddish green lined with greenish purple; the petals, which are four inches long, very broad, and turned downwards, are whitish green in the centre, and stained with purple-crimson; and the lip is large, similar in shape to that of *C. caudatum*, of a dull crimson. The plant blooms in December.—*Garden hybrid*.

C. Sedeni, *Rchb. f.*—A very handsome hybrid raised between *C. Schlimii* and *C. longifolium*. The leaves are strap-shaped, tapering to a point, deep green, and about a foot in length. The flower stem, which is taller than the leaves, bears several blossoms, which are large and showy, the sepals being ovate, greenish white, the petals longer, twisted, white edged with crimson-purple, and the lip rich crimson, spotted inside with crimson on a white ground. This Lady's Slipper may be said to be a continuous bloomer, as it throws up a succession of flowers from the same spike. We have found it do best in the Cattleya house. It belongs to the *Selenipedium* group.

FIG.—*Jennings, Orch.*, t. 4; *Floral Mag.*, 2 ser., tt. 206, 302; *Veitch, Cat.*, 1874, 7, with fig.

SYN.—*Selenipedium Sedeni*.







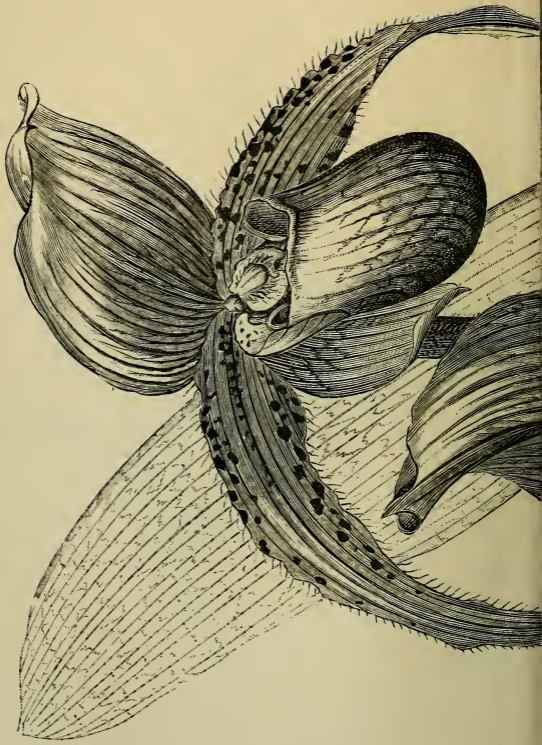
CYPRIPEDIUM SEDENTI.

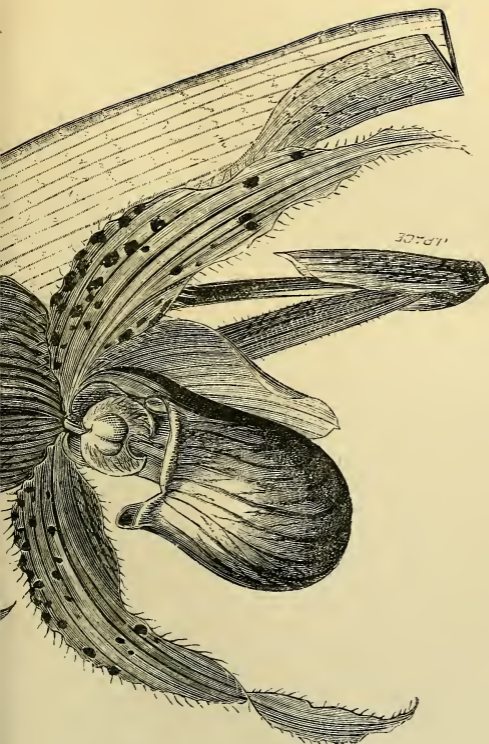




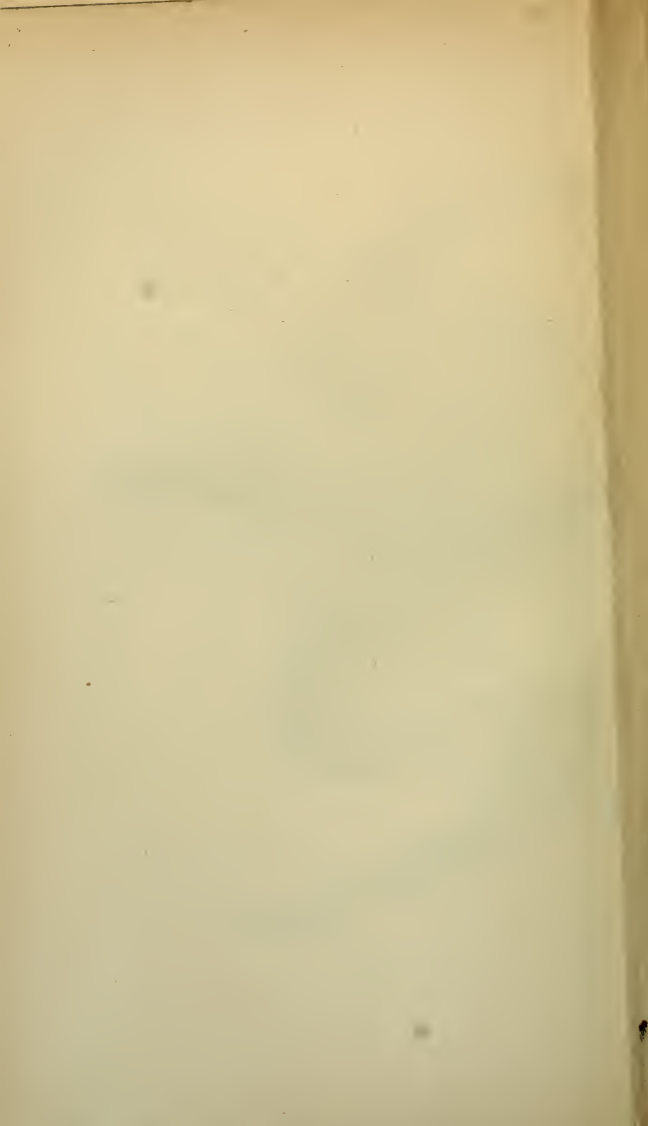


CYPRIPEDIUM SPICERANUM.





CYPRIPEDIUM SELLIGERUM.



C. Sedeni candidulum, *Rehb. f.*—A hybrid between *C. longifolium* and *C. Schlimii albiflorum*, raised by Mr. Seden. The sepals and petals are white, with a rosy hue on the edge, and the lip is of fine warm purple. The petals are narrower than is generally the case in *C. Schlimii*.—*Garden hybrid*.

C. selligerum, *Veitch*.—A very desirable and distinct hybrid between *C. philippinense (lævigatum)* and *C. barbatum*. The plant is of bold massive habit, with broad thick shining faintly tessellated leaves, as in *C. philippinense*. The flower scape is erect, blackish crimson, pubescent, and bears from two to three large flowers, of which the dorsal sepal is white with broad blackish crimson veins; the strongly ciliated petals are about three inches long, deflexed, with a partial twist, vinous red veined with crimson-purple, and having several blackish marginal warts, especially on the upper side; and the lip or pouch is similar in shape to that of *C. barbatum*, but of a lighter red colour.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1878, 13, with fig.; *Gard. Chron.*, N.S., xix. 776, fig. 133; *Florist and Pom.*, 1878, 85, with fig.

C. Spicerianum, *Rehb. f.*—One of the most distinct and beautiful species of the stemless group of this large and rapidly increasing genus, and one so highly appreciated by Orchid-lovers, that at a recent auction sale a plant realised 100 guineas. It has been named in honour of H. Spicer, Esq., Woodlands, Godalming, who first introduced it to England. In growth it somewhat resembles *C. insigne*. The leaves are few, distichous, linear-oblong, acute, keeled, dark lurid green, the sheathing base slightly spotted with purple. The scape is pubescent, purple, the flowers solitary, from two to three inches in diameter, the dorsal sepal very large, about two inches across, green at the base, otherwise pure white, with a broad purple stripe extending from the base to the apex; the petals are pale green with beautifully undulated margins, striped and spotted with purple; and the lip is a deep brownish purple. The staminode is very conspicuous, being of a bright magenta-purple margined with white. It flowers in October, November, and December. Some of the varieties are tinged with rose on the dorsal sepal.—*India: Assam*.

FIG.—*Bot. Mag.*, t. 6490; *Orchid Album*, iii. t. 119; *Gard. Chron.*, N.S. xiii. 41, fig. 7; *Ill. Hort.*, 3 ser., t. 473; *Xenia Orch.*, iii. t. 231; *Florist and Pom.*, 1882, 179, with fig.; *Garden*, xvii. 169, with fig.; *Id.* xxiii. t. 378 (blush var.).

C. Stonei, *Low*.—This superb species first flowered in the fine collection of J. Day, Esq., of Tottenham, after whose Orchid-grower it is named. It has thick fleshy roots, and produces few dark green leathery oblong mucronate leaves, ten or twelve inches long, from the midst of which the dark purple scape ascends to the height of two feet, bearing three or four flowers. The sepals are large, white within, streaked with deep purple-brown, and stained with dark purple on the outer side; the petals are five inches long, curved downwards, yellow for two-thirds of their length, streaked and blotched with brown-purple, the tip wholly brown-purple; and the lip is large, purplish red with darker purple veins. The lip is peculiarly slipper-like in form. It produces its blossoms during autumn. There are several varieties, but all are worth growing.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5349; *Batem. 2nd Cent. Orch. Pl.*, t. 141; *Ill. Hort.*, t. 355; *Jennings, Orch.*, t. 12; *Flore des Serres*, t. 1792; *Orchid Album*, i. t. 8.

C. Stonei platytænium, *Rchb. f.*—This handsome variety is much superior to the type and a grand addition to its class. It was imported by the Messrs. Low & Co., of Clapton, many years ago, and first flowered by John Day, Esq., of Tottenham. The flowers are conspicuous from the breadth of their petals. The dorsal sepal is white with purple stripes; the broadly ligulate petals are four to five inches in length and three-fourths of an inch in breadth, curved downwards, whitish on the outer surface, spotted and tinted with yellow, deep crimson-purple at the tips, the inner surface white blotched with reddish purple; the lip is similar to that of *C. Stonei*, rosy purplish veined with darker purple.—*Borneo*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 14; *Floral Mag.*, 2 ser, t. 414; *Xenia Orch.*, ii. t. 161; *Gard. Chron.*, 1867, 1118, with fig.

C. superbiens, *Rchb. f.*—This very handsome species may be regarded as the best of the *C. barbatum* group. It is of free growth and good habit, and has finely variegated foliage, so that when out of bloom it has a beautiful appearance. The flowers are large, with a broadly ovate acuminate, ciliated, white dorsal sepal, closely marked by longitudinal veins, which are brownish purple at the base and green above; the oblong ligulate bluntish petals are upwards of three inches long and nearly an inch broad, white suffused with green

towards the base, purple towards the apex, irregularly but thickly spotted with purple, and having a row of large spots on the ciliated margins; the lip is oblong obtuse, with the claw-like base inflexed, verrucose, pale rosy purple, the pouch of a rich brownish purple, with the posterior angles produced and bluntish, and the front marked with coarse reticulations. The staminode is obtusely triangular, white, with the centre veined with green. It blooms in June and July, and continues a long time in flower, so that it is invaluable for home decoration or exhibition purposes. When well grown this makes a grand plant.—*Java, Assam.*

FIG.—*Warner, Orch.*, ii. t. 12; *Ill. Hort.*, t. 429; *Flore des Serres*, t. 1453; *Id.*, t. 1996; *Xenia Orch.*, ii. t. 103; *L'Hort. Franc.*, 1859, t. 8; *Florist and Pom.*, 1871, 209, with fig.; *Garden*, iii. 239, with fig.

SYN.—*C. Veitchianum*; *C. barbatum Veitchii*.

C. superciliare, *Rehb. f.*—An interesting cross between *C. barbatum* and *C. superbiens*, resembling the latter parent in all its parts; the flower is, however, smaller than in that species, though the leaves are similar, being broadly ligulate and finely tessellated. The scape is hairy and one-flowered. The dorsal sepal is ovate triangular, the petals ligulate ciliate marked with warts and blotches except towards the tip.—*Garden hybrid.*

C. Swanianum, *Rehb. f.*—A very beautiful and distinct hybrid, the result of a cross between *C. Dayanum* and *C. barbatum*. It was raised by Mr. Swan, gardener to W. Leach, Esq., Fallowfield, Manchester. The leaves are broadly ligulate, acute; in their markings they very much resemble the dark tessellated form of *C. Dayanum*, and are equally handsome. The flowers are long-stalked, and about as large as those of *C. barbatum*, the dorsal sepal being large and broad, white boldly veined with purplish crimson; the broad petals are bent down, bordered with retrorse bristles and having a few small warts on the upper edge, pale vinous red with green nerves; and the lip is large, dark crimson purple with shining warts on the inflected sides of the base. A very beautiful plant, which should be included in every collection. There are several varieties of this plant.—*Garden hybrid.*

C. Veitchianum.—See CYPRIPEDIUM SUPERBIENS.

C. venustum, *Wallich*.—A handsome species of the acaulent group. The leaves are light green mottled with deep green, and on the under side green mottled with purple. The dorsal sepal is greenish white with purple stripes; the petals ligulate, ciliate, warted with purple, greenish with purple tips; and the lip yellowish veined with green and flushed with purple. It is a pretty cool house species, and is very useful for cutting.—*Sylhet*.

FIG.—*Bot. Mag.*, t. 2129; *Bot. Reg.*, t. 788; *Hook. Exot. Fl.*, t. 35; *Loddiges, Bot. Cab.*, t. 585; *Warner, Sel. Orch. Pl.*, ii. t. 24; *Hart, Parad.*, i. t. 4; *Rchb. Fl. Exot.*, t. 100.

C. venustum spectabile, *Williams*.—A very handsome form of this useful winter-flowering species. The leaves are beautifully mottled with green. The flowers are medium sized, produced singly, and are far handsomer than those of the type; the dorsal sepal is white broadly striped with green; the petals greenish white streaked with deeper green, and tipped with rosy red; and the lip greenish yellow tinged with rose.—*Sylhet*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 24.

C. vernixium, *Rchb. f.*—This is a hybrid of the stemless group, raised between *C. Argus* and *C. villosum*. The leaves are as large as those of *C. villosum*, but have tessellated markings very faintly developed. The scape is stout, covered with short hairs. The flowers present a remarkable combination of ochreous brown, crimson, and green, with fainter spots on the petals than on *C. Argus*, and having the varnished surface of *C. villosum*. The dorsal sepal is light green, with darker nerves, having rows of black spots along their basal parts; the petals are ligulate blunt undulate, with bristles on the upper border, washed with warm dark brown and shining; and the lip is light greenish olive, with a brown face and conspicuous nervation. Raised by Mr. Seden.—*Garden hybrid*.

C. vexillarium, *Rchb. f.*—This is an elegant hybrid, raised by Mr. Dominy, and is the result of a cross between *C. Fairrieanum* and *C. barbatum*, the flowers being exactly intermediate. It is remarkable for its dwarf habit. The leaves are pale green, with a few darker markings. The flowers are large, with the dorsal sepal whitish tinged with green towards the base, suffused with light purple, and marked with port-wine coloured veins; the petals are deflexed,







CYPRIPEDIUM VEXILLARIUM,





CYPRIPEDIUM VILLOSUM.

bluntly acute, the edges slightly wavy and ciliate, purplish tinged with green, and furnished with a few warts; and the lip is large, light brown veined and tinged with green. It is a summer-flowering plant, and at present is rare.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1879, 10, with fig.; *Florist and Pom.*, 1880, 13, with fig.; *Gard. Chron.*, N.S., xix. 781, fig. 135 (marked *selligerum* by error); *Garden*, v. 103, with fig.

C. villosum, *Lindley*.—A desirable species of the acaulent group. The leaves are of a light green colour, freckled on the lower exterior part with dark spots. The scapes are villose, about a foot high, producing solitary flowers, often measuring five inches across, and having a fine glossy appearance over their whole surface, which is orange red intermixed with light green and dark purple, the dorsal sepal being green. It blossoms during April and May, and continues from six to eight weeks in perfection. This makes a fine subject for exhibition, on account of



CYPRIPEDIUM VILLOSUM.

its distinct colour, and its long continuance in flower. The plant succeeds well in the cool house with the *Odontoglossums*, &c.—*Moulmein and Tonghoo Mountains, Bhotan*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 30; *Pescatorea*, t. 48; *Flore des Serres*, t. 1475; *Ill. Hort.*, t. 126; *Florist and Pom.*, 1870, 211, with fig.; *Id.*, 1882, 35, with fig.; *Garden*, iii. 415, with fig.

C. villosum aureum, *Williams*.—A remarkably distinct and fine variety. The flowers are six inches across, and have the upper part of the dorsal sepal bright yellow, broadly margined with white.—*Moulmein*.

C. Wallisii, *Rchb. f.*—A very distinct and beautiful plant belonging to the *C. caudatum* section. The leaves are ligulate, acute, and leathery, and the stems three to five-flowered. The sepals are elongate ovate, pale green distinctly striped over their entire surface with bright green, and having a few green spots in the centre; the petals are about eight inches long, broadish for about two inches at the base, and then passing into a very narrow tail, white strongly veined with

green, the apical portion tinted with very pale brown; the lip is large and handsome, white spotted and veined with crimson, its mouth margined with yellow. We believe this was first flowered by C. Winn, Esq., The Uplands, Selly Hill, Birmingham.—*Ecuador*.

FIG.—*Xenia Orch.*, ii. t. 181.

SYN.—*Selenipedium Wallisii*.

C. Williamsianum, *Rehb. f.*—A very fine variety, and according to Reichenbach the best of the crosses obtained by Mr. R. Warner, reminding one both of *C. villosum* and *C. Harrisianum*. The leaves are distinctly tessellated, and the scape is light brown and hairy. The flowers have the dorsal sepal oblong acute, very large, white with a dark blackish brown central bar and prominent green nerves; the petals are oblong-ligulate, acute, ciliate on both margins, and having numerous small black dots in rows near the base, a dark brown median line of a reddish brown hue along the upper side, and white with a coppery tint on the lower, the chief nerves green on both halves, but nearly vanishing in the upper; the lip is yellowish beneath, light brown above, with an ochre-coloured border.—*Garden hybrid*.

CYRTOCHILUM.—See ONCIDIUM.

CYRTOPERA, *Lindley*.

(Tribe Vandeæ, subtribe Cyrtopodieæ.)

A small genus of terrestrial plants, containing a few very handsome species. It is united by Bentham and Hooker with *Cyrtopodium*, from which it differs in its simple inflorescence, and in the lateral sepals being wider at the base and connate with the foot of the column. They have fleshy stems, in some cases short and tuberous, in others more elongated and fusiform, long thin plaited dark green leaves, and flowers generally of a showy character in erect spikes springing from the root. The few known species are widely scattered, occurring in India, Madagascar, South Africa, Peru, and the West Indies.

Culture.—These plants resemble *Bletias*, and should be treated in the same manner. They should be potted in a mixture of turfy loam, peat, and sand, but not elevated upon a cone above the rim of the pot. During the growing season they should be placed in the East Indian house; but during rest a cool and moderately dry atmosphere is best.

C. flava, *Lindley*.—A very pretty plant, not much known at present amongst Orchid-growers. It has somewhat the appearance of a *Bletia*, with long lanceolate plicate leaves, and a tall many-flowered scape, two to three feet high, bearing large flowers, the sepals and petals of which are rich yellow, and the lip a rather paler yellow.—*Northern India*.

C. sanguinea, *Lindley*.—A handsome plant, somewhat variable in its colouring, with thick oblong annulated tubers, from which springs up an erect leafless scape a foot and a half high, with sheathing bracts on the lower part, and above a raceme of numerous red-purple flowers two inches in diameter, with a three-lobed limb produced into a short blunt spur behind, the front lobe expanded, roundish, white bordered with rose, and the side lobes also rosy, having each a dark spot inside.—*Sikkim Himalaya*, tropical region, at 3,000—5,000 feet elevation.

FIG.—*Bot. Mag.*, t. 6161.

CYRTOPODIUM, *R. Brown*.

(*Tribe Vandææ, subtribe Cyrtopodieæ.*)

These are large-growing plants, yet are well worth cultivating, especially where room is not an object, for if well grown they are noble-looking objects even when not in bloom. They are terrestrial herbs, with fusiform fleshy stems bearing a few long plicately-veined leaves, contracted into a petiole, which becomes dilated and clasps the stem; the large compound radical panicles bear moderate-sized showy flowers, the lip of which has a geniculate claw, forming with the base of the lateral sepals a short mentum or chin. The flowers grow

up with the young growth in spring. The species are comparatively few in number, and are found in the West Indies and Tropical America.

Culture.—We well remember a splendid plant of *Cyrtopodium punctatum*—one which Dr. Lindley regarded as a grand specimen—being exhibited by us at Chiswick many years ago. To grow it in like manner would require a large pot or tub and plenty of room, but it well repays the cultivator if space can be allowed. The best soil is a rich fibrous loam and rotten dung to produce vigorous growth, and when the plant is strong enough it will flower; after the growth is completed give it a long rest with little water, until it shows signs of growth in spring, when water should be applied to the roots freely and more heat given. The flowers are produced from the young growth just after starting in spring. The plants require the heat of the East Indian house when growing; but after they have finished their growth the heat of the Cattleya house will be sufficient.

C. Andersoni, *R. Brown*.—A noble Orchid, of easy culture, requiring plenty of heat and moisture when growing. The fleshy stems grow five feet high, with long lanceolate plicate leaves sheathing at the base. The scape, which grows up in spring before the leaves, reaches three feet in height, and bears a panicle of showy flowers, of which the sepals and petals are about equal in size, yellow with a faint tinge of green; and the lip is three-lobed, rich yellow, with the large side lobes erect and the frond lobe spatulate.—*West Indies*.

FIG.—*Bot. Mag.*, t. 1800; *Lodd. Bot. Cab.*, t. 121; *Bot. Reg.*, 1841, t. 8.

C. cardiochilum, *Lindley*.—A tall-growing plant, with stout fusiform curved stems, sheathed by the membranous base of the linear-lanceolate acuminate plicate leaves. It has a forked raceme of showy yellow flowers tinged with green, on a tall scape which springs from the root quite distinct from and taller than the leafy stems. The flowers are nearly two inches across, and being of a bright yellow with broad sepals and petals, they are very showy; the lip is brighter yellow,

recurved, with the front lobe concave; they grow in a long erect raceme, forked at the base, which terminates the scape.—*Native Country not known.*

FIG.—*Orchid Album*, iv. t. 176.

C. punctatum, *Lindley*.—This, like *C. Andersoni*, is a noble plant, but it is not so tall, and is a more profuse bloomer. It has cylindrical slightly compressed stems two feet or more in length, crowned with a tuft of six or eight long linear-lanceolate curved leaves, which render it a striking object in an Orchid collection, even when out of bloom. The scape arising from the base of the stem is erect, nearly three feet high, spotted with purple-brown, and bearing a panicle of large handsome flowers, which are yellow spotted with red, the lip having a broad red-purple margin; they are produced in April and May. In addition to the flowers the large bracts at the base of each branch are also marked in the same manner as the sepals and petals, which greatly increases the display of colour.—*West Indies; Brazil.*

FIG.—*Bot. Mag.*, t. 3507; *Sertum Orch.*, t. 12.

SYN.—*Epidendrum punctatum*.

DENDROBIUM, *Swartz.*

(Tribe Epidendreae, subtribe Dendrobieae.)

A very extensive as well as magnificent genus of Orchids, partly consisting of plants with tall jointed stems, bearing lateral or pseudoterminal racemes of flowers, and partly of pseudobulbous species which have their floral racemes terminal. Some of the species produce very large flowers, which are delicate in colour, and delightfully fragrant; some of them blossom very freely, and are very ornamental; some are evergreen, retaining their leaves all the year round, whilst others are deciduous, flowering on the ripened leafless stems. Being, however, a large genus, comprising some 300 species, it contains also many plants of but little interest to the amateur, though well deserving cultivation in a botanical collection. Those we describe below are among the finest in

cultivation. Their chief peculiarity consists in the base of the lip being more or less contracted into a claw, lying upon or adnate to the foot of the column. They are scattered abundantly over India, and more sparingly in the South Pacific Isles, and Australia, and Japan.

Culture.—So extensive a genus must needs be variable in habit, and in the treatment the several species require. Some of them are compact in growth, while others are straggling; and some are very graceful, especially when cultivated in baskets and suspended from the roof, in order that their pendent stems may hang down and exhibit the flowers to the best advantage. All the drooping kinds, indeed, require to be grown either in baskets, or on blocks of wood. Though requiring different treatment, they may all be successfully cultivated with proper attention. The majority of the species are found in India and the Indian Islands growing on the branches of trees—frequently such as overhang streams of water.

To grow these plants to perfection, they must have decided periods of rest and of growth. It is quite necessary for the production of a good crop of flowers that they should make strong stems or pseudobulbs, and it is equally essential that these growths should be well ripened. Some of the sorts are best grown in pots, with peat and good drainage; others do best on blocks of wood. Nearly all of them should be placed in the East Indian house during their period of growth, as they require a good supply of heat, a moist atmosphere, and a liberal quantity of water at the roots; in fact, the moss or peat should never be allowed to get dry while they are making their growth. After the growth is finished, they may be allowed a good season of rest by moving them into a cooler house; and during the time they are in the cool house they must have very little water, only just enough to keep the stems from shrivelling. This is the only way to make them

grow vigorously and flower freely. When they begin to make new growth they should be moved back into a warmer house, and treated as above described. They generally commence to grow after their flowers have faded. These remarks apply to the East Indian kinds.

There are many of the Australasian species which succeed admirably in a cool house ; but some few even from that continent enjoy the treatment of the East Indian house during the season of growth, and we have found *D. bigibbum*, *D. superbiens*, *D. Goldiei*, and a few others do best in a stove where *Crotons* were grown and where no shading was used. When the growth is completed, they should be gradually inured to a cooler temperature, and supplied with a reduced quantity of water. In the case of *D. speciosum* and *D. Hillii* the plants should be removed to the open air for a few weeks towards the end of summer, which will thoroughly ripen their just-matured stems. They should, however, be returned to the cool house before any danger from the fall of the external temperature is to be apprehended, and be placed in a gentle heat at the commencement of winter to start them into flower if they are required to bloom at that season ; but if not wanted until the spring they are to be kept cool and dry all the winter.

They are propagated in different ways. Some of them form plants on the old stems, which should be cut off and potted. Some are propagated by cutting the old stems from the plants after they have done blooming, and laying them on the moist warm surface of a hotbed, or propagating pit, to induce them to break at the joints. Others, again, are increased by dividing the plants according to the directions given in the chapter devoted to remarks on Propagation.

D. aduncum, *Wallich*.—A rather straggling growing ever-green species, producing its flower spikes from the old slender

drooping stems, the short three to five-flowered racemes being protruded through the scarios sheaths just above the joints. The small blossoms are white tinted with pink, and appear at different times in the year, lasting some two or three weeks in perfection. The leaves are linear-lanceolate acute. It succeeds best grown in a pot with peat and good drainage. This species is not so showy as many of the *Dendrobiums*, but it is well worth growing where there is room for it.—*India*.

FIG.—*Bot. Reg.*, 1846, t. 15.

D. aggregatum, *Roxb.*—A pretty dwarf evergreen species, growing about four inches high, with clustered one-leaved oblong-ovate furrowed pseudobulbs, the inflorescence consisting of a short loose raceme being produced from the axil of a small scale on the side of the pseudobulb; the flowers are deep golden yellow with an orange yellow stain at the base of the pubescent lip. *D. aggregatum majus* is a large-flowered variety. They flower in March and April, lasting two weeks in bloom, and will do either on a block or in a pot with peat. It is a desirable species.—*India*.

FIG.—*Bot. Reg.*, t. 1695; *Bot. Mag.*, t. 3643; *Paxton, Mag. Bot.*, vi. 145, with tab.; *Annales de Gand*, 1849, t. 263.

D. Ainsworthii, *Moore*.—A beautiful and free-blooming hybrid, between *D. nobile* and *D. aureum* (*heterocarpum*). The stems resemble those of *D. nobile*, and the plant is quite as free a grower as that parent, blossoming from the mature stems; the leaves are linear-oblong. The flowers, which are produced in February and March, are deliciously scented, the sepals and petals pure white, the lip marked with a large central feathered blotch of rich bright amaranth or claret-purple. This variety was raised by Mr. Mitchell, gardener to Dr. Ainsworth, of Manchester.—*Garden hybrid*.

FIG.—*Gard. Chron.*, n.s., i. 443, figs. 93, 94; *Id.*, viii. 166, figs. 30, 31, 32 (specimen plant); *Id.*, xvi. 625, fig. 125; *Floral Mag.*, 2 ser., t. 196; *Florist and Pom.*, 1874, 114, with figs.

D. Ainsworthii roseum, *Moore*.—A very handsome deeper coloured variety of the preceding, in which the sepals and petals are of a bright clear rosy magenta and the lip amaranth crimson with a dark spot, feathered at the edge, and traversed by deeper crimson veins. It flowers in February and March, and was raised, we believe, in the same batch of seedlings as the foregoing.—*Garden hybrid*.

FIG.—*Orchid Album*, i. t. 20.



DENDROBIUM AINSWORTHII.

D. albo-sanguineum, *Lindley*.—A distinct and compact-growing plant, with thick erect knobby stems a foot high, and thicker upwards. The leaves are broad and firm, and the very large flowers grow in pairs from the joints near the top. The flowers have the sepals and petals creamy white, while the very large squarish flat lip is of the same colour, with a crimson blotch on each side near the base. It blooms in May and June, lasting a long time in perfection, and is a distinct Orchid, and a fine showy plant for exhibition. Mr. Lobb describes the wild plant as producing the flowers in racemes of five or six together. It thrives well on a block with sphagnum moss, or it will do well grown in baskets with sphagnum, and seems to be quite at home, for the bulbs become very strong. It requires plenty of water during the growing season, enjoys an abundance of light, and likes the warmest house.—*Moulmein*.

FIG.—*Paxt. Fl. Gard.*, ii, t. 57; *Flore des Serres*, t. 721; *Lem. Jard. Fl.*, t. 203; *Bot. Mag.*, t. 5130; *Batem. 2nd Cent.*, t. 173.



DENDROBIUM AMÆNUM.

D. amœnum, *Wallich*.—A very pretty species, producing long slender fascicled pendulous stems two feet long, linear-lanceolate acuminate wavy leaves, and short racemes, one to three-flowered, from the nodes of the stem. The sepals and petals are pure white, tipped with magenta, the lip broadly

ovate with a trumpet-shaped mouth, white, with the tip deep magenta-purple, marked with three deeper-coloured veins, and the concave base yellow with a velvety surface. The flowers are very fragrant.—*East Indies : Nepal and Sikkim*, 5,000 feet elevation.

FIG.—*Bot. Mag.*, t. 6199; *Knowles and Westc., Floral Cab.*, iii. t. 117; *Gard. Chron.*, N.S., iii. 305, figs. 57, 58; *Id.*, xvi. 625, fig. 126.

D. anosmum, *Lindley*.—A magnificent species, in the way of *D. superbum*, but not having the rhubarb scent which is characteristic of the flowers of that species; the sepals and petals, moreover, are broader, thus forming fuller and better-shaped flowers. The long thick pendent stems are like those of *D. superbum*, and the foliage and general aspect of the plant are similar; the flowers are large, and produced in pairs at the nodes, the colour being a beautiful rosy lilac, with a large deep purple-crimson spot at the base of the lip. It blooms during the spring months, the blossoms lasting two or three weeks in perfection. Even now this is a scarce plant, and is best grown in a basket, as it is drooping and deciduous.—*Manilla*.

FIG.—*Faxton, Mag. Bot.*, xv. 97, with tab.

SYN.—*D. superbum anosmum*.

D. Aphrodite, *Rchb. f.*—A charming species, with slender branching stems, nearly a foot long, swollen at the joints, *i.e.*, nodose. The leaves on the younger stems are oblong obtuse, but these fall away before the flowers are developed; the latter are produced singly from the joints, two and a half to three inches across, the smooth oblong obtuse white sepals and petals spreading, the lip clawed, with a white callous disk on the claw, the sides inflexed, with a deep blood red spot at the base, and the front lobe large, subrhomboid acute, deep orange with a white margin and apex. It is a free and rapid grower, and very gay-looking when in blossom, but is a shy bloomer, flowering for several seasons upon its old growths.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5470; *Fl. des Serres*, t. 1582.

SYN.—*D. nodatum*.

D. aureum, *Lindley*.—This is a very distinct and desirable species and one that should be grown by every one who is fond of sweet-scented flowers. It has terete-clavate pendent stems, which flower after the oblong acute leaves have fallen, producing two or three-flowered racemes. The sepals and petals are cream-coloured or yellow (*D. rhombeum*), the lip with a

velvety disk, golden yellow streaked and veined with crimson lines, recurved at the tip. These flowers, which are produced during the months of January, February, and March, and last several weeks in perfection, have a most delicious odour compared to that of violets, or of violets combined with primroses.—*India: Nepal, Assam; Ceylon; Java.*

FIG.—*Bot. Mag.*, t. 4708; *Id.*, t. 4970 (var. *Henshallii*); *Bot. Reg.*, 1839, t. 20 (var. *pallidum*); *Id.*, 1843, t. 17 (rhombium); *Fl. des Serres*, t. 842; *Lem. Jard. Fl.*, t. 386; *Wall. Pl. As. Rar.*, t. 196; *Wight, Icon. Pl. Ind. Or.*, v. t. 1646.

SYN.—*D. heterocarpum; D. rhombium.*

D. aureum philippinense, *Rchb. f.*—A gigantic variety of the preceding, having pseudobulbs one and a half to two feet long. The flowers are paler than those of the type, and have a single broad purple patch under the velvety disk; they are also produced in much greater profusion. This variety is not sweet-scented like the type.—*Philippine Islands.*

D. barbatulum, *Lindley*.—A charming epiphyte, well adapted for cutting, growing a foot or more in height, and having stiff curved suberect stems, terete from a swollen base, the joints covered with membranaceous sheaths. The leaves, which are only seen on the young shoots, are lanceolate acuminate. The flowers grow in lateral racemes on slender almost filiform slightly curved peduncles, and are numerous, crowded, secund, with elliptic sepals, lanceolate petals, and an obovate spatulate lip, pure white in every part except the greenish spur. These crowded clusters of white flowers are very effective. It is known from *D. Fytcheanum*, with which it is confounded in the *Bot. Mag.* plates, by the orbicular petals of the latter plant, and its terminal racemes. Not being a robust grower, it succeeds best on a block, and must have a tolerable rest after its growth is made.—*Western Peninsula of India: Concan.*

FIG.—*Bot. Mag.*, t. 5918; *Paxt. Fl. Gard.*, iii. 113, fig. 285. The *B. M.* plate 5444 labelled *barbatulum* is *Fytcheanum*.

D. Bensoniæ, *Rchb. f.*—A lovely species, bearing some resemblance in its habit to *D. crystallinum*. It has suberect or pendulous terete stems one to three feet long, the younger ones with linear acute or emarginate leaves, the older leafless ones bearing the large showy flowers two or three together from the nodes; the sepals oblong lanceolate, the petals roundish oblong, both creamy white, the orbicular concave tomentose

lip orange, with two large black-purple spots at the base. A handsome and desirable species.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5679; *Floral Mag.*, t. 355; *Jennings, Orch.*, t. 32; *Gard. Chron.*, N S., xxii. 145, fig. 30.

D. Bensoniæ xanthinum, *Rchb. f.*—A very chaste variety of the preceding species. Sepals and petals pure white; lip white with an orange disk. This variety is quite destitute of the two dark blotches found at the base of the lip in the typical form.—*Moulmein*.

D. bigibbum, *Lindley*.—A very handsome species, of a distinct type, represented by *D. superbiens*, *Goldiei*, and *Phalænopsis*, and certainly one of the handsomest of the Australian kinds. It is a dwarfish-growing plant, producing slender fusiform stems about a span long, the younger ones having a few linear-oblong leaves near the summit, whence also spring the peduncles, bearing racemes of rich rosy-purple very broad-petalled flowers; they will sometimes continue to throw out these racemes from the same stem for several successive years. It will thrive in the East Indian house, potted in fibrous peat and sphagnum moss, giving abundance of drainage, and a plentiful supply of water in the growing season; if allowed to become dry enough to shrivel, it will with great difficulty be restored. This species delights in an abundance of light. We have found it do well in a stove where no shading is used; in fact we have grown it far better in this way than even in the East India house.—*North Australia*.

FIG.—*Bot. Mag.*, t. 4898; *Warner, Sel. Orch. Pl.*, ii. t. 8; *Pact. Fl. Gard.*, iii. 25, fig. 245; *Flore des Serres*, t. 1143; *Floral Mag.*, 2 ser., t. 386; *Orchid Album*, i. t. 38; *Batem. 2nd Cent.*, t. 169.

D. bigibbum candidum, *Rchb. f.*—This is a very chaste and distinct variety of the type, having white flowers slightly tinged with rosy purple; and was introduced by us from *Torres Straits*.

D. bigibbum superbum, *Rchb. f.*—A superior and much bolder form than the type; the flowers are larger in all their parts, the side lobes of the lip are almost blackish purple and the spur is longer.—*North Australia*.

FIG.—*Floral Mag.*, 2 ser., t. 229.

D. Boxallii, *Rchb. f.*—A very beautiful species. It has moderately stout stems, thickened on one side below the

nodes, linear-ligulate bidentate leaves, and short clusters of flowers from the defoliated stems. The sepals and petals are white, beautifully tipped with crimson-purple, and the lip, which is white and similarly tipped, has in addition a large deep orange-coloured disk.—*Moulmein*.

FIG.—*Xenia Orch.*, ii. t. 194; *Floral Mag.*, 2 ser., t. 114; *Jennings, Orch.*, t. 19.

D. Brymerianum, *Rchb. f.*—This very handsome species was first flowered by and named in honour of W. E. Brymer, Esq., Ilsington House, Dorchester. It has terete stems a foot high or more, slightly swollen in the middle part, with lanceolate acuminate distichous leaves, and short lateral racemes produced near the top of the stem. The flowers are three inches in diameter, golden yellow, with ovate lanceolate sepals, linear oblong petals, and a triangular cordate lip, the middle lobe of which is greenish yellow beautifully fringed with a long beard-like appendage of dichotomously-branched flexuose ciliate processes, and the short broad lateral lobes are deep orange with a shorter fringe.—*Burmah*.

FIG.—*Bot. Mag.*, t. 6383; *Floral Mag.*, 2 ser., t. 459; *Gard. Chron.*, N.S., xi. 474, fig. 65; *Id.*, xvi. 688, fig. 140.

D. Bullerianum.—See *DENDROBIUM GRATIOSISSIMUM*.

D. calamiforme.—See *DENDROBIUM TERETIFOLIUM*.

D. Cambridgeanum.—See *DENDROBIUM OCHREATUM*.

D. canaliculatum, *R. Br.*—A pretty Orchid of easy culture, and bearing sweet-scented flowers. It has short pear-shaped stems resembling pseudobulbs; these bear a few narrow acute fleshy leaves, and from the side of the stem near the apex a peduncle or scape, which is slender, rigid, erect, about a foot high, terminating in a raceme of a dozen or more curious but not showy flowers, the narrow sepals and petals of which are white tipped with yellow, and the wedge-shaped lip deep mauve on its disk, white at the margins, and bearing along the centre three keel-like elevated veins, which terminate on the semiovate apiculate front lobe in crenulated plates. It is a very singular and desirable small-flowered species.—*North-East Australia*.

FIG.—*Bot. Mag.*, t. 5537.

SYN.—*D. Tattonianum*.

D. Calceolaria.—See *DENDROBIUM MOSCHATUM*.

D. Calceolus.—See *DENDROBIUM MOSCHATUM CUPREUM*.

D. capillipes, *Rehb. f.*—This a curious dwarf-growing species, resembling a pigmy form of *D. albo-sanguineum*. It usually attains a height of about six inches, producing short racemes of bright golden yellow flowers. Succeeds best upon a block or in a basket.—*Moulmein*.

FIG.—*Xenia Orch.*, ii. t. 169, figs. 4-6.

D. chlorops, *Lindley*.—A very pretty free-flowering species, producing pale nankin flowers, having the base of the lip of a bright pea-green. The flowers last a considerable time in bloom.—*India: Western Peninsula*.

D. chrysanthum, *Wallich*.—A handsome Orchid, having pendulous deciduous stems, three to four feet long, furnished with twisted ovate-lanceolate acuminate leaves, and generally producing flowers along the stem at the time of making its growth; they are produced at different times of the year, and grow in pairs or threes, continuing in perfection for ten days or a fortnight. The flowers are of an intense deep yellow, fleshy, with oblong sepals and obovate petals, and a cucullate denticulate lip of the same colour marked in the centre with a large double spot of intense blood-purple. The plants grow best in baskets suspended from the roof of the house. The *D. Paxtoni* of gardens, and of Paxton, is *D. fimbriatum oculatum*.—*Nepal*.

FIG.—*Bot. Reg.*, t. 1299; *Gartenflora*, t. 446.

SYN.—*D. Paxtoni*, Lindl., not of Paxton.

D. chrysotis, *Rehb. f.*—This plant very much resembles *D. fimbriatum oculatum* in the colour of its flowers. It grows from three to four feet high, with slender rod-like stems, dark green oblong-lanceolate acuminate leaves, and long drooping axillary racemes, bearing six to nine large flowers, which measure three to four inches across; the sepals and petals are oblong-acute, entire, of a rich deep yellow; the lip is large, orbicular-cordate, velvety, of the same colour as the petals, or of a deeper apricot yellow, having two blotches of purplish black towards the base, and deeply fringed with bearded segments at the margins.—*Assam*.

FIG.—*Florist and Pom.*, 1871, 145, with tab.; *Bot. Mag.*, t. 6013; *Warner, Sel. Orch. Pl.*, iii. t. 6; *Ill. Hort.*, 3 ser., t. 155 (poor).

SYN.—*D. Hookerianum*, *Bot. Mag.* (non Lindl., which is described as having fascicled, not racemose flowers).

D. chrysotoxum, *Lindley*.—This is a showy species, an upright-growing evergreen plant, with fleshy ribbed clavate stems a foot or more in height, and bearing three or four largish oblong-acute, leathery dark green leaves, clustered at the top. The racemes of flowers are lateral, also from the upper end of the stem, drooping, consisting of a dozen or more showy flowers, which are golden yellow, the lip cucullate and roundish, beautifully fringed and ciliated, pubescent, rich orange, with a paler margin; there is an arch of very deep orange at the base of the flower. It blooms during the winter and spring months, and lasts two or three weeks in perfection. Of this there are two varieties, one much superior to the other. Pot culture in peat suits it best.—*Moulmein*.

FIG.—*Bot. Reg.*, 1847, t. 36; *Bot. Mag.*, t. 5053; *Ill. Hort.*, t. 164; *Batem. 2nd Cent.*, t. 124.

D. clavatum, *Lindley*.—A remarkably handsome evergreen species, which has terete pendulous stems two feet long, and produces five-flowered lateral scaly racemes of flowers from the top of the stems; their colour is a bright orange yellow, with a broad double brownish crimson spot in the centre of the lip, which is pubescent on the surface, and ciliated, not fringed, at the edge. This is one of the finest of the yellow kinds, and it continues in perfection three weeks, thus making a fine exhibition plant. Pot culture in peat suits it best.—*Assam*.

FIG.—*Paxt. Fl. Gard.*, ii. 104, fig. 189.

D. cœrulescens.—See DENDROBIUM NOBILE.

D. crassinode, *Benson et Richb. f.*—A very handsome and distinct species, with stout erect stems varying from six to eighteen inches in length, and having large close-set swollen or knotted joints or nodes, forming depressed spheres an inch in diameter, whence the name *crassinode*. The flowers, which grow on the older defoliated stems, are abundant from the upper nodes, two and a half inches in diameter, solitary or in pairs, the linear-oblong sepals and petals waxy white tipped with magenta-purple, and the broadly oblong-ovate obtuse velvety lip white with an orange yellow blotch at the base, and a magenta-purple tip. The plant is best grown in a small basket or on a block, with sphagnum moss.—*Siam: Arracan Mountains*, elevation 2,500 feet.

FIG.—*Bot. Mag.*, t. 5766; *Orchid Album*, iv. t. 152.

D. crassinode albiflorum, *Rchb. f.*—This is a pure white variety of the species, with a lemon-coloured blotch at the base of the lip. It was first flowered in the collection of Messrs. Low, of Upper Clapton, and has subsequently been exhibited by Sir Trevor Lawrence, Bart. It is called *D. crassinode album* in some collections.—*Moulmein*.

D. crassinode Barberianum, *Rchb. f.*—This is a great improvement on the original form of the species. The stems are stouter, and the plants grow much stronger than those of *D. crassinode*; the flowers are of greater substance and more highly coloured than in the type; the sepals and petals are pure white tipped with rich magenta, the lip white tipped with the same colour, the throat and disk orange. This variety lasts a long time in perfection.—*Moulmein*.

D. crepidatum, *Lindley*.—A splendid deciduous drooping species, with terete striate stems a foot or more in length, oblong acute leaves, and flowers in pairs from the joints of the leafless stems. The oblong sepals and broader petals are white, tipped with pink; and the roundish cordiform pubescent lip is stained with yellow in the basal half, white edged with pink in front, the base of the lip being curiously folded in on each side. It blooms in April and May, and continues three weeks in perfection. This species will make a good plant for exhibition, as it may be easily retarded by keeping it cool in winter. It is best grown in a basket or on a block.—*India: Assam*.

FIG.—*Paxt. Fl. Gard.*, i. 63, fig. 45; *Bot. Mag.*, t. 4993; *Id.*, t. 5011 (smooth-lipped var.); *Batem. 2nd Cent.*, t. 129.

D. cretaceum, *Lindley*.—A compact-growing deciduous plant, with pendent curved terete striated stems a foot long or more, producing its solitary flowers from the joints of the leafless stems during June and July, and lasting six weeks in perfection. The flowers are opaque dull white, the sepals and petals lanceolate, the lip roundish, cucullate, pubescent and fimbriate, pale yellow in the centre, marked with a few crimson lines, white at the edge. The leaves borne on the young shoots are lanceolate, obliquely emarginate at the tip. This will do either in a pot or basket, with peat or moss.—*India: Assam, Mergui, Khasya*.

FIG.—*Bot. Reg.*, 1847, t. 62; *Bot. Mag.*, 4606; *Lem. Jard. Fl.*, t. 344; *Flore des Serres*, t. 818.

D. cruentum, *Rchb. f.*—A very distinct and beautiful species belonging to the nigro-hirsute section, which we first saw in the collection of R. H. Measures, Esq., Streatham. The stems resemble those of *D. Jamesianum*, the membrane sheathing the internodes being covered with small hairs as in that species. The flowers grow in pairs from the nodes on the ripened leafless stems. The sepals and petals are yellowish green, reticulated with a darker green; and the lip is yellowish green, margined distinctly with bright crimson-scarlet, and having the crests and side lacinæ of the lip of the same colour. It flowers during the autumn months.—*Malayan Peninsula*.

FIG.—*Orchid Album*, iv. t. 174.

D. crystallinum, *Rchb. f.*—A distinct and beautiful species, with terete somewhat slender striate pendulous stems, which are destitute of the knotted joints so conspicuous in some of the allied plants. The distichous linear-lanceolate acuminate leaves are produced on the young stems, and fall away before the flowers are developed. The flowers are of moderate size, and freely produced, the sepals and petals white tipped with magenta, the lip orange at the base, and slightly tipped with magenta. It is a most desirable plant, flowering during the summer months.—*Burmah*.

FIG.—*Bot. Mag.*, t. 6319; *Xenia Orch.*, ii. t. 193.

D. cupreum.—See DENDROBIUM MOSCHATUM CUPREUM.

D. D'Albertisii, *Rchb. f.*—A very pretty and distinct species introduced by us from New Guinea. It is rather dwarf in habit, and has the peculiarity of producing square tapering stems. The flowers are produced in erect racemes, and are distinctly spurred; the sepals are pure white, and the lip striped with magenta-purple, forming a pleasing contrast to the long narrow erect twisted emerald green petals, which have been compared to the horns of an antelope. It is said to have an odour like that of *D. amœnum*.—*New Guinea*.



DENDROBIUM D'ALBERTISII.

FIG.—*Gard. Chron.*, N.S., x. 217, fig. 41 (flower).

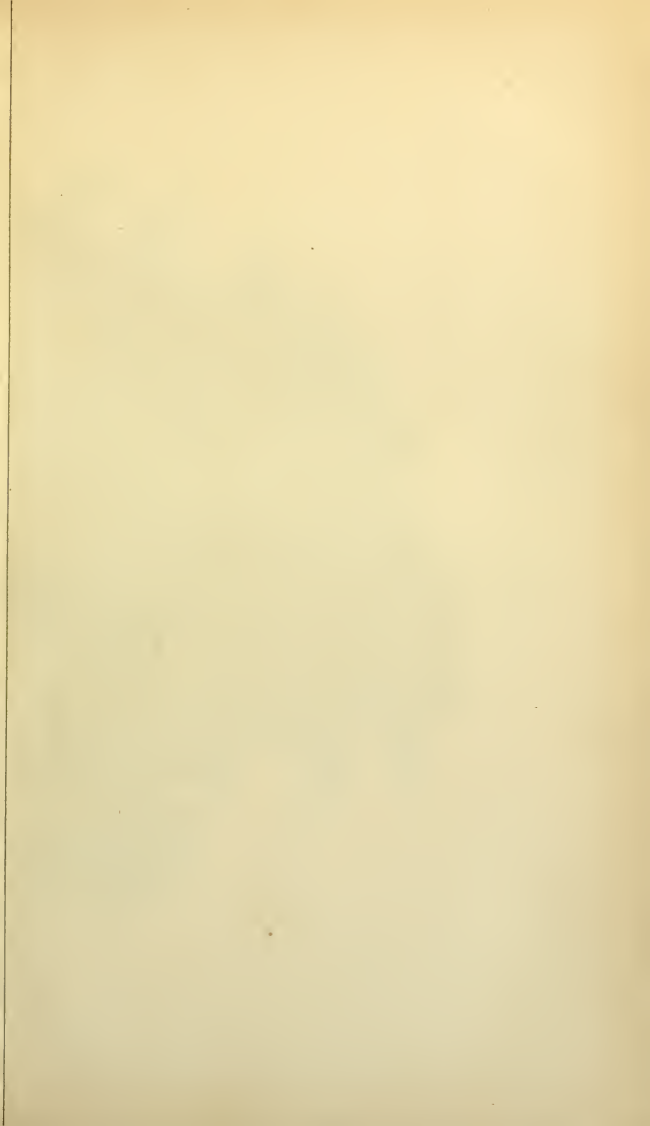
D. Dalhousieanum, *Wallich*.—This is a beautiful large-flowered evergreen species, with stoutish terete subfusiform stems from four to eight feet high, elegantly marked with reddish crimson; it blooms from the old growths in April and May, producing drooping lateral racemes of from five to seven flowers. These flowers are large, fully three inches across, with the parts broad and strikingly effective; the ovate sepals and much larger petals are of a pale lemon colour edged with rose; the lip is oblong, constricted in the middle, glandularly villous and incurved in front, where it is whitish, the base pale yellowish, marked on each side with a large oblong purple-crimson blotch, the inner edge of which passes into coloured whisker-like fringes; it lasts four or five days in beauty. This will grow either in a pot or basket, with moss. *D. Dalhousieanum* has been exhibited with forty-three flower spikes and four hundred and forty flowers, each four and a half inches in diameter.—*India*.

FIG.—*Paxton, Mag. Bot.*, xi. 145, with tab.; *Bot. Reg.*, 1846, t. 10; *Fl. des Serres*, t. 698; *Ill. Hort.*, 3 ser., t. 423; *Warner, Sel. Orch. Pl.*, i. t. 22; *Griffith, Icon. Pl. Asiat.*, tt. 5-7.

D. Dearei, *Rehb. f.*—This handsome and desirable species will take rank as one of the best white-flowered Dendrobes in cultivation. It has stoutish terete stems two to three feet high, bearing at the top a few close-set oblong-ligulate emarginate leaves, and produces both terminal and lateral flower racemes both from the old and new stems in the same way as *D. superbiens*. The flowers, which last several weeks in perfection, are nearly three inches across, and produced in bold racemes of from ten to fifteen together; they are pure white, having a slight tinge of green in the throat. We saw a plant of this recently in Sir Trevor Lawrence's collection with three spikes on one bulb, and the effect of the butterfly-like flowers produced in such quantities was most charming.—*Philippine Islands: Mindanao*.

FIG.—*Orchid Album*, iii. t. 120.

D. densiflorum, *Wallich*.—A magnificent compact-growing free-flowering evergreen Orchid. The stems are clavate, pendulous, leafy at the apex, a foot or more high, the leaves oblong acute nervose, and the racemes lateral, pendent from the upper joints of the stem, many-flowered; it blooms in March, April, or May, and lasts from four to six days in perfection if kept





DENDROBIUM



NSIFLORUM.



in a cool house. The ovate spreading sepals and petals are rich bright yellow, and the broad rhomboid serrulate retuse lip of a deep orange-colour. This is one of the showiest Orchids in cultivation, and one of the choicest plants we have for exhibition on account of its colour. It should be potted in peat. We have seen this species bearing nearly one hundred flower-spikes at one time.—*India : Nepal.*

FIG.—*Bot. Reg.*, t. 1828; *Fl. des Serres*, t. 1397; *Paxton, Mag. Bot.*, v. 121, with tab.; *Wall. Pl. As. Rar.*, t. 40.

D. densiflorum albo-luteum.—See DENDROBIUM THYRSIFLORUM.

D. densiflorum Schröderi.—See DENDROBIUM SCHRÖDERI.

D. densiflorum Walkerianum.—See DENDROBIUM THYRSIFLORUM WALKERIANUM.

D. Devonianum, Paxt.—This is one of the most delicate and lovely species of the genus. The stems are pendulous, slender, elongate, terete, proliferous, with a few linear-lanceolate leaves, which fall away before the flowers are developed. The flowers are produced from the nodes, for fully three parts of the entire length of the stems, which sometimes attain the extent of four feet; they are two inches across, the sepals cream-coloured, faintly shaded with pinkish purple, the petals broader than the sepals, beautifully ciliated, yellowish with a deep magenta-purple tip, and the lip broadly heart-shaped, cucullate, white with a spot of rich orange on each side of the disk, the emarginate apex with a well-defined blotch of purple; the entire margin is most beautifully plumoso-fimbriate. It blooms in May or June, and lasts two weeks in perfection. This plant is best grown in a basket with moss. It is usually found difficult to cultivate, but the great secret is to give it plenty of water when growing, and always to bear in mind that the red spider is its desperate enemy, often attacking the leaves; this must be diligently searched for, and, if found, kept under by syringing the foliage every day, or even twice a day in summer. It makes a splendid plant for exhibition.—*India : Khasya Hills.*

FIG.—*Paxton, Mag. Bot.*, vii. 169, with tab.; *Bot. Mag.*, t. 4429; *Fl. des Serres*, t. 647; *Belg. Hort.*, iii. 204, with tab.; *Ill. Hort.*, t. 145; *Lem. Jard. Fl.*, t. 11; *Warner, Sel. Orch. Pl.*, ii. t. 11.

D. Devonianum candidulum, Rehb. f.—A very distinct and chaste variety, having the sepals and petals white, and not

tipped with magenta as in the type; the lip is white with an orange blotch in the centre. It blooms in April and May.—*India*.

D. Devonianum rhodoneurum, *Rchb. f.*—In this variety the sepals and petals are streaked with dark purple, and the lip is large and round. The flowers are remarkably sweet. It is very distinct, and is said to last longer in flower than the normal form.—*India*.

D. dixanthum, *Rchb. f.*—A very pretty species with somewhat terete stems, slender at their base, and attaining a foot and a half in length. It is a very free grower and abundant flowerer, producing its brightly coloured flowers, which are of two shades of yellow, in spring. The flowers are in lateral racemes of from two to five, from the older leafless stems; the sepals lanceolate, the petals oblong, both clear pale yellow, and the broadish subquadrate minutely denticulate lip also pale yellow, with a deeper yellow blotch in the centre.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5564.

D. Dominicanum, *Rchb. f.*—A hybrid Dendrobe of ornamental character, raised by Mr. Dominy. It is a cross between *D. Linawianum* and *D. nobile*, and bears rosy purple flowers intermediate between the two, the lip with a dark basal blotch, a band of white, and tipped with rosy purple.—*Garden hybrid*.

D. Draconis, *Rchb. f.*—A very distinct and beautiful species, having waxy white flowers. It is evergreen, and has moderately short fusiform stems about a foot in height, and covered with deciduous dark hairs. The leaves are coriaceous, lanceolate, obliquely obtuse; and the flowers are produced in lateral or terminal racemes. The lanceolate acute sepals and petals are pure ivory white; the lip is white, with bright Roman red or vermilion markings on the throat. It blossoms in May, June, and July, and lasts six weeks in perfection.—*Moulmein*; *Cochin China*; *Burmah*.

FIG.—*Xenia Orch.*, ii. t. 146; *Bot. Mag.*, t. 5459; *Batem. 2nd Cent.*, t. 166; *Rev. Hort.*, 1883, 132, with tab.; *Orchid Album*, iii. 103.

SYN.—*D. eburneum*.

D. eburneum:—See *DENDROBIUM DRACONIS*.

D. endocharis, *Rchb. f.*—An ornamental hybrid, raised by Mr. Sedén. The stems very much resemble those of *D. aureum* (*heterocarpum*), and bear the flowers in pairs. These are nearly as large as those of that species, but with broader white petals; the lip is nearly that of *D. moniliforme*, with projecting basilar lobes.—*Garden hybrid; aureum* × *moniliforme*.

D. erythroanthum, *Rchb. f.*—A very pretty species, which in habit of growth resembles *D. secundum*. The racemose flowers form a dense mass, and are of a bright amber, striped with purple-crimson. It blooms in August, the flowers being produced in clusters of two to three dozen together.—*Philippine Islands*.

D. Falconeri, *Hook.*—A magnificent plant of pendulous growth, and one of the most beautiful of the genus. The stems are long, slender, branched and knotted, with few small linear leaves, terminal on the young shoots. The flowers are four and a half inches across, produced singly all along the older leafless stems; the sepals oblong lanceolate, the petals ovate acuminate, the lip cucullate with the front portion ovate acute, all white, or blush white freely tipped with rich deep purple, the lip having in addition a broad orange-coloured disk, which is marked by a large central dark purple spot. It is now plentiful, so that growers will have a better chance of finding the best way to cultivate it by placing it under different treatment and in different houses. During the growing season it likes a good supply of water; but after it has finished growth, which is by autumn, it should be kept rather dry till it begins to show flower, but must never be allowed to suffer for want of water, as it frequently grows during the winter months. Under this treatment it flowers every year, well repaying any trouble that is taken to induce it to produce its charming white purple-tipped flowers, which open in May and June, and remain about ten days in perfection. The blunt-petalled variety is called *Jacksoni* by Morren.—*Northern India: Assam, Bhotan*, elevation 4,000 feet.

FIG.—*Bot. Mag.*, t. 4944; *Id.*, t. 5058 (blunt-petalled var.); *Fl. des Serres*, t. 1197; *Belg. Hort.*, 1874, t. 15 (blunt-petalled var.); *Floral Mag.*, 2 ser., t. 226.

D. Falconeri albidulum, *Rchb. f.*—This variety has pure white flowers, slightly tinged with purple at the tips of the sepals and petals, the apex of the lip having also a slight tinge

of purple. It was flowered by H. G. Elliott, Esq., Clapton.—*Northern India*.

D. Falconeri giganteum, *Hort.*—A very superior variety of *D. Falconeri*, producing stronger stems than those of the type form, and more after the style of those of the original Assam variety of *D. Wardianum*. The flowers are larger and of greater substance, otherwise they resemble those of the type.—*Northern India*.

D. Farmeri, *Paxt.*—A compact-growing evergreen species with delicately beautiful blossoms, and the habit of *D. densiflorum*. The stems are clavate from a small knob-like base, and deeply furrowed so has to become quadrangular; at the top of the stem are from two to four ovate leathery leaves, and later on the loose drooping racemes of numerous flowers; these have the ovate obtuse sepals and the larger petals yellowish white flushed with pink, and the lip is straw-coloured and pubescent, rich yellow in the centre and denticulate at the margin. It blooms in April and May, and lasts two weeks in beauty if kept in a cool house. This species requires the same treatment as *D. densiflorum*. There are many forms of this plant, which varies much in colour and in the manner of its growth.—*India*.

FIG.—*Paxton, Mag. Bot.*, xv. 241, with tab.; *Fl. des Serres*, t. 741; *Lem. Jard. Fl.*, t. 307; *Bot. Mag.*, t. 4659; *Pescatorea*, t. 4; *Jennings, Orch.*, t. 24.

D. Farmeri albiflorum, *Hort.*—In this variety the sepals and petals are almost pure white, with the downy lip orange-coloured. In the *Gartenflora* it is called *D. Farmeri album*.—*India*.

FIG.—*Belg. Hort.*, 1860, 321, with tab.; *Gartenflora*, t. 595.

D. Farmeri aureo-flavum, *Hook.*—A beautiful rich golden yellow-flowered variety, with the same quadrangular stems as in *D. Farmeri*, but not quite so strong-growing. It is somewhat intermediate in aspect between *D. Farmeri* and *D. chrysotoxum*, but quite different from the latter in the four-angled stems; the sepals and petals are bright yellow, and the lip deep golden yellow and pubescent.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5451; *Orchid Album*, iii. t. 99.

D. fimbriatum, *Hook.*—A very showy evergreen species, with stoutish terete erect stems two or three feet long, producing its drooping racemes from near the apex of the last year's

stem. The leaves are distichous, lanceolate acuminate, of a dark green colour. The flowers are of an uniform bright yellow, the petals ciliato-denticulate, the lip having a deeper yellow disk and beautifully fringed with lacerate fimbriæ at the margin. This plant will continue flowering from the old stems for years; it generally blossoms during the spring months, seldom lasting much more than a week in bloom. It is best grown in a basket or pot, with peat and moss.—*India: Nepal.*

FIG.—*Hook. Exot. Fl.*, t. 71; *Paxton, Mag. Bot.*, ii. 172, with tab.; *Knowles and Westc. Fl. Cab.*, t. 109 (pale var.).

D. fimbriatum oculatum, *Hook.*—A beautiful variety of the preceding, producing its pendent flower spikes from near the top of the stems, which grow from three to four feet high. The flowers are large, of a rich orange-yellow, with a single large deep sanguineous spot towards the base of the beautifully fringed lip. It blooms in March and April, and, if kept dry, lasts ten days in perfection. It succeeds best in a pot, in peat. Said to have flowered in September at Kew.

FIG.—*Bot. Mag.*, t. 4160; *Paxt., Fl. Gard.*, iii. t. 84; *Lem. Jard. Fl.*, t. 314; *Ill. Hort.*, t. 15; *Warner, Sel. Orch. Pl.*, ii. t. 19; *Paxton, Mag. Bot.*, vi. 169, with tab.; *Fl. des Serres*, t. 125.

SYN.—*D. Paxtoni*, *Paxt.* non *Lindl.*

D. Findleyanum, *Parish et Rehb. f.*—A very pretty and desirable species, which in its habit of growth somewhat resembles *D. nodatum*. The stems are from one to two feet long, flexuose, knotty, with internodes two to three inches long, the knobs club-shaped and sulcate, developed above the sheathing bases of the leaves, which are linear-oblong acute, and produced on the young shoots, the flowers being borne on the older leafless ones on one to three-flowered peduncles, from near the top of the stems. The sepals and petals are white suffused with pink, the broadly rounded tomentose lip deep orange-yellow on the discal portion, paling to golden yellow at the margins. It blooms in January and February, and on that account will be found a valuable plant.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 6438; *Orchid Album*, ii. t. 92.

D. formosum, *Roxb.*—A remarkably handsome compact-growing evergreen species, with stoutish terete pendulous hairy stems about a foot high, bearing thick ovate obliquely emarginate leaves, and racemes of four or five fragrant flowers from the top of the stem, the blossoms frequently

three inches across. The sepals and the much broader petals are white, the lip white, with a bright yellow furrow down the centre; they last six weeks or more in perfection. This species may be grown either in a pot or basket with moss or peat. We have found it do best in a stove without shading of any kind. It makes a splendid plant for exhibition.—*India: Nepal, Sylhet, Moulmein, Tavoy, on trees and rocks.*

FIG.—*Bot. Reg.*, 1839, t. 64; *Paxton, Mag. Bot.*, vi. 49, with tab.; *Fl. des Serres*, t. 226; *Annales de Gand*, 1848, t. 171; *Wall. Pl. As. Rar.*, t. 39.

D. formosum giganteum, *Van Houtte*.—A magnificent variety of the preceding, much stronger in growth, and, like it, evergreen. The flowers, which are produced at the top of the stems, measure from four to five inches across; their colour is snow-white, with a broad blotch of rich orange-yellow on the centre of the lip. It requires the same treatment as *D. formosum*, and remains in bloom for about the same period.—*Moulmein*.

FIG.—*Flore des Serres*, t. 1633; *Gard. Chron.*, N.S., xvii. 369, fig. 54.

D. Fytchianum, *Bateman*.—One of the prettiest of the smaller-flowered species, and valuable for cutting on account of its effective rosy-eyed white flowers. The stems are slender, cylindrical, erect, a foot long, the younger ones leafy, the leaves being oblong-lanceolate. The flowers grow in terminal (? and lateral) racemes of eight or ten together, and are of dazzling whiteness; the sepals lanceolate, the petals roundish obovate, and the lip three-lobed, bearded at the base, its small oblong incurved lateral lobes rose-coloured, and forming a minute eye to the flower, and its obcordate apiculate middle lobe about as large as the petals, and, like them, pure white. This plant was erroneously figured as *D. barbatulum* in *Bot. Mag.*, t. 5444.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5444 (not t. 5918).

D. fuscatum, *Lindley*.—A very fine species in the way of *D. fimbriatum*. It has fascicled, nearly cylindrical, grooved stems two to three feet long, and lanceolate or ovate-lanceolate acuminate leaves four to six inches long. The flowers grow from nodes of the leafless stems in drooping racemes, which are four to seven inches long, with a slender zigzag rachis, and sometimes bear as many as fifteen flowers on each; these are of a deep-toned orange-yellow (in native drawings almost orange-brown), two inches in diameter, the sepals and petals

similar, oblong, somewhat incurved, the lip shorter, broadly oblate, cucullate, the surface downy, and the margin fringed, having also two deep purple-crimson spots at the base, one on each side the column. The long drooping racemes are very conspicuous.—*India: Khasya and hot valleys of the Sikkim Himalaya.*

FIG.—*Bot. Mag.*, t. 6226.

D. Gibsoni, *Paxt.*—A very showy evergreen Orchid, one of the finest of the yellow-flowered series. The stems are terete, tapering, pendulous, about two feet long, with ovate-lanceolate acuminate leaves, and lateral racemes of ten to fifteen flowers produced near the end of the older stems. The sepals and petals are of a rich orange; the lip very broad, undulated and fringed, bright yellow, with two dark purple spots near the base. It blooms during the autumn months, lasts two weeks in good condition, and requires the same treatment as *D. formosum*.—*India: Khasya.*

FIG.—*Paxton, Mag. Bot.*, v. 169, with tab.; *Paxt., Fl. Gard.*, ii. 133, fig. 204.

D. Goldiei, *Rchb. f.*—A very beautiful and distinct species in the way of *D. superbiens*, but different in having taller and more slender stems, longer and much narrower leaves, and more brilliantly coloured flowers. The flowers grow in drooping racemes from the upper part of the stems, and are of a rich claret-purple; the sepals lanceolate and tessellated with darker veins; the petals broader, oblong, whole-coloured; and the lip, which is quite distinct in form from that of *D. superbiens*, being much longer, narrower, and more acute at the point, also entirely of a claret-purple. This, like *D. superbiens*, flowers at different times of the year, and lasts three months in perfection. It also requires the same treatment as that species.—*Introduced by us from Torres Straits.*

FIG.—*Garden*, xiv. 244, t. 145.

D. gratiosissimum, *Rchb. f.*—A delicate and pretty species resembling *D. crepidatum* in habit, with suberect stems, slender at the base, striated, and bearing ovate-lanceolate acute leaves, which fall before the flowers are produced. The latter are in fascicles of two or three together, two and a half inches across; the sepals and petals are lance-shaped, white slightly shaded and tipped with rose; and the lip is entire, broadly ovate, white tipped with rose, and marked at the base

with a large roundish yellow spot, faintly striped with orange.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5652; *Xenia Orch.*, ii. t. 193.

SYN.—*D. Bullerianum*.

D. Griffithianum, *Lindley*.—One of the most glorious of the yellow spring-flowering *Dendrobes*. It has erect clavate stems, quadrangular on the upper part, and bearing at the top a pair of lanceolate-oblong obtuse leaves. The flowers grow in loose drooping flexuose many-flowered racemes from the side of the stem; the petals are ciliolate, and the lip ovate, pubescent, and denticulate. The plant resembles *D. densiflorum*, and its immense drooping spikes of blooms are of the richest golden yellow, and remain in perfection for about a fortnight. It is very rare, and varieties are often sold for it which are much inferior to the typical form.—*Burmah*.

D. Guibertii, *Linden*.—A fine showy *Dendrobe*, resembling a strong-growing *D. densiflorum*, and possibly a variety of that species. It has clavate stems a foot high, bearing at top a few broad ovate leaves, from amongst which appear the dense drooping racemes, fourteen inches long, of yellow flowers, which have a rich golden yellow lip, marked around the mouth of the funnel-shaped base with a stain of deep orange. It has been named in honour of the late M. Guibert, of Paris.—*Supposed to be Indian*.

FIG.—*Ill. Hort.*, 3 ser., t. 258; *Rev. Hort.*, 1876, 431, with tab.; *Puydt, Les Orch.*, t. 16.

D. Hanburyanum.—See *DENDROBIUM LITUIFLORUM*.

D. Harveyanum, *Rchb. f.*—A very curious and distinct species in the way of *D. Brymerianum*, but with smaller flowers. The stems are fusiform, furrowed, six inches long, and bear the lateral racemes of four or five flowers near the top. The colour of the flowers is deep chrome yellow, with a pair of orange-coloured blotches on the lip; the sepals are lanceolate acute, the petals oblong acute, ornamented with a dense marginal fringe, and the lip is almost circular, with an obscure basal callus, a rough surface, and a distinct fringe at the margin. It was introduced by the Liverpool Horticultural Company, and named after E. Harvey, Esq., of Aigburth, Liverpool, by whom it was first flowered.—*Burmah*.

D. hedyosmum.—See *DENDROBIUM SCABRILINGUE*.

D. Henshallii.—See *DENDROBIUM TRANSPARENS*.

D. heterocarpum.—See *DENDROBIUM AUREUM*.

D. Heyneanum, *Lindley*.—A charming deciduous species furnished with erect clavate stems, six to eight inches high, which bear linear-lanceolate leaves, and produce from their upper part at different times of the year lateral racemes of several small white flowers, that have somewhat the appearance of sprigs of whitethorn; the lip is greenish yellow beautifully streaked with violet. It is best grown on a block, with a moderate supply of moisture, during the growing season. It continues about ten days in perfection.—*India: Western Peninsula*.

FIG.—*Wight, Ic. Pl. Ind. Or.*, t. 909.

D. Hillii, *Hook*.—A bold-habited and rather striking species, nearly related to *D. speciosum*, but the stems, which are stout terete and many-ribbed, are fully twice the length, surmounted by four to six elliptic or oblong thick leathery dark green leaves, and the terminal racemes of flowers are much longer and more graceful. The long narrow sepals and petals are narrower and of a creamy white, while the small lip is transversely blotched with purple. It is a free-flowering and desirable species, and succeeds well in the cool house after its growth is complete.—*Queensland*.

FIG.—*Bot. Mag.*, t. 5261.

D. Hookerianum.—See *DENDROBIUM CHRYSOTIS*.

D. infundibulum, *Lindley*.—A species of the nigro-hirsute section, of great beauty, distributed in the first place under the name of *D. moulmeinense*, and resembling *D. formosum* in habit of growth and in flower, but with more slender stems, one and a half to two feet high, which are terete, with lanceolate acute unequally bilobed leaves, and glorious flowers, which sometimes measure four inches across, and, like those of its allies, are remarkable for their very broad petals. The sepals and petals are pure white, the serrulate lip white, having in the throat of its funnel-shaped base a large blotch of deep golden yellow. The flowers are produced in great profusion from the top of the stems during the summer, and last five to six weeks in perfection. It will be most useful for supplying cut flowers for decorative purposes.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5446; *Ill. Hort.*, 3 ser., t. 172.

SYN.—*D. moulmeinense*.

D. Jamesianum, *Rehb. f.*—This is a very fine nigro-hirsute species, named in honour of the late Mr. James Veitch. It is in the way of *D. infundibulum*, and is considered by many to be a variety of it. The stems grow from a foot to a foot and a half high. The flowers are nearly as large as those of *D. formosum*, pure white, except that the lip is deeply stained with cinnabar red. It blooms during spring and summer. This, as well as the preceding species, succeeds best in the cool house. It is a grand exhibition plant, and its flowers last in perfection for several weeks if kept from the damp.—*Moulmein*.

FIG.—*Florist and Pom.*, 1869, 187, with fig.

D. japonicum.—See *DENDROBIUM MONILIFORME*.

D. Jenkinsii, *Wallich*.—A beautiful dwarf evergreen species with clustered oblong tetragonal pseudobulbs, each bearing at the top a solitary oblong coriaceous retuse leaf, the whole not exceeding two or three inches in height. The flowers are very large for the size of the plant, and last ten days in beauty; they grow on slender peduncles, solitary or geminate, from the side of the pseudobulbs, and are wholly deep yellow, the lip being very large and spreading, reniform retuse, slightly pubescent and ciliate, and measuring nearly an inch across. This species is best grown on a bare block of wood, suspended from the roof. A magnificent specimen of it was exhibited at South Kensington by Mr. Denning, gardener to Lord Londesborough.—*India: Assam*.

FIG.—*Bot. Reg.*, 1839, t. 37; *Warner, Sel. Orch. Pl.*, ii. t. 28.

D. lasioglossum, *Rehb. f.*—A somewhat small-flowered species, but well deserving the attention of Orchid-growers. The stems are slender, terete, drooping, one to two feet long, with flat lanceolate acuminate leaves, and at the nodes opposite the leaves short racemes of two or three flowers, which are white, except a few reddish purple streaks on the erect lateral lobes of the lip, and a tuft of pale yellow hairs on the disk.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5825.

D. Leechianum, *Rehb. f.*—A very handsome hybrid, raised between *D. aureum* and *D. nobile*, by Mr. Swan, gardener to W. Leech, Esq., Oakley, Fallowfield, Manchester. It is the same cross as that from which *D. Ainsworthii* was obtained,



DENDROBIUM JAMESIANUM.



and it resembles that plant both in its growth and in the shape of its flowers, which are about four inches in diameter. The sepals and wavy petals are white tipped with rich rose-purple; the lobate lip is white, also purple-tipped, having a large radiating blotch of amaranth-crimson over the whole central area, a broad callous line with fine purple stripes running towards the base, and on each side radiating purple lines. The column is green with purple stripes. It flowers in January and February, and is very floriferous, since stems of but four inches high produce blossoms.—*Garden hybrid*.

FIG.—*Gard. Chron.*, N.S., xvii. 256, fig. 35.

D. Linawianum, *Rehb. f.*—A truly handsome species of upright evergreen habit, with clavate proliferous deeply furrowed stems a foot or more high, which become swollen at the internodes, and hence moniliform or necklace-like. The younger stems bear distichous oblong obtuse obliquely emarginate leaves, the flowers being produced in pairs from the joints of the stem on two-year old leafless growths. The flowers are two and a half inches across, with oblong acute sepals and petals, the latter broader, both white at the base, passing into rosy purple in the upper half, the serrulate lip much shorter, ovate, reflexed, tipped with bright crimson-purple, and having a crimson spot on each side the pubescent disk. This species, which blooms during the winter months, lasting two weeks in beauty, will grow in a basket, but we find it thrives best in a pot, with peat or moss. The plant is generally known in collections under the false name of *D. moniliforme*, which is quite another thing.—*China and Japan*.

FIG.—*Bot. Reg.*, t. 1314; *Bot. Mag.*, t. 4153; *Paxton, Mag. Bot.*, iii. 77, with tab.; *Maund, Botanist*, iv. t. 194; *Annales de Gand*, 1847, t. 137; *Orchid Album*, iii. t. 141.

D. Linawianum majus, *Williams*.—A fine variety of the preceding, growing to the same height, but having larger flowers, the latter being four inches across, and richer in colour. We saw this in very fine condition in the collection of R. Warner, Esq.—*Japan*.

D. lituiflorum, *Lindley*.—A charming species, with slender terete fasciated pendulous yellowish deciduous stems two to three feet in length, with a knob-like base, and in the younger stages bearing oblong-lanceolate leaves. It succeeds best in sphagnum, in a basket suspended from the roof. The flowers,

produced on the older leafless stems, are large, and are borne in pairs or in four to five-flowered fascicles from the nodes. The oblong-lanceolate sepals and broader petals are dark bright purple, the lip convolute at the base, and there white with heavy purple transverse stripes, the limb orbicular concave, turned up like a trumpet, the broad disk deep violet-purple surrounded by a yellowish velvety band, which is edged with purple. It blooms in March and April, and will last two weeks in perfection. It requires great attention as regards moisture during the growing season, but should be kept dry during winter.—*India: Assam, Tenasserim.*

FIG.—*Bot. Mag.*, t. 6050; *Warner, Sel. Orch. Pl.*, ii, t. 3.

SYN.—*D. Hanburyanum.*

D. lituiflorum candidum, *Rchb. f.*—A lovely white-flowered variety, which first appeared in the collection of Sir Trevor Lawrence, Bart., Burford Lodge, Dorking.—*India.*

D. lituiflorum Freemanni, *Rchb. f.*—A fine variety, having erect stems a foot to a foot and a half high, and flowers similar to those of *D. lituiflorum*, but the lip is covered with dense hairs, and the zone on the lip is yellow. It blooms in April and May.—*Assam.*

D. longicornu, *Lindley.*—A distinct and pretty species, in the way of *D. formosum*, but not so strong in growth. The stems are slender, hispid, erect, one to one and a half foot long, with ovate-lanceolate obliquely pointed leaves, and terminal long-spurred flowers, solitary or in fascicles, which are white, except the dentate lip, which has a yellow centre. Of this there are two varieties, the one named *D. l. majus* being the best. It produces its blossoms from the top of the stem in May and June, and they continue in perfection a long time if kept in a cool house. Treatment the same as that for *D. formosum*.—*India: Sylhet, Nepal.*

FIG.—*Bot. Reg.*, t. 1315.

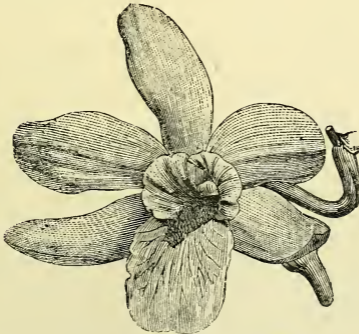
D. Lowii, *Lindley.*—A very distinct and handsome plant, growing in the way of *D. longicornu*, with upright terete nigro-hirsute stems a foot high, furnished with dark green ovate-oblong obliquely-tipped foliage, and producing from the side of the stem near the top dense seven-flowered racemes of large distinctly spurred flowers, measuring about two inches across, of a bright yellow colour, with six red veins on the base of the lip, set off by crimson fringes. This

will succeed in a pot or basket, or on a block, provided it has a liberal supply of water when in vigorous growth. We have seen it bloom in summer and also late in autumn.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5303; *Fl. des Serres*, t. 2395.

D. luteolum, *Bateman*.—A very distinct and desirable species, in which the stems are erect and terete, and bear lanceolate leaves, and simultaneously on the upper part of the stems a profusion of short lateral two to four-flowered racemes of pale primrose-coloured flowers, of which the lip has roundish lateral lobes, and the middle lobe a downy yellow disk marked by a few red lines. It flowers during the months of January and February, and lasts several weeks in perfection.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5441.



DENDROBIUM LUTEOLUM CHLOROCENTRUM.

D. luteolum chlorocentrum, *Rehb. f.*—This variety is altogether superior to the type, the flowers being much larger and of better substance. It bears tufts of green hairs on the middle of the lip. One of our own introductions.—*Moulmein*.

FIG.—*Gard. Chron.*, N.S., xix. 340, fig. 48.

D. MacCarthyæ, *Hooker*.—The “Rainy-month flower” or “May-flower” of Ceylon, a really splendid species, with terete pendulous stems as thick as a goose quill, green

spotted with crimson, and having a bulbiform base; these stems bear a few lanceolate acuminate leaves on their upper part, and opposite to them at the nodes a four or five-flowered raceme of extremely beautiful flowers, which are flattened vertically so as to appear half expanded, and consist of lanceolate sepals, oblong lanceolate broader petals of a bright pinkish rose, and a spatulate-trapeziform lip, which is white in the lower part, with small purple spots in the throat, a large purple blotch on the disk, and an ovate rosy pink front lobe marked with lines of darker rose. This splendid Orchid is difficult to grow, and should be kept in a small basket or on a block with sphagnum, as near the light as possible. It is one of the finest of the Dendrobes, blooms during the summer, and has the advantage of lasting six weeks or two months in perfection. The flowers are nearly three inches long.—*Ceylon forests.*

FIG.—*Bot. Mag.*, t. 4886.

D. macranthum.—See *DENDROBIUM SUPERBUM*.

D. macrophyllum (*Hort.*).—See *DENDROBIUM SUPERBUM*.

D. macrophyllum, *A. Rich.*—A fine and distinct species, perhaps more curious than beautiful, but so remarkable as to be well worth a place in collections. The stems are about a foot high, clavate, deeply furrowed in the upper, thickened portion, and terminated by three or four oblong unequally bilobed pale green leaves, from the centre of which springs the erect raceme, a foot high, many-flowered and nodding at the apex, the blossoms being two inches in diameter, hairy externally. The sepals are greenish yellow, and the smaller spatulate petals dirty white, while the large dilated lip is yellowish green, the side lobes radiately marked with forked purple veins, and the middle lobe bearing a few radiating lines of purple dots. Altogether a singular and very interesting plant, which at first received the name of *D. Veitchianum*, but proves to be a form of *D. macrophyllum*; the type plant of Richard has, according to Sir J. D. Hooker, both larger leaves and longer flower spikes—perhaps the result of excessive luxuriance in its native clime.—*Java, in hot jungles.*

FIG.—*Rich. Voy. Astr.*, t. 9; *Bot. Mag.*, t. 5649; *De Vr. Illust.*, t. 5.

SYN.—*D. Veitchianum*; *D. macrophyllum Veitchianum*.

D. macrophyllum Dayanum, *H. Low.*—This is considered to be a superior variety to the Java plant.—*Borneo.*

D. marginatum.—See DENDROBIUM XANTHOPHLEBIUM.

D. marmoratum, *Rchb. f.*—A very pretty species, allied to *D. transparens*. The sepals and petals are white, blotched at the extremities with purple, and the ciliate lip is purple.—*Burma*.

D. moniliforme, *Swartz.*—This is by no means an exhibition plant, but although it cannot lay claim to much beauty, its flowers, which are pure white, with a few purple spots on the lip, yield a delicious fragrance. The stems are fascicled, terete, pendulous, about a foot long, with linear-lanceolate bluntish leaves, which fall away and are succeeded by the fragrant white flowers, which grow solitary or in pairs from the upper nodes, and are about an inch and a half in diameter. Being a native of Japan and the adjacent islands, it will make a good addition to the cool house Orchids, and will doubtless be very useful for cutting for decoration. The plant so long known in gardens as *D. moniliforme* was not the one originally so called, and has now been named *D. Linawianum*.—*Japan*.

FIG.—*Bot. Mag.*, t. 5482.

SYN.—*D. japonicum*; *Onychium japonicum*.

D. moschatum, *Wallich.*—A handsome evergreen species, which produces stout pendulous terete striated stems four to six feet long, furnished with oblong or oblong-ovate somewhat leathery striated leaves, and bearing pendent racemes of eight or ten large flowers from the sides of the old stems near the top. The flowers are large and spreading, three and a half inches across, of a creamy buff suffused with rose, the lip slipper-shaped, pale yellow, darker at the base, and ornamented inside on each side with a large eye-like blotch of deep blackish purple; they are agreeably musk-scented. It blossoms in May and June, and lasts about a week in a fresh state.—*India: Eastern Peninsula*.

FIG.—*Bot. Mag.*, t. 3837; *Maund, Bot.*, i. t. 37; *Wall. Pl. As. Rar.*, t. 195; *Paxton, Mag. Bot.*, ii. 241, with tab.; *Hook. Ex. Fl.* iii. t. 184; *Puydt, Les Orch.*, t. 15; *Hart. Parad.*, iii. t. 7.

SYN.—*D. Calceolaria*.

D. moschatum cupreum, *Rchb. f.*—A large-growing evergreen plant, which has been cultivated under the name of *D. Calceolus*, that being apparently a misreading of *D. Calceolaria*, a synonym of *D. moschatum*, under which all these plants are sometimes included. It has stout pendulous stems,

four feet long when well grown, and bears its flowers in racemes of twelve or more together, which proceed from the top of the old stems. The flowers are large, but not equal in size to those of *D. moschatum*, the sepals and petals apricot yellow, and the slipper-shaped lip of a deeper golden yellow with an orange-coloured spot on each side near the base. It blooms during the summer months, lasting a week in perfection. This is best grown in a pot with moss and peat.—*India*.

FIG.—*Orchid Album*, iv. t. 165.

SYN.—*D. Calceolus*, Hort.; *D. cupreum*.

D. moulmeinense.—See *DENDROBIUM INFUNDIBULUM*.

D. mutabile, *Lindley*.—A very pretty evergreen species, with rather slender terete erect striated stems, furnished with numerous distichous elliptical sessile blunt fleshy leaves, which become smaller upwards, the stems terminating in a dense panicle of medium-sized flowers, which are in some forms white, and in others white tinted with rose. The lip is deeply emarginate or obovate, and bears on its disk three crests, which are blunt at the apex and tinted with yellow or orange. The flowers are produced on the leafy stems at different times of the year, and last two weeks in bloom. It is best grown in a pot with peat.—*India*.

FIG.—*Bot. Reg.*, 1841, t. 1; *Bot. Mag.*, t. 5285.

SYN.—*D. triadenium*; *Onychium mutabile*.

D. nobile, *Lindley*.—A magnificent and justly popular free-flowering evergreen species. The erect furrowed stems are a foot or more in height, clustered, terete, compressed, slightly thickened upwards, bearing distichous oblong obliquely emarginate leaves, and on the older ripened stems clusters of two or three flowers from the upper nodes. The blossoms are rather large and very showy, with oval sepals and much broader undulated petals, white heavily tipped with rose, the lip rolled up at the base, downy on both surfaces,



DENDROBIUM NOBILE.

roundish ovate, creamy white with rosy tip, and a deep crimson spot in the throat. It blooms during the winter and spring

months, lasting three or four weeks in good condition if kept in a cool house. It will grow either in a pot or basket, with moss or peat. This is one of the finest exhibition plants we have; but to keep it for exhibition, it must be put in the greenhouse, shaded from the sun, and left there till it is wanted, when it must be forced into bloom. During the time it is in a cool house give it but little water, only enough to keep it from shrivelling. This species may be had in full flower from January to June by procuring a number of plants and treating them successionally.—*India; China.*

FIG.—*Sert. Orch.*, t. 3; *Id.*, t. 18 (*cœrulescens*); *Paxton, Mag. Bot.*, vii., 7, with tab. (very poor); *Gard. Chron.*, n.s., xi. 564, fig. 79; *Hart. Parad.* i. t. 11.

SYN.—*D. cœrulescens.*

D. nobile intermedium, *Hort.*—A pretty and distinct variety, which grows in the same way as *D. nobile* itself, and flowers at the same time. The sepals and petals are white, and the lip white, with a dark crimson spot in the centre. A desirable variety for winter decoration. A scarce plant, and one of the best.—*India.*

D. nobile nobilium, *Rchb. f.*—Undoubtedly the largest-flowered form of *D. nobile* yet introduced. The flowers are about four inches in diameter, having broad sepals and petals, white richly suffused with rosy purple, darker towards the tips; the lip is white, margined with rosy purple around the anterior half, and having an intense purplish crimson blotch in the centre. It flowers during the winter and spring months, and is very rare.—*India.*

D. nobile pallidiflorum.—See DENDROBIUM PRIMULINUM.

D. nobile pendulum, *Hort.*—A fine variety of *D. nobile*, with large flowers, richer in colour than those of the type and produced at the same time. This is often called Rucker's variety. It is best grown in a basket, on account of its pendulous habit.—*India.*

D. ochreatum, *Lindley.*—A remarkably handsome deciduous species, of drooping habit. The stems are about a foot long, stoutish, with thickened nodes streaked and spotted with red; the leaves are ovate-lanceolate acuminate, oblique at the base, and sessile. The flowers are produced on the young growth in March and April simultaneously with the leaves, the peduncles two-flowered, the sepals and petals bright orange, the

lip broad, roundish, cucullate from a convolute base, villous, with a recurved margin, and a large sanguineous crimson blotch in the centre. It lasts in beauty about a fortnight, and is best grown in a basket with moss, and suspended from the roof.—*India: Khasya hills.*

FIG.—*Bot. Mag.*, t. 4450; *Paxton, Mag. Bot.*, vi. 265, with tab.

SYN.—*D. Cambridgeanum.*

D. nodatum.—See *DENDROBIUM APHRODITE.*

D. Parishii, Richb. f.—A very beautiful free-flowering species. The stems are from one to two feet long, very thick throughout their entire length, decurved, and bearing flowers in the second year, after the leaves have fallen; the leaves oblong-lanceolate, leathery, and notched at the ends. The flowers grow generally in pairs or in threes, and are of a beautiful dark rose, the downy lip lighter in colour along the centre, with a dark purple blotch on each side the throat. It is a very distinct species, and makes a good exhibition plant, on account of its distinct colour.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5488; *Jennings, Orch.*, t. 39; *Xenia Orch.*, ii. t. 152.

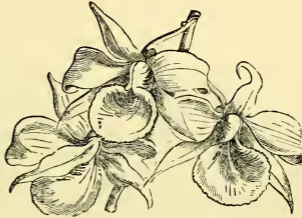
D. Paxtoni (Paxt.).—*DENDROBIUM FIMBRIATUM OCULATUM.*

D. Paxtoni (Lindley).—See *DENDROBIUM CHRYSANTHUM.*

D. Phalænopsis, Fitzgerald.—A beautiful species allied to *D. bigibbum*, but very much superior in respect to the size and colour of its flowers. The stems are erect, rather slender, upwards of a foot and a half long, contracted towards the base, and bearing near the top a few (eight or ten) lanceolate leaves five inches long. The racemes are terminal, on erect peduncles, ten inches long, the flowers about fifteen in number, two to two and a half inches across, and brilliantly coloured; the sepals are oblong-ovate, an inch long, magenta with a whitish centre, the spur deep purple; the petals are rhomboid-ovate, over an inch broad, of a warm magenta-purple, the lower half paler in the centre; the lip intensely rich deep rosy purple, an inch long, acute, with the broad lateral lobes meeting over the column, its base forming at the hinge a second spur, and the front lobe deflexed, magenta with maroon-crimson veins, the throat rich maroon-crimson; the veins of the throat are thickened and covered with dark papillæ. It flowers in April.—*North Australia; New Guinea, Timor.*

FIG.—*Orchid Album*, iv., t. 187.

D. Pierardii, *Roxb.*—A delicately pretty species of deciduous habit, useful on account of its flowering during the winter and spring months. The stems are long (in its native country six feet), moderately slender, terete, drooping, furnished with lanceolate acuminate leaves, and flowering in the same way as *D. superbum*, that is in fascicles of two blossoms from each node through the greater part of the length of the stem. The



DENDROBIUM PIERARDII.

flowers are transparent blush white, with a spatulate pale yellow lip, having the involute claw feathered with purple lines; they last three weeks in beauty. It requires the same treatment as *D. superbum*.—*India*: *Chittagong*.

FIG.—*Bot. Mag.*, t. 2584; *Hook. Ex. Fl.*, t. 9; *Loddiges, Bot. Cab.*, t. 750; *Bt. Reg.*, t. 1750.

D. Pierardii latifolium, *Hort.*—In this variety the stems are stouter and darker in colour, and the flowers, though of the same form and colour, are much finer than in the type; it blooms in April and May. It requires the same treatment, and is a useful plant for exhibition.—*India*.

FIG.—*Fl. des Serres*, t. 955.

D. primulinum, *Lindley*.—A beautiful free-flowering deciduous species, of pendulous growth; the stems terete and clustered, furrowed, a foot or more in length, the young ones leafy at the top, the few leaves being oblong obtuse and obliquely emarginate. The flowers are solitary, the oblong sepals and petals white tipped with pink, the broadly obovate downy lip pale sulphur yellow, its sides convolute at the base and streaked with purple; they are produced in two rows along the stem in April and May, and last in perfection ten days. This species is best grown in a basket with sphagnum, and makes a fine plant for exhibition.—*India*.

FIG.—*Gartenflora*, t. 326; *Bot. Mag.*, t. 5003.

SYN.—*D. nobile pallidiflorum*.

D. primulinum giganteum, *Hort.*—A magnificent variety, the flowers of which are very large, white tipped with pink, the

sulphur-coloured lip being particularly fine. This is a free-flowering plant, which ought to be in every collection, and is best grown in a basket, as it is pendulous in habit. It is grown in some collections under the name of *D. cucullatum giganteum*.—*India ; Sikkim*.

D. pulchellum, *Roxb.*—An exceedingly pretty dwarf species with terete striate decumbent proliferous stems, oblong-lanceolate leaves, and solitary flowers growing from the joints of the leafless stems ; it loses its leaves after it has finished growing, and generally begins to show flower in February all up the stem, lasting two weeks in bloom. The sepals are pale purple, the petals much larger, oval obtuse, of a deep purple-lilac, and the lip broadly orbicular, concave, villous, with a large blotch of orange in the centre surrounded by a zone of white and tipped with purple, the whole margin being beautifully and finely fringed. The plant does well in a basket with moss. There is some doubt as to this being the true plant of Roxburgh, who describes it as having flowers in racemes, but it is certainly the *D. pulchellum* of gardens, as figured by Hooker, Loddiges, and Maund, quoted below.—*India : Sylhet*.

FIG.—*Bot. Mag.*, t. 5037 ; *Loddiges, Bot. Cab.*, t. 1935 ; *Maund, Botanist*, t. 5.

D. rhodopterygium, *Rchb. f.*—This species is something in the way of *D. Parishii* ; the stems, however, are much longer, and more erect. The flowers are pink tinged with rose, and instead of two blotches have on each side the base half a dozen streaks of purple, while the disk is covered with little warts instead of the velvety hairs so conspicuous in *D. Parishii*.—*Burmah*.

D. rhodostoma, *Rchb. f.*—One of Messrs. Veitch's hybrids, produced between *D. Huttoni* and *D. sanguinolentum*. In growth it resembles *D. MacCarthyæ*. The flowers are white, the sepals and petals as well as the lip tipped with bright rosy magenta. It blooms in September. We saw this plant flowering freely in the collection of W. Lee, Esq., Downside, Leatherhead.—*Garden hybrid*.

D. rhombeum.—See *DENDROBIUM AUREUM*.

D. sanguinolentum, *Lindley*.—A distinct and delicately beautiful evergreen species, having terete pendulous stems,

which are of a delicate purple when young, and terminate in a few ovate-lanceolate leaves, which are also purplish beneath. It grows to the length of three or four feet, and blooms from the end of the old stems, which continue flowering for years. The flowers grow in pairs, and are crowded together so as to form a close bunch; the sepals and petals are pale fawn tipped with deep violet, and the lip is of the same colours. It blooms during the summer and autumn months, and lasts two weeks in good condition. This will do either in a basket or pot, with peat or moss.—*Ceylon*.

FIG.—*Bot. Reg.*, 1843, t. 6.

D. sanguinolentum superbum, *Hort.*—This plant is a great improvement on the type, handsome as that is. The variety is much stronger in growth, producing longer spikes of very much larger flowers, which are of a creamy white tipped with dark rich purple. This variety was sent to us a few years ago with a consignment of *Phalenopsis*.—*Borneo*.

D. Schröderi, *Williams*.—A handsome kind, sometimes called Schröder's variety of *D. densiflorum*. It grows to the same height as *D. Farmeri*, which it somewhat resembles in appearance, and has foliage of the same colour. The sepals and petals are white tinged with pale pink, and the lip is bright yellow with a strong orange tint at the base. It blossoms in April and May, and continues about ten days in perfection. It grows best in a pot in peat. This is one of the finest of the Dendrobies, and is still rare. It can be easily distinguished from any other kind by its stems.—*India*.

FIG.—*Floral Mag.*, t. 502.

SYN.—*D. densiflorum Schröderi*.

D. scabrilingue, *Lindley*.—A beautiful sweet-scented Orchid of remarkably easy culture, producing its blossoms in spring. The stems are erect, a span high, and somewhat clavate, with ligulate-oblong unequally emarginate leaves, and numerous flowers produced laterally in pairs on both leafy and leafless stems. When they first open the flowers have been noted to be green or greenish white, but after a day or so they change to pure white, except the lip, which has the acute erect side lobes green streaked with purple, and the much longer recurved front lobe yellow with deep orange furrows along the disk, and striped with crimson. They yield a delicious perfume similar to that of Wallflowers. It belongs to the *D.*

formosum section, in which the leaf-sheaths of the young growths are covered with black hairs.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5515.

SYN.—*D. hedyosmum*.

D. sculptum, *Rchb. f.*—A charming species, in habit somewhat resembling *D. formosum*, but the stems are shorter and not quite so stout. The leaves are oblong acute, slightly downy. The flowers are produced from the top of the matured bulbs, and average from four to five in a raceme; the sepals and petals are pure white, and the obovate emarginate lip of the same colour, with a distinct orange blotch in the centre, the base of the lip being marked on each side by numerous minute transverse rugæ. These flowers measure about two inches across, and, although not so large as in *D. formosum*, will be found more valuable for cutting. It blooms at various times of the year, and lasts a good while in perfection.—*Borneo*.

FIG.—*Xenia Orch.*, ii. t. 146.

D. senile, *Parish*.—One of the most curious of Orchids, quite dwarf in habit, the stems fusiform, six inches long, covered as are the two or three leathery obovate leaves with short white hairs. The flowers are of a bright yellow colour, the three-lobed lip having besides a green blotch on each side of the disk, which is deep orange; they are abundantly produced in pairs, and continue in full beauty for a considerable time.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5520; *Xenia Orch.*, ii. t. 155.

D. splendidissimum, *Rchb. f.*—A handsome hybrid, raised in Messrs. Veitch's establishment at Chelsea. It is a cross between *D. nobile* and *D. aureum*, and in growth most resembles the first-named parent. The sepals and petals are white faintly tinged with rose, and the lip is white, having a faint tinge of yellow in it, and a rich deep purple blotch in the centre. It flowers in January and February. *D. Ainsworthii* and *D. Leechianum* have the same parentage.—*Garden hybrid*.

D. suavissimum, *Rchb. f.*—A handsome compact-growing species, resembling *D. chrysotoxum* in habit. The stems are short, stout, fusiform, deeply furrowed, clustered, about three-leaved, the leaves oblong acute. The flowers, which exhale a delicious perfume, are produced in gracefully drooping



DENDROBIUM



UPERBIENS.



racemes, the individual blossoms being long-stalked, three inches across, and of a rich golden yellow colour, having on the crispulate fringed lip a large sanguineous purple central reniform blotch, with a few crimson bars on each side behind it. It is very free-blooming, and we have seen three spikes on a single stem. It blooms during May and June, and lasts two or three weeks in full beauty. This is a grand plant for exhibition purposes, as its bright yellow flowers form a striking contrast when exhibited amongst other Orchids.—*Upper Burmah.*

FIG.—*Xenia Orch.*, iii. t. 202; *Garden*, 1878, 166, t. 116; *Orchid Album*, i. t. 13.

D. superbians, *Rchb. f.*—This magnificent species is undoubtedly one of the most charming of all the Dendrobes. It is a most profuse bloomer, and as a proof of its free-flowering quality, we may here state that since we imported the plant in 1877 it has never been without flowers. This Dendrobe has the peculiarity of blooming from the old stems at the same time as from the new ones, and frequently repeats this freak of nature for several years in succession, so much so that we have counted as many as fifteen old spikes on a stem. In addition to this it flowers in a very young state, when the stems are scarcely six inches high. These stems when fully grown are from two to three feet high, and about three inches in circumference, furnished with thick oblong acute leaves. The flowers are produced from fifteen to twenty-five at a time in long racemes, the sepals being dark purple, beautifully reticulated, and having a whitish border, the petals of a beautiful warm purple, longer than the sepals, and the lip a warm purple, with five keels on the disk. The flowers last three months in perfection. This plant is best grown in a basket or pan suspended from the roof. It delights in sunshine, and we have grown it most successfully in a stove where Crotons and such-like plants were cultivated.—*Torres Straits.*

FIG.—*Floral Mag.*, 2 ser., t. 294; *Gard. Chron.*, N.S., ix. 49, fig. 9.

D. superbum, *Rchb. f.*—A noble and very handsome deciduous species of pendulous habit, losing its ovate-oblong obtuse leaves just as it begins to show its flower-buds. The spreading or drooping stems grow about two feet long, and from these the flowers proceed in a row on each side; they are of a pale purplish or lilac-rose colour, each three or four

inches across, and the downy lip is of the same colour with a pair of sanguineous blotches at the base; they last two weeks in perfection if they are kept dry. The flowers have a strong smell of rhubarb, in which respect this plant differs from the closely allied *D. anosmum*, which bears scentless flowers. It is best grown in a basket, with moss. This plant has been commonly grown under the name of *D. macrophyllum*, which, however, was previously appropriated to the plant originally known in gardens as *D. Veitchianum*.—*Philippine Islands*.

FIG.—*Fl. des Serres*, t. 757; *Bot. Mag.*, t. 3970; *Pescatorea*, t. 40; *Gard. Chron.*, 1845, 84, with fig. (habit); *Orchid Album*, i. t. 42.

SYN.—*D. macrophyllum*; *D. macranthum*.

D. superbum anosmum.—See *DENDROBIUM ANOSMUM*.

D. superbum giganteum, *Rchb. f.*—A showy variety which grows in the same way as the preceding, and blossoms about the same time. The flowers are from five to seven inches across, the sepals and petals a beautiful rose-purple; the lip of the same colour, fringed and marked at the base with a pair of rich purplish red spots; they remain about two weeks in perfection. A fine plant for exhibition, but it requires to be kept in a cool house to keep it back for that purpose, as it generally blooms very early.—*Philippine Islands*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 26.

D. superbum Huttoni, *Rchb. f.*—This exceedingly rare and beautiful variety has pure white sepals and petals, whilst the lip is of the colour of the normal form, saving a marginal border of white. The rhubarb scent is not so decided as in the type. It requires the temperature of the East Indian house.—*Malayan Archipelago*.

D. Tattonianum.—See *DENDROBIUM CANALICULATUM*.

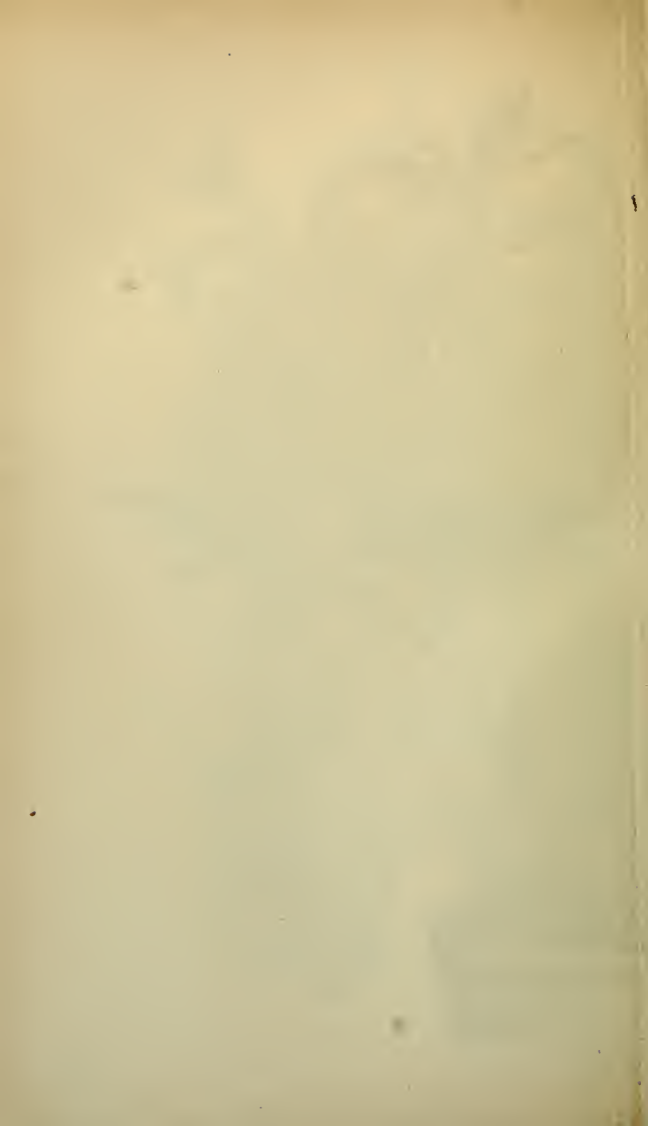
D. taurinum, *Lindley*.—A most remarkable and distinct species named *D. taurinum*, or the Bull-headed Dendrobe, from the strong suggestion of a bull's head with long straight horns made by the curiously constructed flowers. It is a strong-growing plant, with erect terete stems, often attaining a height of five feet. The leaves are very broad, oblong, unequally emarginate; and the flowers grow in an oblong raceme, crowning a long erect terminal peduncle. The sepals are yellowish green, rolled back at the



DENDROB



1 THYRSIFLORUM.



points, the petals very long, erect, twisted, deep purple, and the oblong lip whitish, crispy, purplish violet at the apex, and having three elevated lines along the centre. It is best grown in a pot in peat. We seldom see good plants of this species under cultivation.—*Philippine Islands: Manilla.*

FIG.—*Bot. Reg.*, 1843, t. 28; *Fl. des Serres*, t. 1904; *Paxton, Mag. Bot.*, x. 217, with tab.

D. teretifolium, *R. Br.*—A curious-looking species, very distinct in habit, which is worth growing on account of the profusion of flowers it produces in the winter months. The stems are clustered, dark brown, branched, each branch terminating in a long pendent curved terete taper-pointed hard fleshy leaf, very much resembling that of a *Scuticaria*. The flowers are produced in lateral dichotomously-branched panicles from a branch of the stem; the sepals and petals are both linear-filiform and white, the latter being longer than the former, and the lip, which bears three wavy lamellæ is much crisped, and strongly reflexed, white with a few dots of crimson.—*North-East Australia.*

FIG.—*Bot. Mag.*, t. 4711; *Endl. Icon.*, t. 99.

SYN.—*D. calamiforme.*

D. thyrsoflorum, *Hort.*—A fine showy species, in habit like *D. densiflorum*, but stronger, with the apex of the stems yellowish, and producing splendid clusters of white flowers with a golden orange lip. There have been some large importations of late, and in many cases very fine varieties have been obtained, varying both in the colour of the flowers and the size of spike. This is one of the handsomest of Dendrobes, and is most suitable for exhibition purposes, its fine drooping racemes producing a charming effect when placed beside other Orchids.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5780; *Ill. Hort.*, 3 ser., t. 207; *Gartenflora*, t. 1021; *Floral Mag.*, 2 ser., t. 449; *Gard. Chron.*, N.S., vii. 653, fig. 105; *Id.*, xv. 463, fig. 87 (specimen plants).

SYN.—*D. densiflorum albo-luteum.*

D. thyrsoflorum Walkerianum, *Williams.*—This is the finest variety we have yet seen: the stems are three feet in height, and the racemes of flowers two feet long, bearing more than fifty flowers on one raceme. The blossoms are very large, and of the same colour as those of *D. thyrsoflorum*. This is named in honour of C. Walker, Esq., Brettagh Holt, Westmoreland.—*Moulmein.*

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 21.

SYN.—*D. densiflorum Walkerianum.*

D. tortile, *Lindley*.—A rather pretty dwarf species, with erect clavate furrowed stems a span high, few linear retuse leaves confined to the young shoots, and lateral two-flowered peduncles on the leafless stems. The flowers are large and rather handsome, the sepals and petals white just tinged with purplish rose, waved and spirally twisted, and the large conchiform pubescent lip is lemon yellow streaked with purple at the base. It flowers in May and June, lasting a long time in perfection. It blossoms in the same way as *D. nobile*, and requires the same treatment.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 4477; *Gard. Chron.*, 1847, 797, with fig.

D. tortile roseum, *Hort*.—A beautiful variety of the preceding species, resembling it in every respect, saving the colour of its flowers, which are in this plant a delicate rose shaded with yellow. A very desirable variety; blooms in May and June.—*Java*.

D. transparens, *Wallich*.—A pretty small-flowering Orchid, which blooms in the same way as *D. nobile*. The stems are erect, terete, about a foot long, the young ones bearing linear-lanceolate leaves. The flowers, which grow in pairs along the stems, are of a pale transparent pinkish lilac, and the obovate oblong ciliolate lip has a large deep blood-coloured blotch passing into striæ at the edges. It blooms in May and June, and does well grown in a pot with peat or moss.

FIG.—*Bot. Mag.*, t. 4663; *Paxt. Fl. Gard.*, i. t. 27; *Lem. Jard. Fl.*, t. 68.
SYN.—*D. Henshallii*.

D. triadenium.—See *DENDROBIUM MUTABILE*.

D. Veitchianum.—See *DENDROBIUM MACROPHYLLUM*.

D. virgineum, *Rchb. f.*—This is said to be a lovely thing in the way of *D. infundibulum*, with nigro-hirsute stems, the leaves oblong-ligulate bilobed at the apex, and nearly twice as broad as those of that species. The flowers, which are numerous, and grow in terminal racemes, are only two-thirds the size of those of *D. infundibulum*; they are ivory white, greenish on the chin behind, and marked from the base of the three-lobed lip to the base of the roundish emarginate crenulate middle lobe by two singular thickened light reddish lines, and having also a reddish tint at the base of the column. Flowers during autumn.—*Burmah*.

D. Wallichii, *Hort.*—This beautiful kind resembles *D. nobile* in its general appearance, but has much taller stems, darker foliage, and richer-coloured flowers, and is possibly a fine form of that valuable species. It blooms during the winter and spring months, and with care may be retarded until the summer, when it makes a noble and valuable specimen for exhibition purposes. The treatment recommended for *D. nobile* suits this plant also.—*India*.

D. Wardianum, *Warner.*—A magnificent species, one of the finest in cultivation, and a splendid match for the beautiful *D. Falconeri*, which it somewhat resembles in its thickened and knotted stem, than which, however, it is much stouter, and also easier of cultivation. The stems are stout, terete, somewhat thickened at the nodes, pendulous, from two to three feet long, the younger ones furnished with oblong-lanceolate acute leaves, which fall away, after which the flowers are produced in twos or threes, each flower measuring upwards of three and a half inches in diameter. The colour of the sepals and petals is white tipped with magenta, the great cucullate lip having the same colours and in addition a large rich orange blotch on the convolute base and disk, the throat spotted on each side with deep crimson. It blooms about May, and continues a considerable time in perfection. It is found to thrive best suspended in a basket, or on a block. This fine plant was first flowered by T. Ward, Esq., of Southampton.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 19; *Ill. Hort.*, 3 ser., t. 277; *Jennings, Orch.*, t. 2; *Gard. Chron.*, n.s., viii. 240, fig. 50 (specimen plant).

D. Wardianum candidum, *Low.*—A fine white-flowered variety of this noble species, which first flowered in the collection of E. G. Wrigley, Esq., Broadoaks, Bury, Lancashire. It is very rare, and was a chance importation amongst a large consignment of Orchids from *Assam*.

D. Wardianum giganteum, *Williams and Moore.*—A magnificent variety of this grand Orchid, altogether stouter in all its parts than the type, as first introduced. It sometimes produces growths as much as five feet in length and of great thickness, and is altogether more vigorous in its habit as well as more erect in its mode of growth than the original *D. Wardianum*. The flowers are of the same colours, and similarly marked,

but larger, and of stouter substance. It blooms during the winter and spring months.—*Burmah*.

FIG.—*Orchid Album*, iii. t. 113; *Floral Mag.*, 2 ser., t. 212.

SYN.—*D. Wardianum* *Lowii*.

D. Williamsoni, *Day and Rehb. f.*—A distinct and pretty species, with erect fusiform stems, velvety with black hairs, the younger ones bearing numerous oblong-ligulate unequally bilobed leaves, which are also velvety with short soft hairs. The flowers are large, ivory white, the sepals slightly tinged with brown on the outer surface, the lip bearing a large three-lobed blood-red spot on the disk. This plant belongs to the nigro-hirsute section of this genus, and is somewhat difficult to establish.—*Assam*.

D. xanthophlebium, *Lindley*.—A very pretty species with erect terete angled stems about a foot long, and rather thicker than a swan's quill. The leaves, produced on the young stems only, are linear-lanceolate and obliquely emarginate. The flowers grow from the joints of the older leafless stems, generally in pairs, the sepals and petals being pure white, and the lip three-lobed, the side lobes large, erect, veined with deep orange, the front lobe also roundish, but much undulated, downy, orange-yellow bordered with white as in the lateral lobes. The spur is as long as the chin. This plant has been identified with the *D. marginatum* of Bateman in *Botanical Magazine* quoted below, a name given some years later than that here adopted.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5454.

SYN.—*D. marginatum*.

DENDROCHILUM.—See **PLATYCLINIS**.

DIACRIUM.—See **EPIDENDRUM BICORNUTUM**.

DOSSINIA, *Morren*.

(Tribe Neottieæ, subtribe Spirantheæ.)

This genus is closely allied to *Anæctochilus*, differing chiefly in its spurless three-lobed lip, the claw of which is entire, and the middle lobe dilately bilobed. Only one species, a Bornean

plant, familiar in our Orchid houses as *Anæctochilus Lowii*, is known.

Culture.—The cultural treatment is the same as that of *Anæctochilus*, under which genus it is explained in detail.

D. marmorata, *Morren*.—A splendid plant, the largest of the species of the Anæctochiloid group yet introduced. It grows six inches high, and has ovate leaves from four to five inches long, and three inches broad. The colour is a rich dark velvety green, shading off to mellow orange-brown, marked from stalk to point with well-defined deep golden veins, and crossed by lines of the same attractive hue. This remarkable plant was found by Mr. Hugh Low near an opening of a large cavern in the interior of the island.—*Borneo*.

FIG.—*Morren*, *Ann. Gand*, 1848, t. 193; *Flore des Serres*, t. 370; *Blume*, *Orch. Arch. Ind.*, t. 18; *Xenia Orch.*, t. 96, fig. 2.

SYN.—*Anæctochilus Lowii*; *Macodes marmorata*; *Cheirostylis marmorata*.

D. marmorata virescens, *Hort.*—A charming variety of the above, growing equally large, having the foliage of a lighter green, with brighter markings over the whole surface.—*Borneo*.

D. marmorata Dayi, *Hort.*—A highly-coloured form of the plant grown as *Anæctochilus Lowii*, the dark green velvety leaves beautifully veined with coppery red. It is a rare plant, and grows nearly as large as the typical form.—*Borneo*.

EPIDENDRUM, *Linnaeus*.

(Tribe Epidendreae, subtribe Læliæ.)

A very large genus, consisting of upwards of four hundred species, many of which, however, are scarcely worth cultivating except for their botanical interest. They are known by the claw of the lip being distinctly though sometimes slightly adnate to the parallel footless column, the limb being spreading. The base of the column has also a long deep hollow. Though thus rather of a weedy character, the genus contains a limited number of really beautiful species, the flowers of which are showy, being very distinct and attractive in

colour. The descriptive list subjoined comprises the best sorts that we know. They are all evergreen, and compact in habit, except *E. cinnabarinum*, *E. crassifolium*, *E. radicans* (*rhizophorum*), and a few others, which are tall-growing, with long slender stems, clothed with small distichous leaves from top to bottom. The other sorts have short round pseudobulbs, with long narrow leaves, except *E. aurantiacum*, *E. bicornutum*, and *E. Stamfordianum*, which grow more in the way of the *Cattleyas*, with upright pseudobulbs, having two or three stout leaves on the top. They all produce their flowers from the top of the stem or pseudobulb, except *E. Stamfordianum*, in which they rise from the base.

Orchid-growers have been more frequently deceived in buying *Epidendrums* than any other group of these plants. The pseudobulbs of many kinds are so nearly alike that it is very difficult to tell what they really are until they flower, which may not take place for several years, and then perhaps, instead of being something good, they only produce dingy green flowers of little or no beauty. Nevertheless, some of these insignificant-flowered kinds are very fragrant, and will perfume the whole house in which they are grown.

Culture.—These plants will all do in the Mexican house, and may be grown on blocks of wood, but pot culture is the best for the majority of the species. The drainage must be perfect, and sphagnum moss and peat should be used for potting in about equal parts. They require a season of rest, with the same treatment as the *Cattleyas*, excepting that they need less heat. They are propagated by dividing the plants, as described in the chapter on Propagation.

E. alatum, *Batem.*—A pretty species, producing its panicles of flowers in June or July. The pseudobulbs are ovate, bearing two ensate obtuse leaves, and the sweet-scented flowers have the narrow sepals and petals greenish at the

base, purple upwards, and the roundish three-lobed lip pale yellow, the broad blunt crispy middle lobe elegantly striped and spotted with rosy purple on the elevated veins. They continue five or six weeks in beauty. There are several varieties of *E. alatum*, but that known as the variety *majus*, distinguished by its larger size, is the only one worth the attention of amateurs. The *E. alatum* of the *Bot. Reg.* is *E. ambiguum*.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 18; *Bot. Mag.*, t. 3898; *Pact. Fl. Gard.*, i. t. 30; *Lem. Jard. Pl.*, t. 81.

SYN.—*E. longipetalum*; *E. calochilum*; *E. formosum*.

E. amabile.—See EPIDENDRUM DICHROMUM.

E. arachnoglossum, *Richb. f.*—A free-flowering and very showy plant, in which the stems are erect, simple, terete, clothed below with distichous oblong-lanceolate obtuse fleshy leaves, above which they run out into elongate rigid erect vaginate scapes, bearing at the end a short corymbiform raceme of violet-crimson flowers. The flowers are small, with oblong acute deep violet-crimson sepals and petals, and a lip of the same colour, three-lobed, the lateral lobes roundish and deeply pectinately-laciniate, the middle lobe cuneiform, deeply bilobed, the lobes similarly lacerate, having on the disk a callus of five tubercles, of which the four upper are golden orange-coloured, and the larger denticulate one pale yellow. We saw this plant well-flowered with W. Lee, Esq., Downside, Leatherhead. It is an almost continuous successional bloomer.—*New Grenada*: *Popayan*, elevation 6,200 feet.

FIG.—*Rev. Hort.*, 1882, 554, with tab.

E. atropurpureum, *Willd.*—A very beautiful evergreen species, of free-flowering habit, with ovate or obpyriform rugose pseudobulbs, bearing two ligulate-oblong leaves, and terminal erect peduncles, with well-furnished racemes of handsome flowers. The cuneate-oblong sepals and petals, incurved at the tips, are green at the base, brown above; the three-lobed lip large, pure white, with a feathered crimson blotch at the base of the roundish flabelliform deeply notched front portion. It blooms in April and May, and lasts five weeks in good condition if the flowers are kept free from damp.—*Guatemala*, *New Grenada*, *Venezuela*, (?) *Antilles*.

FIG.—*Bot. Mag.*, t. 3534; *Annales de Gand*, 1846, t. 86; *Orchid Album*, iv. t. 149.

SYN.—*E. macrochilum*.

E. atropurpureum roseum, *Rchb. f.*—A beautiful variety of *E. atropurpureum*, in which the broad ample lip is wholly dark rose colour; it blooms at the same time as the type, and lasts long in beauty. It is equally with it a most desirable plant.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 17; *Paxton, Mag. Bot.*, xi. 243, with tab.; *Fl. des Serres*, t. 306; *Pescatorea*, t. 27; *Illust. Hort.*, t. 541.

E. aurantiacum, *Batem.*—A distinct species, similar in growth to *Cattleya Skinneri*; indeed, the stems so nearly resemble those of that plant as to lead to its being often mistaken for it. The stems are clavate, a foot high, two-leaved, and producing their flowers from a sheath at the top of the stem. The leaves are oblong emarginate, flat, leathery. The flowers are in short somewhat drooping dense racemes, of a bright orange, with the lip of the same colour, striped with crimson, the sepals and petals lanceolate, and the lip oblong cucullate, the base folded over the column, and having three elevated lines on the disk. It blooms in March, April, and May, lasting six weeks in perfection if kept in a cool house. There are two varieties of this plant, both of which we have had growing in the same house under the same treatment. The best variety opens its flowers freely, while in the other they keep nearly closed—a peculiarity which renders the latter not worth growing.—*Mexico and Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 12; *Gartenflora*, t. 158.
 SYN.—*E. aureum*—f. *Rchb.*

E. bicornutum, *Hook.*—A remarkably handsome Orchid, which Mr. Bentham separates with three other species to constitute the genus *Diacrium*, distinguished by its lip being spreading instead of adnate to the base of the column, and by the presence of two hollow horns between its lateral lobes. It has fusiform furrowed stems a foot or more in height, the younger ones leafy at the summit; the leaves distichous, ligulate-oblong, leathery, dark green; and the peduncles terminal on the mature stems, sometimes producing in one raceme as many as twelve beautiful flowers, each about two inches across, of a pure white, with a few crimson spots in the centre of the lip, which has an elongate lance-shaped middle lobe. It blooms in April and May, lasting two or three weeks in beauty. This species is rather difficult to cultivate. The best plant we ever saw was grown on a block

of wood without any moss, and flowered five or six years in succession; but in the seventh year it seemed to lose its vigour, and never flowered afterwards, probably because the block began to decay and get sour. We have seen plants do well in pots and baskets with peat and good drainage. It delights in an abundance of heat and moisture.—*Trinidad, Demerara.*

FIG.—*Bot. Mag.*, t. 3332; *Jennings, Orch.*, t. 21; *Paxton, Mag. Bot.*, v. 245, with tab.; *Orchid Album*, iv. t. 157.

SYN.—*Diacrium bicornutum.*

E. Brasavolæ, *Rchb. f.*—This fine and remarkable species derives its name from the resemblance in shape which the flowers bear to those of a *Brassavola*. It has obpyriform compressed pseudobulbs a span long, producing from their apex a pair of oblong acute leaves, between which appears a short pointed spathe, from which the tallish scape bearing many flowers emerges. The flowers are large—four inches across—but the parts are narrow; they are very attractive and very durable, the sepals and petals of a rich clear tawny yellow; the rhombic-acuminate lip, which is wedge-shaped at the base, is yellowish white in the lower half, the front acuminate portion being of a beautiful mauve, and the disk traversed by two or three carinate lines. The flowers are sweet-scented in the evening. In its general habit the plant resembles a large form of *E. prismatocarpum*. It will succeed well in the Mexican house.—*Central America: Veragua; Guatemala*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 5664.

E. Catillus, *Rchb. f. et Warsc.*—A distinct and pretty species of the *Amphiglottium* group, having tall leafy stems, clothed below with stout distichous oblong acute leaves, channelled down the centre and sheathing at the base, the stems running out into long stout scaly peduncles, terminating in erect racemes of numerous highly-coloured showy blossoms, having bright red ovaries and pedicels. The sepals and petals are narrow, obovate-lanceolate, acute, of a deep cinnabar red, the sepals being glaucous on the outer surface; the three-lobed projecting lip is vermilion, the lateral lobes semicordate oblong retrorse, toothed on the outer margin, the front lobe narrow triangular bifid, toothed at the ends and connate at the base, with a large obovate yellowish callus, the disk carinate. Its tall habit makes it useful for grouping, and it

succeeds well in a cool house.—*New Grenada: Western Cordillera.*

FIG.—*Ill. Hort.*, 3 ser. t. 162.

SYN.—*E. imperator.*

E. ciliare, *Linnaeus*.—A very old and curious species, the flowers of which are most deliciously fragrant, especially at night. The stems are clavate, that is, the short fusiform pseudobulbs taper downwards into the scaly stalk. The leaves grow two together from the apex of the pseudobulbs, and are oblong obtuse, the racemes of several flowers rising from between them, each flower having a long spathaceous bract at its base. The sepals and petals are linear, pointed, greenish yellow, and the lip three-parted, white, the lateral lobes pectinately incised, and the middle lobe setaceous, much longer than the side lobes. It blooms during the winter months.—*West Indies; Tropical America.*

The *E. cuspidatum*, from the West Indies, a very similar plant, is considered a variety of this species, but the flowers are larger and more yellow, and differ chiefly in the middle lobe of the lip being linear-lanceolate and not appreciably longer than the side lobes.

FIG.—*Bot. Reg.*, t. 784; *Id.*, t. 783 (*cuspidatum*); *Bot. Mag.*, t. 463 (*cuspidatum*); *Lodd. Bot. Cab.*, t. 10 (*cuspidatum*); *Redouté Lil.*, t. 82; *Jacquin, Amer.*, t. 179, fig. 89.

E. cinnabarinum, *Salzm.*—A tall-growing plant, having leafy stems four feet high, which are furnished with oblong distichous leaves slightly recurved at the point, and bear terminal corymbiform racemes of bright scarlet flowers; these are produced in abundance in May, June, and July, and continue in succession for two or three months. The sepals and petals are lanceolate, scarlet, the lip three-lobed, keeled, with a pair of calli at the base, the side lobes deeply incised, the front lobe contracted in the middle, then suddenly wedge-shaped, with the angles prolonged into one or two fine teeth; the colour of the lip is orange-yellow spotted with red.—*Brazil; Venezuela.*

FIG.—*Bot. Reg.*, 1842, t. 25; *Hartinger, Parad.*, t. 14.

E. cnemidophorum, *Lindley*.—This is a rare and strikingly handsome cool house Orchid, one which the late lamented Mr. Skinner had so much difficulty in getting home alive. It is a vigorous-growing plant, forming tufts of stout leafy stems four to six feet in height. The leaves sheath the stem,

and are about an inch wide, six to ten inches long, tapering to a point. The flowers grow in terminal nodding racemes, rarely compound, emerging from a spathe of several blunt sheathing equitant pale green bracts, and are fleshy, about an inch and a half across, on long pedicels, numerous, creamy yellow outside, the inner surface nearly covered with blotches of rich crimson-brown; the sepals are oblong obtuse, the petals linear, and the lip three-lobed, the side lobes larger, rounded and entire, and the middle lobe wedge-shaped, cleft into two blunt segments, creamy white tinted with rose, as also is the prominent club-shaped column. Being of strong-growing habit, and throwing out large fleshy roots, it requires abundant pot-room and good drainage. It was flowered first by the late Sir P. Egerton, Bart., at Oulton.—*Guatemala*, elevation 7,000 feet.

FIG.—*Bot. Mag.*, t. 5656.

E. Cooperianum, *Batem*.—A beautiful species, with stout erect rigid stems, growing from two to three feet high, neat and compact in habit, and thickly clothed in the upper part with stiff distichous lanceolate sharp-pointed leaves. The flowers, which are of a leathery texture, grow in drooping dense many-flowered racemes, and are of a pale olive green or yellowish brown, with the large three-lobed lip of a bright rose colour; the lateral lobes are large and roundish, and the smaller central one kidney-shaped and emarginate. A most desirable species, and of easy culture in the *Cattleya* house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5654.

E. dichromum, *Lindley*.—A beautiful and showy species, with ovate fusiform two-leaved pseudobulbs, three to six inches long, rigid ligulate leaves rounded at the apex, and scapes three feet high, bearing bold panicles of flowers, two inches in diameter; the sepals are linear-lanceolate, and the petals obovate, both of a fine rose colour, and the lip lengthened out, deeply three-lobed, the lateral lobes turned up over the column, white, purple at the spreading ends, the middle lobe obcordate, ribbed on the disk, of a rich deep crimson-purple with white margin. The flowers vary in colour, the sepals and petals being sometimes nearly white. A most desirable species, "rivalling the best of the *Barkerias*."—*Bahia*.

FIG.—*Bot. Mag.*, t. 5491; *Batem. 2nd Cent. Orch. Pl.*, t. 112.

SYN.—*E. amabile*.

E. dichromum striatum, *Rchb. f.*—A very beautiful variety of *E. dichromum*, in which both sepals and petals are white, and all the veins marked out by radiating deep purple lines.—*Bahia*.

E. eburneum, *Rchb. f.*—A handsome and very commendable species, the flowers of which have something the aspect of those of a *Brassavola*. It grows two feet high, its erect fascicled terete stems being furnished with large spreading linear-oblong obtuse amplexicaul coriaceous leaves of a deep green colour, placed alternately upon the stems. The raceme is terminal, consisting of four to six flowers, which have linear-lanceolate acuminate sepals an inch and a half long, white tinted with pale citron-green, similar but somewhat narrower petals, and a large orbicular-cordate ivory white sessile lip, an inch and a half in diameter, and having two small yellow calli at the base. The plant is well worthy of general cultivation.—*Panama*: near *Colon*, in swamps.

FIG.—*Bot. Mag.*, t. 5643.

E. ellipticum, *Graham*.—Though not so ornamental as many of its congeners, this is a very pretty and lively-looking species on account of its free-flowering habit. It has tall erect leafy stems, attaining a height of two or three feet or more, furnished below with distichous elliptic blunt coriaceous sheathing dark green leaves, the upper part running out in a long jointed bracteate peduncle, terminated by a corymbiform raceme of rose-coloured flowers, which are produced in profusion in March, April, May, and June, the plant continuing to bloom for three or four months. The sepals and petals are obovate-lanceolate, and the lip three-lobed, the lateral lobes roundish-cuneate, and the middle one larger and obcordate, all of a pleasing rose colour.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3543; *Hook. Ez. Fl.*, t. 207; *Lodd. Bot. Cab.*, t. 1276.
 SYN.—*E. crassifolium*.

E. erubescens, *Lindley*.—A magnificent species of very distinct habit, making long woody rhizomes, which root from the under side and bear the fusiform two-leaved pseudobulbs at intervals of about six inches. The leaves are oblong acute, and the flowers grow in ample flexuose panicles; the oblong obtuse sepals and similarly formed unguiculate petals are broad, and of a beautiful delicate mauve, while the three-lobed lip, which has the middle lobe subrotund, and marked

with three elevated veins, is of a darker shade of the same colour, and yellow at the base. The flowers last in beauty for six or eight weeks, so that the species is a very desirable one for the cultivator; it is, however, somewhat difficult to grow. We have found it thrive well on long blocks of wood in the cool house with *Odontoglossums*, where it was always kept damp at the roots.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 32.

E. evectum, *Hook. fil.*—A very well-marked and beautiful evergreen species, which may be said to be a perpetual bloomer. It is one of the group having tall leafy stems, the upper part of which runs out into a leafless peduncle furnished with bracts, and terminating in the inflorescence. The stems are fascicled, bulbiform at the base, three to five feet high, branching and rooting, bearing leaves towards the upper end. The leaves are distichous, four to six inches long, oblong-lanceolate, emarginate, leathery, and somewhat clasping the stem at their base. The peduncles run out from the top of the stem, and are bracteate with the lower bracts sheathing, the apex bearing a short subcylindrical many-flowered raceme. The flowers have long pale red pedicels, and are of a deep magenta-purple, the sepals and petals being narrowly obovate, and the lip three-lobed, the lateral lobes cuneate, the middle one deeply parted into two subquadrate divaricate segments, all the lobes being deeply lacerated at the outer margin. It is the finest of the section to which it belongs, and its beautiful high-coloured flowers last a long time in perfection. It has been grown at Kew for many years, flourishing at the cool end of an intermediate house.—*Supposed to be from New Grenada*.

FIG.—*Bot. Mag.*, t. 5902.

E. falcatum, *Lindley*.—A rather handsome species when well grown. The plant is pendulous in habit and very distinct from any of the other *Epidendrums*, having branching stems, which are sparsely leafy, the leaves oblong-lanceolate, thick, a foot long, and having a curiously tapered narrow point. The flowers, which are large, proceed from the top of the bulb, one or two together; the sepals and petals are linear-lanceolate, two to two and a half inches long, of a pale yellowish green, tinted with olive-brown, and the lip is orange-yellow, three-lobed, the lateral lobes large, semicordate, erose,

and the middle one linear-acuminate, entire. It blooms during the summer months, and lasts long in beauty. This plant is best grown in a basket with moss.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3778; *Batem. Orch. Mex. et Guat.*, t. 25.

SYN.—*E. Parkinsonianum*; *E. aloifolium*; *E. lactiflorum*.

E. Friderici Guilielmi, *Warsc. et Richb. f.*—An erect-growing evergreen species of ornamental character, with tall robust stems an inch in diameter at the base, clothed with distichous cuneate obovate shortly acuminate leaves a foot long and four inches broad. The stems grow out into a purple peduncle, supporting a short broad many-flowered raceme, the long pedicels being also of a purple colour. The flowers are of a rich crimson; the sepals and petals are narrow lanceolate, acute, the lip three-lobed, the lateral lobes roundish semicordiform, the middle lobe tongue-shaped, acuminate, with two large blunt rhomboid calli at its base, the calli as well as the apex of the column being white; hence the flowers appear to have a white eye. It flowers in June, and being of fleshy texture the blossoms will no doubt last for a considerable time.—*Northern Peru*, elevation 6,000—8,000 feet.

FIG.—*Xenia Orch.*, i. t. 51; *Ill. Hort.*, 3 ser. t. 48; *Puydt, Les Orch.*, t. 19.

E. Hanburii, *Lindley*.—A distinct and well-marked species, which, though not so showy as some of its congeners, is worth growing on account of its pleasing colour. It has largish ovate pseudobulbs, broad ensiform leathery leaves, and scapes about two feet high, bearing well-filled racemes of flowers; the spatulate sepals and petals are deep purple, and the three-lobed lip pale rose with radiating crimson veins. It blooms during the spring months, lasting long in beauty.—*Mexico*.

FIG.—*Gartenflora*, t. 398.

E. ibaguense, *Humb. et Kunth*.—A very handsome species, with tall slender stems as thick as a swan's quill, leafy in the upper portion, the leaves very fleshy, oblong obtuse, and stem-clasping, the extreme end of the stem leafless, and terminating in a dense almost globose head of orange-coloured flowers with a yellow obcordate lip, the lateral lobes of which are cordate, rounded at the tip and fimbriate.—*New Grenada*; *Peru*.

FIG.—*Floral Mag.*, t. 390.

E. macrochilum.—See EPIDENDRUM ATROPURPUREUM.

E. myrianthum, *Lindley*.—A charming plant of a “most brilliant” character, very rare in cultivation. It has tall but graceful stems growing about three feet high, and clothed with long linear-lanceolate distichous leaves, the sheathing bases of which are marked by black dots. Above the leaves is borne a magnificent pyramidal compound panicle of small but very numerous flowers, which are of a nearly uniform ruby red. It flowers in June, and continues long in beauty. It will not bloom if subjected to much heat; the cool house, therefore, will suit it best.—*Mountains of Guatemala*.

FIG.—*Bot. Mag.*, t. 5556; *Batem. 2nd Cent. Orch. Pl.*, t. 163.

E. nemorale, *Lindley*.—A noble evergreen species, of vigorous habit, with ovate pseudobulbs four inches high, bearing on the top two ensiform obtuse leaves a foot long, of a light green colour, and from between them a stout warty peduncle three feet long, supporting an ample drooping panicle of flowers which are individually four inches across, and, when expanded, have a remarkably handsome appearance. It makes a fine exhibition plant, on account of its being well adapted for travelling, and from its distinct and pleasing colour. The sepals and petals are linear-lanceolate acuminate, of a delicate rosy mauve, the three-lobed lip having the middle lobe oval crenellate, white in the centre, with three short red lines, and bordered with deep rose. There are several varieties of this species all worthy of cultivation. It is found growing on rocks and trees, and will do well in the Cattleya house.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4606; *Bot. Reg.*, 1844, t. 51; *Lem. Jard. Fl.*, t. 253.

SYN.—*E. verrucosum*, Hort.

E. nemorale majus, *Warner*.—This is a vastly superior variety of what is in any form a most desirable plant. It is of the same style of growth and habit, but bears a magnificent panicle of flowers, sometimes three feet long with seven branches, the colours being paler and more delicate than in the type, the linear-lanceolate sepals and petals being of a very light tint of rosy mauve, and the large front lobe of the lip distinctly white in the centre with the three short red lines very distinctly marked; the smaller acute falcate side lobes are of a deeper rose, and reflexed at the ends.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, i, t. 13.

E. paniculatum, *Ruiz et Pavon*.—This is a noble plant, with leafy stems, three or four feet high, in the way of those of *E. myrianthum*. The dark green leaves are distichous oblong-lanceolate acuminate, often spotted beneath with purple. The flowers are produced from the top of the stem in a dense branched nodding panicle upwards of a foot long, many-branched, and bearing a profusion of lovely rosy lilac fragrant blossoms, which are produced in April, and last a long time in beauty. The sepals are small spathulate ligulate, the petals almost filiform, and the lip deeply four-lobed. It will succeed in a cool house.—*Peru; Bolivia; New Grenada*.

FIG.—*Bot. Mag.*, t. 5731; *Ill. Hort.*, 3 ser., t. 211.

E. Parkinsonianum.—See EPIDENDRUM ALOIFOLIUM.

E. phœniceum, *Lindley*.—A rather pretty species, with roundish ovate pseudobulbs, a pair of erect narrowly oblong leathery leaves, and a scabrous panicle two to three feet high, bearing good-sized scentless flowers, of which the obovate lanceolate sepals and petals are purple, and the roundish undulated emarginate lip is of a clear bright rose with deep-coloured veins and stains in the centre. It blooms during the summer months. The variety *vanillosum*, which is the same as *E. Grahami*, differs in being vanilla-scented, and in having a white lip spotted with rose.

FIG.—*Sert. Orch.*, t. 46; *Paxton, Mag. Bot.*, ix. 97, with tab.; *Fl. des Serres*, t. 47; *Id.*, t. 306 (var. *vanillosum*); *Bot. Mag.* t. 3385 (*Grahami*).

SYN.—*E. Grahami*.

E. prismatocarpum, *Rchb. f.*—A strikingly handsome Orchid, well-marked in character, and deserving of general cultivation. It is robust in habit, and has pyriform slightly furrowed pseudobulbs tapered upwards, and crowned with two or three ligulate evergreen leaves a foot long. The scapes are erect, produced from the top of the pseudobulbs, and each bear a raceme of about fourteen flowers, which have oblong-lanceolate acuminate sepals and petals, pale creamy yellow with large dark purple blotches, the column of the same creamy yellow, and the narrowly triangular free part of the lip rose colour margined with pale yellow. It blooms in June and July, and will last several weeks in perfection. There are several varieties of this species.—*Central America: Chiriqui*.

FIG.—*Bot. Mag.*, t. 5336; *Xenia Orch.*, ii. t. 123; *Warner, Sel. Orch. Pl.*, i. t. 9; *Batem. 2nd Cent. Orch. Pl.*, t. 109.

SYN.—*E. maculatum; E. nigromaculatum; E. Uro-Skinneri*.

E. pseudepidendrum, *Rehb. f.*—A very distinct and striking species, producing rather scanty terminal racemes of lovely flowers. It has long reed-like stems two to three feet high, cylindrical with a tumid base, and bearing near the top the distichous linear-oblong acuminate leaves, which are leathery, dark green, and about six inches long. The terminal few-flowered racemes have very slender peduncles and pedicels. The flowers are two and a half inches in diameter, with the narrow spatulate sepals and narrower petals of a bright green, and the lip an inch broad, nearly orbiculate, retuse, with the margin yellowish and serrulate, rich orange-scarlet, the disk traversed by five keels and having a three-lobed callus at the base. The effect of the scarlet lip against the green sepals and petals is charming, and is a combination of colours seldom met with. It was introduced by M. Warszewicz, and flowers in January and February. — *Central America: Chiriqui*, elevation 4,000 feet.

FIG.—*Bot. Mag.*, t. 5929; *Xenia Orch.*, i. t. 53.

SYN.—*Pseudepidendrum spectabile*.

E. radicans, *Pavon.*—A pretty but shy-flowering evergreen scandent Orchid, the tall erect leafy stems often reaching ten feet in height. The distichous leaves are ovate oblong subcordate and partially sheathing. The bright orange-scarlet flowers are produced in corymbiform racemes on the leafless scaly terminal growths, the sepals and petals being acutely lanceolate, and the lip three-lobed, with the side lobes toothed, and the cuneate biparted front lobe deeply lacinate; the same spike will keep in beauty for three months. It is best grown in a pot in peat, with good drainage. When the plant becomes tall it should be trained round some sticks, which is the best way to make it flower. We have known Mr. Woolley, of Cheshunt, to have the same plant in flower for twelve months at a time.—*Mexico; Guatemala*.

FIG.—*Paxton, Mag. Bot.*, xii. 145, with tab.; *Orchid Album*, iv. t. 161.

SYN.—*E. rhizophorum*.

E. Sceptrum, *Lindley.*—A very old and pretty species, but very rare in cultivation. It is quite distinct in growth, having compressed pear-shaped pseudobulbs a foot long, long thin remote lorate leaves, and erect racemes one to two feet long, bearing very numerous flowers, as many as three dozen sometimes being collected in one raceme, the peduncle of which

proceeds from the apex of the pseudobulb. The lanceolate sepals and obovate petals are brilliant golden yellow spotted with dark purple, and the lip is white at the base, profusely marked with bright purple. The flowers, although small, are produced in such profusion as to render this a most ornamental plant. It blossoms in September and October.—*Venezuela; New Grenada.*

E. Schomburghii, *Lindley*.—A very handsome species in the way of *E. cinnabarinum* and *E. radicans*, having the upper portion of the stems leafless but furnished with sheathing bracts, and terminating in a short close or corymbiform raceme of rich vermilion-scarlet flowers. The leaves are distichous, oblong obtuse, fleshy, and in the wild plant bordered with crimson dots. The sepals and petals are linear-lanceolate; the lip three-lobed, strongly keeled, and bicallose at the base, the lateral lobes broad semiovate, rounded and lacerate behind, the front lobe cuneate gradually widening upwards, the edge denticulate, and the apex with a short triangular cusp. The form of the lip offers considerable variation, a frequent change being that the lobes run nearly together into one circular plate.—*Demerara; Brazil; Peru.*

FIG.—*Bot. Rej.*, 1828, t. 53; *Maund, Bot.*, iv. t. 165; *Duperrey, Voy.*, t. 43.

SYN.—*E. fulgens.*

E. Stamfordianum, *Batem*.—A handsome spotted-flowered species of very distinct character, being one of the few species which produce a radical inflorescence. It has fusiform pseudobulbs a span long, tapering below into a slender scaly foot-stalk, and terminated by three or four oblong obtuse coriaceous leaves six or seven inches long. The peduncle rises from the root and bears a large many-flowered panicle of fragrant blossoms which are an inch and a half across, of a bright yellow tinged with green, thickly decorated with blood-red spots, those of the petals being larger and fewer than those on the sepals, while the lip has the lateral lobes creamy white and the front lobe yellow, the latter being sparingly spotted. The sepals and petals are lanceolate, the lip three-parted, flat, the lateral lobes large oblong, the middle one transversely oblong, emarginate, and fimbriate. The type is described as having a vivid violet spot at the base of the lip, while in the variety *pictum* there is a crimson line down the centre of that organ. It blooms in April and May, lasting a considerable

time in perfection. There are two varieties of this plant, one having much brighter coloured flowers than the other; the best form is characterised by having longer and thinner bulbs than the other.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 11; *Klotzsch, in L. K. & O., Ic. Pl. Rar. Berol.*, t. 45; *Bot. Mag.*, t. 4759 (pictum); *Lem. Jard. Fl.*, t. 251 (pictum).

SYN.—*E. basilare*; *E. cynostalix*—fide Rchb.

E. syringothyrsus, *Rchb. f.*—A tall-growing and extremely handsome cool house species, the moderately slender tufted stems of which attain a height of three to four feet, and are clothed with distichous sheathing elliptic-lanceolate recurved leathery leaves, which are about six inches long, and of a light green colour. The flowers are produced in dense ovoid racemes, which bear from seventy to eighty flowers on long slender pedicels, which are of a reddish purple like the flowers, the sepals and petals being small elliptic-lanceolate, and the small three-lobed lip white on the disk with three tumid yellow calli, and of the same reddish purple as the rest of the flower in front.—*Bolivia*, elevation 7,000—8,000 feet.

FIG.—*Bot. Mag.*, t. 6145.

E. vitellinum, *Lindley*.—A beautiful dwarf-growing plant, one of the most brilliant of the family, and one which is very distinct in character. The pseudobulbs are ovate acuminate, and bear two oblong-ligulate acute glaucous leaves, and erect many-flowered racemes of brilliant vermilion-orange blossoms, of which the sepals and petals are ovate-lanceolate, and the lip linear-acuminate and together with the column of a bright yellow colour. It blossoms during the autumn months, and lasts six weeks or more in good condition. This is best grown in the Mexican house, as it delights in an abundance of light; but it will also do well with the *Odontoglots* in the cool house, and requires plenty of moisture at the roots.—*Mexico*; *Guatemala*, on cloud-capped mountains amidst continual mists.

FIG.—*Sertum Orch.*, t. 45; *Bot. Reg.*, 1840, t. 35; *Bot. Mag.*, t. 4107; *Moore, Ill. Orch. Pl.*, *Epidendrum*, t. 1; *Paxt. Mag. Bot.*, v. 49, with tab.; *Fl. des Serres*, t. 1026; *Ill. Hort.*, t. 4; *Otto & Deit., Allg. Gartenz.*, 1855, t. 9.

E. vitellinum majus, *Hort.*—This beautiful variety is of the same colour as the typical *E. vitellinum*, the only difference being in the size of the flowers, which are considerably larger,

the sepals and petals broader, and very thick and fleshy in texture. It usually flowers during the summer months, and lasts in bloom for an immense time. It sends up from the top part of the bulbs its brilliantly-coloured blooms, which issue from a sheath formed in autumn. The plant requires the same treatment as the type. Mr. R. Warner, of Chelmsford, grows a large quantity of this plant with his *Odontoglossums*, and the effect of these when in flower and interspersed with them is charming. It is, moreover, one of the best Orchids for exhibition purposes on account of its lasting such a long time in perfection. It is easily packed and bears travelling well; we have used a specimen



EPIDENDRUM VITELLINUM
MAJUS.

as many as five or six times at different shows. For home growth its distinct colour claims for it a place in every collection.—*Mexico*.

FIG.—*Orchid Album*, i. t. 4; *Floral Mag.*, t. 261; *Jennings, Orch.*, t. 31; *Puydt, Les Orch.*, t. 20.

E. Wallisii, *Rchb. f.*—This wonderful species is comparatively new to our collections. It is one of those which do not form pseudobulbs, but instead produces tall leafy stems, several feet in height, which are spotted with brownish purple, and clothed with distichous leaves. The peduncles are both lateral and terminal, and bear elegant drooping racemes of flowers, which intermingled with the foliage produce a most charming effect. The flowers are numerous and showy, about an inch and a half across, and sweet-scented; the ligulate-oblong sepals and petals are rich golden yellow marked with small carmine-crimson spots; and the lip is broad, cuneately flabellate, white, with radiating feathery minutely tubercled lines of magenta-purple. It flowers during the months of October and November, and continues from three to five months in perfection.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 74.

EPISTEPHIUM, *Kunth.**(Tribe Neottieæ, subtribe Vanillaæ.)*

A genus of terrestrial Orchids allied to *Sobralia*, from which it differs by the sepals being free, and surrounded at the base by a shallow-toothed calyculate rim, those of *Sobralia* being connate, and having no rim at the summit of the ovary. They are erect-growing, with rigid coriaceous nervose leaves, and showy flowers in terminal racemes. Some half-dozen species from Tropical South America are known to botanists.

Culture.—Being a terrestrial species, the crowns should not be elevated above the rim of the pot. They succeed best when potted in fibrous loam and sand, and must have good drainage as they require a liberal supply of water; they will do well in the *Cattleya* house.

E. Williamsii, *Hook. fil.*—This beautiful and remarkable plant is so nearly allied to the *Sobralias*, that it was introduced under the name of *S. sessilis*. Its root consists of a tuft of fleshy underground fibres, and it grows upwards of a foot high. The stems are erect, a foot to a foot and a half high, with semiamplexicaul leaves, very dark green and shining in the upper part, those on the lower part of the stem diminished. The flowers are large, six or eight on a terminal spike, of a bright mauve, the linear-oblong sepals, the broader oblong petals, and the front margin of the lip wholly mauve colour, the roundish terminal lobe of the deeply bifid lip with a broad white space near the base, surrounded by a band of deep reddish purple, the disk bearing a small crest of long yellow hairs.—*Bahia*.

FIG.—*Bot. Mag.*, t. 5485; *Batem. 2nd Century Orch. Pl.*, t. 103.

ERIOPSIS, *Lindley.**(Tribe Vandææ, subtribe Cyrtopodieæ.)*

A small genus of epiphytal Orchids, with pseudobulbous stems, long plicately venose leaves, and racemose flowers

distinguished by their spreading sepals, by the large lateral lobes of the lip loosely enfolding the wingless column, while the middle lobe is much reduced and spreading, and by the collateral lamellæ on the disk. Three or four species from Tropical South America are known.

Culture.—These plants succeed best potted in peat, with good drainage, and require a liberal supply of water at the roots, with full exposure to the sun; they are propagated by dividing the bulbs. The coolest house will suit them.

E. biloba, *Lindley*.—A showy evergreen species of a distinct aspect. It has elongate ovate terete pseudobulbs three inches long, with two or three broadly lanceolate plicate dark green leaves at the top, and throws up from the base a long erect dark purple peduncle bearing a raceme a foot high or more of numerous gaily-coloured flowers, which are about an inch across, and have a short chin. The sepals and petals are short oblong, blunt, yellow with orange-red margins; and the lip is yellow, minutely spotted with brown, subcordate ovate, the front lobe much contracted and bluntly retuse, the disk bearing a crest of several collateral triangular lamellæ, and the column green, semiterete, bent down over the concave lip.—*New Grenada; British Guiana.*

FIG.—*Bot. Reg.*, 1847, t. 18.

SYN.—*E. Schomburgkii*.

E. rutidobulbon, *Hook.*—A fine evergreen species, of larger and stouter habit than *E. biloba*. Its pseudobulbs are ovate-oblong, terete, much wrinkled on the surface, and of a purplish black colour, surmounted by a pair, rarely three, broad lanceolate nervose leaves, and producing from the base of the pseudobulb a dark purple terete scape a foot and a half long, bearing a drooping raceme of numerous handsome flowers. The sepals and petals are spreading oblong obtuse, dull orange-yellow with reddish purple margins; the lip is about the same length, is three-lobed, the disk striated and lamellate, with a dull crest, the broad lateral lobes involute, and the front lobe much smaller, orbicular, and obscurely emarginate, white with dark purple spots, the other parts dull orange-red dotted with dark purple. The individual flowers are nearly

two inches across.—*New Grenada: Antioquia, on palm stems fully exposed to the sun*—elevation 4,000 to 5,000 feet.

FIG.—*Bot. Mag.*, t. 4437; *Pescatorea*, t. 20; *Annales de Gand*, 1849, t. 253.

EULOPHIA, *Robert Brown.*

(*Tribe Vandææ, subtribe Eulophiææ.*)

A genus of terrestrial Orchids, having leafy stems, which sometimes become thickened into pseudobulbs at the base, the leaves distichous and plicately nerved, and in the genuine species producing leafless scapes from the base of the stem, some few anomalous species, however, flowering from the apex of the leafy stem. Among the Vandæous genera with pseudobulbs and plicate leaves, its chief peculiarity is the presence of a gibbose sac or spur at the base of the lip. The fifty species which are known are most abundant in Tropical and South Africa, the others occurring in Tropical Asia, with one or two in Australia, and an erratic species appears to have been found in Brazil.

Culture.—Very few species of this interesting genus are known in cultivation. They are best grown in pots, in a compost of good fibrous loam, leaf soil, and sand, with the addition of a little charcoal. The temperature of the Cattleya house will be found to suit them best. Propagation is effected by separating the pseudobulbs.

E. guineensis, Loddiges.—This is unquestionably the most ornamental species in cultivation, the others which we have seen, several in number, all producing inconspicuous flowers. The bulbs of *E. guineensis* are broadly pear-shaped, from an inch to an inch and a half in height, and from their crown proceed two leaves which are elliptic-lanceolate, plicate, and stalked. The flower scape is erect, three feet high, produced from the base of the pseudobulb, and terminates in a raceme of from seven to twelve flowers; the individual flowers are

about two and a half inches in diameter, the sepals and petals dull purplish green, the lip large, three-lobed, the middle lobe very blunt, undulated, white with crimson stripes at the base, the lateral lobes rolled, and the spur subulate. It flowers in September and October.—*West Tropical Africa*.

FIG.—*Loddiges, Bot. Cab.*, t. 818; *Bot. Mag.*, t. 2467; *Bot. Reg.*, t. 686.

E. guineensis purpurata, *Rehb. f.*—A very rare and beautiful variety of *E. guineensis*, having flowers much richer in colour than in the ordinary forms; sepals and petals deep rosy purple, lip rich bright magenta, traversed by deep crimson veins. The pseudobulbs are roundish ovate, and the somewhat plicate leaves are oblong-acuminate, six inches long, narrowed below into a petiole. The scapes, which rise from the base of the bulbs, are a foot or more in height, and bear a raceme of seven to ten pedicellate spurred flowers. The sepals and petals are linear-acuminate, deep rosy purple, all directed upwards, and the broad roundish-ovate pointed front lobe of the lip is of a bright magenta, traversed by crimson flabellate veins, which become deep rosy purple as they converge towards the base, the extreme base being white, and the short blunt side lobes blush. The slender spur is deep purple, and the column rosy purple. It is a charmingly beautiful richly coloured plant.—*West Tropical Africa*.

FIG.—*Orchid Album*, ii. t. 89.

GALEANDRA, *Lindley*.

(Tribe Vandææ, subtribe Eulophiææ.)

Some of the species belonging to this genus are small-flowered, and possess little beauty to attract the attention of amateurs; a few, however, have large and beautifully coloured blossoms, and are well deserving general cultivation. They are deciduous terrestrial or epiphytical plants, with erect slender distichous plicate leaves, becoming consolidated at the base into tuberiform or elongated stems, which produce their racemose inflorescence from the top, just as they have finished their growth. Their flowers are peculiar in the lip assuming the

form of a broad funnel-shaped spur. Some half-dozen species from Tropical America are described.

Culture.—These plants are best grown in pots, with peat and good drainage, in the East Indian house, and should have a good supply of water at their roots during their period of growth. Afterwards they should be moved into the Cattleya house, and placed near the glass, but not kept too dry. When growth commences they should be replaced in the East Indian house, and be freely supplied with water. *Galeandras* are somewhat difficult to cultivate, and in the growing season require strict attention in regard to keeping their leaves free from the red spider and the thrips, which may be done by carefully syringing the plants twice a day in warm weather.

G. Baueri, *Lindley*.—A desirable dwarf epiphytal species, growing about a foot high, the young stems leafy with a bulbiform base, growing up and developing the drooping corymbiform inflorescence from the apex; as these stems become matured they form at the base an ovate-acuminate pseudobulb. The leaves are several in number, lanceolate and three-nerved, and the peduncles are clothed with linear-lanceolate sheathing leafy bracts. The sepals and petals are linear-oblong acute, all spreading or directed upwards, brownish green, the two petals darkest; and the lip large, rolled round the column, the front lobe emarginate and crenellate, purple in front, white exteriorly, the base extended into a narrow extinguisher-shaped spur. The colour of the flowers varies in brightness. The blossoms are produced in the months of June, July, and August, and continue in perfection a long time. This makes a fine plant when well grown, and it is worth all the care that can be bestowed upon it. When Mr. Schröder's collection was intact, he invariably exhibited this plant in splendid condition at Chiswick; we have never seen it so good since, which is to be regretted. Indeed it is now a rare plant, but we trust we may soon get some fresh importations.—*French Guiana; South Mexico; Guatemala.*

FIG.—*Bot. Reg.*, 1840, t. 49; *Paxton, Mag. Bot.*, xiv. 49, with fig.; *Bauer, Ill. Orch. Pl.*, t. 8; *Batem. Orch. Mex. et Guat.*, t. 19 (icon. phantastica); *Puydt, Les Orch.*, 196, fig. 193.

G. cristata, *Lindley*.—A desirable dwarf-growing species, about eight inches high, with the habit of *G. Devoniana*. The flowers, which are produced in a drooping raceme, are, however, much smaller, and of a pink and dark purple colour; they have the linear-lanceolate sepals and petals reflexed, and the lip convolute, crisped at the edge and pubescent within, with two keels at the base; the spur is acuminate, horizontal, and the anther has a peculiar rhomboid purple crest mounted on a white shaft. These flowers appear in July and August, and last four or five weeks in perfection.—*Cayenne*.



GALEANDRA DEVONIANA.

FIG.—*Lindley, Sert. Orch.*, t. 37; *Bot. Mag.*, t. 4610; *Batem. 2nd Cent.*, t. 152; *Warner, Sel. Orch. Pl.*, i. t. 37; *Paxton, Mag. Bot.*, viii. 145, with tab.; *Illust. Hort.*, t. 176; *Maund. Bot.*, v. t. 231; *Lem. Jard. Fl.*, t. 195.

G. Devoniana, *Lindley*.—A beautiful epiphytal Orchid of slender habit, growing about two feet high—five to six feet in its native haunts. The stems are erect, terete, and when young have many leaves, which are lanceolate, sheathing, and three-nerved. The blossoms, which are produced in pendent racemes from the top of the stems, have ascending lance-shaped sepals and petals of a darkish purple with green margins; the lip is large, broadly obovate, the sides meeting over the column, the front projected forward, white, the apex thickly striped and pencilled with purple, the disk bearing four lamellæ, and the spur at the base being green and recurved. It blooms at different times of the year, and remains a long time in beauty.

G. dives, *Rchb. f.*—A very pretty dwarf-growing epiphytal species, with stout erect cylindrical stems, lanceolate acuminate leaves, and flowers produced from the top of the stems in drooping racemes in August and September. The sepals and petals are subequal lanceolate acuminate, reddish brown, and the lip transversely rhomboid, retuse in front, creamy



GALEAND.



NIVALIS



white suffused with pink, and produced into a large extinguiser-shaped spur behind. In the *Bot. Mag.* figure referred here by Reichenbach, the flowers are yellow, with the front part of the funnel-shaped lip for about one-third its length marked by sanguineous lines.—*Tropical America: New Grenada.*

FIG.—*Bot. Mag.*, t. 4701 (as Baueri).—f. Rchb.

G. Harveyana, *Rchb. f.*—This is a pretty novelty, named in honour of E. Harvey, Esq., of Riversdale Road, Aigburth, Liverpool, a great enthusiast in Orchid culture. In its habit of growth the plant resembles *G. Devoniana*. The flowers grow in short racemes, and have cuneate-oblong sepals and petals of a sepia-brown colour, and a light yellow lip, with a tuft of hair on the anterior portion of the disk; the lip is dilated in front, and parted into three obtuse lobes, and at the base is extended into a slightly curved spur. The column is bordered on each side with mauve.—*Tropical America.*

G. nivalis, *Hort.*—This is a very rare and distinct epiphytal species, and has been recently flowered by Sir Trevor Lawrence, Bart., M.P. It has slender erect fusiform glaucous stems, long narrow lanceolate grassy leaves, and drooping racemes of rather pretty flowers, which are produced in March, each about two inches in length, and having narrow reflexed rich olive-coloured sepals and petals, and a white lip, funnel-shaped at the base, the front lobe broad, flat, expanded and emarginate, and marked with a large central violet-coloured blotch.—*Tropical America.*

FIG.—*Gard. Chron.*, N.S., xvii. 537, fig. 85.

GONGORA, *Ruiz et Pavon.*

(Tribe Vandææ, subtribe Cyrtopodieæ.)

This genus is somewhat despised by Orchidists, yet it contains some very interesting and free-flowering species, which, as nearly all of them are fragrant, have a claim to our attention. They are compact-growing evergreen pseudobulbous epiphytes, each bulb having two broad plicate leaves contracted into a stalk-like base, and they bear long drooping racemes of

singular grotesque-looking richly coloured flowers on scapes which spring from the base of the pseudobulbs. The flowers have the petals and the erect dorsal sepal adnate with the back and sides of the column, and a very peculiar hollow fleshy lip, having two or more awns or horns from near its base. About a score of species are known, all Tropical American.

Culture.—In the earlier days of Orchid culture one often saw fine specimens of *Gongora*, but latterly they seem to have become quite neglected, though they bear a really elegant inflorescence, and are of varied and attractive colours. As the flower spike is pendulous and produced from the base of the pseudobulbs, the plants are best grown in baskets with peat and moss; indeed the spikes are extremely liable to injury if grown in pots. The temperature of the cool end of the Cattleya house suits them well; they enjoy a liberal supply of water during summer, both on the foliage and at the roots, but a very little will suffice in winter, though even then the pseudobulbs should not be allowed to shrivel.

G. atropurpurea, *Hook.*—An old but pretty species, compact in growth, with oblong-cylindrical ribbed pseudobulbs, bearing at the top two large ovate-lanceolate light green leaves, and from the base very long drooping racemes of numerous dark purple-brown or chocolate-coloured purple-spotted flowers, which are produced during the summer months. The flowers are peculiar in form, the sepals lanceolate, the upper one springing from the back of the column smaller than the other two, which are spreading; the petals are quite small, incurved, fixed near the base of the upper sepal and some distance above the lateral ones. The lip is nearly an inch long, standing out at a right angle with the rest of the flower. At the base is a cylindrical claw, above which are four horns, two obtuse and two acuminate; the apex is laterally compressed, acuminate, forming a vertical plate, double at its upper edge, and gibbous at its base. The column is very long, curved, broadest upwards, semi-cylindrical, bearing on its back and

sides the upper sepal and the two petals; the pedicels are purple.—*Trinidad*.

FIG.—*Bot. Mag.*, t. 3220; *Hook. Exot. Fl.*, t. 178; *Maund, Bot.*, iii. t. 108.



GONGORA ATROPURPUREA.

G. bufonia, *Lindley*.—An interesting species resembling *G. maculata* in its mode of growth, having both the pseudobulbs and leaves of a pale whitish green. The flowers in this species are of a dull pale wine-purple, very irregularly stained and spotted on an obscure yellowish white ground, and bear a pair of long setaceous bristles on the hypochil; the pedicels are purple. The variety *major* has larger flowers than those of the type.—*Brazil*.

FIG.—*Bot. Reg.*, 1841, t. 2.

G. maculata, *Lindley*.—This rather handsome plant grows about eighteen inches high, and has ovate-oblong strongly-ribbed pseudobulbs, dark green five-nerved broadly lanceolate leaves, and long drooping racemes upwards of a foot in length, and produced from the base of the bulbs, of elegant flowers, which are of a clear yellow with bright reddish brown bars

and spots, and very showy, the whole of the parts of the flower being similarly spotted; the sepals are lanceolate acuminate, which gives the flowers a very light and pleasing character; the pedicels are of a pale purple; it blooms in May.—*Demerara; Surinam; Peru; Guatemala.*

This plant appears to be very variable according to Reichenbach, who places it under *G. quinquenervis* of Ruiz and Pavon, and includes with it *G. fulva*, *G. fulva vitellina*, *G. bufonia leucochila*, and *G. leucochila*.

FIG.—*Bot. Mag.*, t. 3687; *Bot. Reg.*, t. 1616; *Id.*, 1847, t. 17 (*bufonia leucochila*); *Id.*, 1839, t. 51 (*fulva*); *Fl. des Serres*, t. 37 (*leucochila*).

SYN.—*G. quinquenervis*.

G. maculata alba, *Lindley*.—A handsome and distinct form of the preceding species, which it very much resembles, but the pseudobulbs are more deeply ribbed; the flowers, which are pure white, with a few spots of rose on the lip, are produced about the month of May.—*Guiana.*

G. odoratissima, *Lem.*—This showy species has oval deeply furrowed pseudobulbs, broadly lanceolate plicate leaves, and long green peduncles bearing many-flowered drooping racemes of large spreading and showy flowers of a clear yellow colour richly and heavily blotched and mottled with bright reddish brown, which is of a darker hue towards the edges and points; the pedicels are green. The upper sepal and petals are adherent to the back and sides of the curved column, while the lip is continuous with its base, clawed, the basal part (hypochil) arched and laterally compressed with a pair of petaloid processes on the back truncate above, with two angles bearing thread-like processes, while the upper part (epichil) is acutely elongate ovate, the sides folded together face to face, attenuated to a point.—*Venezuela.*

FIG.—*Fl. des Serres*, t. 229; *Gard. Mag. Bot.*, 1850, ii, 73 (*Jenischii*).

SYN.—*G. Jenischii*.

G. portentosa, *Lind. et Rehb. f.*—A compact-growing large-flowered handsome species, with oblong-ovate furrowed pseudobulbs three inches high, broadly lanceolate acute nervose leaves, and long drooping racemes of long-stalked yellow flowers from the base of the pseudobulbs. The dorsal sepal is ligulate acute, the lateral ones oblong apiculate, all buff yellow, spotted faintly with purple; the petals are fleshy, linear falcate, white dotted with purple, and the lip is compressed, deep yellow, the hypochil having two retrorse awns near the

base of the two dolabriform laminae which fold up to form a hollow, with a straight linear horn at the summit. The flowers have the parts more or less dotted with minute purplish or dull red spots; the pedicels are greenish straw-colour.—*New Grenada*.

FIG.—*Illust. Hort*, 3 ser. t. 61.

G. tricolor, *Richb. f.*—One of the handsomest of the *Gongoras*, having oblong-ovate thickly ribbed pseudobulbs, bold plicate leaves, and fine stout drooping racemes of bright-coloured flowers of comparatively large size. The dorsal sepal, affixed half-way up the back of the column, is lanceolate, and as well as the lateral ones, which are obliquely triangular, broad at the base, narrowing upwards, deep bright yellow heavily spotted and blotched with rich sienna brown; the petals are small, narrow, pale yellow, lightly spotted; the lip is prettily marked, the hypochil being white, oblong, convex, and two-horned at the base, the front truncate, with acute angles extended into two long awns, white with one or two dark brown spots, and the epichil acuminate, stained on the sides with cinnamon (bright rose in the figure); the pedicels are purple.—*Panama* or *Peru*.

FIG.—*Bot. Reg.*, 1847, t. 69.

SYN.—*G. maculata tricolor*.

G. truncata, *Lindley*.—A fine and very distinct species, with light-coloured flowers of full average size. The habit of the plant as regards the pseudobulbs, foliage, and inflorescence resembles that of the other species. The chief peculiarity is in the flowers, which are whitish or straw-coloured, marked by a few brownish purple transverse freckles, the lip being a clear varnished yellow. The dorsal sepal is obovate carinate, the lateral ones roundish oblong and so blunt-ended that the buds before expansion resemble a bean in form; the petals are small and the lip is curved, the hypochil compressed in the middle and bearing a pair of awns in front, while the epichil, or anterior portion, is ovate and channelled, and when turned up is suggestive of the form of the front part of a gondola; the pedicels are mottled purple.—*Mexico*.

FIG.—*Bot. Reg.*, 1845, t. 56; *Ann. de Gand*, 1848, t. 205.

GOODYERA, *Robert Brown.*

(Tribe Neottieæ, subtribe Spirantheæ.)

An interesting genus of dwarf-growing plants, with compact fleshy stems, and much of the general character and aspect of *Anæctochilus*, which they also resemble in the dark velvety green leaves which many of them possess, and which in some cases are marked by silver or golden lines. The flowers have the dorsal sepal and petals connivently galeate, and the sessile lip has the small lamina undivided. The plants have thick fleshy roots, and push from underground stems, forming neat dwarf tufted plants. The flower spikes, which issue from the centre of the foliage, attain a height of from six to ten inches, some of the kinds bearing delicate white flowers, which are very useful for bouquets, as well as for other purposes. The genus contains many species, which are widely distributed, occurring in Europe, Madeira, North America, Temperate and Tropical Asia, New Caledonia, and the Mascaren Islands.

Culture.—Some of the *Goodyeras* are of easy culture, while others are difficult to manage, but with care they may all be had in perfection, and when this is attained, they amply repay the trouble bestowed upon them. If grown in small pots, and intermixed with different forms of *Anæctochilus*, they have a fine appearance, the foliage of the *Goodyeras* forming a beautiful contrast with them; they do not, however, require the same attention, but, on the contrary, will do in any close house where there is a little warmth. The soil we use is peat and sand, with a little loam, and we give a liberal supply of water to the roots during the growing season. They are propagated by cutting up the plants so as to have a portion of root attached to each piece of the stem. They may be grown

where there is no Orchid house, as a mixed stove suits them perfectly. For further particulars see *Anæctochilus*.

G. Dominii, *Hort.*—A beautiful hybrid, raised in Messrs. Veitch's nursery, and as regards foliage one of the best forms we have seen. The leaves are larger than those of *Hæmaria discolor*, having a dark bronzy velvet-like appearance, with several prominent lines running their whole length, of a lightish colour—nearly white, and interspersed with smaller veins. It is a useful addition to this class of plants, as it forms a good contrast with *Anæctochilus*.—*Garden hybrid*.

G. macrantha, *Maximowicz*.—A very neat and pretty dwarf-growing terrestrial Orchid, and a valuable acquisition to the cool house. The leaves are dark velvety green with a pale green central band, and beautifully netted over the surface with a lighter shade of the same colour; the under surface being pale green. The flowers grow in short terminal spikes of two or three together, and are about an inch long, of a pretty rosy pink colour, the petals and lip white. It belongs to the section *Georchis*, which has a cylindraceous tubulose perianth, with all the parts—sepals, petals, and lip—linear, the upper one united with the petals.—*Japan*.

G. macrantha luteo-marginata, *Maxim.*, is a very choice variety, in which the leaves have, besides the elegant reticulation, a distinct and effective marginal band of creamy yellow.—*Japan*.

FIG.—*Flore des Serres*, tt. 1779, 1780; *Gartenflora*, t. 533, fig. 2; *Florist and Pom.*, 1867, 227, with fig.; *Gard. Chron.*, 1867, 1022, with fig.

G. picta, *Hort.*—A distinct species, growing about three inches high. The leaves are an inch and a half long, light pea-green, with a paler band running through the entire leaf. We have not seen it in flower, but it is worth growing on account of its foliage. A rare plant, whose roots are not so thick as those of some other kinds, and which therefore requires more care in its cultivation.—*Native Country not known*.

G. pubescens, *R. Br.*—A charming dwarf evergreen species, with a tuft of ovate dark green leaves marked with a silvery white costa, and closely reticulated with paler veins, so that in appearance it is something like *Physurus argenteus*. The flower scape rises from the centre of the leaf tuft, about

eight or ten inches, and on its upper half is thickly furnished with small white flowers, which, though not showy, are pleasing. It is, however, well worth growing for its beautiful foliage. The plant requires a cool house or pit to grow it in perfection; it is not difficult to manage, but requires great care, as it is often destroyed by being placed in too great heat. It should be grown in pots, not too large, giving a liberal supply of water during the growing season; in fact, it should never be allowed to get dry at the roots.—*North America*.

FIG.—*Flore des Serres*, t. 1555; *Lindl. Coll. Bot.*, t. 25; *Sweet, Brit. Fl. Gard.*, 2 ser., i. t. 47; *Lodd. Bot. Cab.*, t. 1.

G. Rollissoni, *Hort.*—A most distinct and beautiful species. The leaves are rich dark green, margined, striped, and blotched with pale yellow on the upper side, whilst below they are of a rich velvety purple. A most desirable plant, and one that should be in every collection.—*Native Country not known*.

G. rubrovenia, *Hort.*—A charming and distinct species, having the habit of *Hæmaria discolor*. It grows several inches high, and has bronzy velvet-like foliage, with three bands of coppery red down each leaf; it has thick fleshy roots, and is of easy culture under bell-glasses or in frames. We have grown it along with *Anæctochilus* for several years on account of its foliage, but it will do in a pot with the same treatment as is usually given to the *Hæmaria*.—*Brazil*.

G. tessellata, *Lodd.*—A neat and pretty plant with the aspect of *G. pubescens*, but of smaller growth, whence it has been called *G. pubescens minor*. It is a dwarf evergreen species, with ovate leaves tapered into a stalk, the green surface beautifully marked with pale green or whitish reticulations. The flowers are white, produced in slender erect spikes. It should be treated like *G. pubescens*.—*North America*.

G. Veitchii, *Hort.*—A hybrid of vigorous habit, raised by the Messrs. Veitch between *G. discolor* and *Anæctochilus Veitchii*; the leaves are of a rich deep reddish brown colour, marked with a few silver ribs.—*Garden hybrid*.

G. velutina, *Maxim.*—A handsome and striking dwarf evergreen species, with ornamental foliage, and well adapted for the cool house. It has deep purplish bottle-green velvety ovate leaves, marked with a very distinct central bar of silvery

white, and purple on the under side. The flowers are small, in ten-flowered spikes, and of a cheerful rosy pink colour. It is of robust though dwarf and compact in habit, and of free and easy growth.—*Japan*.

FIG.—*Flore des Serres*, t. 1779; *Gartenflora*, t. 533, fig. 1.

GOVENIA, *Lindley*.

(Tribe *Vandææ*, subtribe *Cyrtopodiææ*.)

A small genus of terrestrial Orchids, some few of which are of sufficient interest and beauty to be worthy of a place in collections of these plants. They are herbs, with tuberiform rhizomes, from which grow up the erect stems, bearing a few leaves, and crowned by a raceme of numerous flowers of medium size, which are singular in form and prettily marked; the sepals are connivent, the lateral ones falcate or decurved, and with the foot of the winged column forming a short mentum or chin; and the lip, which is articulated with the foot of the column, is undivided. About a dozen species are known, natives of Mexico, Brazil, and the West Indies.

Culture.—These plants should be grown in the cool house, in a mixture of loam and leaf-mould with a little sand added. After their growth is finished give them a good season of rest, and keep dry till they begin to grow.

G. deliciosa, *Rehb. f.*—A rather pretty species, quite distinct in character from any other Orchid. It has a tuberous root-stock, from which proceeds an erect stem some foot and a-half in height, furnished with two lanceolate acuminate nervose leaves about nine inches long, the bases of which are enclosed with that of the stem in a pair of basal bracts; at the top of the stem is a raceme of six or eight bracteated flowers, whose pedicels are dull red, the flowers themselves being white, with oblong-lanceolate sepals and petals, and an elliptic apiculate lip, which is yellow at the base, the front half white covered with round purple dots.—*Mexico*.

GRAMMATOPHYLLUM, *Blume.*

(Tribe Vandææ, subtribe Cymbidicæ.)

A small genus of somewhat large-growing plants, well worth a place in collections where there is accommodation for them. *G. speciosum* makes a magnificent specimen, having a noble appearance, but it requires considerable space to grow it to perfection. They are all stout-growing epiphytes with elongate or pseudobulbous stems, distichous venose leaves, and long simple scapes from the base of the stems, bearing loose racemes of many showy flowers. Bentham adopts Reichenbach's view in separating *G. Ellisii* under the name of *Grammanjis*, distinguished among other points by its petals and lip being much smaller than the sepals, and by its two-winged column. There are some half-dozen species found in Malacca and the Malay Archipelago and in Madagascar.

Culture.—The plants must be well grown, and after they have made a few strong growths, should have a decided season of rest. They require to be grown in peat, in a pot of ample size, and with good drainage; a liberal supply of water at the roots must also be given to them during the growing season. The East Indian house is the proper place in which to keep them throughout the year. They are propagated by parting the bulbs.

G. Ellisii, *Lindley*.—A charming and most attractive deciduous species, introduced by the late Rev. W. Ellis, of Hoddesdon, in compliment to whom it is named. It is a plant of smaller growth than *G. speciosum*, and more free-flowering, producing its flower scapes from the base of the pseudobulbs along with the young growths. These pseudobulbs are clavato-fusiform, quadrangular, a foot or more in length, and bear several distichous broadly lorate arching leaves, one and a half to two feet long; the flowers form a recurved raceme, and are tawny yellow, closely marked by

transverse lines of reddish brown on the lower part, and having a blotch of the same near the acuminate inflexed tip, which is dull yellow, the dorsal sepal fornicate, and the two lateral ones saccato-gibbose at the base; the petals and lip are smaller, the latter white streaked with reddish purple. The flowers, which are large and numerous (thirty to forty), have a peculiar varnished appearance. It blooms in July and August, and remains some time in beauty. This plant may be made to succeed in a basket or on a block suspended from the roof, provided it has a plentiful supply of water.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5179; *Batem. 2nd Cent. Orch. Pl.*, t. 176; *Fl. des Serres*, tt. 1488—89; *Orchid Album*, iv. t. 147.

SYN.—*Grammangis Ellisii*.

G. speciosum, *Blume*.—A magnificent Orchid with the habit of a *Cyrtopodium*, and of which it has been remarked, that it richly merits the title of the Queen of the Orchidaceous Plants. It has erect clustered terete compressed stems, five to ten feet high, having a few large appressed scales below, and clothed in the upper part with distichous sheathing lorate leaves a foot and a half to two feet long, and dilated at the base. The scape issues from the base of the stem, is as thick as one's finger, and grows five to six feet high. The flowers measure nearly six inches across, and are of a deep yellow thickly spotted with reddish brown, the sepal and petals being broadly oblong and blunt-ended, the small three-lobed lip yellow streaked with brownish red, the disk sulcate with three raised plates, and the red lines of the front lobe bristling with short hairs. It blooms during winter, and will last a long time in perfection if the flowers are kept dry.—*Java; Lampong; Malacca; Singapore; Cochin China*.

FIG.—*Bot. Mag.*, t. 5157; *Fl. des Serres*, t. 1386; *Batem. 2nd Cent. Orch. Pl.*, t. 181; *Paxt. Fl. Gard.*, ii. t. 69; *Lem. Jard. Fl.*, t. 235; *Blume, Bijdr.*, 377, tabell. 20; *Id., Rumph.*, iv. t. 191; *Gard. Chron.*, n.s., x. 180, with fig.

HÆMARIA, *Lindley*.

(Tribe Neottieæ, subtribe Spirantheæ.)

A neat and pretty dwarf-growing stove plant related to *Goodyera*, to which it was formerly referred. It differs, however, amongst other points, in having divergent instead

of connivent lateral sepals, and a clawed instead of sessile lip, the limb of which is bilobed. It has the general habit of the *Anæctochiloid* group, and produces its erect spikes of white flowers very freely. There are some three or four species, which are natives of China, Cochin China, and the Malayan Archipelago.

Culture.—A useful stove plant when grown in five or six-inch pots, several plants being put into a pot so as to make up a good specimen. We grow many of them in this way for blooming during the winter months, placing about six plants in a pot. They should be grown vigorously so as to ensure an abundance of bloom. In other respects the treatment noted for *Goodyera* will suit them. Even without any flowers, the plants themselves are by no means unattractive. See also under *Anæctochilus*.

H. discolor, *Lindley*.—A very handsome and free-blooming dwarf Orchid of the variegated foliage group. It grows about ten inches high, and has deep purple fleshy stems, clothed with ovate leaves of a beautiful dark velvety green, purplish red beneath, and having a white bar in the centre through their entire length. The flowers are white, with a little yellow in the centre, and are produced in winter, lasting a long time in perfection.—*Hong Kong*.

FIG.—*Lodd. Bot. Cab.*, t. 143; *Bot. Reg.*, t. 271; *Bot. Mag.*, t. 2055.

SYN.—*Goodyera discolor*.

H. discolor Dawsoniana, *Rchb. f.*—A very ornamental-leaved variety, which was at first distributed as an *Anæctochilus*. The leaves are large, ovate, stalked, blackish bronzy green on the upper side, and very glossy, with about seven bold lines of a beautiful golden coppery hue traversing them from base to apex, and connected by smaller reticulations of the same colour; the under side is of a uniform dull purple. The flowers, which are white, are freely produced, and become useful for bouquet-making.—*Malay Islands*.

FIG.—*Fl. des Serres*, t. 1830.

SYN.—*Anæctochilus Dawsonianus*; *Anæctochilus Dawsonianus*; *Goodyera Dawsoniana*.

H. discolor Ordiana, *Williams*.—A very desirable plant, which in habit, and in the shape of the leaf, closely resembles *H. discolor Dawsoniana*, but the colour is a vivid green, instead of a deep brown, the leaves being lined out with golden veins.—*Malay Islands*.

SYN.—*Goodyera Ordiana*.

HELICIA, *Lindley*.

(Tribe Vandææ, subtribe Oncidiææ.)

A pretty dwarf-growing Orchid, the sole representative of a genus, which some of our great authorities merge in *Trichopilia*. It is a pseudobulbous epiphyte, with solitary coriaceous leaves, and peduncles springing from the base of the bulbs. It differs from *Trichopilia* amongst other things in its column standing erect and clear of the lip, instead of being rolled up in the latter; it has, moreover, a deep fringed border to the anther-bed, and the lip is contracted near the middle, and below that furnished with a pair of thick fleshy erect lobes, hollowed out in the middle, standing up on each side of the column without touching it. It is from Tropical America.

Culture.—This is a small compact-growing evergreen plant, and succeeds well in the cool house. It is best grown in a pot with peat, moss, and good drainage, keeping it moist in the growing season.

H. sanguinolenta, *Lindley*.—A very pretty dwarf tufted plant, with somewhat the habit of *Trichopilia*. It has ovate elongate pseudobulbs, undulated leathery petiolate leaves four to six inches long, and numerous radical decurved scapes, each bearing a rather showy flower two and a half inches across; the sepals and petals are narrow oblong, yellowish olive-colour marked with transverse bands of brownish crimson, or, according to the figure in *Illustration Horticole*, with beautiful ocellate markings of the same colour; the lip

is broad obovate emarginate, recurved, white flabellately veined, the veins in the basal half marked out by broken lines of crimson.—*Andes of Guayaquil; Ecuador.*

FIG.—*Illust. Hort.*, 3 ser., t. 31; *Pact. Fl. Gard.*, ii. 97, fig. 182.

HOULLETIA, *Brongniart.*

(Tribe Vandeeæ, subtribe Stanhopieæ.)

A small group of epiphytes, with large loosely racemose flowers, well worth cultivating on account of their distinctness, though they have been somewhat neglected by orchidologists. They have free spreading subequal sepals, and a narrow fleshy lip continuous with the column, the base hollowed or two-lipped, and the lateral lobes produced behind into retrorse curved horn-like processes, the broadish middle lobe articulated and undivided, often truncate or biauriculate at the base. They have one-leaved pseudobulbs, broad long-stalked plicately-venose leaves, and erect scapes rising from the base of the pseudobulbs. There are five species known, natives of Brazil and Columbia.

Culture.—The *Houlettias* grow best in pots, in peat with good drainage, and like a liberal supply of water during the growing season; they do well in the cool Odontoglossum house. Propagation is effected by separating the pseudobulbs just before they begin to grow.

H. Brocklehurstiana, Lindley.—A handsome, showy, and distinct species, which grows two feet or more high, and has conical furrowed pseudobulbs, and broadly lanceolate pale green leaves on long petioles. The flower scapes are stout, produced from the base of the bulbs, and are erect, ten to twelve-flowered, the individual flowers very fragrant, half-nodding, and measuring three and a half inches or more in diameter; the sepals are oblong, concave, and together with the spathulate petals are of a rich sienna-brown, spotted thickly with dark purple-brown, and the lip is yellow, more finely and thickly spotted with dark purple-brown, its side

lobes linear-lanceolate reflexed, and the middle lobe (epichil) ovately triangular, somewhat hastate, the lateral lobes being acuminate. The flowers as figured in *Paxton's Magazine* are of a much darker brown, and the lip whitish striped and spotted with purple.—*Brazil*.

FIG.—*Lindl. Sert. Orch.*, t. 43; *Bot. Mag.*, t. 4072; *Pescatorea*, t. 36; *Paxton, Mag. Bot.*, ix. 49, with tab.; *Gartenflora*, t. 229.

SYN.—*Maxillaria Brocklehurstiana*.

H. chrysantha, *Linden et André*.—A very beautiful species, quite distinct from any other. The pseudobulbs are elongate ovate, furrowed, bearing a tall ovate-lanceolate ribbed leaf on a longish petiole. The scape is erect, short, robust, of a deep red colour, bearing six or eight concave flowers, which are about two inches across, the sepals and petals similar, broadly obovate-obtuse cucullate, yellow and unspotted externally, golden yellow inside, profusely blotched with chocolate-purple, the lip rich yellow, approaching to orange, freckled with crimson.—*New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., t. 71.

H. odoratissima, *Linden*.—A very handsome species, of smaller stature than *H. Brocklehurstiana*. It has ovate ribbed pseudobulbs, from which spring the solitary long-petioled broadly lanceolate light green plaited leaves, the scape rising from the base of the bulbs to the height of about a foot and a half, and bearing nodding flowers three inches across, the sepals and petals oblong acute, pale dull purplish red, closely and faintly marked by darker lines, and the lip white, with its blunt subsagittate epichil stained with yellow, the horns of the hypochil being of a dull red. The name is applied in allusion to the exquisite and powerful odour of violets given off by the flowers.—*Columbia*.

FIG.—*Pescatorea*, t. 3.

H. odoratissima antioquiensis, *Linden*.—A very fine variety of the preceding, with dark green pseudobulbs and leaves, and an erect scape bearing many flowers; the sepals are much broader than the petals, and like them deep blood red, while the curious lip, which is very long and somewhat sagittate, is white, faintly tinged with pale yellow. It succeeds in a moderately cool temperature.—*Columbia*.

H. picta, *Linden et Rehb. f.*—A handsome and distinct plant, well worthy a place even in select collections. It has

tufted narrow ovoid furrowed pseudobulbs, from each of which one elliptic-lanceolate plaited leaf with a long slender petiole grows up. The erect robust scape is radical, and including the raceme, from eighteen to twenty inches high, six to ten-flowered, each flower being three and a half inches across; the sepals oblong bluntish, deep cinnamon, unspotted in the upper half, and closely tessellated with yellow in the lower half; the petals are smaller and more narrowed towards the base, but of a similar colour; the lip has a subquadrate or subtrapeziform hypochil with two long ascending spurs, yellow spotted with crimson-purple, the epichil broadly hastate, with two short recurved horns, and the deeply channelled apex recurved, pale yellow, marked closely with short transverse red-purple bars.—*New Grenada*, elevation 4,000 to 6,000 feet.

FIG.—*Bot. Mag.*, t. 6305.

H. tigrina, *Linden*.—A showy and exceedingly pretty species. The pseudobulbs are about two inches long, somewhat ovate, supporting long-stalked dark green erect plaited leaves, which are blunt at the end. The scape is about as thick as a swan's quill, greenish red, decurved, bearing handsome flowers, which are four inches in diameter, firm in texture, with oblong concave straw-coloured sepals richly mottled with deep rose, very acute three-lobed petals of a brilliant yellow barred with crimson, and a lip which is yellowish at the point, otherwise white speckled over with crimson.—*New Grenada*.

SYN.—*Paphinia tigrina*.

Huntleya Meleagris.—See BATEMANIA MELEAGRIS.

Huntleya marginata.—See WARSCEWICZELLA MARGINATA.

Huntleya violacea.—See BOLLEA VIOLACEA.

IONOPSIS, *Humboldt, Bonpland, and Kunth.*

(Tribe Vandææ, subtribe Oncidiææ.)

A genus of limited extent, of epiphytical habit, the short slender stems bearing thick narrow distichous sheathing leaves, and long slender rigid peduncles which proceed from the top or upper parts of the stem, and bear either simple racemes or

panicles of flowers ; these have a broad lip, which is prominent owing to the length of its claw. They are of Tropical American or West Indian origin. We specially recommend the species named below.

Culture.—These plants succeed best on a block, with a little live sphagnum moss round the roots, which require to be kept moist nearly all the year round. We have found them do well in the coolest house, suspended near the glass, where they continue in bloom for several weeks at a time. They are difficult plants to grow, for we seldom see them continuing to do well—indeed we often find them flowering themselves to death.

I. paniculata, *Lindley*.—A charming small free-flowering Orchid that ought to be in every collection. The leaves are six inches high, and proceed from very slender stems which scarcely form pseudobulbs. The flower scapes, which are a foot and a half high and branching, proceed from the axils of the leaves, the blossoms, produced twice a year, being of a pretty blush white, the broad roundish bilobed lip having a lovely purple spot on its base ; they vary, however, in colour, some being almost pure white, some pencilled with rose, and some white and yellow. According to Descourtilz, the scentless flowers remain fresh in their native forests from September or October till the following May.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5541.

IPSEA, *Lindley*.

(Tribe Epidendreæ, subtribe Eriæ.)

This small group of two species only is sometimes referred to *Pachystoma*. The *Ipseas* are terrestrial plants, with tuberous rhizomes, leafless scapes, and narrow lanceolate plaited leaves. The lateral sepals are oblique at the base, connate with the foot of the column, and saccate ; the lip is three-lobed, the lateral lobes large erect, and the middle one oblong obtuse

with the disk obtusely keeled. They come from Ceylon and India.

Culture.—The same as that recommended for *Bletia*.

I. speciosa, *Lindley*.—This is a beautiful terrestrial finely pubescent Orchid, with somewhat the habit of a *Bletia*. The rhizomes are tuberous, terrestrial, fleshy, as large or larger



IPSEA SPECIOSA.

than a nut, fascicled, subglobose with conical tops, from whence grow the slender lanceolate ribbed leaves six or eight inches long; from their base arise the leafless erect scapes, each furnished with several large flowers of a uniform rich orange yellow, marked by several parallel lines of reddish orange on the disk, which lines indicate the position of several bluntly keeled crests which are there developed.—*Ceylon*.

KELLENSTEINIA, *Reichenbach fil.*

(Tribe Vandææ, subtribe Cyrtopodiææ.)

A small genus of Vandeous Orchids belonging to the group *Cyrtopodiææ*, included by *Bentham* in the genus *Aganisia*.

They are small-flowered Tropical American plants, of little interest to growers of the choicer kinds of Orchids.

Culture.—The same as that recommended for *Aganisia*.

K. ionoptera, *Linden et Rehb. f.*—A rather nice plant, with leafy stems, cuneate oblong leaves, and a basal peduncle more than a foot long, bearing at top a raceme of flowers; these flowers, not very much larger than those of the Lily of the Valley, are white, with violet tips and streaks on the sepals, violet petals and numerous transverse violet-purple bars on the lip.—*Peru*.

LÆLIA, *Lindley*.

(Tribe Epidendrææ, subtribe Læliææ.)

This is a very lovely genus of epiphytal Orchids, most of the species being compact in their growth, with evergreen leathery or fleshy leaves, resembling in some respects those of the genus *Cattleya*, to which many of them are equal in the beauty of their flowers, which are large, distinct in colour, and very handsome, produced on spikes of varied length from the top of their one or two-leaved pseudobulbs. They are nearly allied to *Cattleya*, and, in fact, cross readily with the species of that genus. The genus is, however, retained by Bentham and Hooker, who distinguish it by the presence of eight pollinia in two series, the series being slightly unequal, while in *Cattleya* there are only four pollen masses forming a single series. Reichenbach includes the whole group in *Bletia* along with the *Cattleyas*. These plants merit a place in every collection, and will amply repay the cultivator for any care they may require; indeed, *Lælia* comprises species which are among our finest Orchids whether for winter or summer blooming.

Culture.—Some of the species are best grown on blocks of

wood with moss; others thrive well in baskets and pots with peat and good drainage. The large-growing kinds are best grown in pots, and require the same treatment as *Cattleyas*. Those on blocks require more water, and are best grown in the *Cattleya* house, though some, such as *L. autumnalis*, *L. albida*, and *L. majalis*, do not require so much heat to grow them to perfection. They are propagated in the same way as *Cattleya*.

L. acuminata, *Lindley*.—A pretty delicate-flowered, compact-growing species, nearly allied to *L. rubescens*, with ovate compressed rugose pseudobulbs, solitary oblong emarginate leaves, and corymbs of about four graceful fragrant flowers two inches across, on slender scapes about a foot high; the sepals and petals are white, the latter broader and wavy, and the lip oblong, with short rounded basal lobes, white, with a blotch of deep purple in the throat. It blooms in December and January, and lasts two or three weeks in beauty. Its native name is *Flor de Jesu*.—*Guatemala*.

FIG.—*Bot. Reg.*, 1841, t. 24; *Bot. Mag.*, t. 4905; *Flore des Serres*, t. 9.

L. acuminata rosea, *Hort*.—A very pretty variety with pale rose-coloured flowers, which has been imported for *L. peduncularis*, but is quite distinct.—*Guatemala*.

FIG.—? *Paxton, Mag. Bot.*, x. 49, with tab.

L. albida, *Bateman*.—A lovely compact-growing species, with oval sulcate pseudobulbs, each bearing a pair of narrow ancelate acute leaves, and a terminal erect five to eight-flowered raceme of blossoms as sweet as primroses, the odour resembling that of the leaves of the Chinese primrose. The flowers have the sepals and petals white, the lip pale pink or deep rose pink, with three yellow lamellæ or crests down the centre. It blossoms in December and January, lasting a good time in beauty. There are several varieties of this plant. This plant is best grown on a block in the cool house.—*Mexico: Oaxaca*.

FIG.—*Bot. Reg.*, 1839, t. 54; *Bot. Mag.*, t. 3957; *Orchid Album*, iii. t. 138; *Floral Mag.*, t. 335 (*rosea*).

L. albida bella, *Hort*.—A very fine and striking variety, in which the flowers are much larger and the spikes stronger

than those of the type. The sepals and petals are creamy white, tipped with rosy lilac, and the lip is yellow, with a broad band of magenta around the middle lobe, and an orange-yellow throat. It flowers in December and January.—*Mexico*.

L. albida Marianæ, *Warner*.—A charmingly pretty variety of compact habit, with pale green foliage and flowers, in which the sepals and petals are flesh colour, changing to salmon, and the lip is mauve, with buff-coloured stripes. A desirable plant, blossoming during winter, and as it continues in bloom four or five weeks, it is a valuable addition to a collection when flowers are generally scarce.—*Mexico*.

L. albida sulphurea, *Richb. f.*—A distinct variety, having large flowers, of which the sepals and petals are sulphur-coloured, and the lip mauve on each side of the anterior lobe, the crests orange.—*Mexico*.

L. amanda, *Richb. f.*—A very distinct and handsome plant, which, it has been suggested, may be a natural hybrid. It has thin fusiform stems, six to eight inches in height, of a light green colour, and bearing two cuneate-ligulate coriaceous leaves, six to nine inches long, said to be tinted with red underneath when young. The flowers are five to six inches across, and are produced on two-flowered peduncles; the sepals and petals light rose or flesh-colour, the lip deeper rose, having a rich purple venation. At first sight the flowers resemble those of *Cattleya maxima*, and we should think this plant may possibly have been one of its parents. It flowers in October, and lasts for six weeks in beauty.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 135.

SYN.—*Cattleya Rothschildiana*.

L. anceps, *Lindley*.—A remarkably handsome species, and one of the most useful winter-flowering Orchids we have. It has oblong compressed somewhat quadrangular pseudobulbs four or five inches long, oblong lanceolate leaves, generally in pairs but sometimes solitary, and long two-edged scapes from the apex of the pseudobulbs bearing two to five large showy flowers three or four inches across, which will last for a month in perfection if kept in a cool dry house; the sepals and petals are rose-lilac, the lip a beautiful deep purple, with the broad side lobes yellow marked with deep red lines; the

disk has a crest of three yellow ridges. It blooms in December and January. It should be grown in the Mexican house, as it delights in an abundance of light and air; a copious



LÆLIA ANCEPS.

supply of water should be given to it in the growing season.—*Mexico.*

FIG.—*Bot. Reg.*, t. 1751; *Bot. Mag.*, t. 3804; *Orchid Album*, ii. t. 75; *Paxton, Mag. Bot.*, iv. 73, with tab.; *Gartenflora*, t. 140 (*superba*).

L. aniceps alba, *Richb. f.*—A remarkably chaste and beautiful variety, in which the sepals and petals are broad and pure white as in *L. aniceps Dawsoni*, and the lip also is pure white, with a pale yellow disk. It blossoms in December and January.—*Mexico.*

L. aniceps Barkeriana, *Lindley.*—This is the deepest-coloured variety of *L. aniceps*. The sepals and petals are of

a purplish tint of rose colour, and the lip, which is shorter and narrower than in the type, is of an intense magenta-purple with a yellow disk. This variety has long been in cultivation, but is nevertheless rare.—*Mexico*.

FIG.—*Bot. Reg.*, t. 1947; *Flore des Serres*, t. 1100; *Knowles & Westc. Floral Cab.*, t. 30.

L. anceps Dawsoni, *Anderson*.—This beautiful variety is a great acquisition amongst our winter-flowering Orchids. It flowered for the first time in this country in the autumn of 1867 with the late T. Dawson, Esq., at Meadow Bank, then the great emporium for Orchid gems and novelties, and again in January, 1868, in the collection of E. Wright, Esq., Gravelly Hill, Birmingham, by whose gardener, Mr. Hodges, it was exhibited at South Kensington. The special distinguishing character of the plant resides in the colour of its flowers, which are produced two or three together on stems two feet long or more, and in the breadth of its petals. The sepals and petals are pure white, and the exterior of the lateral lobes of the lip is white, while the interior is clothed with purple lines radiating from the base, the yellow crest under the column, common to the species, being prominent; the front or expanded portion of the lip is undulating and recurved, white towards the lateral lobes, and deep rosy purple near the extremity, the whole being broadly margined with white.—*Mexico: Juquila*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 34; *Orchid Album*, i. t. 44; *Floral Mag.*, t. 530; *Jennings, Orch.*, t. 6.

L. anceps delicata, *Hort*.—A distinct and handsome form, with scapes bearing from four to six flowers each. The sepals and petals are white, stained with rosy purple; the lip white, suffused with reddish purple and shaded with violet, the throat being orange-yellow. This variety is deserving the attention of all cultivators of these plants, on account of the numerous flowers borne on each raceme.—*Mexico*.

L. anceps grandiflora, *Williams*.—This variety has very large highly-coloured flowers of fine form and substance. The growth of the plant is altogether stronger than in the ordinary *L. anceps*, and the flowers are about half as large again, and better coloured.—*Mexico*.

L. anceps Hilliana, *Rchb. f.*—A very delicate and beautiful form, having white sepals and petals, a yellowish lip, the front parts of the three lobes being of a soft blush pink; the disk deep orange, sometimes having dark purple-crimson markings in the throat. The lip instead of being acute is bilobed or emarginate. This is named in honour of C. J. Hill, Esq., of Nottingham, an enthusiastic collector of this class of plants.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 146.

L. anceps Percivalliana, *Rchb. f.*—A very distinct and pretty variety named in honour of R. P. Percival, Esq., Southport. Its leaves are somewhat narrower than in the type, and very pointed, and the flowers are freely produced. The sepals and petals are blush pink as in the ordinary forms, but the lip, which is truncate, not acute, has the lateral angles of the warmest mauve-purple, while the anterior portion is of a bright purple-magenta only at the extreme anterior third, the posterior two-thirds being white; the disk is light orange, with the tips of the three crests sulphur-yellow, and there are some strong dark purple lines over the nerves of the disk.—*Mexico*.

L. anceps rosea, *Rchb. f.*—A very pleasing and distinct variety, in which the flowers have pale rose-coloured sepals and petals, and the lip is large, and of a bright rosy magenta colour; the throat is pale yellow, and the dark line usually seen in the species is entirely wanting.—*Mexico*.

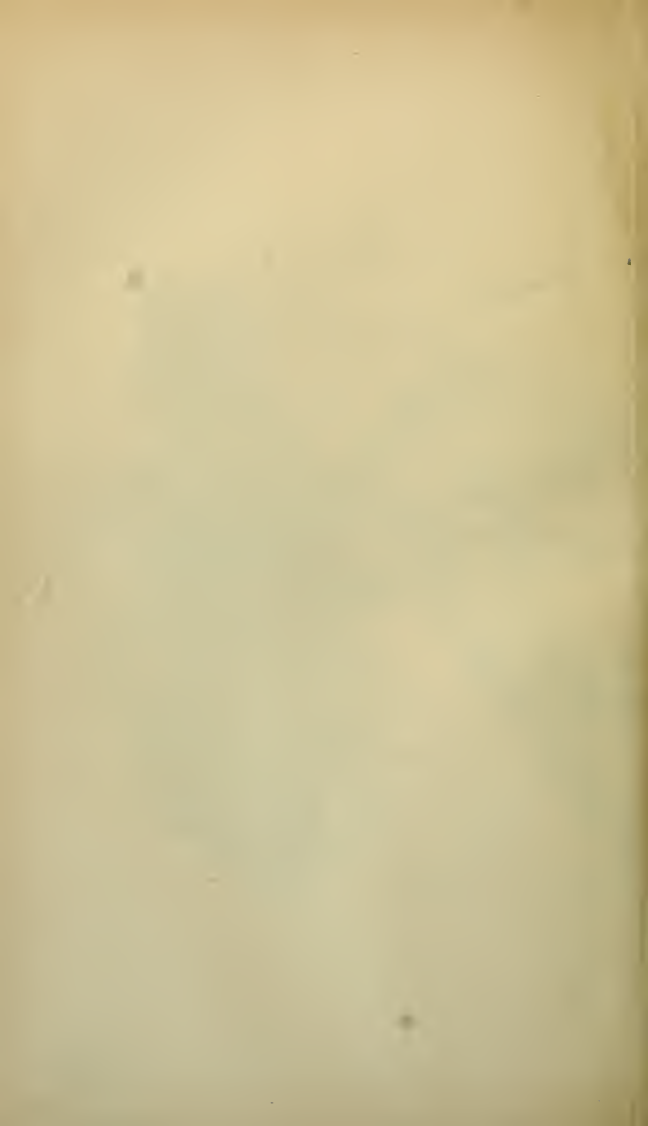
L. anceps Veitchiana, *Rchb. f.*—We saw this distinct plant well flowered in the collection of Baron Schröder, The Dell, Staines, in January, 1884. The sepals and petals are white, suffused with lilac, the petals being about an inch across in the centre; the lip is white, its front part and the angles of the side lobes violet-purple, after the style of *L. a. Percivalliana*; the crests of the disk are yellow, and the throat striped with brownish purple. It blooms in January and February.—*Mexico*.

L. anceps vestalis, *Rchb. f.*—A very lovely white-flowered variety, distinct both from *Dawsoni* and *alba*. The flowers are large; the sepals, broad petals, and lip pure white, with a pale yellow disk, and a few purple lines in the throat. This





LÆLIA AUTUMNALIS.



variety was first flowered by Sir Trevor Lawrence, Bart., in January, 1880, and is one of those which have the middle lobe of the lip emarginate.—*Mexico*.

L. anceps Williamsiana, *Sander*.—A new and chaste variety of this favourite winter-flowering Orchid, in which the sepals and petals are pure white, of good form and substance, and the lip white, having a yellow disk and a yellow throat distinctly striped with deep crimson-purple. It blossoms during the winter months. A plant of this variety recently realised 90 guineas at an auction sale.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 190.

L. autumnalis, *Lindley*.—A lovely and showy Orchid with ovate terete ribbed pseudobulbs, bearing two or three oblong-linear spreading leaves, and from the apex flower scapes twelve inches high or more, often bearing as many as nine flowers on a single spike. The flowers are four inches across and fragrant, the perfume being powerful; the lanceolate sepals and the oblong-lanceolate undulated petals of a beautiful rosy purple colour, the lip with large roundish erect white side lobes, and an oblong lanceolate rose-coloured front lobe reflexed at the tip, the disk spotted and streaked with purple, and bearing two yellow lamellæ or crests. It blooms at the same time as *L. anceps*, lasting about a fortnight in good condition. There are several varieties of this plant, some of them much richer in colour than others. This should be grown in the Mexican house either in a pot or on a block.—*Mexico*.

FIG.—*Bot. Reg.*, 1839, t. 27; *Bot. Mag.*, t. 3817; *Paxton, Mag. Bot.*, vi. 121, with tab.; *Bateman, Orch. Mex. et Guat.*, t. 9; *Lemaire, Rev. Hort.*, t. 17.

L. autumnalis atrorubens, *Backhouse*.—A most magnificent form of *L. autumnalis*, in which the bulbs are much larger and the flower spikes much stronger than those of the type, besides which its blossoms are far deeper and richer in colour. The flowers are upwards of four inches across, and from six to nine are borne on one scape; the sepals and petals of a brilliant purple-crimson colour; the middle or front lobe of the lip dark purple-crimson, while the lateral lobes which enclose the deep crimson column are pure white. This striking contrast of white against purple gives to the flower an altogether unique and charming appearance; it flowers in

November and December, and lasts about three weeks in perfection.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 49.

L. bella, *Rchb. f.*—A very fine hybrid, the result of a cross between *L. purpurata* and *Cattleya labiata*. It was raised in Messrs. Veitch's nursery, and was first flowered by Baron Schröder, The Dell, Staines. In its habit of growth it partakes most of the character of the last-named parent. The flowers are large, the sepals and broader petals light lilac, and the lip with a broad anterior wavy lobe of warm purple, and light purple disk. The column is white, tinged with purple at the sides; and at the mouth of the tubular portion of the lip are two oblong zones of yellowish white, and in front of them two spots of the same colour, as in *C. Warscewiczii*. It flowers in January and February.—*Garden hybrid*.

L. Boothiana.—See *CATTCLEYA LOBATA*.

L. Brysiana.—See *LÆLIA PURPURATA BRYSIANA*.

L. cinnabarina, *Bateman*.—A charming and distinct species, very compact in growth. The pseudobulbs are stem-like elongated subcylindrical, but broadest at the base, clothed with sheathing scales, and bearing one or two linear-oblong acute leathery leaves. The scape is terminal, erect, bearing a raceme of five or six flowers, which are of a uniform reddish orange colour, the sepals and petals narrow lanceolate, the former about an inch and a half long, longer than the convolute crisped lip. It blooms in March, April, and May, lasting six weeks in beauty. This makes a good plant for exhibition on account of its unusual and very distinct colour.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4302; *Paxton, Mag. Bot.*, vii. 193, with tab.; *Sertum Orch.*, t. 38.

L. Crawshayana, *Rchb. f.*—An interesting plant, supposed to be a natural hybrid, having ovate sulcate pseudobulbs as in *L. albida*, but somewhat flattened, and bearing one or two leaves, which are also like those of *L. albida*. The scape is elongated, as in *L. anceps*, to which the flowers, two on the scape, bear some resemblance, but the sepals and petals are narrower, and of a fine amethyst-purple colour, the anterior lobe of the lip and the tips of the side lobes being of a fine

deep rosy purple, with a white disk bearing three yellow crests, the throat also is white striped with crimson-purple. This plant was first flowered by De B. Crawshay, Esq., Rosefield, Sevenoaks; it flowers in January.—*Mexico*.

L. crispa.—See *CATTLEYA CRISPA*.

L. crispilabia, *A. Richard*.—A very pretty plant, somewhat resembling *L. cinnabarina* in habit, though very distinct in the colour of both the leaves and flowers. It has slender pyriform pseudobulbs, tapering upwards like those of *L. cinnabarina*, each bearing a solitary light green leaf, which is of evergreen character, and from the side of which at the top of the pseudobulb grows a scape a foot in length, bearing about half a dozen moderate-sized flowers, which are of an amethyst or purple-lilac colour, the lip being deeper amethyst and rolled over the column at the base, white in the centre portion, with the margin of the oblong acute reflexed middle lobe of a still deeper amethyst; the disk bears three crenulate keels. It succeeds very well when grown with other kinds of *Lælia*, if afforded plenty of light, and never allowed to get perfectly dry; it grows about a foot high, bearing on its flower spikes four to six medium-sized delicate purple flowers, which continue in perfection for several weeks.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 6.

SYN.—*L. Lawrenceana*.

L. Dayana, *Rehb. f.*—A beautiful and distinct dwarf compact-growing species, and a very desirable addition to the group, the more so as it is a winter-flowering plant. It is of dwarf habit, growing about six inches in height, with clustered oblong somewhat clavate monophyllous stems, the leaves elliptic-oblong, fleshy coriaceous, and the scape terminal one-flowered. It is a small grower, in the way of *L. præstans*, the flowers nearly four inches across, the sepals and petals rosy, the lip rich purple-magenta, the throat yellowish white, with numerous deep purple keels. A very free-flowering species, which blossoms at the time it is making its young growth from the axil of the leaf, and lasts for three or four weeks in perfection. We find it does well in the Odontoglossum house with cool treatment. It is named in honour of J. Day, Esq., of Tottenham.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 132; *Floral Mag.*, 2 ser., t. 249.

SYN.—*L. pumila Dayana*.

L. Dominiana, *Richb. f.*—This glorious hybrid was raised in Messrs. Veitch's nursery by Mr. Dominy, and is the result of a cross between *Cattleya Dowiana* and a species of *Lælia*, probably *L. elegans*. It is similar in habit to *Cattleya Mossia*, having short fusiform one-leaved pseudobulbs, but the leaves are longer, more in the way of *L. elegans*. The flowers are as large as those of that species, and splendidly coloured; the sepals and petals are bright rosy purple, with darker reticulations, and are similar in shape and size to those of *C. Dowiana*, while the lip is of an intense and beautiful deep blood purple, the rich dark colour being carried to the margin, and the tube only showing a little of the golden venation of *C. Dowiana*. It is to be regretted that this plant, through being a hybrid, must always be scarce, as its great beauty and distinctness claim for it the premier position among the dark-flowered *Lælias*. It flowers in August.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 325.

L. Dominiana rosea, *Veitch*.—A very fine hybrid *Lælia*, raised by Mr. Dominy from *Cattleya exoniensis*, crossed with *C. Dowiana*. The flowers are of moderate size, the sepals and petals are pale lilac-rose, and the lip is in the way of that of *C. Dowiana*, of a rich purple-crimson, and well crisped at the margin, an inch and three-quarters wide, and upwards of two inches long. It is very distinct.—*Garden hybrid*.

L. Dormanniana, *Richb. f.*—A fine *Lælia*, supposed to be a natural hybrid between *Cattleya bicolor* and *Lælia punila*. It has thin slender terete sulcate stems, bearing one or two leaves, which are cuneate oblong-ligulate, and two to five-flowered peduncles. The flowers, which are as large as those of *C. superba*, are very distinct in form; the sepals and petals are olive-green, marbled outside with a light vinous purple; the odd sepal and petals are prettily decorated with numerous dark port wine coloured spots round the margin; the front lobe of the lip is of a bright purplish crimson, the lateral lobes rosy crimson, distinctly veined with purplish crimson. It flowers in December and January, and probably at other seasons, as it is very free-blooming.—*Brazil*.

L. elegans, *Richb. f.*—A magnificent species, with slender terete clavate stems, two feet high or more, bearing at top one

or two linear-oblong coriaceous evergreen leaves, and a two to seven-flowered peduncle issuing from an oblong blunt spathe. The flowers are four to five inches across, and are produced at different times of the year, lasting in perfection for about three weeks. Of this species there are many varieties, differing in the shade of colour of their flowers, which varies from white to light rose, pink, crimson, and rosy purple. In the typical variety the sepals and petals, the latter being broader, are pale rose, and the lip, which has elongate obtuse pale-coloured side lobes encircling the column, and having a deep crimson spot near the tip, has an emarginate undulated front lobe broader than long, rather recurved to the base, and of a brilliant rose-purple.—*Brazil: St. Catherine's.*

FIG.—*Bot. Mag.*, t. 4700; *Ann. de Gand*, 1848, t. 185; *Pescatorea*, t. 43; *Ill. Hort.*, t. 402; *Puydt, Les Orch.*, t. 21; *Bateman, 2nd Cent.*, t. 156 (*Cattleya elegans*).

SYN.—*Cattleya elegans*.

L. elegans alba, *Williams*.—A most lovely variety, and one that should be in every collection. In its habit and in the size of the flowers it resembles the best forms of *L. elegans*, but the sepals and petals are broad, pure white, and the front lobe of the lip is rich crimson-purple, softening off towards the tip into lilac-purple. It blossoms in June and July, lasting three weeks in perfection.—*Brazil.*

FIG.—*Orchid Album*, i. t. 30.

L. elegans Bluntii, *Low*.—A very beautiful dark-flowered variety, having the sepals and petals of a bright rosy magenta colour; the front portion of the lip is much lengthened out and is of a pure magenta-crimson. The basal portion of the lip which encloses the column is white save at the two points, which are turned upwards and are flushed with the same colour as the petals. It flowers during August and September.—*Brazil.*

L. elegans Leeana, *Williams*.—This is a very lovely and distinct variety. The pseudobulbs are thicker and more clavate than those of an ordinary *L. elegans*. The flowers are six and a half inches across, the sepals and petals being of a pale rose, beautifully suffused at the margins with rosy magenta, in the same way as *L. elegans Wolstenholmiæ*, and the lip is very large, cut at the sides, an inch and a half across, the anterior part rosy magenta of a very rich hue,

the throat white striped in the centre with magenta. It flowers during the spring months.—*Brazil*.

L. elegans prasiata, *Rchb. f.*—A very distinct and beautiful variety, forming an elegant companion to *L. Turneri*. The flowers are of large size, the sepals and petals dull magenta-rose tinged with green; the front portion of the lip is of a rich magenta-crimson veined with a deeper tint of the same colour, while the lateral lobes of the lip are pure white, and form a striking contrast to the dark portions of the flower. We have seen this variety produce from six to eight of its fragrant flowers on one spike. It blooms during September and October, and lasts for three weeks in beauty. This variety was finely flowered in the collection of Baron Schröder, The Dell, Staines, under the care of Mr. Ballantyne, the gardener.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 97.

L. elegans Warneri, *Williams*.—A magnificent variety of *L. elegans*, which grows to about the same size as the species itself, having similar terete subclavate stems and oblong-obtuse leaves. The flowers are fully seven inches across, the sepals and petals are blush white, with the throat yellowish purple; the lip rich crimson. It blossoms in June and July, and will last in perfection for three or four weeks. This very rare variety is one of the finest of its class, and also a fine exhibition plant.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 1.

SYN.—*L. Warneri*.

L. elegans Wolstenholmiæ, *Rchb. f.*—A magnificent variety of *L. elegans*, producing light amethyst-coloured flowers, seven inches across, in which the sepals are white marked at the edges with pale purple-rose, and the petals more deeply margined with the same colour; the lip is white at the base, with a deep purple curved blotch about the throat, and rosy purple in front. It is very distinct in appearance, and was bloomed by J. Day, Esq., who dedicated it to his sister, Mrs. Wolstenholm, who is an enthusiastic lover of these beautiful plants. It usually blossoms during the autumn months.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 29.

L. flammea, *Rchb. f.*—This fine distinct plant is the result of a cross between *L. cinnabarina* and *L. Pilcheriana*. It is

of moderate stature, with slender cylindrical stems, each terminated by a solitary oblong-ligulate leaf, and from a compressed pale brown sheath a peduncle with three or four flowers, each four inches across. The variety blooms during March and April. The sepals and petals are of a brilliant cinnabar orange, and the lip is three-lobed, with the side lobes yellow, folded over the column, their blunt anterior ends spreading, and the central one rounded, denticulated, crispy, and of a rich crimson hue, the discal part marked with crimson veins.—*Garden hybrid*.

FIG.—*Florist and Pomologist*, 1874, 133, with tab.

L. flava, *Lindley*.—A very distinct species, which has short ovate one or two-leaved pseudobulbs, flat leathery oblong acute leaves, and an erect scape bearing a cylindraceous raceme of eight or ten flowers, which are of a clear yellow, and have the sepals and petals linear-oblong obtuse, and the lip oblong, recurved, the side lobes plane, erect, veined with crimson, the sessile middle lobe crispy, and the disk marked by four elevated veins, divergent at the tips. The flowers last three weeks in perfection.—*Brazil*.

FIG.—*Bot. Reg.*, 1842, t. 62.

SYN.—*L. caulescens*.

L. furfuracea, *Lindley*.—A showy species, resembling *L. autumnalis*, but having the pseudobulbs ovate and furrowed, and the narrow oblong erect acute leathery leaves solitary or in pairs, and of a light green. The flowers are produced on upright scapes, ten inches high, from the top of the bulb during autumn, and are individually five inches in diameter; the sepals are lanceolate and very acuminate, the petals subrhomboid and undulated, and the bilamellate lip three-lobed; the colour is a deep rose, the base of the lip being white. This plant is somewhat difficult to cultivate; we find it does well in pans with peat and good drainage, and suspended near the glass in the cool house.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3810; *Bot. Reg.*, 1839, t. 26.

L. gigantea, *Warner*.—This is one of the finest of the genus, and is a free-growing and free-flowering plant, in general habit like *L. elegans*, but having longer leaves. The flowers measure six inches in diameter, and are produced four or five on a scape in March and April, and continue in perfection for four or five weeks. The oblong-lanceolate sepals

and broader petals are of a delicate lilac, beautifully spotted with rose-purple; the lip is three-lobed, the tips of the lateral lobes violet-rose, and the middle lobe of a deep rich magenta, the throat being white. It succeeds well with the other *Laelias*, and is very rare.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl., i. t. 6.*

SYN.—*L. grandiflora.*

L. grandis, *Lindley*.—A very distinct and singular, and also a very rare species, remarkable for the colour of its flowers. It grows about a foot high, with clavate furrowed stems, from which rises the solitary oblong-acute rigid dark green leaf. The scapes are



LÆLIA HARPOPHYLLA.

about four-flowered, and emerge from terminal oblong sheaths; they measure about four inches across, and have the reflexed and twisted sepals and petals of a light nankin or fawn colour, the lip white in the throat, beautifully veined throughout with magenta-rose, the middle lobe being prettily crispate-undulate. It flowers during the summer, and will remain in perfection for a long time if kept from the damp.—*Brazil: Bahia*.

FIG.—*Orchid Album, iii. t. 123; Paxt. Fl. Gard., i. 60, fig. 38; Flore des Serres, vii. 238, with fig.; Id., t. 2473; Bot. Mag., t. 5553; Gartenflora, t. 698.*

L. harpophylla, *Rchb. f.*

—A very handsome species, and one that should be grown in every collection. The

stems are slender terete, about one foot in height, bearing a solitary lanceolate acute leaf. The scapes are produced in a longish terete sheath from the apex of the stems, and bear from four to eight flowers, of which the lanceolate pointed sepals and petals are bright orange-vermilion, and the three-lobed lip of the same colour, margined with white. This

species is far superior to *L. cinnabarina*, the flowers being larger and the colour more brilliant. This plant is well grown and flowered by Mr. Heims, gardener to F. A. Philbrick, Esq., Bickley. It flowers in February and March.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 117; *Floral Mag.*, 2 ser., t. 372; *Garden*, xxiv. t. 400.

L. irrorata, *Rehb. f.*—An elegant species, whose stems usually attain a height of eighteen inches, and bear two or three leaves on the summit (monophyllous—*f. Rehb.*). The flowers are racemose, measuring about five inches across, the ligulate acute sepals and the cuneate oblong slightly undulated petals blush white, the lip with the lateral lobes blush white, the rounded spreading ends tipped with rosy pink, and the middle lobe rich crimson shaded with purple. It makes a very fine subject for exhibition, flowering in June and July, and is a plant no collection of Orchids should lack. The finest variety of this plant which we have seen bloomed in the rich collection of R. F. Ainsworth, Esq., M.D., at Lower Broughton, Manchester, under the care of Mr. Mitchell.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 115, fig. 1.

L. irrorata Scottiana, *Rehb. f.*—A very fine large-flowered high-coloured variety. The narrow acute sepals and narrowish acute petals are of a light rose colour, and the lip is three-lobed, the centre lobe brilliant crimson-magenta, and the throat white. It flowers in June. The variety is named in honour of H. J. Scott, Esq., Queen's Quay, Belfast, by whom it was flowered.—*Brazil*.

L. Jongheana, *Rehb. f.*—A lovely and distinct species, with small ovate-oblong compressed shining pseudobulbs, and oblong ligulate blunt or emarginate dark green glossy leaves. The scape is two-flowered, the flowers expanded, four and a half inches across, with linear-lanceolate acute sepals, elliptic oblong-obtuse petals, and a rather small but handsomely marked lip, which has the side lobes short convolute, the tube yellow within, the yellow colour being continued on the disk, which is marked by a crest of seven elevated undulated ridges of a dark orange yellow, the oblong front lobe whitish, with a broad beautifully denticulate border of violet-amethyst, the sepals and petals being of a brilliant amethyst. This species blooms in March, and the flowers last a long time in perfection. It is best grown in a basket with rough fibrous

peat, having some charcoal mixed with the peat, and having also good drainage.—*Brazil*.

FIG.—*Bot. Mag.*, t. 6038; *Floral Mag.*, 2 ser., t. 177; *Gard. Chron.*, 1872, 425, fig. 128.

L. Leeana, *Rchb. f.*—This is a very dwarf-growing and distinct *Lælia*, supposed to be a natural hybrid. In growth it somewhat resembles *Cattleya marginata*, but the pseudobulbs and leaves are considerably longer. The flowers are very handsome, the sepals and petals being rosy magenta, and the anterior lobe of the lip bright magenta-crimson. The lateral lobes of the lip, which enclose the column, are pale rose colour, having two magenta-crimson blotches at the tips. It flowers in September. This plant has been named in honour of W. Lee, Esq., Downside, Leatherhead.—*Native Country not stated*.

L. Lindleyana, *Hort.*—A very distinct species both as regards its flowers and its manner of growth. The stems are slender elongate terete, about eight inches high, with whitish spathaceous bracts, and the one or two leaves are linear-lanceolate, fleshy, and channelled like those of *Brassavola venosa*. The flowers are solitary, terminal, on long deflexed peduncles, upwards of five inches across; the sepals and petals linear-lanceolate, blush white; the lip, with very short rosy tinted basal lobes, the intermediate one an inch and a half long, subrotund, concave, blush white, the apical part with deeper rosy flabellate veins and with a series of oblong spots along the centre in the upper half. It blooms at different times of the year, principally autumn and winter, and continues in perfection six weeks.—*Brazil: Bahia*.

FIG.—*Bot. Mag.*, t. 5449; *Batem. 2nd Cent. Orch. Pl.*, t. 175.

SYN.—*Cattleya Lindleyana*.

L. majalis, *Lindley*.—This is a glorious plant, one of the finest of the genus, or perhaps one of the most striking of all known Orchids. It is of dwarf habit, with ovate or roundish pseudobulbs, leathery oblong solitary leaves, and one or two-flowered peduncles bearing immense flowers, measuring between seven and eight inches across from the tip of the dorsal to the tips of the lateral sepals, which are lanceolate, four inches long, of a delicate lilac-rose, the petals being twice as broad, oblong-lanceolate, and of the same colour; while the lip is three-lobed, the side lobes small, white inside, with magenta-purple stripes, the middle lobe large rounded emar-

ginate, purplish lilac at the sides, white in the centre, marked with bold divergent blotches forming broken lines of magenta-purple. Native name *Flor de Mayo*. It blooms with the young growth during the summer months, and lasts five or six weeks in beauty. This plant is rather difficult to flower in some collections, but we have bloomed it successively for several years. We keep it rather dry and cool during the winter, and give it plenty of water during the growing season. It is best grown near the glass suspended from the roof, with little shade.—*Mexico*.

FIG.—*Bot. Reg.*, 1844, t. 30; *Bot. Mag.*, t. 5667; *Batem. Orch. Mex. et Guat.*, t. 23; *Jennings, Orch.*, t. 41; *Paxton, Mag. Bot.* xii. 1, with tab.
 SYN.—*Cattleya Grahami*; *Bletia speciosa*; *B. grandiflora*.

L. monophylla, *N. E. Brown*.—A very distinct and pretty dwarf-habited species, resembling a *Masdevallia* in its growth. It has a creeping rhizome and no pseudobulbs, but short slender erect stems as thick as a crow quill, dotted with rosy red, and having sheathing bracts. The leaves are solitary, narrow linear-oblong and bluntish, of leathery texture, deep green on the upper surface; and the continuation of the stem, which rises from six to ten inches high, bears a solitary flower, two inches across, of a vivid orange-scarlet, the sepals and petals being alike oblong and subacute, and the lip minute, yellow, enclosing the column, which just shows its purple anther-cap beyond. It blossoms in September and October.—*Jamaica*, 3,000—5,000 feet altitude.

FIG.—*Bot. Mag.*, t. 6683.

SYN.—*Trigonidium monophyllum*; *Octadesmia monophylla*.

L. peduncularis, *Lindley*.—A charming compact-habited evergreen plant, with the habit of *L. acuminata*. The pseudobulbs are roundish ovate, compressed, rugosely wrinkled, bearing from the top a solitary oblong-obtuse leaf, and a slender scape ten inches or a foot high, terminating in a corymbiform raceme of handsome rosy magenta flowers, of which the sepals are lanceolate, and the petals oblong-ovate, undulated, and the lip is prominent, three-lobed, the lateral lobes short, the centre one oblong, rounded and recurved at the apex, of the same colour as the sepals, except that there is a distinct purple-crimson spot in the throat, and a small patch of creamy white just in front of it. It requires to be grown on a block or basket; blooms during the winter months, and lasts about a fortnight in perfection.

The finest form of this species we have seen was in the collection of R. F. Ainsworth, Esq., M.D., Lower Broughton, under the care of Mr. Mitchell; the flowers in this case were deep rose-coloured, and three inches and a half in diameter. The figure in *Paxton's Magazine* quoted below appears to us to represent this species rather than *L. acuminata*, which name is attached to it.—*Mexico*.

FIG.—*Bot. Reg.*, 1845, t. 69; *Orchid Album*, iv. t. 173; *Bot. Mag.*, t. 4099; *Paxton, Mag. Bot.*, x. 49, with tab. (*acuminata*).

L. Perrinii, *Lindley*.—A truly beautiful species, resembling a *Cattleya* in growth and in flower. The stems are club-shaped, scarcely a foot in height, with large solitary oblong-obtuse dark green leaves, and two-flowered peduncles from compressed purplish green spathes. The flowers are about six inches across; the sepals and broader petals light magenta-rose, the three-lobed lip with the front portion intensely rich purple-crimson, which is continued round the front edges of the lateral lobes, the throat white, and the exterior of the side lobes pale rosy lilac veined with deeper rose. It blooms in October and November, and continues in good condition for a couple of weeks. There are two varieties of this plant; one producing much darker-coloured flowers, and being stronger in growth than the other.—*Brazil*.

FIG.—*Bot. Reg.*, 1838, t. 2; *Bot. Mag.*, t. 3711; *Orchid Album*, ii. t. 60; *Paxton, Mag. Bot.*, xiii. 5, with tab.; *Hart. Parad.*, i. t. 10.

SYN.—*Cattleya Perrinii*; *C. intermedia angustifolia*.

L. Perrinii irrorata, *Rchb. f.*—A delicately-coloured yet attractive variety, with the general characters of the type, but differing in the colour of its charming flowers. The sepals and petals are of the palest rose colour, and the lip is nearly white, its disk, however, being of a pale yellow colour, and its apex of a light purple.—*Brazil*.

L. Perrinii nivea, *Rchb. f.*—A very chaste and beautiful form, first flowered in this country by ourselves, and still very rare. It resembles the type in every respect saving the colour of the flowers, which is pure white, with the exception of the lip, which is pale rosy pink in front, and having a slight tinge of yellow in the throat. It blossoms during October and November, and lasts about two weeks in perfection.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 181; *Floral Mag.*, 2 ser., t. 429.

L. Pilcheriana, *Dominy and Rchb. f.*—This fine hybrid

was obtained in Messrs. Veitch's nursery by Mr. Dominy, between *L. Perrinii* and *Cattleya crispa*. The flowers are larger than those of the latter, the sepals oblong ligulate acute, the petals broader oblong acute, both of a beautiful French white; the lip is narrow, rolled round the column, three-lobed, the disk whitish yellow with deep purplish veins, the anterior part very much crisped and toothed, pointed, deep purple with a white margin. Professor Reichenbach, in the *Gardeners' Chronicle*, 1868, 815, describes one of these hybrids as having rosy lake flowers, so that doubtless the different seedlings vary.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 340.

L. præstans, *Rchb. f.*—A splendid dwarf evergreen species, which grows six inches high, and often blossoms twice in a year. It has short fusiform stems (pseudobulbs), solitary oblong leaves, and short one-flowered peduncles. The flowers are large, three and a half inches across; the sepals oblong, the petals ovate, both of a brilliant dark rose; the lip of a deep rich purple in front and around the margin, the disk and throat yellow, and the exterior of the side lobes where they are rolled over the column deep rose. This plant resembles *Cattleya marginata* in growth and in the size of its flowers. There are several varieties, some of which are much better than others. It grows best on a block with a good supply of water at the roots in the growing season. The cool house is best suited for its successful growth.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 114; *Illust. Hort.*, t. 193—*f. Rchb.*; *Flore des Serres*, t. 1900; *Bot. Mag.*, t. 5498; *Batem. 2nd Cent. Orch. Pl.*, t. 128.

SYN.—*Cattleya pumila major*—*f. Rchb.*

L. pumila.—See *CATTELEYA MARGINATA*.

L. purpurata, *Lindley*.—A magnificent species, often designated the King of Orchids, a title which it richly merits, as a nobler Orchid producing such large rich-coloured flowers does not exist. It grows some two feet high or more, and has fusiform furrowed stems, oblong emarginate light green leaves, and a peduncle bearing from three to five flowers, which are very large and showy. There are many varieties of it, all of which are well worth growing, though some are much finer than others. The recurvo-patent linear-oblong sepals and the larger oblong undulated petals are pure white, while the lip has the basal lobes folded over the column, whitish streaked with rose, the throat yellow, striped distinctly with crimson,

and the broad front lobe expanded, of a rich dark crimson-purple, paler towards the tip, and marked by feathered crimson veins. In the form called *prætexta* by Reichenbach the tip of the lip is white. In some of the varieties the flowers are of a light rose colour. It blooms during May, June, and July, and lasts three weeks in perfection, if the flowers are kept dry.—*Brazil: St. Catherine's.*

FIG.—*Warner, Sel. Orch. Pl., i. t. 40; Paxt. Fl. Gard., iii. t. 96; Pescatorea, t. 37; Illust. Hort., t. 83; Flore des Serres, tt. 1138-9; Xenia Orch., t. 61 (prætexta); Florist, 1859, t. 153—f. Rchb.; Gard. Chron., n.s., xiv. 45, fig. 12 (flower regular); Id., xx. 530, fig. 90.*

L. purpurata Brysiana, Hort.—A fine showy and very distinct plant, a variety that makes a fine contrast to the white form of *L. purpurata*. The sepals and petals are of a beautiful light rose veined with a darker tint of the same colour, and the front lobe of the lip is dark crimson.—*Brazil,*

FIG.—*Lem. Jard. Fl., tt. 275-6; Id. Illust. Hort., t. 134.*
 SYN.—*L. Brysiana.*

L. purpurata Nelisii, Lemaire.—A handsome and well-marked variety, having the general aspect and characteristics of the type. The flowers are large; the sepals rich rose colour on the outer surface, and as well as the petals white tinged with rose on the inside; the lip is large and prominent, and of a rich purplish crimson. It is a rare and very beautiful form, named in compliment to M. de Nélis, of Malines.—*Brazil.*

FIG.—*Illust. Hort., t. 569.*

L. purpurata Williamsii, Hort.—A splendid variety, growing about two feet high, and certainly one of the finest of the genus for exhibition purposes. The stems are clavate, monophyllous, the leaves leathery, narrowly oblong, and the flowers large, three or four on a scape, each bloom measuring about eight inches in diameter, the sepals and broader petals of a beautiful delicate rose, pencilled with lines of purple, and the very large lip rich dark crimson-magenta, the tip paler and reticulately veined, and the throat yellow, beautifully veined with crimson-magenta. It blooms in May and June, and continues three weeks in perfection.—*Brazil: St. Catherine's.*

FIG.—*Orchid Album, i. tt. 9, 10.*

L. Russelliana, Hort.—A very distinct and elegant variety, belonging to the *L. purpurata* section of the genus. The

flowers are large; the sepals somewhat narrow, white, suffused with lilac, the petals broader and slightly deeper in colour; the lip large and rosy lilac, having a band of pale rose near the throat, which latter is light yellow, pencilled with rose. It is very rare.—*Brazil*.

L. Schilleriana, *Rehb. f.*—A fine and rare species allied to *L. purpurata*, and resembling *L. elegans* as regards its manner of growth. The stems are eighteen inches high, and bear light green foliage nine inches long. The flowers are showy; the sepals and petals are nearly equal, elongate lanceolate, white, the lip elongate, three-lobed, the side lobes blunt-angled, and the middle lobe oblong, minutely denticulate, the throat radiately veined with purple, and the disk sulphur yellow, with a large curved or hippocrepiform blotch of a rich purple-crimson in front of the disk. It blooms during May and June, lasting three and four weeks in beauty, and makes a good exhibition plant on account of its showy flowers.—*Brazil*.

L. Schilleriana splendens, *Hort.*—A splendid variety of *L. Schilleriana*, which grows to the same height, and bears on the top of the bulb two green leaves of a light green colour. The plants flower twice a year, and produce large blossoms, of which the sepals and petals are light rose, veined with a deeper colour, and the lip is large, of a beautiful magenta, the front part light rose, and the throat yellow. It blooms in June and in autumn, and as it lasts several weeks in perfection, it makes a fine exhibition plant.—*Brazil*.

L. Schroderii, *Williams and Moore.*—A very distinct and beautiful species, which in its growth and in the shape and size of its flowers resembles *L. grandis*. It was flowered for the first time by ourselves, and was named after Baron Schröder, The Dell, Staines, a great admirer of this noble class of plants. The stems are clavate, about a foot and a half high, with solitary oblong leathery light green leaves, and racemes of three or four flowers, borne on a scape issuing from an oblong compressed bract or spathe. The flowers are about seven inches across, the sepals and much broader petals pure white, and the lip white, undulated, veined towards the throat with magenta-rose, the throat itself, as well as the part inflected over the column, deep yellow veined with rose. This new species has also flowered with Erastus Corning,

Esq., of Albany, New York, U.S.A., under the care of Mr. Gray, the gardener. It flowers during May and June, lasting from three to four weeks in perfection.—*Brazil: Bahia.*

FIG.—*Orchid Album*, i. t. 2.

L. Stelzneriana, *Rchb. f.*—This species is allied to *L. elegans*, which it resembles in growth, but is scarcely so robust. The flowers are somewhat smaller than those of that plant, having pure white sepals and petals, the latter much broader than the former, and the lip, the lobes of which are unusually short, of a blush white, the throat being yellowish white, the front lobe undulated and purple-crimson, this colour being continued along the edge as far as the tips of the side lobes. It blooms in May and June.—*Brazil.*

FIG.—*Flore des Serres*, tt. 1494-5.

L. superbiens, *Lindley*.—A noble Orchid, one of the finest of the genus. It is rather a large-growing plant, with fusiform stems, bearing a pair of oblong acute rigid leathery leaves at the top. The flower scape is three to nine feet high, having sometimes on one scape from fourteen to twenty blossoms, often measuring seven inches across. These flowers have the sepals and petals of a beautiful deep rose, somewhat paler towards the base; and the lip has the side lobes deep crimson in front, yellowish at the sides above the fold over the column, the disk yellow, with a crest of five large subserrate deeper orange yellow lamellæ, truncate in front; the middle lobe is oblong emarginate, of a rich deep crimson, flabellately veined with deeper crimson. It blooms during the winter months, and continues long in beauty. The finest plant we ever saw of this was in the Horticultural Gardens at Chiswick; it sometimes produced as many as nine clusters of its beautiful flowers at one time; the plant was four feet across, with the flowering stems seven feet in height, and was in perfect health.—*Mexico: Guatemala.*

FIG.—*Warner, Sel. Orch. Pl.*, i., t. 20; *Batem. Orch. Mex. et Guat.*, t. 38; *Bot. Mag.*, t. 4090; *Paxton, Mag. Bot.*, xi. 97, with tab.; *Flore des Serres*, tt. 1178-9.

L. Turneri, *Warner*.—This is a magnificent plant of the *L. elegans* section, from the type of which, however, it proves quite distinct in its larger flowers, richer colours, and in the different form of the lobes of the lip. The stems are elongated, terete, clavate, and the leaves in pairs, oblong, leathery, a foot long. The flowers measure upwards of six inches across;

the sepals and petals are of a deep purple-rose, slightly veined with a darker hue, and the lip has the front lobe plane, not warded, of a deep bright magenta colour, rounded spatulate in outline, its lateral lobes white, tipped with rose. It is without exception one of the finest plants known amongst Orchids, blooming in July and August, whence it will be found an acquisition for late summer shows. It was named in honour of the late J. A. Turner, Esq., of Manchester.

FIG.—Warner, *Sel. Orch. Pl.*, i, t. 12.

L. Veitchiana, *Rchb. f.*—A gorgeous hybrid, raised in Messrs. Veitch's nursery at Exeter by Mr. Dominy so long ago as 1858, and first bloomed in 1874. It is the result of a cross between *Cattleya labiata* and *C. crispa*. The stems are short fusiform, clothed with spotted sheathing scales, and terminating in oblong dark green leathery leaves. The flowers are long, four or five on a scape, with lanceolate sepals of delicate lilac, ovate lanceolate undulated petals of a somewhat deeper colour, and a splendidly coloured lip, of which the anterior half is rich crimson-purple, and behind this a sulphur yellow disk, streaked with purple in the central part, the whole having a narrow pale lilac border. The lip is rather narrowed towards the apex, thus showing an approach to *C. crispa*.—*Garden hybrid.*

FIG.—*Floral Mag.*, 2 ser., t. 305; *Gard. Chron.*, xx, 142, with fig. of entire plant in supp. sheet.

L. Wyattiana, *Rchb. f.*—A lovely species, imported in a set of the short-bulbed form of *L. purpurata*. The flowers are about the size of *Cattleya crispa*, and of membranous texture; the sepals and petals are white, the latter very acute, and the lip, which is similar in shape to that of *C. crispa*, so as to be subrhomboid, and undulated towards the front, has the nerves on the disk dark purple, the side ones coloured only at the base, the central ones coloured through their whole length; the side lobes are light yellow outside, the anterior lobe light purple. It flowers during the autumn. This was first flowered by G. Nevile Wyatt, Esq., of Cheltenham, who has a large and choice collection of Orchids.—*Brazil.*

L. xanthina, *Lindley*.—A very distinct and pretty species, which is also rather rare. The stems are clavate-fusiform, about a foot high, monophyllous, the leaves oblong-lorate bluntish, and the scape four to six-flowered, issuing

from a linear-oblong compressed bract. The flowers are three to four inches across, the sepals and petals oblong-ligulate undulated, with the sides rolled back, yellow, more or less flushed with olive green, the lip cucullate, divided into three obtuse and shallow lobes at the apex, deep yellow with a broad front border of white, the disk marked by a few crimson-purple veins, which are flat and not raised like a crest as in the allied *L. flava*. It flowers during May and June, and lasts for three weeks in beauty. There are two varieties of this species, one with much larger flowers than the other.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5144; *Batem. 2nd Cent. Orch. Pl.*, t. 180; *Orchid Album*, i. t. 23.

LÆLIOPSIS, *Lindley*.

(Tribe Epidendreae, subtribe Lælieae.)

A small genus of pseudobulbous epiphytes, which have a terminal inflorescence, petals larger than the sepals, and a lip shortly adnate with the base of the column, over which its lateral lobes are folded. The latter organ is spurless, sessile, convolute, of membranaceous texture, with its veins bearded, the latter peculiarities separating the genus from *Cattleya* according to Lindley, by whom it was founded. The few species recorded, three or four in number, are West Indian.

Culture.—This very scarce plant is best grown on a block suspended from the roof, and under these conditions requires a good supply of water at the roots during the growing season. It requires rather a warm temperature while growing, and afterwards appears in a state of nature to become almost shrivelled with drought. In its habit of growth it is much like *Broughtonia sanguinea*.

L. domingensis, *Lindley*.—A pretty dwarf slender evergreen species, compact in growth, with short oblong pseudobulbs, bearing two oblong obtuse leathery leaves about three inches long, and a slender scape from the top of the bulb, attaining a height of twelve inches, and bearing a raceme of about eight

blossoms of a pretty rose-lilac colour, and produced at different times of the year, continuing in beauty for five weeks at a time. The throat is pallid, traversed by hairy veins, of which the middle one is brownish yellow and the rest purplish.—*St. Domingo.*

FIG.—*Gard. Mag. Bot.*, iii. 201, with tab.; *Paxt. Fl. Gard.*, iii. t. 105; *Lemaire, Jard. Fl.*, t. 172.

SYN.—*Cattleya domingensis*; *Broughtonia lilacina*; *B. violacea*.

LEPTOTES, *Lindley.*

(Tribe Epidendreae, subtribe Lælicæ.)

A small genus consisting of dwarf and compact-growing epiphytal pseudobulbous plants, with curious evergreen terete foliage channelled on the upper side, and flowering from the top of the pseudobulb. It is referred to *Tetramicra* by Bentham. One peculiarity of the plant is the small auricle-like lateral lobes of the lip. They are of Brazilian origin.

Culture.—These plants are of easy culture, and will do either on blocks or in pots with peat suspended from the roof. They are very accommodating, for they will grow in either house, requiring a liberal supply of water in the growing season. They are propagated by dividing the plants.

L. bicolor, *Lindley.*—A neat and pretty epiphyte, with a creeping rhizome, from which grow up several slender stems, which are about an inch long, and almost cylindrical, and ter-



LEPTOTES BICOLOR.

minated by a solitary terete recurved fleshy leaf, which is grooved on the upper side. The peduncle with a solitary flower rises from the base of the leaf, the flower itself having a very long pedunculiform ovary. The sepals and petals are linear-oblong, white, and the lip has two very short lateral lobes, and an oblong front lobe nearly as long as the petals, white, streaked with purple on the disk; it blooms during the winter months, lasting four weeks in beauty.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1625; *Bot. Mag.*, t. 3734 (glaucous var.).

L. serrulata, *Lindley*.—A charming little plant, in the way of *L. bicolor*; the flowers being nearly the same in colour, the chief difference being that they are considerably larger—as much as three or four times larger. The stems are sometimes two-leaved, the cylindrical fusiform grooved leaves glaucous green, dotted with purple, the scapes terminal and axillary, purple, bearing the large stellate flowers on very long stalk-like ovaries; the sepals and petals are white, and the lip white, with lines of brilliant lake radiating from the base, where it has two short rounded auricles. It blooms in April and May, and lasts three weeks in perfection.—*Brazil*.

FIG.—*Sertum Orchid.*, t. 11.

LIMATODIS, *Blume*.

(Tribe Epidendreae, subtribe Bletieae.)

A small genus of beautiful terrestrial Orchids related to *Phaius*, in which it is included by Bentham; it also closely resembles *Calanthe*. The flowers have a spurred lip rolled around the column, from which it is free, and which, according to the authors of *Genera Plantarum*, is two-winged. It includes some species of a highly ornamental character. By a slip of the pen Lindley formerly wrote the name *Limatodes*, but has corrected it in the *Folia Orchidacea*. They are all Eastern, being found in Java, Sumatra, India, and China.

Culture.—During the growing season these plants require a liberal supply of water at the roots—in fact, they should be kept watered till they come into flower. After they

have done blooming they must be rested by withholding water. They do well in the East Indian house, and should be grown in pots with peat, leaf mould, and sand, being potted in the same manner as *Calanthe vestita*, which they resemble in growth; they also flower about the same time as that equally useful Orchid. They are propagated by dividing the pseudobulbs just when they begin to grow.

L. rosea, *Lindley*.—A charming winter-flowering Orchid, of which there are many varieties. We have had five in flower at the same time, differing more or less from each other in their colour, which varied from white to dark rose and pink, with different intermediate shades of rose. We have few plants that are more valuable for decorative purposes during the dull season than this *Limatodis*, and it may be had in flower for months together. It is a deciduous plant, with fusiform pseudobulbs five or six inches long, much swollen at the base, and terminated by broadly lanceolate membranous ribbed leaves. The flower scapes proceed from the base of the pseudobulbs, and are nodding, attaining a height of one or two feet, bearing many flowers, which are usually of a pleasing shade of rose-pink, with a flat oblong lip, the side lobes of which are white, rolled over the column, and having a white throat surrounded by a well-defined ring of rich deep rose. The pseudobulbs, which are of a pale brownish or greyish colour, are curiously constricted in the middle part, as seen in some forms of *Calanthe vestita*.—*Moulmein*.

FIG.—*Pact. Fl. Gard.*, iii, t. 81; *Bot. Mag.*, t. 5312.

LISSOCHILUS, *Robert Brown*.

(Tribe Vandeeæ, subtribe Eulophiææ.)

Tropical Orchids of terrestrial habit, some of which are of a very ornamental character. The flowers have the petals larger than the sepals, and spreading, and the lip is saccate at the base or produced into a conical spur. The leaves are plicate, and the flower scape is leafless. There are about

thirty species of the genus known, all found in Tropical or Southern Africa.

Culture.—These are terrestrial plants, and require to be potted in fibrous loam, and to have good drainage secured, as they need a liberal supply of water during the time they are making their growth. As they come from a tropical clime they require to be grown in a strong heat. This genus is much neglected and despised by Orchid-growers, but though we have not yet had the best species introduced to our gardens, or if they have been they have soon disappeared, some of those within the reach of Orchidists are well worth attention.

L. Horsfallii, *Batem.*—This is a magnificent plant, in habit of growth resembling *Phajus grandifolius*. It has a fleshy underground tuber, from which springs a tuft of lanceolate acute distinctly stalked plaited leaves two to three feet long, and an erect terminal flower scape twice the length of the leaves, terminated by a dense elongated raceme of large and beautiful flowers. The sepals are lanceolate, undulated, reflexed, of a rich purplish brown, the petals are much larger, white, with a delicate tint of rose; the lip funnel-shaped, purplish at the base, three-lobed, the lateral lobes large, erect, convex, green streaked with purplish crimson, and the middle lobe bluntly ovate, of a deep puce purple, with three white ridges on the disk running down to the base. It was received by the gentleman whose name it bears from Old Calabar.—*Tropical West Africa.*

FIG.—*Bot. Mag.*, t. 5486; *Batem. 2nd Cent. Orch. Pl.*, t. 121.

L. roseus, *Lindley.*—A grand species of this group of terrestrial Orchids, having the stiff erect leaves broadly lanceolate and plicately veined, and the flower scapes between three and four feet high, terminated by a dense oblong raceme of handsome lively coloured flowers, very distinct in character, each produced from the axil of an ovate bract. The sepals are spatulate in outline, concave, reflexed, of a rich deep velvety brown, the large oblong apiculate recurved petals are of a deep rose colour, and the three-lobed lip, which is roundish and longer than the petals, is also of a deep rose, and bears a conspicuous golden crest of three undulated

lamellæ on the disk ; the under side of the lip and the conical spur is also yellow.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1844, t. 12.

L. speciosus, *R. Br.*—A fine showy species, having large roundish ovate underground bulbs, from which spring up a tuft of several ensiform sharp-pointed stoutish smooth leaves of a deep green colour. The scape comes from the side of the newly formed bulb, and is erect, many-flowered, two to four feet high, bearing the fragrant flowers in racemes a foot and a half long, the flowers themselves, which have a green bract at their base, being attractive in appearance, and, from the torsion of their pedicels, being what is called resupinate, or upside down ; the sepals are small, green, and reflexed ; the petals oblong-ovate, an inch long, spreading, of a bright glowing yellow, and the lip is nearly as long as the petals, ovate-oblong, incurved, retuse, yellow, the cordate base white, feathered with purple veins. “The flowers in general begin to open at the lower part of the scape about May or June, and continue to expand upwards in succession until the latter end of July or the middle of August.” It prefers rich loamy soil, and should be well drained, as in summer it must be liberally watered ; and the intermediate house suits it best.—*South Africa*.

FIG.—*Bot. Reg.*, t. 578 ; *Paxt. Mag. Bot.*, iv. 25, with tab.

LYCASTE, *Lindley*.

(Tribe Vandææ, subtribe Cyrtopodiææ.)

The *Lycastes* are mostly very useful plants. All the species have short thick pseudobulbs, and ribbed or plicate leaves, and the flowers are produced from the base of the pseudobulbs on scapes about six inches in length, and are not only large but showy, and remarkably durable. They have somewhat ringent flowers with erecto-patent sepals, the petals are dissimilar and produced into a short chin at the base, and the lip has a transverse fleshy appendage between its lateral lobes. Several fine varieties have appeared during the past few years, chiefly belonging to *L. Skinneri*, and differing

very much from each other in colour. There are some twenty-five known species, which are found in Tropical America and the West Indies.

Culture.—The plants belonging to this genus are of easy culture, if properly attended to with respect to water, of which they require a liberal supply during the growing season, especially *L. Skinneri* and its varieties. We have seen specimens of this species bearing as many as fifty blossoms, and producing a grand effect. They should be grown in a cool house, potted in peat, with good drainage, and be liberally supplied with water during the growing season; they should, in fact, never be allowed to get dry at the roots even while at rest. These plants will stand for a very long time in flower in a sitting-room, and will continue in full perfection, without the slightest injury arising therefrom, but they should be grown in the warmest end of the cool house. They are propagated by division after flowering.

L. aromatica, *Lindley*.—A rather desirable species, on account of its free-blooming habit and fragrance. It has ovate compressed pseudobulbs, oblong lanceolate plicate leaves, and numerous erect slender one-flowered scapes about four inches high growing from the base of the pseudobulbs. The flowers are golden yellow, greenish exteriorly, and the semi-cylindrical lip, which is spotted inside with orange, has the front lobe cuneate serrulate at the tip, and bears in the middle a large concave fleshy truncate appendage.—*Mexico*.

FIG.—*Hook. Exot. Fl.*, t. 219; *Bot. Reg.*, t. 1871.

SYN.—*Maxillaria aromatica*; *Colax aromatica*.

L. citrina, *Hort.*—A fine robust-growing species, with the habit of *L. Harrisonia*, and flowering about the same time. The flowers are large, thick, and fleshy, and have the sepals and petals lemon-colour, and the lip white marked with lilac. It is a distinct and rare plant.—*Brazil*.

L. Cobbiana, *Rehb. f.*—A curious and distinct plant having long narrow pseudobulbs. The sepals are greenish yellow, the petals greenish white, and the lip white, distinctly fringed.

We saw a nice plant of this blooming in the large collection of W. Lee, Esq., Leatherhead. It flowers in September.—*Native Country not stated.*

L. cruenta, *Lindley*.—A rather desirable species allied to *L. aromatica*, but its leaves are broader, and its flowers are larger, the peduncles being sometimes two-flowered. The pseudobulbs are ovate compressed rugose, the leaves oblong membranaceous, the peduncles radical, with cucullate sheaths. The flowers are four inches across, the sepals ovate, scarcely produced at the base, bright yellow inside, green without, the petals smaller of the same form, wholly yellow, and the lip much shorter than the petals, three-lobed, the lobes rounded, the intermediate one crisped and pubescent, and the appendage reduced to a small flat tubercle; it is dotted with red, and has a deep crimson blotch at its base. It flowers in abundance in March and April, and lasts three weeks in perfection.—*Guatemala.*

FIG.—*Bot. Reg.*, 1842, t. 13.

SYN.—*Maxillaria cruenta.*

L. Denningiana, *Rchb. f.*—A well-marked and conspicuous species, which has broadly pyriform furrowed glaucous pseudobulbs three inches high, cuneate oblong leaves, and flowers nearly as large as those of *L. gigantea*, having whitish green sepals and petals, the latter somewhat the smaller, and a reddish brown lip, of which the front lobe is oblong blunt, toothletted and reflexed, and the disk bears a large rhomboid acute appendage.—*Ecuador.*

L. Deppei, *Lindley*.—An old but ornamental species well worthy of a place in collections. The pseudobulbs are ovate compressed, about three-leaved, the leaves oblong-lanceolate plicate. The scapes which spring from the base of the bulb are one-flowered, erect, shorter than the leaves. The flowers have oblong obtuse green sepals dotted over with chocolate-purple spots arranged in transverse lines; the petals are smaller, pure white, and the lip is cucullate, three-lobed, yellow with crimson dots, the front lobe ovate acuminate reflexed, with an ovate elevated appendage or callus. It blooms during the winter and spring months, and lasts long in beauty.—*Mexico.*

FIG.—*Bot. Mag.*, t. 3395; *Lodd. Bot. Cab.*, t. 1612.

L. Deppei punctatissima, *Rehb. f.*—A very large-flowered and distinct variety, in which the sepals and petals are greenish white covered with innumerable purple spots, and the lip is yellow with dark purple radiating lines on the side lobes, and five blotches of the same colour on the anterior lobe. It flowers during the winter months.—*Guatemala*.

L. fulvescens, *Hook.*—An interesting species, with large broadly ovate pseudobulbs, somewhat membraneous plicate lanceolate leaves two or more from their top, and handsome tawny yellow flowers on slender radical scapes. The flowers have lanceolate sepals two and a half inches long, the lateral ones falcate connate at the base into a blunt spur; the petals are similar but slightly smaller; and the orange-coloured lip is oblong, three-lobed, with an emarginate appendage on the disk, and an ovate obtuse front lobe, beautifully fringed at the margin with wavy hairs.—*Columbia*.

FIG.—*Bot. Mag.*, t. 4193.

L. gigantea, *Lindley*.—A stately-growing plant, of which there are several varieties, some of which are inferior in beauty, though the best are well deserving a place with *L. Skinneri*. It has oblong-ovate smooth pseudobulbs some five or six inches high, bearing two or three large oblong-lanceolate acuminate plicate leaves from one to two feet long. The scapes are proportionately stout, and bear a solitary flower, which measures from tip to base fully six inches, and as much across; the sepals and petals are of a warm olive-green, the latter being rather the shorter, and the lip is oblong-lanceolate, three-lobed, the middle lobe panduriform, serrated at the edge, of a rich maroon-purple with a warm border of orange; the appendage to the lip is a transverse saddle-shaped emarginate callus. It blooms during the winter months.—*Central America*; *New Grenada*.

FIG.—*Bot. Mag.*, t. 5616; *Batem, 2nd Cent. Orch. Pl.*, t. 198; *Bot. Reg.*, 1845, t. 34; *Annales de Gand*, 1845, t. 9.

SYN.—*Mazillaria Heynderyzii*.

L. Harrisoniæ, *Hort.*—An old and undeservedly neglected species, with pyriform tetragonal pseudobulbs bearing a single large oblong-lanceolate plaited leaf. The scape is one, sometimes two-flowered, the flowers large, measuring some three inches in diameter; the sepals and petals large and fleshy, creamy white, the lateral sepals being attenuated into a spur-like base; the lip purple, yellowish at the base, and marked with purple

veins exteriorly, the inner surface streaked with red lines, except the orange-coloured appendage on the disk. It succeeds in a cool house, and its flowers last an immense time in perfection in a sitting-room. Reichenbach refers this species to *Bifrenaria*. The var. *grandiflora* has the inner surface of lip wholly purple except a narrow yellowish border, and the spur is yellow with a few bold purple stripes.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2927; *Bot. Reg.*, t. 897; *Hook. Exot. Fl.*, t. 120; *Paxt. Fl. Gard.*, iii. 92, fig. 277; *Xenia Orch.*, i. t. 94; *Paxton, Mag. Bot.*, ii. 196, with tab. (*grandiflora*).

SYN.—*Maxillaria Harrisoniæ*; *Colax Harrisoniæ*; *Dendrobium Harrisoniæ*; *Bifrenaria Harrisoniæ*.

L. Harrisoniæ alba, *Hort.*—A neat variety, in which the habit coincides with that of the type, but the flowers of which are white; the sepals are slightly tinged with green, and the lower sides of the lateral ones faintly dotted with red, the petals are pure white, well displayed, and the lip has a white tube, the side lobes reddish purple veined with deeper red, and the middle lobe of the same red-purple covered with short white fleshy hairs; the spur-like portion is greenish white.—*Brazil*.

FIG.—*Gartenflora*, t. 52.

L. Harrisoniæ eburnea, *Moore*.—A very chaste and beautiful variety having the sepals and petals pure white, and the lip white freely striped with crimson; the throat is yellow striped with purplish red. It blooms during the months of April and May.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 100.

L. lanipes, *Lindley*.—A very free-flowering kind. In its habit of growth it is similar to *L. Skinneri*. The flowers are large, produced in great quantities, pale green or greenish white, with the lip of the same colour, its oblong obtuse front lobe serrated at the base, and the appendage blunt convex and ribbed. It is a most profuse bloomer during autumn, yielding many dozens of flowers, which are very useful for cutting, and last for a long time in perfection.—*Guayaquil*.

L. macrophylla, *Lindley*.—A distinct-coloured species, with large ovate ribbed pseudobulbs, ample lanceolate plaited leaves, and bold flowers, of which the sepals are olive green, and the petals, which are nearly as long as the sepals, and broadly rounded and undulated at the extremity, are of a pale nankin-tinted sulphur; the lip is also of the same tint of

pale sulphur with purplish spots on the edges of the lobes, and has a tongue-shaped appendage.—*Peru: Caraccas.*

FIG.—*Annales de Gand*, 1848, t. 221.

SYN.—*Maxillaria macrophylla.*

L. plana, *Lindley*.—A rather showy species, with large ovate-oblong ribbed pseudobulbs, bold oval lanceolate plicate leaves, and handsome flowers some three and a half inches across, having flat oblong spreading sepals of a fine madder red, smaller white petals, with a rosy crimson blotch, having in it an eye-like spot of white on their recurved tips, and a still smaller white lip spotted with rosy crimson, the roundish front lobe serrated, and the appendage oblong blunt and obsoletely three-lobed. We saw this plant well flowered in the collection of R. H. Measures, Esq., Woodlands, Streatham. Mr. Measures also has a variety with a pure white lip, and another with a bright rose-coloured lip. It flowers during the winter.—*Bolivia.*

FIG.—*Bot. Reg.*, 1843, t. 35.

L. Schilleriana, *Rchb. f.*—A free-growing plant, with the habit of *L. gigantea*, but a more desirable species. The pseudobulbs and foliage are like those of *L. Skinneri*, but the leaves are more erect. The scapes supporting the flowers are about six inches in height. The sepals are spreading, about four inches long, greenish brown, the petals smaller, very pure white, converging over the base of the lip, the latter being pure white in front, and with a slight tinge of yellow at the base. The flowers are set on the stalk as in *L. Skinneri*, that is, they look the observer in the face, and not as in *L. gigantea*, in which they look down at the pot in which the plant is growing.—*Central America.*

L. Skinneri, *Lindley*.—A beautiful and free-flowering species, and one of the most striking ornaments of our Orchid houses. It has oblong-ovate compressed pseudobulbs, oblong-lanceolate membraneous plaited leaves, and single-flowered radical scapes like most of the other species. The flowers are very large, five to six inches across, and of a fleshy texture, the sepals oblong-lanceolate acute, spreading, blush white, the petals are about half the length, ovate, erect, convolute over the column, with the tips reflexed, more or less deeply tinted with rose, and the lip is three-lobed, the middle lobe roundish ovate deflexed, wavy at the edge, white spotted

with deep rose red or crimson, the appendage forming a large fleshy tongue-shaped callosity on the disk. It blooms during the winter months, lasting a long time in beauty. This plant ought to be in every collection, as it is one of the finest we have for winter blooming, its large numerous singularly - formed and richly - coloured flowers rendering it at that season peculiarly attractive. There are a good many varieties, several of which have been named.—*Guatemala*.



LYCASTE SKINNERI.

FIG.—*Bot. Mag.*, t. 4445; *Bateman, Orch. Mex. et Guat.*, t. 35; *Paxton, Mag. Bot.*, xi. 1, with tab.; *Flore des Serres*, tt. 303, 304; *Pescatorea*, t. 39; *Sieb. Fl. Jard.*, 1862, t. 3; *Jennings, Orch.*, t. 9; *Floral Mag.*, t. 192; *Puydt, Les Orch.*, t. 22 (rubra).

SYN.—*Maxillaria Skinneri*; *M. virginalis*.

L. Skinneri alba, *Hort.*—A very fine variety, with flowers of full average size, and well expanded. The sepals and petals are of a pure white colour; the lip is also white with the faintest tinge of yellow about the centre, the tongue-shaped appendage being wholly yellow. A most desirable plant.—*Guatemala*.

FIG.—*Floral Mag.*, 2 ser., t. 35, fig. 1; *Pescatorea*, t. 39, right-hand fig. (smaller form).

L. Skinneri amabilis, *Williams.*—A very large and handsome variety, having flowers six inches in diameter. The sepals are about two inches in breadth, of a pale rose colour, the petals broad, of a rich magenta, and the lip white, indistinctly blotched with pale rosy purple.—*Guatemala*.

L. Skinneri delicatissima, *Warner.*—A distinct and handsome variety, the large flowers measuring six inches across. The sepals are blush white, the petals more deeply flushed with rosy pink, and the lip creamy white spotted with rose, the appendage being more distinctly yellow, and tongue-

shaped. It blooms in February, and continues in perfection six weeks.—*Guatemala*.

FIG.—*Warner, Sel. Orch. Pl., i. t. 10, fig. 1.*

L. Skinneri gloriosa, *Williams*.—A fine and handsome variety of this beautiful winter-blooming Orchid. The flowers are seven inches across; the sepals being very broad, of a pale pink colour, whilst the petals are rich rose colour, especially on the inner surface, and the lip is large, white, marked faintly with rose.—*Guatemala*.

L. Skinneri nigro-rubra, *Hort*.—A very handsome deep-coloured variety, bearing flowers of the largest size, with the broad spreading ovate sepals of a deepish mauve colour or lilac-rose, the petals of a rich puce purple or plum colour, and the lip with deep rose side lobes and a front lobe of deep sanguineous purple, the appendage being yellow. Very fine.—*Guatemala*.

FIG.—*Floral Mag., 2 ser., t. 35, fig. 2.*

L. Skinneri picturata, *Warner*.—A choice and showy variety, having flowers seven inches across. The sepals are blush, strongly tinged with rose near the base and along their centre, the petals are white, the basal part flushed with pink and striped with rosy lake; and the lip is creamy white, the front part spotted with purple-crimson and the basal part bearing an appendage or blotch of deep purplish crimson.—*Guatemala*.

FIG.—*Warner, Sel. Orch. Pl., i. t. 10, fig. 2.*

L. Skinneri purpurata, *Warner*.—A strikingly bold and handsome variety, with large flowers, of which the sepals are oblong acute and of a faint blush white, the petals similar in colour but smaller, and the lip wholly of the richest crimson-purple, with a purple appendage.—*Guatemala*.

FIG.—*Warner, Sel. Orch. Pl., i. t. 10, fig. 3.*

L. Skinneri rosea, *Williams*.—A magnificent variety, having very large flowers, these being quite seven inches in diameter. The sepals and petals are rich dark rose, and the lip white, spotted with crimson. This is the finest variety we have seen, and it lasts six weeks in beauty.—*Guatemala*.

L. Skinneri roseo-purpurea, *Williams*.—A large-flowered and handsome variety, the flowers being seven inches in

diameter. The sepals and petals are bright rose colour, and the whole of the lip of an intense magenta-crimson.—*Guatemala*.

L. Skinneri superba, *Moore*.—A splendid variety, of a very showy character, and very distinct. The flowers are large and attractive, the sepals being of a delicate rose or deep blush, deeper at the base, the petals are intense rich rosy crimson, and the lip white, with a blotch of crimson on each of the lateral lobes, and having the tongue-like appendage clear yellow.—*Guatemala*.

FIG.—*Floral Mag.*, t. 24.

L. Skinneri vestalis, *Williams*.—A remarkably fine variety, with flowers seven inches across, almost rivalling those of *L. Skinneri alba* in purity of colouring. The sepals, which are an inch and three-quarters wide, are pure white, the petals are also white, with a faint venation of pale rose on the inner face, and the lip is pure white, with very faint markings of pale rose.—*Guatemala*.

L. Smeeana, *Richb. f.*—A very interesting plant, which it has been suggested is probably a hybrid between *L. Skinneri* and *L. Deppei*, to which latter it bears considerable resemblance in its pseudobulbs and manner of growth. The colour of the flower is white, excepting the lip, which is bordered with light purple and spotted over its entire surface. The appendage of the lip is short, with an obscure central keel. It was first flowered by A. H. Smee, Esq., Carshalton, and was named in compliment to him by Prof. Reichenbach. It flowers during the autumn and winter months.—*Guatemala*.

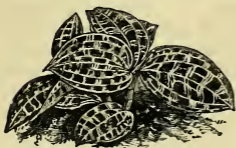
MACODES, *Blume*.

(Tribe Neottieæ, subtribe Spirantheæ.)

A beautiful genus of variegated tropical Orchids, allied to *Anæctochilus*, which it closely resembles, but from which it differs in its spurless sessile lip, with a three-lobed limb, the front lobe of which is linear spathulate. The only species is a native of Java.

Culture.—The treatment is in every respect similar to that of *Anæctochilus*, which see.

M. Petola, Lindley.—One of the finest of the Anæctochiloid group, which has the further merit of being very free-growing, and easy to increase. Of this there are two varieties, one inferior to the other, but both of them handsome. It



MACODES PETOLA.

grows about four inches high, and has oval acute leaves three inches long, and two inches broad, the ground colour lustrous, and resembling light-coloured green velvet, enriched with well-defined netted lines and bands of a pale or yellowish hue, deepening to a golden hue, and covering the whole

surface. The flowers grow in racemes, terminating an erect scape eight to ten inches high, and are pale reddish brown outside, whitish within. It is a very charming species, and rare in collections.—*Java ; Borneo*.

FIG.—*Xenia Orch.*, i. t. 96, fig. 1 ; *Blume, Orch. Arch. Ind.*, t. 31, fig. 2 ; *Id.*, t. 36.

SYN.—*Anæctochilus Petola* ; *Anæctochilus Veitchii* ; *Neottia Petola*.

MASDEVALLIA, Ruiz et Pavon.

(Tribe Epidendreae, subtribe Pleurothalleae.)

Of this very interesting genus of cool Orchids, we have many charming and beautiful species, thanks to the efforts of our Orchid collectors. Some of the species are very distinct and brilliant in colour, which renders them especially valuable for decorative or exhibition purposes—we refer to such sorts as *M. Lindeni*, *M. Veitchii*, *M. Harryana*, *M. Davisii*, and others, which furnish colours that add much to the brilliancy of the display in our Orchid houses when they are in flower, and enrich our collections by the contrast they afford to other types of this wonderfully varied family. The plants are tufted-growing epiphytes without pseudobulbs, but having a creeping rhizome, from which the short one-leaved stems grow up, the leaves being thick and leathery in texture, and

tapered at the base into a petiole ; the peduncles which grow up with the petioles are one or less frequently many-flowered. The peculiar feature of their flowers is that the three sepals are connivent into a tube, less frequently free to the base, the points of the sepals being extended into a tail-like form, and the petals and lip are usually small and inconspicuous. They are natives of Tropical and Central America, more than a hundred species having been discovered, most of them within the last few years.

Culture. — The *Masdevallias* are beautiful neat-growing plants, and should be in every collection, for they occupy but little space, and are both free-blooming and free-growing, provided they get the treatment they require. They were for a long time grown in too much heat by the majority of Orchid cultivators, but are found to grow best in the cool house with and under the same treatment as *Odontoglossums*. They should be potted in peat and sphagnum moss, with good drainage, and always kept moist at the roots, though never allowed to get soddened by the presence of bad soil or deficient drainage, which is too often the case with these plants. It is a good plan to keep live sphagnum about the roots, which not only looks neat and pleasing to the eye, but is an index to the sweetness of the soil beneath, and an indication that it has not become soddened by excess of stagnant water. Thus grown in a cool house they will produce a profusion of flowers, and will sometimes bloom twice during the year.

Masdevallias require, however, considerable attention and care to keep them in good order, being subject to the attacks of the red thrips, which, if allowed to accumulate, will soon disfigure the foliage and cause the plants to dwindle away ; it is, therefore, necessary to keep a watchful eye to prevent the intrusion of these pests, and to well wash the plants whenever the first trace of them is seen. The plants should be placed

as much in the light and as near the glass as possible, but shaded from the sun, and water should be freely given to them.

M. amabilis, *Richb. f.*—A very pretty species, forming dense tufts of obovate-oblong obtuse emarginate leaves, about five inches long, on terete channelled footstalks which are closely sheathed at the base, and one-flowered peduncles nearly twice the height of the leaves, bearing flowers of which the perianth tube is orange-carmine above, white tinged with pink beneath, the lobes being of a bright rosy carmine, the upper one triangular, terminating in an erect filiform appendage (tail), and the side ones broader oblique ovate decurved, and ending in similar appendages. This is a very free-blooming species, and although somewhat small-flowered it is nevertheless very pretty in a mass. The figure quoted below represents a variety which MM. Linden and André call *M. amabilis lineata*, which has the lateral sepals marked by three curving purple veins, meeting at the apex, and there are also three straight purple lines on the narrower dorsal lobe.—*Peru*.

FIG.—*Illust. Hort.*, 3 ser., t. 196.

M. Backhousiana.—See MASDEVALLIA CHIMÆRA BACKHOUSIANA.

M. bella, *Richb. f.*—A very beautiful and distinct species of the *Chimæra* group, discovered by Mr. Wallis. The leaves are densely tufted cuneate-oblong, with truncate bracts sheathing the stalkless base. The flowers are produced upon drooping peduncles, and on the inner surface are yellow, irregularly and densely spotted with purplish brown on the dorsal sepal and the outer half of the lateral sepals, the tails being from three to four inches long, and also of deep purplish brown; the base of the dorsal sepal and the interior sides of the lateral ones are ochre yellow; the reniform clawed lip is pure white, and the lamina entirely covered with radiating lamellæ. The exterior surface of the flowers is of a shining dull deep purple. It flowers during the autumn months.—*New Grenada*, 8,000 feet elevation.

FIG.—*Floral Mag.*, 2 ser., t. 433; *Gard. Chron.*, N.S., xiii. 756, figs. 131—2; *Id.*, xvi. 236, fig. 50; *Belg. Hort.*, 1884, t. 3.

M. Boddaertii, *Linden*.—This species is named after Dr. Boddaert, of Ghent, a great enthusiast amongst Orchids. It





MASDEVALLIA BELLA.

Wm. G. Carr
1851







MASDEVALLIA WALLISII.



was introduced by Mr. Linden, who considered it to be a variety of *M. ignea*, but we cannot agree with him in this, as both the foliage and flowers are more nearly akin to the old *M. coccinea*. In fact we consider it may possibly be a gigantic free-flowering form of that species, or if not, to be very closely allied to it. The leaves are of leathery texture, lanceolate obovate, with sheathing truncate scales at the base. The flowers are solitary on tall peduncles, and are about two and a half inches long by two to two and a quarter inches broad, very flat, and of fine substance, the decurved filiform dorsal lobe of the perianth, as well as the throat and lower portion of the ovate acute (not tailed) lateral sepals, are yellow, gradually passing to a bright crimson-scarlet more or less mottled with yellow, the broader segments having three distinct crimson veins or stripes extending from the base to the apex. It flowers in April and May.—*New Grenada*.

FIG.—*Ill. Hort.*, 3 ser., t. 357.

SYN.—*M. ignea* *Boddaertii*.

M. candida.—See MASDEVALLIA TOVARENSIS.

M. Chelsoni, *Richb. f.*—This is, we believe, the first hybrid *Masdevallia* that has been raised in this country; it is said to be a cross between *M. Veitchii* and *M. amabilis*. The flowers resemble those of *M. Veitchii* in form, but are considerably smaller and duller in colour; the segments of the perianth are orange, the lower ones being covered by a large number of small excrescences of a bright mauve colour; these take the form of two broad stripes, and give the surface a somewhat hairy appearance. We saw a fine plant of this in the possession of W. Lee, Esq., Downside, Leatherhead, who has a grand collection of these gems. It blossoms in September and October.—*Garden hybrid*.

M. Chimæra, *Richb. f.*—It is only lately that we have seen the beauties of this truly wonderful Orchid, for the plant that was first distributed for it has proved to be quite a distinct thing, now known as *M. nycterina*. It is of tufted growth, as are most of the species, the leaves being six to nine inches high, cuneate oblong acute, narrowed to and sheathing at the base. The scapes bear each a solitary much expanded flower, of which the three sepals are but slightly connate at the base, triangular, with the ends drawn out into long slender tails, pale ochraceous yellow, with numerous purple-violet spots,

the margin densely fimbriate, and the whole inner surface hispid, the tails of a deep violet-purple colour; the petals are cuneate oblong, slit at their apex into four wings containing in their centre a great warty body; the lip is slipper-shaped with the edges denticulate. This species, with its allies that have drooping flowers, should be grown in baskets suspended from the roof of the house.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 185; *Id.*, t. 186, fig. 1; *Florist and Pomol.*, 1873, 2, with fig.; *Puydt, Les Orch.*, t. 23.

M. Chimæra Backhousiana, *Rchb. f.*—This plant is very closely allied to *M. Chimæra*, and we agree with those who consider it to be a variety of that species. Reichenbach says it is coloured like the well-known *M. Wallisii* (the usual *Chimæra* of gardens), but the colours are much brighter and the flowers much larger, having also a very long narrow lip. A variety of this plant has been flowered by Messrs. Backhouse & Son, measuring sixteen inches across the blossom.—*New Grenada*.

M. coccinea, *Linden.*—A charming little plant of compact growth, with tufts of leathery oblong-obtuse dark green three-nerved leaves, the stalk-like base somewhat terete and channelled. The peduncles are a foot high, and the flowers solitary, the perianth with a short curved tube, which with the upper linear-subulate sepal is rosy pink, the elliptic falcate lower sepals of a glowing scarlet. Dr. Lindley describes it as “a most charming thing, with flowers as red as a soldier’s coat.” This little gem has often been sent to this country, but the plants have either been dead on arrival, or have soon died through being subjected to too great heat, and other bad treatment. We have, however, now found out the proper method of growing them, though it is still a rare species. A variety of *M. ignea* is often sold for this plant, but it is totally distinct from that species, the foliage being much stouter and shorter, and the flowers larger.—*New Grenada: Pamplona*.

FIG.—*Gard. Chron.*, 1868, 75, with fig.; *Id.*, N.S., xvi. 236, fig. 49; *Xenia Orch.*, v. t. 74, figs. 1, 2; *Gartenflora*, t. 870; *Floral Mag.*, 2 ser., t. 410, fig. 2.

M. Colibri.—See *MASDEVALLIA EPHIPPIMUM*.

M. Davisii, *Rchb. f.*—A very distinct species, with narrow linear-oblong keeled thick coriaceous leaves eight inches

long, and taller scapes supporting one horizontal orange-yellow flower, which has a subcylindrical tube and shortly caudate sepals, of which the upper one is smaller ovate, contracted into a slender erect tail an inch long, and the lateral ones are two and a half inches long, nearly parallel, ending in a short tail a quarter of an inch long, the limb oblong; the small lip is linear-oblong obtuse and three-keeled. A very valuable addition to this class of plants, its distinct colour forming a lively contrast with those of other popular kinds.—*Peru*.

FIG.—*Bot. Mag.*, t. 6190; *Xenia Orch.*, iii., t. 203; *Orchid Album*, ii. t. 76.

M. elephanticeps, *Richb. f. et Warsc.*—A species of bold and striking character, having tufts of acute cuneate-spathulate leathery leaves eight or nine inches long, and stout peduncles a foot high, each bearing a solitary horizontal flower three to four inches long of peculiar form, and which has been compared to an elephant's head. The tubular portion of the perianth is produced into a chin at the lower base, and with the lower sepals is of a dark rich crimson-purple, pale purple on the outer side, united for about one-third of their length, the tail lobe continuations yellow on the inner surface, and gently curving upwards; the upper sepal, which stands nearly parallel to the lower one, is bright yellow both inside and out, separated much lower down, the three-cornered basal part gradually narrowing into the yellow tail, which has a slight upward curve; the small lip is obtusely rhomboid, its front half densely papillose. The variety named *pachysepala* has the tails of the sepals broader.—*New Grenada*.

FIG.—*Xenia Orch.*, i. t. 3; *Id.*, t. 74, figs. 3, 4 (*pachysepala*); *Flore des Serres*, t. 997.

M. Ehippium, *Richb. f.*—A very curious species of robust and striking character, forming a dense tuft of spathulate-oblong three-nerved leaves a span long, and winged ancipitous or triquetrous peduncles upwards of a foot high, bearing each a large flower, four inches long, with the dorsal sepal small, yellow, roundish, ending in a long reflexed yellow tail, and the two lateral sepals reddish or chestnut brown, broad and cymbiform at the base, each abruptly attenuated into a long yellow tail; thus there is a purplish brown pouch-like base, with a few paler streaks, and three divergent orange-yellow tails from three to four inches long. On the inside of the lateral sepals are five corrugated ribs, which meet at the apex

and form corresponding ridges on the outer surface. The colours of the flowers are said to have a bluish metallic lustre, like the plumage of some of the humming birds. This plant is extremely rare.—*New Grenada: Antioquia.*

FIG.—*Xenia Orch.*, ii. t. 195; *Bot. Mag.*, t. 6208; *Ill. Hort.*, 3 ser., t. 180; *Floral Mag.*, 2 ser., t. 443.

SYN.—*M. Trochilus*, *M. Colibri.*

M. Estradæ, *Rehb. f.*—A dwarf and exceedingly pretty profuse-blooming species. Its densely-tufted leaves are elliptic oblong or spatulate, obtuse or bifid, coriaceous in texture, deep green, about four inches long including the petioles. The scapes are erect, slender, single-flowered; the sepals are combined at the base into a short campanulate tube, with a spreading limb, nearly equal in size, the dorsal one oblong boat-shaped, half an inch long, yellow in the lower and violet-purple in the upper half, suddenly contracted into a yellow filiform tail an inch long; the lateral sepals are similar, but flatter, violet-purple below and whitish above, each ending in a filiform tail. The general effect of the plant is very pleasing. It was first observed in the garden of Dona Estrada, a lady of New Grenada, who is described as a skilful grower of Orchids.—*New Grenada.*

FIG.—*Bot. Mag.*, t. 6171.

M. Harryana, *Rehb. f.*—A free-growing and very handsome species, which in its habit of growth resembles *M. Lindenii*, of which it is sometimes regarded as a variety, differing in its colouring. It forms thick tufts of long-stalked narrowly obovate-spathulate leathery leaves, eight or ten inches long, and flowers of the richest blood-crimson on scapes somewhat taller than the leaves. It is one of the handsomest and most distinct species of this genus. The flowers are three inches long, the sepals connate below into a decurved subcylindrical tube, which is yellow, as is the throat, the dorsal sepal crimson, filiform from a small triangular base two inches long, the lateral ones nearly an inch wide, and about two inches long, flat, semiovate, attenuate but not caudate at the apex, all of the richest blood-red suffused with magenta. There are many varieties, varying in colour, in shape, and in the size of the flowers.—*New Grenada.*

FIG.—*Florist and Pom.*, 1873, 169, with tab.; *Belg. Hort.*, 1873, t. 21; *Illust. Hort.*, 3 ser., t. 142; *Bot. Mag.*, t. 5990 (as *Lindenii*); *Flore des Serres*, t. 2250; *Floral Mag.*, t. 555 (tube green); *Id.*, 2 ser., t. 410, fig. 3.

M. Harryana atrosanguinea, *Williams*.—This variety is the darkest form of *M. Harryana* we have yet met with, having richly coloured handsome flowers of large size, the lateral sepals being nearly an inch wide, of a rich glowing crimson flushed with magenta. The points of the lateral sepals are falcate-lanceolate, so that they turn inwards, and nearly meet at the point.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 105.

M. Harryana cœrulescens, *Hort*.—The flowers of this variety are very large and of fine substance, the two lower sepals having together almost a circular outline, and measuring across the centre two and a half inches; these lateral sepals are broadly semiovate and apiculate, and of a rich magenta-crimson, flushed with bluish purple.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 24.

M. Harryana Denisoniana, *Hort*.—This is undoubtedly one of the largest and richest-coloured forms of the group of varieties to which the name of *M. Harryana* is applied. The lateral sepals are very broad and have each a short acute subulate point, which is turned inwards almost horizontally. The colour is the deepest blood-crimson flushed with magenta. This plant is often found in collections under the name of the Bull's-blood variety of *M. Harryana*, but after making many comparisons between the two we have always found them to be the same. It is certainly one of the most distinct varieties of this beautiful species, and should be found in every collection.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 79.

SYN.—*M. Denisoni*.

M. Harryana grandiflora, *Williams*.—This is the largest form of *M. Harryana* we have seen. It has a fine and well-rounded form with flowers of a bright magenta-crimson, about three inches long by two and three-quarter inches broad, and having the tips of the lateral sepals turned inwards in a horizontal fashion.—*New Grenada*.

M. Harryana læta, *Rchb. f.*—A very distinct and beautiful variety, having large bright rosy purple flowers. It is very peculiar in shape, being much narrowed at the upper part of the flower, and having the margins slightly undulated. This variety is more distinctly striped than are many of the forms.—*New Grenada*.

M. Harryana lilacina, *Williams*.—A very delicate-coloured and beautiful form, having broad almost circular flowers of a bright rosy lilac colour, which is quite distinct from that of any other variety known to us.—*New Grenada*.

M. Harryana miniata, *Williams and Moore*.—Although *M. Harryana* varies as much as any Orchid we know of, we had no suspicion or hope that a scarlet-flowered variety would ever present itself. Great was our surprise, therefore, when visiting the collection of W. Lee, Esq., Downside, Leatherhead, in the summer of 1883, to find a beautiful vermilion-coloured form of this plant. We subsequently met with the same variety in the collection of R. Warner, Esq., Chelmsford. In this form the flowers are of the full average size, the lateral sepals being fully two inches long and one inch wide, of a bright vermilion-red flushed with scarlet, the principal ribs being marked out with rich crimson lines, and the yellow eye being very distinct. It is a bright-looking and attractive variety of surpassing beauty.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 110.

M. Harryana sanguinea, *Hort*.—A distinct and handsome form, having large brilliantly-coloured flowers of a reddish crimson, flushed with orange.—*New Grenada*.

M. Harryana splendens, *Hort*.—A very high-coloured and beautiful variety, having broad finely-shaped flowers of an intense mauve-magenta, the veins being distinctly marked with rich crimson.—*New Grenada*.

M. Harryana versicolor, *Moore*.—This is the most distinctly marked variety we have yet met with. The flowers are large, almost circular, and enlivened by a deep yellow eye; the lateral sepals have a ground colour of bright magenta, variously marked with rich maroon-crimson: in some instances the markings take the form of a conspicuous band on each of the outer margins, in other cases they consist of blotches of irregular outline variously distributed on the surface. This fine variety was first noted among the choice Orchids cultivated in the ducal gardens at Trentham, and we have also seen it in the grand collection of Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking.—*New Grenada*.

M. Houtteana, *Rehb. f.*—A distinct and free-flowering species of a very pleasing character. It forms dense tufts of

linear-lanceolate acute leaves, which are from ten to twelve inches in length by about a quarter of an inch in breadth, thin in texture, carinate below, and of a light green colour. The scape is about half the length of the leaves, single-flowered; the flowers about an inch across, with broad semiovate-triangular spreading sepals of a creamy white profusely spotted with blood-red, the point of each sepal being extended into a terete tail-like point of the same blood-red colour as the spots, and measuring from two to three inches in length. It has been exhibited under the name of *M. amabilis*.—*Venezuela*, elevation 8,000 feet.

FIG.—*Flore des Serres*, t. 2106.

M. ignea, *Richb. f.*—A very handsome and distinct species, with tufts of elliptic obtuse leathery long-stalked leaves, about six inches high, and taller graceful scapes, bearing large horizontal decurved flowers, fully two inches long, with a curved subcylindrical tube, the dorsal sepal subulate from a broadish base, deflexed between the elliptic-oblong lateral ones, the colour a bright cinnabar red inside, the three nerves on each sepal marked by deeper crimson lines. There are several varieties of this species, varying in size and in the colour of their flowers. This plant, when well grown, forms a most beautiful object, the colour being so distinct. We saw a splendid specimen of it, bearing over forty flowers, in Baron Schröder's collection at Staines in the month of January, 1884.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5962; *Florist and Pom.*, 1873, 169, with tab.; *Illust. Hort*, 3 ser., t. 333; *Gard. Chron.*, 1872, 545, fig. 149; *Id.*, n.s., xvi. 305, fig. 57; *Orchid Album*, ii. t. 62; *Floral Mag.*, 2 ser., t. 15.

M. ignea aurantiaca, *Williams*.—A distinct variety, having bright orange-coloured flowers veined with vermilion. This forms a nice companion to the other forms of the type, being unique in colour.—*New Grenada*.

M. ignea Massangeana, *Williams*.—A large-flowered and distinct kind, having bright orange-vermilion coloured flowers, flushed with rosy purple. This variety was named in honour of M. Massange, Chateau de Baillonville, Marche, Belgium.—*New Grenada*.

M. ignea grandiflora, *Williams*.—A very large and handsome variety, having circular flowers of great substance; the lateral sepals are bright vermilion lined with crimson and suffused with purple.—*New Grenada*.

M. inæqualis, *Richb. f.*—This, although one of the smaller-flowered species, is nevertheless extremely pretty. It is allied to *M. triangularis*, and like that has thin-textured flowers. The leaves are of the usual character. The flowers have a somewhat cup-shaped tube, and well-expanded sepals, ornamented with three slender tails upwards of an inch in length, the ground colour being yellowish white prettily spotted with purple. It is a desirable species for basket culture.—*New Grenada*.

M. Lindeni, *André*.—A very handsome and brilliant species, evidently closely related to *M. Harryana*, as some of the varieties run so near to that species as to be scarcely dis-



MASDEVALLIA LINDENI.





MASDEVALLIA MACRURA.

tinguishable therefrom. Like its allies it has tufts of oblong-lanceolate obtuse or emarginate leaves, tapered below, and solitary flowers on scapes taller than the leaves, of a rich magenta-purple, the short curved tube and throat being white. The flowers of this species are not so large as those of some forms of the allied *M. Harryana*, but their distinct and brilliant colour renders the plant a very conspicuous object in a collection or group. The plant figured under this name in the *Botanical Magazine* is *M. Harryana*.—*New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., t. 42; *Jennings, Orch.*, t. 17; *Floral Mag.*, 2 ser., t. 28; *Id.*, t. 410, fig. 1; *Gard. Chron.*, N.S. i., 385, fig. 85; *Id.*, xvi. 336, fig. 62; *Florist and Pom.*, 1873, 169, with tab.

M. macrura, *Richb. f.*—A very rare and stately-growing species, producing tufts of unusually large stout coriaceous bluntly oblong glossy leaves, from two to three inches in breadth, the scapes bearing solitary flowers, which have a broad short perianth divided into an upper and lower lip; the former corresponding with the dorsal sepal has a triangular base extending into a stout tail, while the lower lip formed of the lateral sepals is somewhat larger, but parted so as to form two tails; the broader parts of the sepals are light reddish brown, marked with dark purple-brown streaks and spots, the tails, which are from four to six inches in length, being yellow. The principal nerves of the interior of the flowers are quite prominent, and covered with numerous blunt warts.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., vii. 12, fig. 2; *Id.*, xvi. 336, fig. 65.

M. maculata, *Klotzsch and Karst.*—A remarkable species of this very remarkable genus, of stoutish habit, producing tufts of oblong spathulate leaves, narrowed to the base, and solitary horizontal flowers, which have a cylindrical tube, of which the upper side is yellow, the subulate dorsal sepal being of the same colour, and fully three inches long, while the lower side of the tube is rich purple-brown, which colour is continued on the two lanceolate lateral sepals, the subulate tails of which are as long as that of the dorsal sepal, and green for fully two-thirds of their length.—*Caracas*.

FIG.—*Flore des Serres*, t. 2150.

M. militaris, *Richb. f. and Warsc.*—As there seems to be some confusion respecting this species, we feel we cannot do better than give Professor Reichenbach's description, taken from the *Gardeners' Chronicle* (N.S., xiii. 742): "It was

called, from its flowers reminding one of English soldiers' jackets, *Masdevallia militaris*; and the next critical species is *Masdevallia ignea*, with its dazzling flowers. It is very easily recognised by its exceedingly stiff dark green leaf, of great substance, standing on a petiole shorter than the blade, by a thicker peduncle, a much wider flower-tube, and a wider limb, the first yellow, the limb cinnabarine, now partly yellow; the lip is much broader and shorter. The plant does not flower very readily, while *M. ignea*, with its much broader and longer, lighter green, thinner long-stalked leaves and much less wide flowers gives a profusion of bloom. It was originally discovered by the late V. Warszewicz."—*New Grenada*.

M. nycterina, *Rehb. f.*—A very curious species of the *Chimæra* group, and one which was originally figured and sent out for that species by M. Linden; it, however, proves to be not only distinct from but altogether inferior to it in its grotesque beauty. The plant is of moderately strong growth, with oblanceolate leaves, keeled behind and tapered to the base. The scapes, which each bear one blossom, are much shorter than the leaves, and spread out horizontally; the flowers have a short slender dark purple tube, and three sepals, which together form a triangular limb about two inches deep, each being continued into a subulate tail about two inches long, so that the expanse of the flower from tip to tip of the opposite tails is about six inches; the colour of the broader parts is a pale buff-yellow, beautifully blotched and spotted with purple-brown, the whole of the surface being also covered with minute hairs, and the tails are wholly of the same purple-brown tint as the spots. The lip, which in these plants is seldom conspicuous, is here larger than usual, and forms rather a prominent object in the centre of the flower, having a buff strap-shaped claw and an incurved sacciform white limb. This species forms a very interesting subject for a basket, as the flowers are produced horizontally from the base of the plant.—*New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., tt. 117, 118 (as *Chimæra*); *Floral Mag.*, 2 ser., t. 150; *Gard. Chron.*, N.S., i. 639, fig. 134; *Id.*, xvi. 336, fig. 64.

M. polysticta, *Rehb. f.*—A very pretty free-blooming species of the racemose-flowered group. The plants form a dense tuft of spathulate-oblanceolate obtuse or retuse three-nerved leaves, and produce numerous scapes taller than the leaves, each bearing a raceme of from six to eight flowers, which are of a very pale lilac, almost white, and speckled all over with

purple, the filiform tails, which are about an inch long, being olivaceous spotted with purple. In form the flowers have a short tube, an ovate cymbiform dorsal sepal, and narrower obliquely oblong lateral sepals, all of which are ciliolate at the edge.—*Northern Peru*.

FIG.—*Bot. Mag.*, t. 6368 (not t. 6258, which is *M. melanopus*); *Illustr. Hort.*, 3 ser., t. 198; *Gartenflora*, t. 869; *Rev. Hort.*, 1880, 250, with tab.; *Gard. Chron.*, N.S., iii. 657, fig. 134.

M. radiosa, *Rehb. f.*—A pretty little species, with flowers in the way of those of *M. Chimæra*, but only about two-fifths of their size. The inner surface of the flower is blackish purple, being densely covered with blackish warts on a purple ground, and the tails are almost black; the lip is white. It was discovered by Mr. Wallis.—*New Grenada: Frontina*.

M. Reichenbachiana, *Endres.*—A distinct and free-flowering species, which when discovered by the late Mr. Endres, was named by him after his friend Professor Reichenbach. The plant is similar in the outline of its flowers to *M. coriacea*. It is of densely tufted habit, with narrowly spathulate carinate leaves, and an angular three-flowered scape, which somewhat exceeds the leaves. The flowers are thin in texture, two inches long, and have a funnel-shaped tube very narrow at the base, the dorsal sepal triangular caudate, the lateral sepals elongate triangular, with short slender tails; they are yellowish white with a blood-red blotch on the posterior part in the typical form, in other varieties with radiating blood-red lines, or a nearly black blotch.—*Costa Rica*.

M. Roezlii, *Rehb. f.*—An interesting species, whose flowers resemble those of *M. Chimæra* both in their triangular outline and their dark purplish brown colour. The leaves are oblong ligulate. The flowers are produced singly on the scape, which has the peculiarity, as is usual in the group (*vide Rehb.*), of developing blossoms in succession, though only after a considerable interval; the perianth is spread out nearly flat, the sepals, which are only connate at the very base, having an oblong limb extended at the apex into an entire linear-filiform tail about two inches long; the small ligulate bilobed petals and broadly saccate lip occupy the centre, the latter being entire at the edge with the front inflexed, and having down the centre three longitudinal nerves and several transverse nervilles on each side. The colour of the flower is a fine deep blackish purple, with still darker warts

near the margin, the disk pale and somewhat tessellated ; the petals and lip are light mauve, the former having beautiful dark eye blotches.—*New Grenada*.

FIG.—*Xenia Orch.*, ii, t. 186, fig. 2.

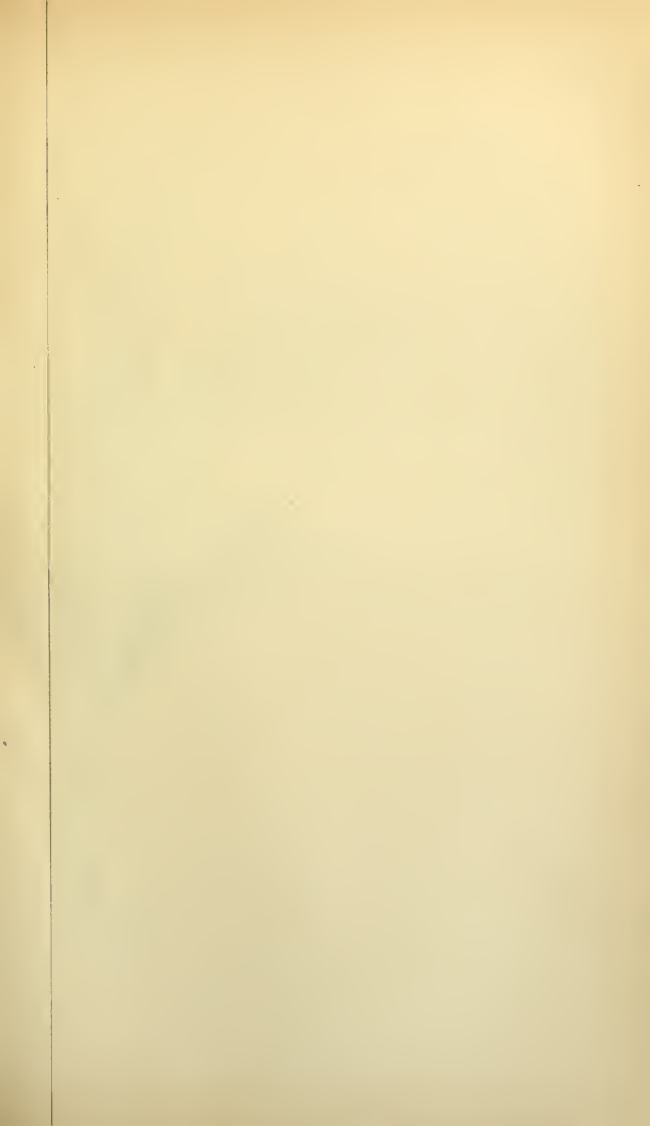
M. Roezlii rubrum, *Hort.*—A handsome and brighter-coloured form of *M. Roezlii*, with erect flower scapes six to eight inches long, and large widespread flowers, the three triangular sepals being only connate at the very base, each tipped by a chocolate-red tail three or four inches long ; the general colour of the flower is a creamy yellow, mottled with dark chocolate-red, and the inner surface is scabrous. The petals are narrow, round at top, pale fawn with a purple spot near the end, and the lip is yellowish, tongue-shaped, roundish-oblong in front, with inflexed edges.—*New Grenada*.

M. rosea, *Lindley*.—Although described long since it was not until 1880 that this species was introduced into cultivation. It is a dwarf-growing plant, producing its flowers in



MASDEVALLIA ROSEA.

great profusion, and for cultivators offers altogether a new and distinct type. The plant is of tufted habit, like the rest ; its leaves are elliptic acute and long-stalked, and its scapes are longer than the leaves, bringing the flowers well up into view.





MASDEVAL



Wm. S. Jones
S. Jones
ROSEA.

They have a cylindrical tube an inch long, which is deep crimson-purple above and rosy lilac beneath; the dorsal sepal is filiform, two and a half inches long, bent down closely over the lateral ones, which are semiovate, with an attenuated point as long as the dorsal one, and of a bright rose colour, the attenuated tail-like portion being crimson-purple.—*Peru*.

FIG.—*Gard. Chron.*, N.S., xiii. 681, figs. 117, 118; *Id.*, xvi. 337, fig. 63.

M. Schlimii, *Linden*.—A very rare and distinct species, producing as many as from six to eight secund long-stalked flowers on a tall scape, each flower issuing from a bluntish sheathing bract. The plant is of stoutish habit, the stalked oblong leaves narrowed to the base being a foot long and three inches broad. The flowers are handsome and dissimilar; the dorsal sepal is considerably smaller than the others, with a triangular base, soon narrowing into the thickish tail; the lateral ones are more oblong, suddenly narrowing into tails of about two inches long. The colour is a reddish brown, with yellow tails and dorsal sepal; on closer inspection the inner and upper part of the lateral sepals may be seen to be also yellow, but covered with innumerable small reddish brown spots, while the petals are white, and the lip yellowish spotted over with reddish brown. It flowers during the winter months—November to February in its wild habitats—and was first flowered by Sir Trevor Lawrence, Bart., M.P.—*Colombia*: *Merida*.

FIG.—*Gard. Chron.*, N.S., xix. 532, fig. 80.

M. Shuttleworthii, *Rchb. f.*—A very free-flowering and beautiful species, with tufts of elliptic-oblong subacute three to five-nerved leaves about four to five inches high, and scapes of nearly the same height, bearing each a comparatively large flower, which has a very short gibbous tube, and a suberect somewhat hooded dorsal sepal of a pale yellowish colour tinted with pale rosy red, and marked with several wine-coloured nerves, the obliquely ovate decurved lateral sepals rose-coloured, thickly studded with deep reddish purple spots; all three sepals are contracted, the dorsal one suddenly, and the lateral ones more gradually into tails about three times their own length, which are green at the base, changing to orange-yellow towards the tips. It blossoms during the spring and summer months.—*United States of Colombia*.

FIG.—*Orchid Album*, i. t. 5; *Bot. Mag.*, t. 6372.

M. towarensis, *Rchb. f.*—This is a very distinct species, easy of culture, and much sought after on account of its producing a profusion of white flowers, which are invaluable as cut flowers for many decorative purposes. The plant, moreover, lasts a long time in bloom, and thus makes up, with its modest beauty, for any deficiency that might be suggested through comparing it with larger-flowered and more attractively coloured sorts. It forms a tuft of oblong-spathulate bidentate leaves a span long, and has two-edged scapes of about the same height, bearing flowers of the purest white, in which the sepals coalesce into a short tube, the dorsal one gradually tapered into an awn-like tail nearly two inches long, and the lateral ones are longer, semiovate, an inch long, suddenly narrowed into a tail of about equal length, the tails all greenish white. The flowers are sweet-scented, and generally grow in pairs. This plant was at one time extremely rare, but it has been imported in such quantity that it can now be purchased at a very moderate cost. It flowers during the winter months.—*Colombia*.

FIG.—*Bot. Mag.*, t. 5505; *Batem. 2nd Cent. Orch. Pl.*, t. 120; *Illust. Hort.*, 3 ser., t. 363; *Gard. Chron.*, 1865, 914, with fig.; *Id.*, xvi. 409, fig. 79 B; *Puydt, Les Orch.*, t. 24; *Journ. of Hort.*, 3 ser., x. 153, fig. 27 (specimen plant); *Florist and Pomol.*, 1873, 169, with tab.

SYN.—*M. candida*.

M. triangularis, *Lindley*.—A curious and interesting little species. The leaves are oval-lanceolate acute, four inches long, the scape filiform, the flowers spreading, with the sepals equal triangular, scarcely two inches long, ochre yellow dotted with purple, the long slender tails deep red. It flowers in December.—*Colombia*.

M. Trochilus.—See *MASDEVALLIA EPHIPIUM*.

M. Veitchiana, *Rchb. f.*—A most beautiful species, with flowers of resplendent colour. The leaves are densely tufted, six or eight inches long, linear-oblong, leathery, of a dark shining green; the scape bears a solitary flower about six inches across in its longest diameter, the sepals connate into a tube at the base, ovate, the lateral ones oblique, and each lengthened out into a tail at the points; they are of a bright orange-scarlet, exceeding rich from the inner surface being studded with minute papillæ of a brilliant cadmium-yellow, and also beautifully shaded with purple; the eye or mouth of the tube is bright yellow, and contains the small and



MASDEVALIA TOVARENSIS.





MASDEVALLIA VEITCHII.

unattractive petals and lip. This noble species blooms usually during the autumn months, lasting long in perfection, but sometimes also flowers in April and May; it requires very cool treatment.—*High Mountains of Peru.*

FIG.—*Bot. Mag.*, t. 5739; *Flore des Serres*, t. 1803; *Floral Mag.*, t. 481; *Warner, Sel. Orch. Pl.*, ii. t. 33; *Gard. Chron.*, 1871, 1421, fig. 310; *Id.*, xvi. 409, fig. 79 A; *Puydt, Les Orch.*, t. 25; *Florist and Pom.*, 1873, 169, with tab.



MASDEVALLIA
VEITCHIANA.

M. Veitchiana grandiflora, *Williams*.—A very large-flowered and handsome variety, producing flowers from five to seven inches in length, of great substance, and of a bright orange-scarlet colour deeply shaded with purple. We first saw this grand form in the collection of His Royal Highness the Prince of Wales at Sandringham. It flowers during the summer months.—*Peru.*

M. Wageneriana, *Linden*.—This is truly a pigmy Orchid, the whole plant not growing more than two or three inches high. It has the same tufted habit as the rest of the genus, with spatulate obtuse coriaceous leaves, and filiform scapes of about equal length, bearing each one flower, which has a short cup-shaped tube, formed by the united bases of the three broad ovate sepals, which are yellow, the dorsal one clouded with chestnut red inside, and the lateral ones minutely dotted; the fleshy recurved deeply toothed hook-pointed lip, which is dotted over with red-brown, is a beautiful object when seen through a magnifying glass.—*Venezuela.*

FIG.—*Xenia Orch.*, i. t. 75, fig. 2; *Paxt. Fl. Gard.*, iii. 74, fig. 267; *Bot. Mag.*, t. 4921.

M. Wallisii, *Hort*.—A very interesting plant, which has hitherto in most collections represented the grotesque but withal handsome *M. Chimara*. The plant has narrowly ob-lanceolate acute leaves, narrowed to the base, six to nine inches high, and sheathed at the base. The flower scapes are shorter than the leaves, decurved at top, bracteate, each bearing a solitary flower, which measures eight inches from tip to tip of the dorsal and lateral sepals, and are of a yellowish ochre colour, with deep purplish red markings, the perianth tube shortly campanulate, the broadly obovate sepals densely

fringed, clad on the interior surface with long hairs, and terminating in long purple-red tails.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 6152; *Rev. Hort.*, 1881, 130, with tab.; *Floral Mag.*, 2 ser., t. 149; *Gard. Chron.*, N.S., iii. 41, fig. 5.

M. Wallisii stupenda, *Richb. f.*—This is a remarkably fine variety, the finest of the group yet seen, on account of the breadth of the triangular surface of its sepals, and its rich colouring. The tails are chocolate-coloured, and the same colour occurs at the apex on the outside of the triangular part, mostly on the upper sepal. The colour of the interior is light sulphur, with some large chocolate-coloured spots over the triangular parts, the inner surface being hairy and the margins fringed. The disk around the internal organs is orange, and at each side of the petals stands a white cushion-like body covered with numerous scarlet spots. It blossoms during the winter months. It has been flowered by Sir Trevor Lawrence, Bart., M.P.—*New Grenada*.

M. xanthina, *Richb. f.*—A curious little plant in the way of *M. Wageriana*, but stronger in its growth, and with larger and more attractive flowers. The leaves are cuneate-oblong, and the flowers with scarcely any tube, the three sepals spreading, the dorsal one oblong ligulate, galeate, and extended into a longish tail, the dorsal ones somewhat narrower; the colour is a bright yellow with a dark violet blotch at the base of the lateral sepals.—*Colombia*.

MAXILLARIA, *Ruiz et Pavon*.

(Tribe Vandeeæ, subtribe Maxillarieæ.)

This a large genus of Orchids, numbering over a hundred, but many of them, on account of the small size of their flowers, are not worthy of cultivation as decorative plants. Those we have enumerated are, however, plants of some character, and deserving a place in collections. Some of them are pseudobulbous, in which case the one-flowered scapes proceed from the base of the bulbs, and others form a stem with dense distichous leaves, these bearing the solitary flowers in the axils of the leaves. The genus has been much diminished

by the separation of *Lycaste*, *Colax*, *Promenaea*, *Bifrenaria*, and others, though still containing numerous species.

Culture.—These plants are all of evergreen habit, and can be grown in the cool house with *Odontoglossums*. They succeed best grown in pots, in a mixture of peat and moss, and require a liberal supply of water during their growing season, the amount being reduced during the period of rest, when only just sufficient to keep them in a plump state should be given them.

M. grandiflora, *Lindley*.—A handsome species, with the aspect of a *Lycaste*. The pseudobulbs are depressed ovate, two-edged, and of a deep green colour; the erect ovate-oblong leaves are also dark green, and about a foot long; and the flowers are produced singly on bracteate scapes about six inches in length; the lateral sepals having a spread of about three and a half inches. The oblong-acute sepals and shorter petals are pure white, the lip pouched, dark purple at the sides, the triangular middle lobe yellow in front, white towards the base. A very desirable plant, blooming during autumn, the flowers deliciously fragrant. This fine plant enjoys a very cool atmosphere; indeed, to succeed with it, the coolest end of the *Odontoglossum* house should be selected for its reception, and the atmosphere kept very moist.—*Peru*; *Colombia*.

FIG.—*Illust. Hort.*, 3 ser., t. 14; *Floral Mag.*, 2 ser., t. 322; *Humb. and Kunth, Nov. Gen.*, i. t. 88 (*Dendrobium grandiflorum*).

SYN.—*Dendrobium grandiflorum*.

M. luteo-alba, *Lindley*.—This is a very striking plant when in blossom, both on account of the peculiar tawny colour and the triangular form of its flowers. The pseudobulbs are ovate compressed, something like those of *M. venusta*, and the solitary leaves are long and broad, and grow to the height of eighteen inches. The large flowers, which are developed at different times of the year, proceed from the side of the bulbs, and have three linear-oblong sepals three inches long, of a tawny yellow in the upper two-thirds, creamy white in the lower portion, and brownish externally, the three spreading out triangle-wise, and the two lower ones being twisted; the petals are about half as long as the sepals, white at the

base, brown about the centre, and yellow at the tip, while the short three-lobed lip is recurved, yellow with paler edges in front, and the side lobes erect, striped with purple.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 106.



MAXILLARIA LUTEO-ALBA.

M. nigrescens, *Lindley*.—A very curious and distinct species, with oval compressed pseudobulbs, bearing a solitary oblong-ligulate dark green coriaceous leaf, and producing its flowers singly on erect peduncles. The sepals and petals are spreading, port-wine colour, the lip of the same colour, but stained in addition with dull purple. It blooms at various times of the year, and should be grown in the cool house.—*New Grenada*.

SYN.—*M. rubrofusca*.

M. splendens, *Poepp. et Endl.*—A very handsome plant, deserving a place in every collection; in growth it is something like *M. venusta*, but more robust. It has oval ancipitous pseudobulbs, solitary long linear leaves, attenuated at the base, obliquely bidentate at the apex, and rather large

flowers on one-flowered fascicled scapes, the sepals and petals being unspotted white, and the lip orange, margined with rose.—*Peru*.

FIG.—*Pæpp. et Endl., Nov. Gen. et Sp., i. t. 66.*

M. Turneri, *Hort.*—A very distinct and pretty species, with short pseudobulbs, long broad leaves a foot high of a very dark green colour, and flowers of a rich cinnamon-brown and crimson, with a delicious fragrance; it blooms in May in great profusion, and continues a long time in perfection.—*South America*.

M. venusta, *Linden et Rehb. f.*—This plant is one of the best of the genus, of easy culture, blooming at different times in the year, and continuing for three or four weeks in perfection. It has bluntly oblong compressed pseudobulbs, bearing at the top a pair of broad oblong-lanceolate leaves, nearly a foot high, and producing from their base the one-flowered red bracteate scapes, which are much shorter than the leaves, and bear a large showy somewhat nodding white flower, with the front lobe of the lip yellow, the edges of the lateral lobes crimson, and two crimson spots on the disk, where also is a great roundish tomentose callus; the sepals and petals are all spreading and attenuately acuminate at the apex, the sepals being nearly or quite three inches long. There are two varieties of this species, one having the flowers superior in being larger and more pure in colour than the other.—*New Grenada: Ocana*.

FIG.—*Bot. Mag., t. 5296; Batem. 2nd Cent. Orch. Pl., t. 118; Pescatorea, t. 38.*

MESOSPINIDIUM, *Reichenbach fil.*

(Tribe Vandeeæ, subtribe Oncidieæ.)

A small group of cool house Orchids, closely allied to *Odontoglossum*, with which Bentham unites them. Reichenbach attributes to it a somewhat fleshy partially expanded perianth, connate lateral sepals subsaccate at the base forming a very short chin, a pair of lamellæ at the base of the lip, and a semiterete column deeply excavated in front, the anther bed with a descending border and a bicuspidate rostellum. The

sepals are however only united at the extreme base to form the very short mentum in *M. vulcanicum*. The species are natives of the Peruvian Andes.

Culture.—The plants of this genus are evergreens, requiring cool treatment, and are best grown in baskets suspended from the roof, as they produce drooping spikes of flower from the sides of the pseudobulbs. They should be placed in a compost of peat and moss, giving them a liberal supply of water during the growing season. They are propagated by dividing the pseudobulbs.

M. sanguineum, *Rchb. f.*—This very pretty plant, though known long since, was not brought in a living state to this country until a few years ago. In habit it resembles the smaller



MESOSPINIDIUM SANGUINEUM.

Odontoglossums. The pseudobulbs are oval compressed, clouded with prettily mottled bands of brown, and bearing two cuneate ligulate leaves. The flowers come in slender

drooping slightly branched racemes, which spring from the base of the bulbs, and bear numerous flowers of a beautiful waxy appearance, bright rose in colour, and produced in summer and autumn, lasting several weeks in perfection.—*Peru; Ecuador.*

FIG.—*Bot. Mag.*, t. 5627; *Batem. 2nd Cent. Orch. Pl.*, t. 196.

M. vulcanicum, *Rehb. f.*—A very pretty species, differing from *M. sanguineum* in having erect instead of drooping flower spikes. The pseudobulbs are ovoid, compressed, and more or less two-edged, with oblong keeled bluntish leaves three to five inches long, and unilateral racemes of flowers on a slender erect peduncle, the flowers about two inches across, of a dark bright rose colour, from twelve to twenty on a spike, and producing a charming effect since they remain in full beauty for a considerable time; the lip, which is three-lobed, the side lobes roundish and the middle one emarginate, is in the front part of the same bright rose as the sepals and petals, but becomes paler on the disk, where there is a four-keeled callus.—*Eastern Peru.*

FIG.—*Bot. Mag.*, t. 6001.

MICROSTYLIS, *Nuttall.*

(*Tribe Epidendreae, subtribe Malaxeaë.*)

A genus of terrestrial Orchids of dwarf habit, sometimes pseudobulbous, the stems bearing near the base several handsomely coloured plicate leaves, and terminating in a spike of very small flowers. There are many species known, and they are widely dispersed in Europe, Asia, and America; but those in cultivation are mostly tropical, and deserve a place with the *Anæctochili*, being all interesting to those who desire to have a general collection.

Culture.—The same as that of *Anæctochilus*, which see.

M. calophylla, *Rehb. f.*—A distinct and handsome species, with ornamental foliage. The leaves are oval lanceolate acuminate, prettily undulated, four to six inches long, two to two and a half inches broad, greenish brown in the centre, and having a broad margin of pale greyish green, which is

prettily spotted over its entire surface with the same colour as the centre of the leaf, the under surface pale green. Flowers small, yellowish.—*Malaya; Java.*

M. chlorophrys, *Richb. f.*—This is a most desirable species, with foliage of a very distinct character. The leaves are elongate elliptic acute, with neatly undulated margins, the upper surface of a purplish brown colour, bordered with light green, and the under surface light purple. The flowers are purple with an orange-coloured lip.—*Borneo.*

M. discolor, *Lindley.*—This is the prettiest of the species of this curious family yet in cultivation. It is a terrestrial plant, with clustered stems eight or ten inches high, which are leafy above, the broadish leaves, which are ovate oblong with a sheathing petiole, being plaited, of a deep reddish purple, with an elegantly crisped green border, and terminate in a short upright spike or raceme of small crowded flowers, which are at first yellow and change to orange-colour.—*Ceylon.*

FIG.—*Bot. Mag.*, t. 5403; *Wight, Icon. Pl. Ind. Or.*, t. 1631.

M. metallica, *Richb. f.*—An extremely attractive little plant, six or eight inches high, with richly-coloured foliage, which is elliptic acute plicate, slightly undulated at the margin, and of a dark glossy purple above, tinged with light rose colour beneath. The diminutive flowers are rosy purple, on erect spikes, and have very narrow sepals and petals, and an obovate pink lip, sagittate at the base.—*Borneo.*

FIG.—*Bot. Mag.*, t. 6668; *Belg. Hort.*, 1884, t. 14, fig. 1.

M. purpurea, *Lindley.*—A fine species, with broadly ovate leaves four to five inches long and two inches or more broad, very much undulated, the upper surface of the leaves of a dark metallic crimson colour, the under surface and petioles of a pale reddish metallic grey. The flowers are yellowish purple.—*Ceylon.*

MILTONIA, *Lindley.*

(Tribe Vandeeæ, subtribe Oncidiæ.)

This genus includes several beautiful Orchids. They are all of evergreen habit, and compact in growth, and for the most part produce light green foliage which sometimes has a

very yellow appearance, but no notice should be taken of this as it is natural to them. The pseudobulbs are short, bearing two or three leaves each, and the flower-scapes, usually one or two-flowered, are produced from the sides of the bulbs. The lip is sessile at the base of the column, and is broad spreading and undivided; otherwise they come near to *Oncidium*. There are nearly a dozen admitted species, which with one exception (Peruvian) are natives of Brazil.

Culture.—Some of the species of *Miltonia* require treatment different from the others, as will be mentioned when treating them individually. They will succeed in the *Cattleya* house or the cool end of the East India house. The most of them require to be grown in pots, in peat and moss, with good drainage; and they like a liberal supply of water during the growing season, and to occupy the shadiest part of the house. Propagation is effected by dividing the pseudobulbs at the time when they begin to grow.

M. Bluntii, *Rehb. f.*—A very distinct plant—a lovely and elegant thing, as Reichenbach calls it, and which he has named after its discoverer. The plant was exhibited by W. Lee, Esq., Downside, Leatherhead, at the Royal Horticultural Society's meeting in October, 1883. In growth and habit it resembles *M. spectabilis*, between which and *M. Clowesii* it is supposed to be a natural mule. The flowers are as large as those of *M. spectabilis*, with lanceolate acute sepals and oblong-lanceolate less acute petals, both creamy white, with some large brownish lilac or cinnamon-purple blotches chiefly in the centre; the lip, which is oblong-obovate obtuse or subpandurate, like that of *M. spectabilis*, is white or pale rose with purple-violet stripes at the base, where there are two keels, and the short thick column has two large purple-violet wings.—*Brazil*.

SYN.—*Oncidium Bluntii*.

M. anceps, *Lindley*.—A singular and rare species, which, after being in cultivation for some time, was lost, and we are indebted to the Messrs. Low for its re-introduction. It has narrow oblong compressed yellowish pseudobulbs two inches

long, each having a pair of narrow ligulate leaves four or five inches long, and ancipitous scapes taller than the leaves and invested by long sheathing pointed bracts. The flowers are about two inches in diameter, produced singly, the sepals and petals oblong-lanceolate, spreading, of a pale greenish olive colour, the two lateral ones with a bar of reddish purple near the base, the lip rhomboideo-lyrate, recurved at the apex, white with two or three reddish purple bars and spots on the lower half, behind which are a similar number of lamellæ on the pubescent base. Prof. Reichenbach's figure shows the sepals and petals of a citron yellow. It requires the same treatment as that indicated for *Miltonias* generally.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5572; *Xenia Orch.*, i. t. 21.

SYN.—*M. Pinellii*; *Odontoglossum anceps*.

M. bicolor, *Hort.*—A beautiful species with the aspect of *M. spectabilis*, but of a more vigorous habit, growing about eight inches high. The flowers are large, with white sepals and petals, the lip being also white, with a blotch of violet in the upper part. It blooms in August, and lasts in perfection for six weeks. Of this there are two varieties, one called *M. bicolor superba*, with larger flowers and more white on the lip than in the other.—*Brazil*.

M. candida, *Lindley*.—A very beautiful strong-growing species, one of the finest in the genus, of which there are two or three distinct forms known. The pseudobulbs are oblong ovate, narrowed to the apex, two-leaved, the leaves ligulate, the scape one and a half to two feet high, arising from the base of the bulbs, and bearing an erect raceme of very handsome large flowers, of which the sepals and petals are oblong, nearly covered with large blotches of bright reddish brown, with a bright yellow margin, and the broadly roundish obovate wavy lip is white with five small lamellæ at the base. It produces its flowers during the autumn, lasting three weeks in bloom.

The *Botanical Magazine* figure represents a form with a yellow lip flushed with purple (var. *flavescens*, Hook.); that in *Xenia Orchidacea* a very large form with the sepals and petals almost wholly reddish brown except the yellow fringe, and the lip pure white (var. *Jenischiana*, Rehb. f.).—*Brazil*.

FIG.—*Sertum Orch.*, t. 21; *Paxton, Mag. Bot.*, vi. 241, with tab.; *Bot. Mag.*, t. 3793 (*flavescens*); *Xenia Orch.*, i. t. 54 (*Jenischiana*).

M. candida grandiflora, *Hort.*—This, which is a very rare handsome plant, is much finer than *M. candida*, being not only

much stronger in its growth, but the flowers are also larger and brighter in colour. It flowers in September, and is best grown in a pot with peat and moss.—*Brazil*.

FIG.—*Orchid Album*, v., t. 200.

M. Clowesii, *Lindley*.—This showy plant produces its long racemes of flowers during September and October, and lasts a long time in perfection, sometimes extending into November and December. The pseudobulbs are ovate, two-edged, narrowed upwards, two-leaved, the leaves narrow ligulate, yellowish, and the scape radical, bearing a rather lax raceme. The flowers have both sepals and petals yellow, cross-banded and nearly covered with chestnut brown, and the lip, which is cordate, constricted in the middle, having its plurilamellate base of a deep violet, and its subrotund attenuated apex white. Of this species there are several forms, but the variety called *M. Clowesii major* is the best. It should be grown in a pot with peat and moss.—*Brazil: Organ Mountains*.

FIG.—*Bot. Mag.*, t. 4109; *Sertum Orch.*, t. 34; *Paxton, Mag. Bot.*, ix. 241, with tab.; *Gartenflora*, t. 160.

SYN.—*Brassia Clowesii*; *Odontoglossum Clowesii*.



MILTONIA CUNEATA.

M. cuneata, *Lindley*.—A very pretty and free-growing species, which reaches about ten inches in height, and

resembles *M. candida* in its manner of growth. The pseudobulbs are ovate-oblong, compressed and narrowed at the apex, diphyllous, the leaves ligulate-oblong, keeled on the under side. The scape is radical, bearing an erect raceme of from six to eight flowers which are nearly four inches across; the sepals and petals are of a deep chestnut brown, tipped with pale greenish yellow, and the lip is white, with a claw-like wedge-shaped bilamellate base, each keel terminating in a chocolate-coloured spot at the base of the broad roundish anterior part. These flowers are produced in February, and continue four or five weeks in perfection. The plant is best grown in a pot, in peat, with good drainage.—*Brazil*.

FIG.—*Bot. Reg.*, 1845, t. 8; *Moore, Illust. Orch. Pl.*, Miltonia, t. 2; *Illust. Hort.*, t. 237; *Orchid Album*, i. t. 46.

SYN.—*M. speciosa*; *Oncidium speciosum*.

M. festiva, *Rehb. f.*—A rare and showy species, resembling *M. spectabilis* in its growth and general appearance, but having very distinct flowers, which are borne in pairs, and are as large as those of *M. spectabilis* itself. They have oblong ochroleucous sepals and petals, and a large cuneately flabellate acutely pointed lip of a purplish lilac, with eleven radiating veins of deep purple on the disk, two yellow keels, and dark purple column wings. Reichenbach suggests it may be a wild hybrid between *M. spectabilis* and *M. flavescens*.—*Brazil*.

M. Regnelli, *Rehb. f.*—A very distinct and pretty species, which grows in the way of *M. cuneata*. The pseudobulbs are ancipitous narrow oblong, tapering to the apex, the leaves linear ligulate, light green, and about twelve inches long, and the scapes erect from the axils of accessory leaves, and producing from three to six flowers, which are about two and a half inches across, the lanceolate sepals and the oblong petals white, and the subpandurate lip cuneate at the base, quadrate and emarginate in front, and of a pale rosy pink streaked with darker rose in the centre, white at the edge and along the median line; there are three lamellæ at the base of the lip, the middle one shorter than the others. The plant generally produces its blossoms in September or October, and lasts in bloom for some four or five weeks. It is best grown in a pot, with peat and moss.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5436; *Batem. 2nd Cent. Orch. Pl.*, t. 182; *Xenia Orch.*, i. t. 47; *Puydt, Les Orch.*, t. 26.

M. Regnelli purpurea, *Hort.*—This is a most charming form of *M. Regnelli*, and very rare. The habit of growth is the same in both, but in the form here referred to the spike is longer, and the flowers are larger, and altogether superior in colour; the sepals and petals are delicate rose, margined with white, and the broad flat emarginate lip is of an intense magenta-crimson, the three crests being white, and accompanied by several small pinkish stripes.—*Brazil*.



FIG.—*Orchid Album*, ii. t. 72; *Floral Mag.*, t. 490.

MILTONIA REGNELLI PURPUREA.

M. spectabilis, *Lindley*.—A beautiful and well-known popular Orchid, which grows about six inches high, and produces its large solitary showy flowers in July and August, lasting six weeks in beauty if kept in a cool house and free from damp. The pseudobulbs are oval, ancipitous, and covered by a pair of ligulate leaves, of a tern yellow colour, and the one-flowered scapes are clothed with large fuscous keeled bracts. The handsome flowers have the spreading oblong petals and the recurved petals all white, while the obovate plicate lip, which is large, measuring two inches across, is of a deep violet-purple at the base and along the deep furrows, the middle portion being of a fine deep rosy crimson, and the rest of the surface more or less flushed with pink; the column has two conspicuous purple ears or wings, and the disk bears three lamellæ. Of this beautiful species there are some varieties much better than others. It is a most desirable old plant, and easily grown into a good specimen.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4204; *Bot. Reg.*, t. 1992; *Illust. Hort.*, t. 216; *Lem. Jard. Fl.*, t. 108; *Paxton, Mag. Bot.*, vii. 97, with tab.; *Hart. Parad.*, i. t. 11; *Knowles & Westc. Floral Cab.*, t. 45.

SYN.—*Macrochilus Fryanus*.

M. spectabilis Moreliana.—A very handsome and most desirable plant, the flowers of which resemble those of *M. spectabilis* in every particular except colour, as does also the habit of growth, thus confirming the view now generally held that it is merely a highly-coloured and superior variety of that species. The colour of the sepals and petals is of a

deep rich purple, and the broad flat lip is beautifully veined with rose. It produces its flowers in September and October, continuing in bloom a long time.—*Brazil: Rio Janeiro.*

The following are sub-varieties of this handsome form :—

M. spectabilis *Moreliana atrorubens*, *Hort.*—A magnificent variety, with the flowers very large, often measuring four inches across, and with the colour much darker than that of *M. spectabilis Moreliana*; it blooms in September, and lasts a considerable time in beauty. A scarce plant.—*Brazil.*

M. spectabilis *Moreliana rosea*, *Rchb. f.*—A distinct form of this old favourite, in which the sepals and petals are white, traversed by a band of pale rose down the centre, and the lip is bright rose, distinctly veined with rosy purple; it flowers during the summer months.—*Brazil.*

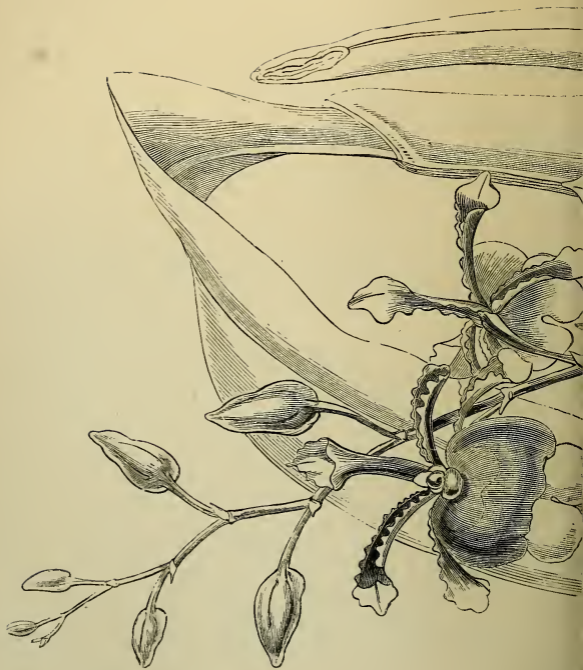
FIG.—*Gard. Mag. Bot.*, iii. 41, with tab.; *Warner, Sel. Orch. Pl.*, i. t. 32; *Jennings, Orch.*, t. 37; *Floral Mag.*, 2 ser., t. 143; *Puydt, Les Orch.*, t. 27; *Bot. Mag.*, t. 4425; *Moore, Ill. Orch. Pl.*, *Miltoia*, t. 1; *Flore des Serres*, t. 1008.

SYN.—*M. Moreliana*; *M. purpurea violacea.*

M. spectabilis *radians*, *Rchb. f.*—In this form of *M. spectabilis* we have a most chaste-looking and lovely epiphyte, and a most admirable contrast to the highly-coloured *M. spectabilis Moreliana*. The habit is that of the type, the pseudobulbs being oblong and compressed, the leaves lorate or ligulate and keeled, and the scape ancipitous, springing from the base of the bulb. The flowers are about three inches across and over four inches in depth, the sepals and petals being of a creamy white, and the lip pandurately-ovate retuse and slightly wavy, pure white, with a crest of three yellow linear lamellæ blunt and thickened in front, and close upon these a series of about six club-shaped slightly curved bars three-quarters of an inch long of magenta-purple radiating from the base, two thin purple lines running back through the crest. The white column is bordered with magenta.—*Brazil.*

FIG.—*Orchid Album*, iv. t. 164.

M. spectabilis *rosea*, *Hort.*—This very handsome and rare plant resembles *M. spectabilis* in its habit of growth, but the pseudobulbs are narrower and longer, as also are the leaves. The flowers, which are large, have the sepals and petals white tinted with light rose, and the lip white irregularly striped





MILTONIA WARCEWICZII WELTONI.



with rich deep rosy lake in broad unequal bands with a few detached blotches. It flowers during summer, and remains in perfection for several weeks.—*Brazil*.

FIG.—*Illust. Hort.*, t. 524.

SYN.—*M. rosea*; *M. Warneri*.

M. Warscewiczii, *Rchb. f.*—A very distinct and handsome plant, which has borne in gardens several names, including *Oncidium fuscatum*, but which our chief authorities now place under *Miltonia*. It has tall flattened narrow oblong pseudobulbs, oblong obtuse pale green leaves, and nodding panicles of numerous crowded flowers, whose peduncle springs from the axil of an accessory leaf sheathing the bulb. The short sepals and petals are bluntly cuneate ligulate and prettily undulated, dark brownish purple tipped with white, and the sessile lip is nearly orbicular, deeply bilobed, of a velvety brownish purple margined with rosy lilac, giving a roundish outline to the purple area, in the midst of which there is a transversely oblong shining patch, which from being glossy appears to be of a different colour; there is also a yellow spot on the disk. The column is very short, purple at the base. It blooms in the spring months.—*Peru*; *New Grenada*.

FIG.—*Bot. Mag.*, t. 5843; *Flore des Serres*, t. 1831.

SYN.—*Oncidium fuscatum*.

M. Warscewiczii Weltoni, *Moore*.—A variety of *M. Warscewiczii*, which, though differing in many points, is obviously of the same specific type. In its flat oblong pseudobulbs, oblong leaves, and paniculate inflorescence, it is quite like the type, but the flowers appear to be smaller, and the sepals and petals have the ground colour olive brown, with the tips yellow instead of white. The lip is smaller, roundish-ovate, bilobed, but without an apiculus; the purple colour is cut off straight at about two-thirds the length of the lip, and the apical part is distinctly white. There are many connecting links known to botanists, and this has led to the two plants being regarded as strictly synonymous.—*Peru*; *New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., t. 156.

SYN.—*Oncidium Weltoni*.

M. Warscewiczii xanthina, *Rchb. f.*—A pleasing variety, in which the flowers are almost wholly yellow; the sepals and petals are yellow, and the lip is of a light yellow with a narrow white border, there being no purple as in the type. It blooms in the winter season, and was first flowered with W. Lee, Esq., Downside, Leatherhead.—*Peru*.

MORMODES, *Lindley*.

(Tribe Vandeeæ, subtribe Stanhopieæ.)

A most interesting genus, of which only a few of the species find favour with Orchid cultivators. They are related closely to *Catasetum*, but differ in the sepals being usually narrow and more spreading, and the lip narrowed below into a claw, incurved, ascendent, and obliquely twisted. They are epiphytes, with short oblong or fusiform stems, sheathed by the membranaceous bases of the old leaves, of which three or four lance-shaped plicated ones are produced at the top; the scapes issue from some of the nodes of the stems. They are found in Colombia, Central America, and Mexico, upwards of a dozen species being described.

Culture.—These plants are of deciduous habit, and do best in the *Cattleya* house, potted in peat, with a liberal quantity of water supplied to the roots during their period of growth, after which water should be gradually withheld until they become quite dry, when they may be placed near the glass till they begin to grow. They are propagated by division.

M. buccinator, *Lindley*.—A very curious distinct species, which Reichenbach describes as “the most polychromatic Orchid of the world.” The form originally described by Lindley had the flowers pale green, “with an ivory-white lip, whose sides are so rolled back as to give it the appearance of a trumpet.” Other forms have pale yellow flowers, densely spotted with crimson, and a greenish yellow lip, also spotted with crimson, the markings on the sepals much smaller than those on the petals. This species well represents the contortion of the parts of the flower peculiar to this genus, the column being twisted sometimes to the right, sometimes to the left. It flowers in the autumn months.—*Mexico*.

There is also a variety named *M. buccinator majus*, *Rchb. f.*, which has larger ochre-coloured flowers with numerous small cinnamon-coloured dots on the sepals and

petals, the lip bearing only a few obscure pallid markings on the sides.—*New Grenada*.

M. Colossus, *Rehb. f.*—A very effective species of large growth, the stems subterete, tapering upwards, sometimes a foot long, with elliptic ovate plaited leaves, and a stout radical scape a foot long, bearing a raceme a foot long of large spreading flowers five to six inches across, with narrow lanceolate acuminate sepals and petals, of which the lower part is pink with darker pink veins, and the upper half yellow, and the lip is bright yellow dotted with pink at the base, much incurved, with the edges revolute, meeting at the back, and the green arching column is twisted to one side as usual. It is a most singular and wonderful plant.—*Central America*, elevation 7,000 feet.

FIG.—*Bot. Mag.*, t. 5840.

SYN.—*M. macranthum*.

M. luxatum, *Lindley*.—A very handsome species, and also a very singular one, in which the distortion of the flower peculiar to the genus seems carried to its extreme limit, the whole flower—not only the lip and column, which are the parts usually affected—appearing as if all its members had been dislocated. Notwithstanding this it is a plant of much beauty. The stems are short, terete, and tapered upwards, the plicate lanceolate leaves three feet long, and the flowers on radical scapes in oblong racemes much shorter than the leaves, very fragrant, three inches or more in diameter, lemon-yellow, fleshy, and rather globular, but so distorted that the parts are not easily recognised, excepting that the lip has a deep brown streak down the middle, and covers the column like a hood. It blooms in July, lasting in bloom a couple of weeks or more.—*Mexico*.

FIG.—*Bot. Reg.*, 1843, t. 33; *Moore, Ill. Orch. Pl.*, *Mormodes*, t. 3.

M. pardinum, *Bateman*.—This very beautiful species is unfortunately seldom seen in collections. The stems are terete and tapering, three to six inches high, with several lanceolate membranaceous leaves from their upper end, and from their base the nodding flower scapes a foot or more in length, furnished with a crowded raceme; the sepals and petals are ovate-lanceolate acuminate, spreading at the base, but with their points all directed upwards so as to be almost connivent; they, as well as the three-lobed lip, are bright

yellow, spotted with rich brownish crimson, so that the flowers have quite a gay appearance.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3900; *Batem. Orch. Mex. et Guat.*, t. 14; *Knowles & Westc. Floral Cab.*, t. 113.

SYN.—*Cyclosia maculata*.

M. pardinum unicolor, *Hooker*.—This variety differs from the type only in having the flowers wholly of a clear lemon yellow without any trace of spotting, and is by so much the less ornamental of the two, though its self-coloured flowers are not ineffective.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3879.

SYN.—*M. citrinum*; *Catasetum citrinum*.

M. uncia, *Rehb. f.*—The handsomest and most noble of all the *Mormodes*, distinguished by its broadly fusiform somewhat two-edged stems or pseudobulbs, about three inches high, its elongate lanceolate ribbed leaves a foot to a foot and a half long, and its many-flowered pendulous raceme of large flowers, which are two and a half inches in diameter, whitish externally, and within of a pale yellow, entirely covered with oblong dark crimson spots rather smaller and more dot-like near the margin. The sepals and petals are concave, an inch across, ovate acute, and the lip is curved upwards with a linear fleshy base dilated gradually into a saccate orbicular apex, the base dark purple, the inner surface yellow spotted with red, the exterior spotted like the sepals except at the tip, which is lilac. The flowers have an aromatic odour.

FIG.—*Bot. Mag.*, t. 5802.

SYN.—*M. Greenii*.

MONOCHILUS, *Wallich*.

(Tribe Neottieæ, subtribe Spirantheæ.)

A small genus of terrestrial tropical Orchids, included by Bentham under *Zeuxine*, but kept distinct both by Lindley and Reichenbach. It differs from *Anæctochilus* in the absence of a spur, and in the adhesion of the lip with the column, and from *Zeuxine* in its long membranous split lip. It contains a few species only, which are natives of India and Ceylon.

Culture.—It requires the general treatment of *Anæctochilus*,

and is a free-growing plant, which may be cultivated in a warm house without the assistance of a bell-glass.

M. regium, *Lindley*.—A distinct species, growing about five inches high, and having ovate-lanceolate leaves three inches long, with a margin of a dark green colour, and a broad band of pale lilac or whitish down the centre. The flowers are white and green in loose spikes, and the lip is split into a pair of roundish crenate lobes. Its native name is Iri Rajah, or Striped King of the Woods.—*Ceylon and Borneo*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 48.

SYN.—*Anæctochilus striatus*; *Anæctochilus lineatus*; *Haplochilus regium*.

NANODES, *Lindley*.

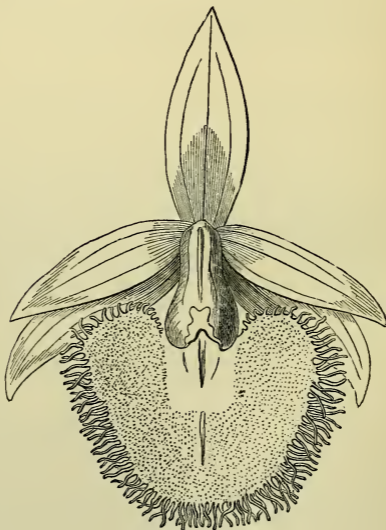
(Tribe Epidendrææ, subtribe Lælicææ.)

A very small epiphytal genus of peculiar interest, with a ringent perianth, and a fleshy undivided lip connate with the column. Bentham associates it with *Epidendrum* under the section *Nanæ*, distinguished like it by distichous sheathing leaves on a dwarf diffuse-growing stem. *N. Medusæ* is a most extraordinary-looking object when in flower, very distinct from any other of its order.

Culture.—The little Orchid described below is a plant well worth cultivating, and requires to be grown on a block, or in a basket, with moss and peat, and kept very cool in the Odontoglossum house, where it should be suspended from the roof, as it is a native of the higher Andes of Western S. America.

N. Medusæ, *Rchb. f.*—One of the most singular of Orchids. The stems are densely tufted, pendent, branched, covered with broad imbricated sheaths of the distichous glaucous green leaves, which are three to four inches long, linear-oblong, curved, unequally bilobed at the apex, and semiamplexicaul at the base. The flowers are leathery, two and a half inches across, flat, two or more in the axils of the terminal leaves ;

the sepals and petals linear-oblong, yellowish green tinged with brown, and the lip very large, orbicular with a cordate base, and a bilobed apex, of a deep maroon-purple, greenish over the disk, the whole margin deeply cut into subulate segments, forming a conspicuous fringe. The plant has no pseudobulbs to support it, but only a woody stem crowded with greyish green leaves in two ranks whose sheathing bracts



NANODES MEDUSÆ.

entirely hide the stem itself. Of this plant Sir Joseph Hooker remarks, that, "altogether the flattened stout culms, and the pale glaucous colour of the foliage, and the extraordinary appearance and lurid purple of the flower, give it a most sinister appearance, and for an Orchid a most unusual one."—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5723; *Flore des Serres*, t. 1771.

ODONTOGLOSSUM, *Humboldt, Bonpland, and Kunth.**(Tribe Vandææ, subtribe Oncidiææ.)*

To this comprehensive genus of Orchids so many magnificent additions have been made during the last few years that it now contains some of the choicest and most useful decorative species in cultivation. In so extensive a genus it might be expected that some of the species would be of inferior merit as regards their ornamental properties, and such is indeed the case; but all those here described are worthy of a place in every collection. They are all of them evergreen, producing their flower scapes from the base of the pseudobulbs, which in some of the species are stout and thick, and in others are of small size, with small narrow foliage. They have usually spreading flowers with the sepals and petals free, or the lateral ones very shortly connate at the base, the claw of the lip, which is often very short, being parallel with the exauriculate column, and the limb spreading. The scapes are rarely short and few flowered, more frequently paniculately branched, and the flowers are mostly of a showy character. Nearly or quite a hundred species have been found in the South American Andes, and the major part of them have already made their way into our Orchid collections.

Culture.—The Odontoglossums require to be placed either in an intermediate or cool house to grow them successfully. With the exception of *O. Krameri*, *O. Phalænopsis*, *O. Roezlii*, *O. vexillarium*, and *O. Warszewiczii*, which thrive better with the Cattleyas, they succeed best in a cool house, the temperature of which in autumn and winter ranges from 45° to 55°. Some are best grown in baskets, while most of the species do best in pots, in rough fibrous peat with live sphagnum moss on the peat, and good drainage below, a liberal supply of water

at the roots being required during the growing season—in fact, they never should be allowed to get dry at the roots. The plan of having some live sphagnum moss growing on the top of the soil is an excellent one, as it keeps a nice wholesome moisture about the roots, which they seem to delight in.

The demand for these plants has become very great, and this is not to be wondered at, for they are a very lovely class of flowers, and can be grown in a cool house at a less expense than the more stately Brazilian and East Indian Orchids. In the form of cut blooms and otherwise, they yield very much enjoyment to lady cultivators. The flowers of many of them are exquisitely beautiful, and they continue a long time in perfection. It is much to be regretted they have been so difficult to import: many thousands of the plants collected from their native habitats having died before they reached this country. We have opened many boxes of these valuable plants, and have found them all dead, and we have also had many arrive in excellent condition. Of late years the methods of packing these plants have been much improved upon, and now one can depend upon a larger proportion reaching this country in a living state.

Shade is very essential to the well-being of this class of plants; some growers prefer a north house, but a little sun is very beneficial. They require a liberal supply of air and moisture, great care being taken to prevent cold draughts.

Some of the species are subject to insects, such as red thrips, &c., especially if kept a little too warm. When any sign of these pests is seen the plants should be well washed with clean water, for if they are allowed to become seriously infested, the foliage will soon be disfigured by the brown marks caused by the insects. They are propagated by separating the pseudobulbs just as they begin to grow.

O. Alexandræ.—See ODONTOGLOSSUM CRISPUM.

O. Andersonianum, *Rchb. f.*—This singularly beautiful and very interesting plant is evidently a natural hybrid between *O. crispum* and *O. gloriosum*. The pseudobulbs and leaves resemble those of *O. crispum*, but the flowers, which are strongly scented, are more distinctly suggestive of *O. gloriosum*. The ovate-oblong acute slightly crispy sepals and petals are creamy white, with bright chestnut brown oblong spots; and the oblong-pandurate apiculate lip, which is also creamy white, is yellow at the base, with numerous small spots of crimson, in front of which are a pair of blunt teeth, while the anterior part sometimes bears a largish irregular patch of confluent spots. It is named in compliment to Mr. Anderson, of Meadow Bank. We have had it with fifty flowers, and a fine appearance it made when shown at the Manchester Royal Botanic Gardens.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 35; *Floral Mag.*, 2 ser., t. 45.

O. Andersonianum lobatum, *Rchb. f.*—This variety has the numerous flowers two and a half inches across; the sepals and petals being both of a creamy white, with numerous small elegant chestnut brown spots on their base; and the lip, which bears rather spreading narrow side lobes, is spotted with the same brown colour towards the centre, and there are two lines of chestnut brown extending for about half an inch from the base of each of the petals.—*New Grenada*.

O. angustatum, *Lindley*.—A very distinct species, producing pyriform ancipitous pseudobulbs, each with one broad lanceolate leaf from its apex, and about four accessory ones at its base. The flowers come in erect panicles, which have short branches; they have linear very much acuminate sepals, which are greenish with a median line of brown, and broader much crisped petals, which are yellow with shining transverse bars of cinnamon brown, and a white lip, the anterior part of which is oblong triangular wavy and toothletted, with brown streaks and bars, and a crest of two serrate lamellæ, one long acute middle keel, and a tooth on each side of it.—*Peru*.

FIG.—*Batem.*, *Mon. Odont.*, t. 26.

O. aspersum, *Rchb. f.*—This plant is supposed to be a natural hybrid between *O. maculatum* and *O. Rossii*. The pseudobulbs are similar to those of *O. maculatum*, but smaller, as are the flowers. The sepals and petals are yellowish white,

mottled on the inner surface with numerous brown blotches, the petals much broader than the keeled sepals, with a few brown spots at their base; the cordate acute lip is creamy white with yellow crests. At first sight this flower reminds one of a yellow variety of *O. Rossii majus*. It flowers during the winter months.—*Mexico*.



ODONTOGLOSSUM ASPERSUM.

O. astranthum, *Linden et Rehb. f.*—This pretty species bears a considerable resemblance to *O. odoratum*. It produces a large branching panicle, bearing upwards of fifty flowers, which are nearly two inches in diameter, with the organs stellately disposed; the lanceolate acuminate sepals and petals are yellowish with purplish brown streaks and blotches, and the lip, which is ligulate acuminate in front, is white spotted with pale rose, the base of the column being orange with a few reddish purple spots. It requires quite cool treatment.—*Ecuador*.

O. baphicanthum, *Rehb. f.*—A supposed wild hybrid between *O. crispum* and *O. odoratum*. The flowers are about two and

a half inches in diameter, the ligulate aristate sepals and petals sulphur yellow, with purplish blotches which finally become suffused over their whole surface; the lip is pandurate cuspidate serrate, yellow with two or three reddish brown spots, and a bifurcate callus as in *O. crispum*. The lip is pointed as in *O. Andersonianum*. It flowers during the summer months.—*New Grenada*.

O. bictoniense, *Lindley*.—A well-known free-growing species with oblong compressed pseudobulbs, bearing two or three ensiform undulated leaves, and upright racemes of flowers, in which the sepals and petals are green spotted with brown, and the cordate acuminate lip lilac, or pink, or sometimes white. The variety *album* figured in *Illustration Horticole* (3 ser. t. 91), has the sepals and petals wholly of a bright chestnut brown, and the lip white, and that figured as *splendens* in the same work (t. 449) has the sepals green and brown, and the lip bright rosy lilac. The name *africanum* was given by misadventure.—*Mexico: Guatemala*, 6,000—7,000 feet.

FIG.—*Bot. Reg.*, 1840, t. 66; *Bot. Mag.*, t. 3812 (lip whitish); *Batem., Orch. Mex. et Guat.*, t. 6; *Id., Mon. Odont.*, t. 18; *Illust. Hort.*, t. 449; *Id.*, 3 ser., t. 91 (*album*); *Flore des Serres*, t. 1502 (lip pink); *Moore, Ill. Orch. Pl.*, *Odontoglossum*, t. 6.

SYN.—*Cyrtochilum bictoniense*; *Zygopetalum africanum*.

O. bictoniense superbum, *Williams*.—A distinct free-growing variety, much superior to the old form. The pseudobulbs and leaves are light green, the spike erect many-flowered, the sepals and petals dark chocolate brown, and the lip large, purplish mauve marked with darker lines. It blooms during the autumn months, and is a very desirable plant.—*Guatemala*.

O. blandum, *Rchb. f.*—This is a very fine species, somewhat resembling a dwarf form of *O. navium*. The flowers have a honey-like fragrance, and are white with brownish crimson spots; the sepals and petals are equal in size, cuneate-lanceolate acuminate, creamy white beautifully spotted and freckled with maroon crimson, and the lip which is of the same colour, but much broader than in *O. navium*, has a bilamellate claw with a broad ovate acuminate crispy blade.—*New Grenada*.

FIG.—*Batem., Mon. Odont.*, t. 28.

O. Bluntii.—See ODONTOGLOSSUM CRISPUM.

O. Bowmanni, *Rchb. f.*—A form of the variable *O. crispum* which we first saw in 1880, in the collection of

F. A. Philbrick, Esq. The sepals are white, almost wholly flushed with deep rose colour, and indistinctly blotched with deep rose; the petals are white, slightly spotted with rose towards the base; and the lip is distinct in shape, being broadly hastate, having four or five reddish brown spots, and a fine large yellow disk.—*New Grenada*.

O. brevifolium, *Lindley*.—A very free-flowering and handsome species of the *coronarium* group. The pseudobulbs are ovate oblong compressed one-leaved, the leaves ovate oblong, short. The flowers are nearly or quite two inches across, numerous, on an erect raceme, of a rich chestnut brown with a narrow golden border; and the cuneate emarginate lip, which is shorter than the sepals, is of a bright yellow, having a reddish furcate blotch at the base. It blooms in April and May. This flowers more freely than *O. coronarium*, and should be cultivated on that account.—*Peruvian Andes*.

FIG.—*Orchid Album*, i. t. 27; *Illust. Hort.*, 3 ser., t. 170.

O. cariniferum, *Richb. f.*—A very free-growing plant, producing oblong subancipital diphyllous pseudobulbs, oblong ligulate leaves, and large spreading panicles of flowers, which have the oblong lanceolate acuminate sepals and petals reddish brown, greenish outside, and the lip clawed, three-lobed, with the anterior larger lobe cordate acute, white in front, the disk red, and also bearing about five fleshy tubercles, the two lamellæ on the violet claw being serrated. It succeeds well in the cool house, and flowers during the winter season, continuing in bloom for three months.—*Central America: Veragua*, 9,000 feet.

FIG.—*Batem.*, *Mon. Odont.*, t. 10; *Bot. Mag.*, t. 4919.

SYN.—*O. hastilabium fuscatum*.

O. Cervantesii, *La Llave and Lexarza*.—A pretty dwarf species with ovate angulate pseudobulbs, solitary oblong leaves, and few-flowered scapes of large sweet-scented flowers, with a slightly cordate and acute lip, the colour a very pale pink, the base of the sepals and petals marked with broken concentric bands of brownish crimson on a yellow ground, the claw fleshy, cup-shaped, having in front a double tooth, and beyond that a pair of long hairy processes.—*Mexico*.

FIG.—*Bot. Reg.*, 1845, t. 36; *Paxt. Fl. Gard.*, i. t. 15; *Moore, Ill. Orch. Pl.*, *Odontoglossum*, t. 4; *Orchid Album*, iv. t. 167; *Illust. Hort.*, t. 12; *Id.*, 3 ser., t. 313 (majus); *Paxton, Mag. Bot.*, xii. 193, with tab.; *Floral Mag.*, t. 294.

O. Cervantesii Andersoni, Moore.—This variety, which is referred to without name by Reichenbach in *Gardeners' Chronicle* (1868, 710), has white flowers marked by the usual concentric broken lines or bars of reddish brown at the base of the sepals and petals, but differs in having the lip bordered by numerous spots of the same colour as the bars at the base of the sepals. It was flowered by Mr. Anderson in the Meadow Bank collection.—*Mexico*.

O. Cervantesii decorum, Rehb. f.—A magnificent variety of *O. Cervantesii*, with very large flowers, measuring nearly three inches across. The sepals and petals are white tinged with rose and spotted and barred with reddish brown; the lip is large, white tinged with rose blotched with crimson and beautifully fringed. This variety produces as many as three or four flowers on a spike, and when grown in a basket makes a very charming object. It was exhibited by Sir Trevor Lawrence, Bart., M.P., in whose fine collection it flowered.—*Mexico*.

O. Cervantesii membranaceum, Lindley.—A charming small-growing variety of this beautiful species, in which the larger fragrant flowers, which smell of almonds, are pure white having concentric broken lines of crimson at the base, and a deeply cordate retuse blunt lip, marked with a few concentric crimson bars. It blooms during the winter months, and continues in bloom four weeks. This will do on a block of wood or in a pot. There are many forms of this variety. One named *O. C. membranaceum roseum* is a very handsome plant, with the flowers in racemes of five or six together, rose colour, shaded with yellow, and barred with brown, and produced through autumn and winter.—*Mexico; Guatemala*.

FIG.—*Bot. Reg.*, 1846, t. 34; *Bot. Mag.*, t. 4923; *Annales de Gand*, 1845, t. 10; *Pescatorea*, t. 5; *Moore, Ill. Orch. Pl.*, *Odontoglossum*, t. 5.

O. Chestertoni, Hort.—A very handsome *Odontoglossum* introduced by the late Mr. Chesterton. It is of the *O. crispum* type, and has the sepals much serrated, white heavily barred with reddish brown, the petals white with a few small reddish brown spots towards the centre, deeply toothed at the edge, and the lip pale yellow, having a large reddish brown blotch in the centre, and the margin beautifully fringed. It flowers at different times of the year, after the growth has been completed.—*New Grenada*.

O. cirrhosum, Lindley.—This fine species is undoubtedly one of the most elegant and charming of a very charming family, which is also becoming a very numerous one. The plant varies a good deal, but all its forms are pleasing. The character of the flowers is somewhat similar to that of *O. navium majus* both in shape and colour, but they are much



ODONTOGLOSSUM CIRRHOSUM.

larger. The pseudobulbs are oblong, narrowed upwards, compressed, with a solitary ligulate oblong leaf from the apex of the bulbs, and one or two pairs of accessory ones at the base; the scape springing from the axil of the latter grows from two to three feet in length, and bears numerous flowers which are star-shaped, and from four to five inches across.

The sepals are narrow lanceolate, much attenuated at the point and slightly undulated, the petals similar but somewhat shorter and broader at the base, both white thickly blotched with bright chocolate purple; the lip is smaller and shorter but equally attenuated, the expanded base heart-shaped, yellow with deep crimson veins, and a pair of prominent yellow horns white and spotted like the petals on the anterior part. Some of the many forms produce their flowers in panicles. The name *cirrhosum* is given in allusion to the slender recurved cirrhiform apices of the parts.—*Andes of Ecuador: Guayaquil.*

FIG.—*Orchid Album*, iv. t. 151; *Illust. Hort.*, 3 ser., t. 301; *Floral Mag.*, 2 ser., t. 222; *Gard. Chron.*, N.S., v. 501, 503, figs. 91, 92; *Id.*, ix. 181, fig. 33 (var.).

O. cirrhosum *Hrubyianum*, *Rehb. f.*—This handsome plant was recently (February, 1885) exhibited by Messrs. Sander & Co. at South Kensington. It closely resembles *O. cirrhosum* both in the shape and colour of its flowers, saving the spotting of the sepals and petals, which are pure white with only a blotch of orange and some red lines at the base of the lip. The flowers are borne in long robust racemes with about twenty blossoms. It is now considered to be a variety of *O. cirrhosum*.—*New Grenada.*

SYN.—*O. cirrhosum album*; *O. Hrubyianum*.

O. cirrhosum *Klabochorum*, *Rehb. f.*—An altogether superior form of the type, having much larger white flowers more heavily spotted with chocolate-brown, and the sepals and petals developed into much longer tails. It flowers during the summer months.—*Ecuador.*

O. citrosmum, *Lindley*.—A charming Orchid, producing long pendulous spikes of fragrant lemon-scented flowers in June and July. It has roundish compressed pseudobulbs, oblong ligulate leaves, and pendent racemes or panicles of large handsome flowers, a dozen or more on one scape, each flower measuring two inches across. The oblong obtuse nearly equal sepals and petals are white slightly flushed and sometimes dotted with pink, the crestless reniform emarginate lip mauve-coloured with an orange yellow claw having the two sides erect. It flowers in summer, and will continue in perfection for as long as four weeks if kept in a cool house free from damp; moreover, it makes one of the finest plants for exhibition.—*Mexico.*

FIG.—*Bot. Reg.*, 1843, t. 3; *Gard. Mag. Bot.*, ii. 261, with tab.; *Moore*,

Ill. Orch. Pl., *Odontoglossum*, t. 8; *Flore des Serres*, t. 633; *Lem. Jard. Fl.*, t. 90; *Batem., Mon. Odont.*, t. 6; *Puydt, Les Orch.*, t. 29.

SYN.—*Odontoglossum pendulum*; *Oncidium Galeottianum*, Drapiez.

O. citrosimum roseum.—A very fine variety of *O. citrosimum*, having the same habit and manner of growth as the type, and producing its beautiful flowers on long drooping racemes. The sepals and petals are white, and the lip a bright rose colour. There are many varieties of this, some of them having more colour than others; the best form we have seen is that figured by Mr. Warner, as quoted below. When the plant is in bloom the pot should be suspended from the roof, so that the pendent racemes may hang down naturally, in which position it produces a charming effect.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 28; *Illust. Hort.*, t. 59.

O. constrictum, *Lindley*.—Although not a large-flowered species, this is a very pretty plant, producing a large branching panicle of gaily-coloured blossoms. The pseudobulbs are rather large, ovoid, compressed, ribbed, supporting a pair of linear-lanceolate leaves a foot long, and of the same dark green colour, and a slender scape, a foot and a half long, supporting a loosely branched panicle of equal length. The flowers are an inch and a half across (in wild specimens three inches); the oblong lanceolate sepals and petals are bright yellow blotched with orange or reddish brown, the colours often disposed in longitudinal bars, the lip distinctly fiddle-shaped, with an apiculus, white with a pair of oblong rose-coloured blotches in the middle contracted portion, and a pair of small toothed crests on the disk.—*La Guayra; Caracas*.

FIG.—*Bot. Mag.*, t. 5736.

O. Coradinei, *Rehb. f.*—A distinct showy *Odontoglossum* supposed to be a natural hybrid between *O. triumphans* and some species of the *O. odoratum* group. The pseudobulbs are elongate ovate compressed, with ligulate oblong leaves usually in pairs, with accessory ones sheathing the bulbs and evolving from their axils the flower scape with its raceme of eight to ten flowers. The flowers are stellate, three inches across, with lanceolate acuminate sepals and petals, which are primrose yellow, with some large irregular blotches of chestnut brown; the lip is shorter, obovate oblong, apiculate, contracted in the middle, paler yellow, with a large squarish blotch of chestnut red in the central part, and a crest of two

upcurved horns on the disk. This plant blooms during the winter months.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 90; *Xenia Orch.*, t. 192, figs. 1—4; *Gard. Chron.*, 1872, 1068, fig. 251.

O. cordatum, *Lindley*.—An old though very distinct and handsome species of free-growing and free-blooming habit, and one therefore which deserves to be grown for its utility. It has oblong obtuse compressed pseudobulbs, broadly oblong acute leaves, and distichous racemes of prettily spotted flowers on scapes which issue from the axils of accessory leaves, and grow about a foot in height. The flowers are stellately expanded, with lanceolate caudate acuminate sepals and shorter broader petals, both yellow, the surface of the sepals almost wholly covered by numerous transverse oblong bars of bright chestnut brown, that of the petals with roundish blotches of the same colour; the lip is cordate acuminate, white with a line of brown spots down the centre and another round the margin, the apex being wholly brown, the claw bearing a bilobed fleshy appendage or crest. There are many varieties of this species, which requires to be grown in a pot in peat.—*Mexico*; *Guatemala*.

FIG.—*Orchid Album*, iv. t. 186; *Knowles and Westc., Floral Cab.*, t. 100; *Pescatorea*, t. 26; *Bot. Mag.*, t. 4878 (as *maculatum*); *Batem.*, 2nd Cent. of *Orch. Pl.*, t. 167; *Id.*, *Mon. Odont.*, t. 25; *Gartenflora*, t. 356.

SYN.—*O. Hookerianum*.

O. cordatum sulphureum, *Rchb. f.*—A curious variety, in which the flowers have sulphur-coloured sepals, while the petals and lip are white with sulphur-coloured tips and blotches; it was flowered by Mr. F. Sander in 1880.—*Mexico*.

O. cordatum superbum, *Hort.*—This is a very fine variety of the old and useful *O. cordatum*. It produces flower scapes upwards of two feet high and very much branched, and in which the flowers are not only larger, but their colours very much richer than in the type. There is a fine plant of this variety in the collection of Baron Schröder, The Dell, Staines.—*Mexico*.

O. coronarium, *Lindley*.—A charming species, one of the finest in the genus. It has oval compressed shining pseudobulbs and dark green oblong coriaceous leaves. The scape, which rises upright from the side of the bulb, is about a foot and a half in height, and bears a many-flowered raceme a foot long, loaded with flowers which are nearly two inches

broad, the sepals and petals reddish brown edged with yellow, the cuneate retuse lip bright yellow. It does best in a pot or basket in peat, and will continue a long time in perfection. This species is generally considered difficult to bloom, but we think this is due to bad cultivation, since Sir T. Lawrence, Bart., M.P., flowers it frequently, grown in a house along with other *Odontogloss*s.—*New Grenada*.

FIG.—*Pescatorea*, t. 47; Warner, *Sel. Orch. Pl.*, iii, t. 4; Batem., *Mon. Odont.*, t. 27.

SYN.—*O. candelabrum*.

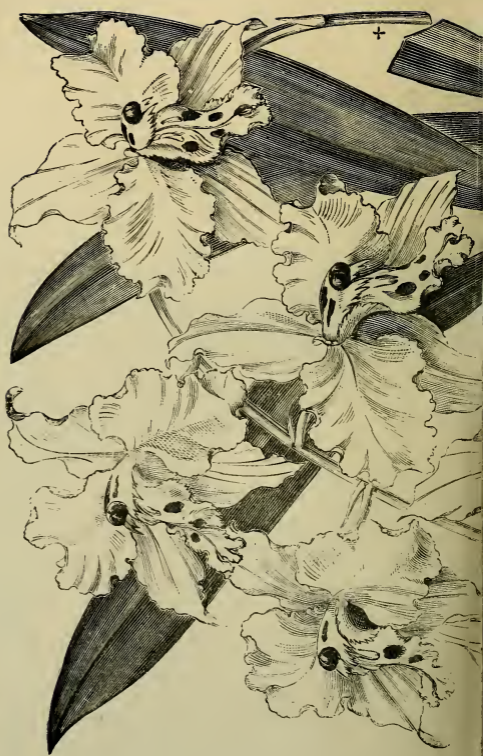
O. crispum, Lindley.—One of the most beautiful and most useful of Orchids, which from its identity with *O. crispum* not having been at first discovered, and from its having when originally introduced in a living state received the popular name of *O. Alexandræ*, is perhaps even yet better known in gardens by this latter designation. It is a charming addition to our collections, and one which affords many variations, ranging from a pure white to yellow and rose, and including various highly spotted forms. The pseudobulbs



ODONTOGLOSSUM CRISPUM.

are oblong ovate compressed, with a pair of ligulate oblong acute leaves, and radical scapes from the axils of accessory leaves, bearing racemes or panicles of the lovely flowers, which often have the ovate lanceolate sepals flushed with rose, the broadly ovate pure white petals being much undulated, and the oblong ovate lip much crisped and acuminate, with a rich yellow stain over the discal portion, and having one or two small red-brown spots about the centre and a series of radiating lines of the same colour at the base.

This is regarded as a fair example of the species, but, as just noted, there are many varieties of the plant, some much finer and larger than others, though very few prove altogether inferior. It is a most graceful plant, producing its lovely spikes of bloom freely when kept quite cool, and lasting in beauty a long time if the flowers are kept free from damp. This indeed is the case with all white or light-





ODONTOGLOSSUM CRISPUM.



coloured flowers when placed in a cool house ; if they become damp they soon get spotted, and so lose their beauty.

The form which originally received the name of *O. Alexandræ* had nearly pure white flowers, with a bright golden blotch on the lip.

The plant called *O. Bluntii* is a form with white sepals and petals shaded with rose and richly spotted with purplish crimson, the lip also being profusely spotted.

We may repeat that this is the most useful of all the Odonoglosses, and one cannot have too many of it, so useful is it for every purpose for which flowers are grown.—*New Grenada: Bogota*, at an altitude of 7,000 to 8,000 feet.

FIG.—*Orchid Album*, i. t. 47 ; *Jennings, Orch.*, t. 26 ; *Floral Mag.*, t. 343 ; *Bateman, Mon. Odont.*, tt. 14, 19 ; *Flore des Serres*, t. 1652 (*Bluntii*).

SYN.—*O. Alexandræ*, *O. Bluntii*.

O. crispum aureum, *Hort.*—One of the best yellow varieties of *O. crispum* we have yet seen. The sepals and petals are of a deep lemon yellow, the sepals spotted with brown ; and the lip is yellow, having two brown spots on the anterior part. This variety was exhibited by F. A. Philbrick, Esq., Bickley, at the Royal Horticultural Society's meeting in February, 1884, and was awarded a first-class certificate.—*New Grenada*.

SYN.—*O. Alexandræ aureum*.

O. crispum Cooksoni, *Williams and Moore*.—A very splendid variety, one of the best spotted forms yet obtained. The sepals and petals are white, heavily marked in broad patches with dark brownish crimson, and the lip is white, having a large blotch of the same brownish crimson on its anterior part and a few spots on either side of the crest, which, with the disk, is golden yellow. It flowers during the summer months.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 118.

SYN.—*O. Alexandræ Cooksoni*.

O. crispum flaveolum, *Rchb. f.*—A most distinct and pleasing variety, having the flowers of a pale sulphur yellow colour, and the lip of a bright yellow, marked with about three reddish brown spots.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 43.

SYN.—*O. Alexandræ flaveolum*.

O. crispum giganteum, *Moore*.—A magnificent variety, in which the pseudobulbs and leaves are large and robust, and

the flower spike three feet high, and many-flowered. The flowers are large, four and three-quarter inches across, white slightly flushed on the sepals with blush, the sepals and petals otherwise colourless, very broad and very densely frilled; the lip, which is large and frilled, with a broad apiculate recurved apex, has the usual yellow disk, and in front of it a few chestnut brown spots, which are sometimes confluent into an irregular blotch. The noble flowers are arranged in two series, one on each side the rachis, and form a full second inflorescence.—*New Grenada*.

FIG.—*Warner, Sel. Orch. Pl.*, iii, t. 20.

SYN.—*O. Alexandræ giganteum*.

O. crispum guttatum, *Moore*.—A very handsome variety, in which the flowers are large, white, the sepals and petals bearing a few spots of reddish brown; and the lip is large, deep yellow at the base, and there dotted with red, having a single large spot in its central part and other smaller spots along the margin.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5697; *Orchid Album*, ii, t. 94; *Puydt, Les O. ch.*, t. 28.

SYN.—*O. Alexandræ guttatum*.

O. crispum Lehmanni, *Rehb. f.*—A remarkable variety, with narrow leaves, and flowers smaller than those of the type, and described as being produced on a branching inflorescence, sometimes as many as fifty in one panicle. There are several reddish brown spots on the lip of this variety, which is very distinct, being much broader than that of the typical *O. crispum*, and altogether a rounder flower.—*New Grenada*.

O. crispum Marianæ, *Moore*.—A very handsome and distinct variety, which was first flowered by R. Warner, Esq. The flowers are about two and a half inches in diameter, the sepals being as broad as the petals, both pale rose colour heavily blotched with reddish purple; and the lip is white, spotted profusely with pale brown, and having a yellow disk.—*New Grenada*.

SYN.—*O. Alexandræ Marianæ*.

O. crispum roseum, *Moore*.—A very handsome and distinct variety, having the sepals and petals deeply tinted with lilac-rose colour, and marked with a few irregularly scattered spots of chestnut brown; the lip, which is white, and broad at the

tip, with a recurved apiculus, is more freely spotted with brown, the yellow disk being less prominent.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 269.

SYN.—*O. Alexandræ roseum*.

O. crispum Sanderianum, *Hort.*—A very distinct and beautiful variety, having large port wine coloured blotches on the sepals and petals. It was exhibited by Baron Schröder at the Orchid Conference of the Royal Horticultural Society in May, 1885.—*New Grenada*.

O. crispum Stevensii, *Williams and Moore*.—One of the finest of the spotted forms, with noble flowers three inches across. The sepals and petals are white, very heavily spotted and blotched with bright cinnamon brown; the lip is also similarly spotted, and has the orange stain on the disk very prominent. It is quite one of the best forms yet observed.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 127.

SYN.—*O. Alexandræ Stevensii*.

O. crispum Trianae, *Moore*.—A superb variety, with very large flowers nearly three inches in diameter. The sepals are white shaded with rose, the dorsal one having a single large round spot of ferruginous red in the centre, while the lateral ones have each three such spots, with a patch of several smaller ones of bright rose on their outer half; the petals are pure white very broad toothed and wavy; and the lip, which is broad and two-lobed at the apex, has the usual yellow disk, and a large blotch of ferruginous or coppery red in the centre, with smaller spots of the same colour along the upper margins. It flowers in October.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5691.

SYN.—*O. Alexandræ Trianae*.

O. crispum Veitchianum, *Rchb. f.*—This is one of the most distinct and richly coloured of all the many beautiful forms of *O. crispum* at present introduced. In its pseudobulbs, leaves, and inflorescence, it resembles the typical plant. The flowers are produced in well-furnished racemes, and are of large though perhaps not the largest size, broad and well filled out as to form, and very gaily coloured. The sepals are broadly ovate with the edges undulated, and the base very little narrowed, white with about two large central blotches of deep brownish crimson, and a row of smaller oblong blotches out-

side these, all being enclosed by a belt of purplish rose some distance within the margin, which preserves its pure white character. The petals are also ovate, but considerably broader and more decidedly undulated, the margins being also toothed; the colour resembles that of the sepals, but there is frequently only one central blotch, which is then larger than those on the sepals. The lip is oblong, broad, and well displayed, white with yellow disk, the surface marked by a few crimson splashes over the central parts, and pencillings near the edge, with the usual radiating lines round the base of the column. It is certainly one of the handsomest forms that has yet appeared. The plant is now in the rich collection of Baron Schröder, of Staines.—*New Grenada*.

FIG.—*Florist and Pomol.*, 1884, 177, t. 623.

SYN.—*O. crispum mirabile*.

O. crispum virginale, *Williams*.—This is a pure white variety, having very large flowers of fine substance, without either spot or tinge of pink in the sepals and petals; the disk and crest of the lip yellow as in the type. It was exhibited by us at South Kensington in November, 1882, when it received a first-class certificate.—*New Grenada*.

SYN.—*O. Alexandræ virginale*.

O. crispum Warneri, *Moore*.—A magnificent form of this beautiful species, exhibited at the Royal Horticultural Society's Exhibition in 1869. It is a large-growing vigorous form, with long close secund racemes of very large blossoms, upwards of three inches in diameter, having the sepals white stained with rose, and spotted on the central area with about half a dozen oblong spots of chestnut brown; the petals very broad, dentate at the edges, pure white; and the lip, which is large and densely frilled, white stained at the base with rich yellow, in front of which is a large squarish patch of bright chestnut brown. This fine variety has been well figured by Mr. Warner.—*New Grenada*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 23.

SYN.—*O. Alexandræ Warneri*.

O. cristatellum, *Rchb. f.*—This species is allied to *O. cristatum*, and is a very rare plant. It has ovate pseudobulbs of moderate size, ligulate oblong acute leaves, and radical peduncles terminating in racemes of attractive flowers each two and a half inches across, in which the roundish oblong-ovate sepals and petals, which are about of equal size,

are yellow heavily blotched so as to be nearly covered with chestnut brown; the lip is smaller oblong panduriform, apiculate, yellow at the base and chestnut brown in front, furnished with subulate radiate calli on the disk, and a pair of lamellæ standing before them. It flowers during the summer months.—*United States of Colombia.*

FIG.—*Orchid Album*, ii. t. 66.

SYN.—*O. Lehmanni.*

O. cristatum, *Lindley*.—A pretty compact-growing and free-flowering species. The pseudobulbs are conical, of a light shining green, and the leaves linear-lanceolate and very acute; the many-flowered radical scape bears a raceme of flowers, which are about two and a half inches across, with lanceolate acuminate spreading sepals and petals, and a deflexed lip of the same form, furnished with a multipartite crest, of which the anterior lobes are largest. The flowers are of a honey-like yellow, with dark brown blotches which nearly cover their whole surface, the petals being distinguished by zigzag bars of yellow, and the base of the lip being white. There are several varieties of this, some of which are very deficient in colour. Prof. Reichenbach has distinguished three (*Gard. Chron.* 1868, 1014), namely: *Argus*, bright yellow with many purplish freckles and speckles, the lip white with purplish markings; *Canaria*, canary-yellow with a single purplish blotch on each sepal and petal, the lip as in the preceding; and *Dayanum*, a possible hybrid, with flowers of the normal colour.—*Peru, Ecuador.*

FIG.—*Illust. Hort.*, 3 ser., t. 21 (*Argus*).

O. crocidipterum, *Rchb. f.*—A species in the way of *O. nævium* and *O. odoratum*. The pseudobulbs are nearly elliptical, but tapering to the apex, ancipitous, blunt at the edges, and in age become wrinkled all over but never furrowed; the leaves are longicuneate ligulate acute; the flowers grow in branching spikes, and are pale yellow spotted with chestnut brown, the lip having a large quadrate brown spot on its anterior part, and a smaller one of similar colour on each side of the calli. The flowers have a peculiar and not very agreeable odour. It flowers during the autumn months.—*New Grenada.*

FIG.—*Xenia Orch.*, ii. t. 192, fig. 2.

O. cuspidatum xanthoglossum, *Rchb. f.*—This is a very distinct and brilliantly coloured variety of *O. cuspidatum*—a

species which has primrose yellow sepals and petals, and a white cuspidate lip, all the parts blotched with dark brown. It produces long branching racemes of flowers, which are large and of a rich golden yellow, the sepals and petals being blotched and barred with chestnut brown, and the lip pandurate cuspidate, the edges very wavy and much toothed, yellow with a large reddish brown blotch at the base. It flowers during March and April.—*Colombia*.

FIG.—*Xenia Orch.*, ii. t. 184, figs. 1, 2 (cuspidatum).

O. Denisoniæ, *Hort.*—A very fine *Odontoglot*, named in compliment to Lady Londesborough, certificated by the Royal Horticultural Society, and supposed to be a natural hybrid between *O. crispum* and *O. luteo-purpureum* (*hystrix*), resembling the latter in its vigorous habit and in the shape of the flowers. The pseudobulbs are ovate, with a pair of oblong lance-shaped leaves, and the flowers, which grow in elongated racemes on radical scapes, are over four inches across, the sepals lanceolate acuminate white with a few oblong pale purplish spots; the petals rather broader but acuminate and of a pure white; and the lip oblong blunt denticulate, with a pale yellow stain over the disk and a few spots of a rather darker purple, all the parts, the lip especially, being undulated at the edge.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 26.

O. Dormannianum, *Rehb. f.*—A pretty little plant in the way of *O. navium*. The pseudobulbs are small elliptic blunt two-edged and rugose, the leaves short narrow linear-lanceolate, and the stellate flowers in racemes. The sepals and petals are white or whitish spotted all over with reddish brown, and the lip is white with a large reddish blotch on the anterior part; the crest is white with two yellow areas on either side. It flowers in January.—*Colombia*.

O. Edithiæ, *Warner.*—A very distinct and beautiful plant of the *O. crispum* type, having flowers about the size of those of a large *O. Andersonianum*. The pseudobulbs are roundish or ovate compressed, the leaves oblong ligulate, and the scape bears a raceme of flowers, in which the slightly wavy sepals and petals are flushed with rose, marked by a few large transverse blotches of bright chestnut red, and broadly margined with yellow; the petals have a white flame up the centre, and the chestnut spots are smaller, those towards the

base confluent into irregular broken lines. The lip is somewhat hastate, deep yellow at the base, where there are about four longitudinal red lines, and a fringe of smaller transverse streaks on each side, the centre having two or three chestnut brown blotches, and the wavy margin and front portion pale primrose. It flowers in the spring.—*Colombia*.

FIG.—*Warner, Sel. Orch. Pl., iii. t. 25.*

O. Edwardii, *Rchb. f.*—A species of great merit, and one that should be grown by every one on account of its distinctness of colour and the delicious perfume of its flowers. It is a stout-growing plant, producing large pear-shaped pseudobulbs of a dark green colour. The flowers are produced in large thyrsoïd panicles, and although small individually are nevertheless very effective on account of their being produced in profusion—literally by hundreds; they have the sepals and petals bright violet purple, the sepals asperous on the outer surface, and the lip of the same colour with a bright yellow base. The flowers of this species, which have a delicious perfume of violets, are produced in February and March. We saw this plant well flowered in the collection of Baron Schröder, The Dell, Staines, under the care of the gardener, Mr. Ballantine.—*Ecuador*.

O. elegans, *Rchb. f.*—This most distinct plant was imported with a batch of *O. cirrhosum*, of which species it is doubtless a natural hybrid, resembling it as it does not only in the shape of its flowers, but also in its habit of growth, and in its paniculate inflorescence. Its other parent is supposed to be *O. cristatum*. The lanceolate acuminate sepals and broader caudate petals are yellowish white, and are marked with a number of dark chocolate spots and blotches, so as to become almost covered, the sepals especially so; the lip is hastately triangular caudate, with two long serrated keels on the disk, pale yellow at the base, white in front, having a large rich brown blotch in the centre and one or two spots towards the apex; the crest is deep yellow, the column white with chocolate markings. It flowers in May.—*Ecuador*.

FIG.—*Orchid Album, iii. t. 111.*

O. excellens, *Rchb. f.*—This ‘wonderfully fine’ plant is thought to be a natural hybrid between *O. Pescatorei* and *O. tripudians*. The flowers are rather broader than those of the latter; the sepals yellow with a few purple blotches, the dorsal

one white in the centre; the petals much broader, white, having yellow margins; and the lip pandurate, emarginate, apiculate, white, having numerous small purple blotches on the sides and a few larger purple blotches on the front; the crests are yellow, and consist of two long divaricate keels, one on each side of a central line, the keels having one tooth at the back and another at the end, while on each side stand a series of curved teeth. It flowers during the summer months.—*New Grenada.*



ODONTOGLOSSUM GLORIOSUM.

O. Galeottianum, *A. Rich.*—This plant is nearly allied to *O. nebulosum*, and also in its growth and its pseudobulbs resembles *O. Cervantesii*, so that it may possibly be a hybrid between these two species. The flowers are produced in short racemes, and are white, with the exception of the petals, which are transversely barred with brown at the base; the triangular subcrispate lip is white, with a few streaks of yellow near the base, and having a three-lobed white callus. It is still a rare plant.—*Mexico.*

FIG.—*Rich., Orch. Mex., t. ined. 89.*

O. gloriosum, *Linden et Rehb. f.*—This species appears to seed very freely in its native country and produces numberless varieties, of which some are more ornamental than others. It is a plant of good constitution, easily grown, travels well, and flowers in the summer or show season. The pseudobulbs and leaves resemble those of *O. crispum*, and the plant bears a long branched inflorescence. The flowers vary much in size and colour, but are mostly yellow, sometimes clouded with green, and always spotted with lively chestnut brown; they are stellate, with oblong-ligulate acuminate sepals and petals, the former having a few larger, the latter more numerous smaller spots on the basal half, and a lip which is cordate at the base, ligulate acuminate upwards, angulate towards the base, and having just above the crest a solitary irregular brown blotch. This plant is very fragrant, with a powerful hawthorn-like scent.—*New Grenada*.

FIG.—*Batem., Mon. Odont., t. 12; Gard. Chron., 1865, 578, with fig.*

O. grande, *Lindley*.—This species is well named *grande*, for it is indeed the finest of the genus, and one of the most showy Orchids in cultivation; it is a grand old plant, a universal favourite, which no collection should lack. It has ovate-oblong compressed ancipitous pseudobulbs, with a pair of broadly ovate striated wavy leaves, and a two to five-flowered erect scape springing from the base of the bulbs, and bearing the very large gaily-coloured flowers, which measure from five to seven inches across, and are developed during the autumn months. The sepals are oblong-lanceolate, yellow, transversely blotched with irregular bands of chestnut red; the petals are broader, oblong, with a single obcordate spot of chestnut red over



ODONTOGLOSSUM GRANDE.

the lower two-thirds, the rest being clear bright yellow; the lip is roundish, emarginate, unguiculate, creamy white, with a few concentric bands of chestnut red in front of the disk, and dotted with irregular-shaped pale reddish brown spots around the edge. It remains in perfection for three or

four weeks, if the flowers are kept dry. The plant should be grown in a pot.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 3955; *Batem., Orch. Mex. et Guat.*, t. 24; *Id., Mon. Odont.*, t. 8; *Flore des Serres*, t. 21; *Paxton, Mag. Bot.*, viii. 49, with tab.; *Jennings, Orch.*, t. 13; *Annales de Gand*, 1845, t. 37; *Gartenflora*, t. 270; *Orchid Album*, ii. t. 79; *Hartinger, Parad.*, i. t. 13.

O. grande magnificum, *Williams*.—This variety in its habit of growth resembles the type, but it bears sixteen flowers



ODONTOGLOSSUM HALLII.

upon one scape, and these measure seven inches in diameter, and have the most splendid and brilliant markings; the lip is also large in proportion. We saw this plant, which well deserves the name of *magnificum*, in the collection of the late T. Dawson, Esq. With it there were in bloom from ninety to

a hundred plants of *O. grande*, forming a really beautiful display.—*Guatemala*.

O. Hallii, *Lindley*.—A very charming and beautiful species belonging to the *O. luteo-purpureum* section, but having flowers far superior and more beautiful than those of any variety of that species. The pseudobulbs are ovate acuminate ancipitous, about three inches high; the leaves ensiform, upwards of a foot long, and two inches broad, light green, and the scape many-flowered, produced from the base of the bulbs. The flowers measure about four inches across, the sepals and petals being ovate-lanceolate acuminate, buff yellow, heavily blotched and the petals barred near the base with purplish brown; and the large oblong acuminate lip is white with a rich yellow throat streaked with orange and white, the surface blotched with purplish brown, the margin white and beautifully fringed. There is a large multipartite crest at the base of the lip. This plant is sometimes called by the varietal name *leucoglossum* to distinguish it from the next, but as it represents the type of the species which had a white lip, this name is quite supererogatory.—*Peru: New Grenada*, elevation 8,500 feet.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 10; *Batem., Mon. Odont.*, t. 21; *Illust. Hort.*, 3 ser., t. 58; *Floral Mag.*, t. 378; *Gard. Chron.*, 1865, 962, with fig.; *Xenia Orch.*, i. t. 63, fig. 1; *Bot. Mag.*, t. 6237 (pectinate column wing-).

O. Hallii xanthoglossum, *Rehb. f.*—A very beautiful and distinct variety having large flowers, with broad sepals and petals, the colour of which is a bright yellow heavily blotched and spotted with chestnut brown; the lip is large and broad, bright yellow spotted with reddish brown. This variety forms an effective companion for the white-lipped *O. Hallii*. It flowers during the spring and summer months.—*Peru*.

O. hastilabium, *Lindley*.—A handsome pleasing and fragrant Orchid, which produces its flowers in June, July, and August, their colours being purple, green, and white. It continues blooming for two months if kept in a cool house. The pseudobulbs are oblong compressed, ribbed, bearing a pair of linear-oblong obtuse leaves, and from the axil of an accessory leaf at its base a panicle of fragrant flowers, some three inches in diameter, with the linear lanceolate acuminate undulated sepals and petals pale green barred transversely with thin purple lines, and the broadly hastate lip having the basal part purple, triangular, with two acute side lobes, and

the front part white, roundish, ovate acute; the purple part bears a crest of five irregular lamellæ. This is a useful plant for exhibition, on account of its continuing so long in bloom.

—*New Grenada*.

FIG.—*Bot. Mag.*, t. 4272 (non t. 4919, which is *cariniferum*); *Batem., Mon. Odont.*, t. 7; *Pescatorea*, t. 11.

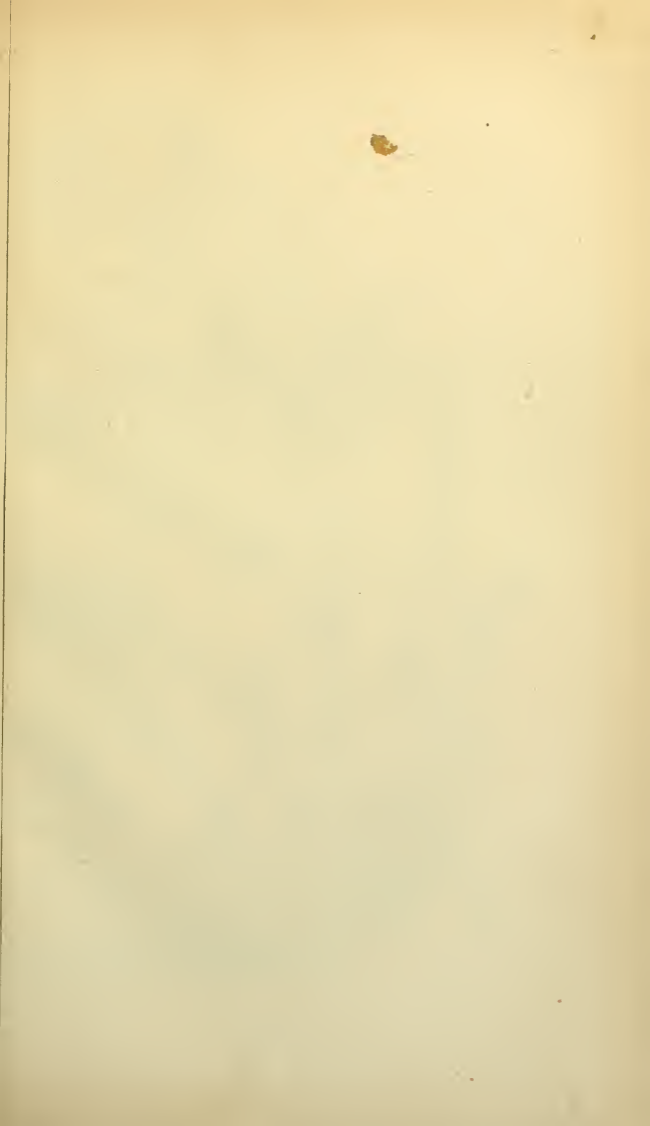
O. hebraicum, *Rchb. f.*—This very beautiful and distinct *Odontoglot*, supposed to be a natural hybrid, has elongate ovate compressed pseudobulbs, ligulate oblong leaves, and dense racemes or panicles of showy stellate flowers, of which the ovate lanceolate acuminate sepals and petals are pale yellow, and are striped and heavily spotted with chestnut brown, the markings being suggestive of Hebrew characters. The hastate lip is yellow, darker at the base, where it is marked by short radiating lines of crimson, the front part undulate and acuminate, and having a large cordiform blotch of maroon-brown. It flowers in the summer months.—*New Grenada*.

FIG.—*Orchid Album*, v. t. 194.

O. hebraicum lineoligerum, *Rchb. f.*—An interesting variety of the preceding, first flowered by C. Wynn, Esq., of Birmingham. The flowers when they first open are pale yellow, changing with age to creamy white, distinctly marked with longitudinal bars and oblong blotches of purple-crimson, the margins and tips unspotted. The lip is elongate triangular acuminate wavy pale yellow, having three or four purple-crimson spots variously disposed on its anterior part; on the disk are a pair of prominent divergent crests, the area which surrounds them being deep yellow. It flowers during the summer months.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 85.

O. Horsmanni, *Rchb. f.*—A very beautiful and distinct plant, supposed to be a natural hybrid between *O. Pescatorei* and *O. luteo-purpureum*. The pseudobulbs are pear-shaped, compressed. The flowers are of good form, well filled up, and very ornamental; the sepals and petals yellowish white blotched with cinnamon; the lip broad, yellowish white, with a large yellow disk blotched with cinnamon. It was discovered by Mr. Frederick Horsman. When the many-flowered racemes of this *Odontoglot* are well developed, as we have frequently seen them, the effect they produce is highly pleasing. The





ODONTOGLOSSUM



HEBRAICUM.

W. C. C.



plant blooms during the winter months.—*New Grenada : Ocana.*

O. Humeanum, *Rchb. f.*—A very pretty Orchid, supposed to be a wild cross between *O. cordatum* and *O. Rossii*. It is named in honour of the late W. B. Hume, Esq., in whose collection it flowered for the first time. The inflorescence is two-flowered; the flowers have the sepals triangular acuminate, keeled behind, yellow striped with bars of cinnamon brown, the oblong acuminate crispulate petals white, with three sepia brown blotches at their base, and the cordate-ovate acute crenulate lip white, with a two-lobed yellow callus striped with red on its disk.—*Mexico.*

O. hystrix.—See ODONTOGLOSSUM LUTEO-PURPUREUM.

O. Insleayi, *Lindley*.—This noble plant has very much the aspect of *O. grande*. It has ovate compressed pseudobulbs, from which grow a pair of broad oblong-ensiform leathery leaves, and at their base an erect scape bearing some eight or ten flowers each three inches across, the oblong slightly wavy sepals and petals being of a pale yellow thickly transverse-blotched with rich chestnut brown; the lip is narrow obovate retuse, smaller than that of *O. grande*, bright yellow with a row of crimson spots around the margin. It is further distinguished by the presence of a pair of red subulate horns or cirrhi on the column. The flowers are produced at different times of the year, lasting in beauty three weeks. The variety *macranthum* of Lindley (*O. Lawrenceanum*, Hort.), which has flowers three and a half inches across, differs in the lip wanting the row of marginal spots, and in having a dark-coloured base with a yellow crest.—*Mexico.*

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 25; *Journal Hort. Soc.*, viii. 55, with fig. (*macranthum*); *Batem., Orch. Mex. et Guat.*, t. 21; *Id., Mon. Odont.*, t. 4; *Flore des Serres*, t. 62.

O. Insleayi splendens, *Rchb. f.*—A very splendid variety, in which the large flowers are four and a half inches across, and of fine substance, from four to six blossoms being produced on a scape during the months of October and November. The sepals and petals are rich shining brown tipped and edged with yellow, and the lip is large, yellow spotted with brilliant carmine, and having deep orange yellow crests. It is one of the showiest Odontoglots with which we are acquainted, and is extremely rare.—*Mexico.*

O. Krameri, *Rehb. f.*—A rather pretty dwarf-growing species, in which the pseudobulbs are compressed, with sharp edges, in some specimens roundish, in others ovate, pale green, bearing a single leaf. The peduncles are freely produced from the base of the bulbs, and are pendulous, bearing several flowers; the sepals and petals are ligulate obtuse, and the lip somewhat reniform, deeply notched in front; the whole flower being of a charming violet colour, and the lip, in addition, being marked and spotted with yellow and purple, and having two lines of rich dark brown near the column. It is a good addition to this numerous family, and should be grown in peat and sphagnum moss, but will require a little more warmth than the generality of the genus.—*Costa Rica*.

FIG.—*Gard. Chron.*, 1868, 98, with fig.; *Bot. Mag.*, t. 5778; *Floral Mag.*, t. 406; *Batem., Mon. Odont.*, t. 24; *Orchid Album*, i. t. 40.

O. læve, *Lindley*.—A pretty and variable species, of free-growing habit, with ovoid compressed pseudobulbs, a pair of elongate lorate obtuse leaves, and a paniced inflorescence of rather large and showy flowers, in which the sepals and petals are oblong linear acute, flat, yellowish green transversely banded with chocolate-red (sometimes yellower with cinnamon-red markings); the lip pandurate, deflexed from near the base, which is pale lilac-purple, and the emarginate mucronate apex white. The crest consists of only two slight almost obsolete ridges on the disk, whence the name *læve*. Being a very abundant bloomer, it should become generally cultivated, especially as it will thrive under the very coolest treatment.—*Mexico*.

FIG.—*Bot. Reg.*, 1844, t. 39; *Illust. Hort.*, t. 213.

O. læve Reichenheimii, *Moore*.—This fine plant so closely resembles *O. læve* as to be scarcely distinguishable. It is a strong free-growing and handsome variety, sending up its branched panicle some two or three feet in height, and bearing a profusion of attractive flowers; the sepals and petals are yellowish green barred with purplish brown, and the lip varies very much in colour, in some varieties being quite dark, and in others a light purple. In this plant the lip is not deflexed as in *læve* itself. When well grown it makes a fine specimen.—*Mexico*.

FIG.—*Pescatorea*, t. 19; *Warner, Sel. Orch. Pl.*, ii. t. 16; *Batem., Mon. Odont.*, tt. 15, 16.

SYN.—*O. Reichenheimii*.

O. Lawrenceanum.—See ODONTOGLOSSUM INSLEYI.

O. Leeanum, *Rchb. f.*—A very distinct and handsome plant, probably a wild hybrid, named in honour of W. Lee, Esq., Downside, Leatherhead. The pseudobulbs are ovate compressed diphyllous, the leaves oblong ligulate acute, and the scape radical, bearing an erect many-flowered raceme. The flowers are of the stellate form, three and a half inches across; the sepals and petals are lanceolate acuminate, bright yellow margined with orange, and spotted all over with small dots of rich reddish brown, the petals having each an open eye-like spot of clear yellow; the oblong acuminate lip is pale yellow, deeper at the base and apex, having a large brownish crimson blotch towards the front, and a few marginal spots; the disk bears a thick linear keel, which extends into two rhomboidal toothletted lamellæ. It flowers during the winter months.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 101.

O. Lindeni, *Lindley*.—A stout-growing species, which was first flowered by H. J. Buchan, Esq., of Southampton. The plant has tall pear-shaped pseudobulbs, erect ensiform leaves nearly a foot long, and a flower scape two to three feet high, the uniform lateral branches bearing five to seven flowers, which form a regular unilateral series directed upwards. The flowers are about one and a half inch across, of an uniform lemon-yellow, the sepals and petals clawed lanceolate acute and much undulated, the lip ovate lanceolate with an angular base, and a crest of two terete calli, which are emarginate in front. It blooms during the summer months.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 333.

O. Lindleyanum, *Rchb. f. et Warscew.*—A distinct species, with ovate oblong compressed pseudobulbs, linear lanceolate acute leaves, and slender flexuose peduncles bearing a raceme of stellate flowers, which measure about three inches in depth, and consist of linear lanceolate acuminate sepals and petals, cuneate at the base, yellow with an elongate bar of cinnamon brown over half an inch long at the base, followed by a large roundish spot of the same, the apex speckled with small dots; the lip, which is prominent, and three-lobed in the middle part, has the base connate with the horned column, and the projected front part deflexed linear lanceolate, brown

with a long yellow tip, the disk with two pairs of falcate lateral lobes, which are white and very long.—*New Grenada*.

FIG.—*Xenia Orch.*, i. t. 71 ; *Batem.*, *Mon. Odont.*, t. 11.

O. Londesboroughianum, *Rchb. f.*—This is one of the most distinct and brilliantly coloured of the Odontoglots. The plant though epiphytal is deciduous, losing its ligulate acute foliage in winter; the pseudobulbs are oblong ovate, glaucous green, furrowed in age; and the flower scapes grow from three to six feet in length, producing flowers towards their upper end. The oblong sepals and ovate petals are concave, wavy, yellow regularly cross-banded with reddish brown, the basal markings arranged concentrically. The lip has a long yellow claw, two conspicuous erect yellow auricles, and a flat transversely reniform limb of a bright yellow, an inch and a half broad, and very effective. It produces its blossoms during the autumn months.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 82 ; *Floral Mag.*, 2 ser., t. 246.

O. luteo-purpureum, *Lindley*.—The numerous varieties of this magnificent plant have given rise to many names, but most growers of Orchids are now satisfied that these represent only varieties; still, as such, they are well worthy of a place in every collection. The typical form has thick oval compressed pseudobulbs two to three inches long, ensiform leaves two feet long, and flowers three inches or more across, in racemes which issue from the side of the bulbs, and grow a yard high. The sepals and petals are broadly lanceolate, the latter fringed, all almost wholly covered by an oblong blotch of bright chestnut brown, the margins and tips being yellow. The lip is yellowish white with reddish brown spots, obovate four-lobed and fimbriate, emarginate, the multifidly pectinate crest being deep yellow.—*New Grenada*, altitude 7,000 to 8,000 feet.

FIG.—*Batem.*, *Mon. Odont.*, t. 17 ; *Gard. Chron.*, 1865, 746, with fig. (*radiatum*); *Id.*, N.S., xxi. 585, figs. 114, 115.

SYN.—*O. hystrix*, *O. radiatum*.

O. luteo-purpureum sceptrum, *Rchb. f.*—The royal or sceptre-bearing variety of the preceding, and a plant of wondrous beauty. The sepals are oval oblong, acuminate, toothed and undulated, deep chestnut brown margined with yellow; the petals of the same form as the sepals, irregularly lobed at the edges, yellow blotched with the same colour as

the sepals; and the oval cordiform lip yellow, with serrated edge and apiculate apex, and having a curved blotch of chestnut brown in front of the disk.—*New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., t. 73.



ODONTOGLOSSUM LUTEO-PURPUREUM (RADIATUM).

O. lyroglossum, *Rehb. f.*—This very fine species is in the way of *O. Wilckéanum*, but differs in colour. The pseudobulbs are oblong ovate, compressed, diphyllous; its leaves are oblong ligulate, and its radical scape bears a vigorous raceme, the individual flowers of which are about four inches across. The sepals and petals are oblong lanceolate, coarsely toothed at the edges, of a bright yellow heavily blotched with chestnut brown; the lip is small, much fringed and toothed, similar in shape to that of *O. luteo-purpureum*, yellow with a large blotch of chestnut brown in the centre. The plant is supposed to be a natural hybrid between *O. Pescatorei* and *O. luteo-purpureum*.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., xvii. 632, fig. 97, and supp. sheet.

O. maculatum, *La Llave*.—A pretty and attractive species. It has oblong compressed monophyllous pseudobulbs, oblong nervose leaves, and pendulous or semi-erect many-flowered racemes which are produced during winter. The sepals are chestnut brown within, marked with green transverse bars at the base, sometimes violet-purple; the petals



ODONTOGLOSSUM LYROGLOSSUM.

yellow thickly spotted on the basal half with reddish brown, and the lip cordate of the same colour as the petals. It will last in bloom a long time, and succeeds best in a cool house, in a pot, in peat and moss.—*Mexico*.

FIG.—*Bot. Reg.*, 1840, t. 30; *Pescatorea*, t. 28; *Paxton, Mag. Bot.*, xiii. 147, with tab. (as *cordatum*); *Batem., Mon. Odont.*, t. 20; *Orchid Album*, ii. t. 52; *Floral Mag.*, t. 348 (as *maculosum*).

O. maculatum integrale, *Rehb. f.*—A very interesting variety of *O. maculatum*, having the same habit of growth. The flowers have the sepals light brown, the petals white with a few transverse bars of brown at the base, and the lip white with a yellow crest.—*Guatemala*.

O. madrense, *Rehb. f.*—A very distinct and handsome species, with tall ligulate or narrowly-oblong two-edged



ODONTOGLOSSUM MULUS.

pseudobulbs, lorate acute nervose leaves, and lateral scapes bearing an inclined raceme of about eight showy flowers, which are deliciously fragrant, and three and a half or four inches across in their vertical diameter. The sepals are lanceolate acuminate, white with a bilobed reddish purple blotch at the base, the petals broader oblong, white with a purple blotch twice as long as that of the sepals, and the lip

shorter ovate cuspidate, with a claw which bears two collateral crispy calli, which, with the disk, are bright orange. This species, which blooms during the summer months, and lasts several weeks in perfection, is well grown by W. Vanner, Esq., of Chislehurst.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 71; *Floral Mag.*, 2 ser., t. 158 (as maxillare); *Bot. Mag.*, t. 6144 (as maxillare).

O. mulus, *Rchb. f.*—A very handsome plant, intermediate between *O. luteo-purpureum* and *O. gloriosum*, differing from the first in its narrower sepals and petals and its constricted pandurate lip, and from the second in its broader sepals and petals, its pandurate lip, the thicker cirrhi of its column, and its radiant subbasilar callus. The habit and vegetative organs of the plant resemble those of *O. luteo-purpureum*, and it produces large branching many-flowered panicles of star-shaped flowers; the sepals and petals are bright yellow, very wavy at the margins, irregularly blotched with cinnamon brown; and the lip panduriform, yellow with a cinnamon blotch towards the centre and two or three small spots near the crest. It flowers during the spring months.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 160, figs. 1, 2.

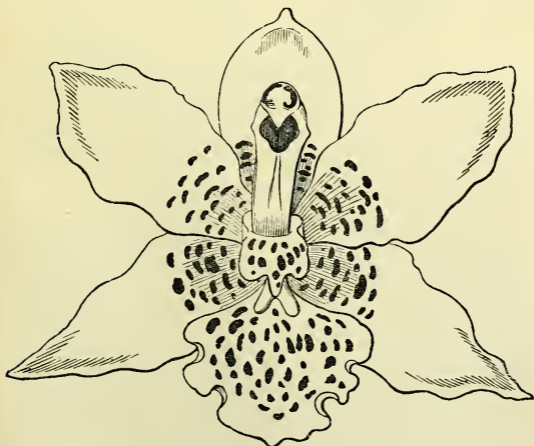
O. mulus Holfordianum, *Rchb. f.*—A very fine variety of the preceding, which was flowered by R. S. Holford, Esq., Westonbirt, Tetbury, under the care of Mr. Chapman. The ground colour of the flowers is whitish yellow, the sepals and petals being marked with very dark purple-brown blotches; the lip is white, and has a large pandurate purple spot and several smaller ones on the margins and base.—*New Grenada*.

O. Murrellianum, *Rchb. f.*—A very lovely plant, imported with *O. Pescatorei*, and doubtless a natural hybrid between that species and *O. navium*. It was named in honour of Mr. Murrell, gardener to the late W. B. Hume, Esq., in whose collection it first flowered. The plant quite resembles *O. Pescatorei*, and bears a raceme like that of *O. navium*, the lanceolate acute sepals and petals being plane, not at all wavy, white with a light purplish violet tint, with some darker purple blotches distributed with the greatest irregularity; the narrow three-lobed lip bears on its disk golden lamelliform toothed calli, and has the side lobes semiovate, and the front one ligulate acute and crenulate.—*New Grenada*.

O. nævium, *Lindley*.—A charming dwarf-growing Orchid, bearing considerable resemblance to *Oncidium phymatochilum*. It has small ovate costate pseudobulbs, slender lanceolate leaves, narrowed to the base, and spreading racemes or panicles of stellate flowers, which are produced in June and July, and last a considerable time in perfection. The sepals and petals are narrow ovate lanceolate, attenuately acuminate, with wavy margins, white irregularly blotched with rosy purple; and the slightly halberd-shaped lip is nearly of the same form, pubescent, yellow on the prominently cristate disk, the front part white and spotted like the petals.—*Demerara; Venezuela*, elevation 6,000 feet; *New Grenada*.

FIG.—*Pact.*, *Fl. Gard.*, i. t. 18; *Pescatorea*, t. 13; *Flore des Serres*, t. 594; *Batem.*, *Mon. Odnt.*, t. 9.

O. nævium majus, *Lindley*.—A beautiful variety of the preceding, producing upright spikes of much larger flowers, which



ODONTOGLOSSUM NEBULOSUM.

are pure white speckled all over with rich deep crimson, the spots being generally larger and the whole colouration bolder. The plant requires great care to grow it well; a cool house

suits it best, with a good supply of water—in short, it should never be allowed to become dry. This and the preceding last several weeks in bloom, and they both make fine exhibition plants.—*New Grenada*, elevation 8,000 feet.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 7; *Gartenflora*, t. 791.

O. nebulosum, *Lindley*.—A very handsome species, with oblong pseudobulbs, a pair of thick ligulate leaves, and a flower scape which comes up with the young growth, and bears five or six large flowers, and becomes pendulous as they expand. The flowers are two and a half inches across; the lanceolate elliptic sepals, and the much broader ovate petals are clear white thickly studded in the lower half with spots of reddish brown, or in some forms with red; the lip is ovate acute, much undulated, and otherwise differs only in the spots being larger, with a faint tinge of yellow on the disk.—*Mexico*.

FIG.—*Illust. Hort.*, t. 200 (as *maxillare*); *Batem., Mon. Odont.*, t. 1; *Gard. Chron.*, 1867, 572, with fig.

SYN.—*O. maxillare*.

O. nebulosum candidulum, *Rchb. f.*—A very pretty and delicate variety, precisely like the previous plant, saving in having the sepals and petals pure white, and entirely destitute of the spotting or clouding at the base. It is not so good as the type, but it is very distinct, and well worth a place in every collection.—*Mexico*.

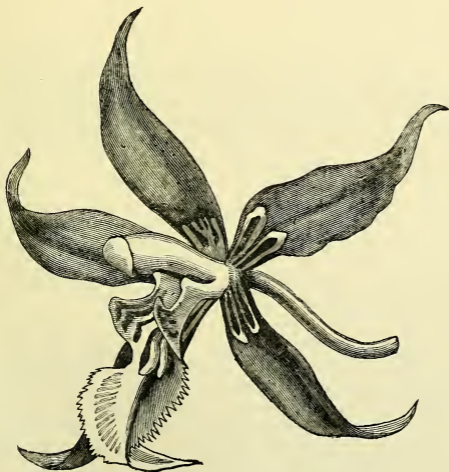
FIG.—*Gard. Chron.*, 1867, 710, with fig.

O. nevadense, *Rchb. f.*—A thoroughly distinct as well as rare and beautiful species. It has large oblong-ovate pseudobulbs which are diphyllous, lorate lanceolate keeled leaves much narrowed to the base, and radical scapes bearing long drooping racemes of numerous large and pleasingly coloured flowers, of which the lanceolate sepals are of a clear bright chestnut with a narrow even edge of yellow, the petals smaller, similarly coloured, with two forked bars of pale yellow in addition at the base opposite the lateral lobes of the lip, which are large, erect, crescent-shaped, white spotted with chestnut, the front lobe large, roundish, cuspidate-acuminate, pure white, deeply fringed, the disk with a bifid crest and three obtuse brown spots.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 191, figs. 1—3; *Illust. Hort.*, 3 ser., t. 45; *Orchid Album*, iii. t. 131.

O. nobile.—See ODONTOGLOSSUM PESCATOREI.

O. odoratum, Lindley.—This remarkably sweet-scented species has oblong compressed grooved pseudobulbs, narrowly ensiform acute leaves, and branching panicles sometimes three feet long, the flowers being numerous, and having the sepals and petals golden yellow blotched with brownish red, narrowly lanceolate and crispy at the edges; the lip is of the same colour, white towards the base, hastate, with the



ODONTOGLOSSUM NEVADENSE.

front lobe broadly subulate, and the disk with two pairs of erect teeth. It blooms during the winter months. This plant is often confounded with *O. gloriosum*, but it is quite distinct.

A variety, *latimaculatum*, André, is figured in *L'Illustration Horticole*, in which the parts are larger as well as flattened out and broader, and the blotches of purple-brown on the several members broader and more intensely coloured.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 1502; *Illust. Hort.*, 3 ser., t. 39 (*latimaculatum*).

O. Erstedii, *Richb. f.*—A very pretty diminutive species, having oblong ancipitous pseudobulbs, which are furnished with a single cuneate oblong leaf, and producing erect scapes bearing one or two flowers, of which the lanceolate wavy sepals and the obovate retuse undulated petals are pure white, while the flabellate lip, four-lobed in front, is white with a yellow disk and a few red spots. This plant is very floriferous, and is in addition deliciously scented; it flowers during the summer months.—*Costa Rica*.

FIG.—*Xenia Orch.*, i. t. 68, figs. 1–3; *Gard. Chron.*, n.s., vii. 811, fig. 128.

O. pardinum, *Lindley*.—One of the most distinct species of the genus, which was first flowered by Lord Rendlesham in 1878. It produces large ovate compressed pseudobulbs, narrow elliptic-oblong acute leaves, and strong branching panicles three feet long or more, freely furnished with flowers of large size and of the purest golden yellow colour, ornamented with several small orange red ocellated spots on the much undulated petals and the lip, which latter is of a deeper yellow than the other parts of the flower. It should be cultivated on account of its distinct colour—a palish yellow lightly spotted, its long lasting properties, and its delicious fragrance. It flowers in March and April.—*Peru, Ecuador*.

FIG.—*Bot. Mag.*, t. 5993.

SYN.—*Cyrtochilum pardinum*.

O. Pescatorei, *Linden*.—A magnificent species, and one of the choicest gems of the cool Orchid house. It is furnished with small ovate slightly costate pseudobulbs, bearing a pair of lorate leaves a foot in length, and producing branched panicles of richly ornamental flowers during April and May. The sepals and petals are ovate-oblong, undulated, white with a shade of rose, and the cordate oblong cuspidate subpandurate lip is white spotted with rose, the disk with its crest being bright yellow streaked with crimson. The panicles sometimes contain as many as a hundred flowers. We ourselves showed a specimen at Brussels with one hundred flowers expanded at one time; and when grown in this way the plant produces a charming effect. There are several varieties of it, all of them good. It does best in a cool house, grown in a pot.—*New Grenada: Pamplona*.

FIG.—*Paxt. Fl. Gard.*, iii. t. 90; *Pescatorea*, t. 1; *Flore des Serres*, t. 1624; *Lem. Jard. Fl.*, t. 331; *Warner, Sel. Orch. Pl.*, i. t. 25; *Batem., Mon. Odont.*, t. 5; *Orchid Album*, iv. t. 175; *Floral Mag.*, t. 241 (*splendens*).

SYN.—*O. nobile*.



ODONTOGLOSS



CERSTEDIL.





ODONTOGLOSSUM



PHALANOPSIS.

O. Pescatorei Lowianum, *Rchb. f.*—This plant was first flowered by Sir T. Lawrence, Bart., M.P., and has very long sepals and petals which have numerous mauve spots and dots on a fine light mauve ground.—*New Grenada*.

O. Pescatorei Schröderianum, *Rchb. f.*—A very beautiful variety of *O. Pescatorei*, the original plant of which sold for 70 guineas, and is now, after having changed owners, in the collection of Baron Schröder, The Dell, Staines. In growth it resembles the type, but its flowers come near those of *O. P. Veitchianum*. The sepals and petals are densely spotted and blotched with purple, which marking, being rather confined to the basal part of the sepals and petals, gives the flowers a very distinct appearance.—*New Grenada*.

O. Pescatorei Veitchianum, *Rchb. f.*—A very handsome and distinct variety, resembling the type in its habit of growth, and to some extent resembling *O. P. Schröderianum* in its flowers. The sepals and petals are white transversely blotched at the base with mauve-purple, these markings having the peculiarity of agreeing in their positions on the sepals and petals, so that they form a series of irregular spots and broken rings extending towards the apex. This plant is in the collection of Baron Schröder.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 68.

O. Phalænopsis, *Linden et Rchb. f.*—A most lovely compact-habited, elegant-growing species, whose large showy flowers are in strong contrast to the slender foliage. It has oblong compressed pseudobulbs narrowed upwards, bearing each one linear acute grassy leaf eight inches to a foot long. The flowers, which are generally two or more together on a spike, are flat and very distinct from those of any other kind; the petals are obovate obtuse, the sepals oblong-ligulate and more acute, both white; and the lip, which is panduriform, broader in front, and emarginate, is also



ODONTOGLOSSUM PHALÆNOPSIS.

white with two great crimson blotches, one on each side of the centre, where occurs a broken bar or two of the same colour, the front edge of the blotches being extended into stripes. The plant blooms in summer, and will last in bloom four or five weeks. This is a free plant to cultivate, but it requires the heat of the *Cattleya* house in winter to grow it well; it also requires a well-drained pot, and good fibrous peat soil.—*New Grenada*.

FIG.—*Pescatorea*, t. 44; *Warner*, *Sel. Orch. Pl.*, i, t. 30; *Batem.*, *Mon. Odont.*, t. 3; *Gard. Chron.*, 1872, 832, fig. 191 (specimen plant).

SYN.—*Miltonia pulchella*.

O. Pollettianum, *Hort.*—A very handsome and distinct *Odontoglot*, probably a natural hybrid between *O. crispum* and *O. gloriosum*. The sepals and petals are white tinged with purple on the underside and heavily blotched and spotted with reddish brown; the lip wedge-shaped. It was exhibited by H. M. Pollett, Esq., Bickley, at South Kensington, at the R.H.S. meeting in February, 1884.—*New Grenada*.

O. polyxanthum, *Rchb. f.*—A rare and handsome plant resembling *O. Hallii* in the character of its pseudobulbs and foliage. Its flower scapes are some two feet or more in length, drooping, the individual flowers being about four inches in diameter. The sepals and petals are large ovate-lanceolate acute, deep tawny yellow, the sepals having a large roundish blotch of bright chestnut red towards the end and various smaller markings near the base, the petals being marked only near the base; the lip is shorter, cordate, cuspidate, nearly covered by a broad dark chocolate brown blotch, the edge being just marked with yellowish white and finely toothed. It flowers in April and May. Introduced by Mr. E. Klaboch in 1878.—*Ecuador*.

FIG.—*Floral Mag.*, 2 ser., t. 453.

O. prænitens, *Rchb. f.*—A very interesting species, whose flowers are in the way of those of *O. triumphans*, but are smaller, though with clear shining colours, which make them very effective. The sepals and very wavy petals are bright shining sulphur yellow with a few large maroon-brown blotches; and the lip has the claw white, and its anterior part yellow, marked in the centre with a cinnamon-coloured blotch. It flowers in the spring months. At one time Prof. Reichenbach thought it might be a natural mule between

O. triumphans and *O. tripudians*, but the shape of the lip, recalling that of the old *Miltonia cuneata*, induces him to alter this opinion.—*New Grenada*.

O. prionopetalum, *Lawrence*.—A very handsome and distinct species of the *O. luteo-purpureum* section. The sepals and petals are rich yellow heavily spotted and barred with chestnut brown, the petals being deeply serrated at the



ODONTOGLOSSUM POLYXANTHUM.

margins; the lip is white in front, pale yellow behind, with a large transverse brown blotch in the centre. It flowers in spring.—*New Grenada*.

O. pulchellum, *Bateman*.—A neat and pretty species, remarkable for its very thin oblong ancipitous two-leaved pseudobulbs, and its narrow grassy leaves; the flowers are white, with the exception of the crest of the lip, which is

spotted with crimson. It blooms during the winter months, and lasts five weeks in good condition.—*Guatemala*.

FIG.—*Bot. Reg.*, 1841, t. 48; *Bot. Mag.*, t. 4104; *Moore, Ill. Orch. Pl.*, *Odontoglossum*, t. 9; *Warner, Sel. Orch. Pl.* ii., t. 13.

O. pulchellum Dormannianum, *Williams*.—This is the largest variety of *O. pulchellum* we have yet met with, being far superior to *O. pulchellum majus*. The pseudobulbs are much stronger and stouter than in the type and are rounder in form. The flowers, which are white, and one and a half to one and three-quarters inch in diameter, have the sepals and petals fully half an inch broad. It is named in compliment to C. Dorman, Esq., Laurie Park, Sydenham.—*Guatemala*.

O. pulchellum majus, *Hort*.—This is a very robust form of *O. pulchellum*, having the pseudobulbs much larger. The flowers are also nearly double the size of those of the ordinary variety, and the racemes are stronger, with the blossoms more numerous. In addition they are very fragrant, so that one plant will perfume the house in which it is growing.—*Guatemala*.

O. purum, *Rchb. f.*—A very pretty little species in the way of *O. Wallisii*. The flowers grow in spreading racemes, the sepals being of a light yellow with the disk entirely covered with sepia brown, the petals light yellow with a few blotches of brown at the base, and the lip pure white, having a large purple blotch about the centre. It flowers in the summer months.—*New Grenada*.

O. radiatum.—See ODONTOGLOSSUM LUTEO-PURPUREUM.

O. ramosissimum, *Lindley*.—This is a very old and very distinct species with oval compressed pseudobulbs, very long ensiform leaves, and scapes three or four feet high, bearing panicles of innumerable flowers, the panicles being stiff and excessively divaricately branched. The sepals and petals are narrow lanceolate undulate, of a brilliant white, the basilar portions of the petals lilac-purple; the lip is cordate, dilated and undulated at the base, the front part lanceolate, acutely pointed, having a large purple-lilac disk. It flowers during the winter months.—*New Grenada*.

O. Reichenheimii.—See ODONTOGLOSSUM LEVE REICHENHEIMII.

O. retusum, *Lindley*.—Though not a large-flowered magnificent plant, this species is well worth a place in a collection on account of the profusion of flowers it produces during winter. It is dwarf-growing, with linear-lanceolate papery leaves, and an inflorescence consisting of a branching panicle bearing upwards of a hundred flowers. The sepals and petals are lanceolate acute, orange-red tinged with yellow; the lip oblong retuse, bilamellate at the base, in some varieties yellow, and in others of the same colour as the sepals and petals. It is very rare.—*Ecuador*.

O. Roezlii, *Rchb. f.*—One of the most beautiful of all the *Odontoglossums*, producing blossoms twice a year; it is a very near ally and a close rival of *O. vexillarium*, and yet how different! The plant has small narrow ovate acutely margined pseudobulbs, long linear-lanceolate light green leaves, and large flat sweet-scented flowers from two to three inches in diameter, and borne one to three on a scape; the obovate oblong acute sepals are pure white, and the broader petals are white with a bold purple spot at the base; the lip is obcordate, two and a quarter inches in breadth, white with a yellowish stain, tinged with red around the crest. The flowers last from four to five weeks in perfection if kept free from damp. There are numerous varieties of this charming species, many of which make fine subjects as exhibition plants; some of them are much lighter than the one here described, but they are all worth cultivating. It is best grown in the *Cattleya* house, and requires an abundance of moisture. It is named in honour of M. Roezl, being one of his own introductions.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 183; *Bot. Mag.*, t. 6085; *Batem.*, *Mon. Odont.*, t. 30; *Floral Mag.*, 2 ser., t. 90; *Orchid Album*, ii. t. 64; *Gard. Chron.*, 1873, 1302, fig. 269.

O. Roezlii album, *Bull.*—A charming variety of the last-named species, the flowers of which are pure white with the exception of a blotch of pale lemon yellow on the basal part or disk of the lip. This very desirable variety lasts a long time in perfection, and requires the same treatment as *O. Roezlii*.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 164.

O. roseum, *Lindley*.—This very pretty little species is when well grown a charming plant. It is evidently closely allied to *Mesospinidium vulcanicum*, but its flowers are not so brilliant

in colour as those of that plant. Its pseudobulbs are ovate, two-edged, dark green tinted with violet, the leaves ligulate oblong bluntish, and the flowers in drooping racemes, each flower about an inch across, rosy carmine with the tip of the column white. The sepals and petals are oblong-elliptic, the lip cuneate at the base, three-lobed, the lateral lobes small enclosing the disk, which bears a four-lobed callus, the middle lobe longer, linear, dilated at the end. It flowers during the winter months, producing from twelve to twenty flowers on each raceme, and it remains in beauty for a considerable time. The cool house suits it best.—*Peru*.

FIG.—*Bot. Mag.*, t. 6084; *Illust. Hort.*, 3 ser., t. 66; *Batem., Mon. Odont.*, t. 22.

SYN.—*Mesospinidium roseum*.

O. Rossii, *Lindley*.—A very pretty and desirable little Orchid of dwarf habit, growing some six or eight inches high. Its pseudobulbs are tufted ovate and ancipitous, its leaves oblong lanceolate, and its flowers borne on radical one or two-flowered scapes. The flowers are about two inches in diameter; the sepals are linear-lanceolate acuminate, keeled, greenish yellow transversely barred with brown, the petals are oblong obtuse, revolute at the tips, white with a dark purple spot at the base, and the lip is roundish ovate emarginate, with a cup-shaped fleshy yellow crest, with two blunt teeth in front. The plant produces its white and purple flowers during the winter, and lasts long in beauty. It is best grown in a basket, or on a block, but should always be kept moist.—*Mexico*.

FIG.—*Bot. Reg.*, 1839, t. 48; *Maund, Botanist*, v. t. 222; *Moore, Ill. Orch. Pl.*, *Odontoglossum*, 3; *Knowles and Westc. Floral Cab.*, t. 129.

SYN.—*O. acuminatum*, *O. apterum*.

O. Rossii majus, *Van Houtte*.—This is a superb variety of *O. Rossii*, having the growth somewhat more robust, and the deliciously fragrant flowers vastly superior in size, often measuring as much as three inches or upwards in diameter, and two or three blossoms being frequently borne upon each spike; petals white, having a few purplish crimson blotches towards the base; sepals also white beautifully striped with transverse bars of purplish crimson; lip large, cordate, and pure white, the column being in some varieties purple, in others yellow. It blooms during mid-winter, lasting a very long time in full beauty.—*Mexico*.

FIG.—*Flore des Serres*, t. 2110; *Warner, Sel. Orch. Pl.*, iii, t. 15.

O. rubescens, Lindley.—One of the many small-flowered cool Orchids for which we are indebted to the late Mr. Skinner. The present species is a dwarf-growing kind, with oblong compressed monophyllous pseudobulbs an inch long, and two to six-flowered racemes as long as the leaves, the flowers having linear-lanceolate straight and very acute sepals, bluish white richly spotted with crimson; the petals are twice as broad, oblong and wavy, spotted only near the base; and the lip is cordate obtuse, wavy, spotless white, and very pretty.—*Nicaragua*.

O. Ruckerianum, *Rehb. f.*—A rare and handsome Orchid, dedicated to the late Sigismund Rucker, Esq., in whose collection it first flowered. It was one of the first to appear of those mysterious plants which are now generally looked upon as natural hybrids, and is quite a gem, probably having *O. crispum* for one of its parents. The habit and general character agrees with *O. crispum*, but the flowers differ much in colour. The lanceolate cuspidate sepals and petals are creamy white with a border of deep violet, and a few oblong spots of brown on the inner surface; the oblong ligulate acuminate lip, which is angulate on both sides at the base, is yellow in that part, and has two or three chestnut brown blotches in the centre. The petals have the chestnut brown basilar lines seen in *O. Andersonianum*. The column is pluricirrhose. This is a very distinct and desirable plant.—*New Grenada*.

FIG.—*Gard. Chron.*, 1873, 105, fig. 18.

O. Ruckerianum splendens, *Rehb. f.*—A very superior form of the type, in which the flowers are much larger, the sepals and petals broader, the blotches larger, and the mauve colouring of the margin of the sepals and petals considerably deeper. It flowers in June.—*New Grenada*.

O. Sanderianum, *Rehb. f.*—A curious and distinct plant which bears stellate flowers from two to three inches in diameter, and in shape and general appearance resembling those of *O. constrictum*, only that they are altogether larger and finer. The plant was at first described as being similar to *O. nevadense*, indeed it was supposed to be a natural hybrid between *O. nevadense* and *O. navium*, but we fail to see any resemblance. The sepals and petals are lanceolate acuminate, yellow spotted with reddish brown; the lip pandurate apicu-

late, toothed at the edge, the front part enlarged, white having a reddish blotch in the centre and a few small spots near the apex. It flowers during the winter months.—*New Grenada*.

O. Schlieperianum, *Rehb. f.*—This species was for a long time confounded with *O. Insleayi*, and in growth it certainly resembles that plant very much, notwithstanding that the flowers are very distinct. The pseudobulbs are ovate ancipitous diphyllous, the leaves oblong ligulate, and the stout peduncle bearing a raceme of rather large showy flowers. The sepals and broader petals are oblong ligulate acute, of a pale sulphur yellow, cross-barred, the sepals most so, with transverse bands of deepish purple, while the lip is of a paler yellow, auricled on each side of the base with retrorse semiovate retuse lobes, the much larger middle lobe being cuneate dilated and emarginate at the apex, and bearing two or three transverse bars of brown. Compared with the size of the flower the lip is somewhat small. It flowers towards the end of summer, and not during the winter months.—*Costa Rica*.

FIG.—*Xenia Orch.*, ii. t. 143; *Gard. Chron.*, 1865, 1082, with fig.; *Floral Mag.*, t. 461.

SYN.—*O. grande pallidum*; *O. Warscewiczii* (Bridges).

O. Schröderianum, *Rehb. f.*—This distinct and pretty novelty was flowered in 1882 by Baron Schröder, the plant being under the care of his gardener, Mr. Ballantine. In their general form the flowers resemble those of *O. tripudians*, between which and *O. Pescatorei* it is suggested that it may be a wild mule. The sepals and petals are oblong acute wavy, white with mauve-purple blotches; the lip is pandurate, broader at the basal part, narrower, obcordate apiculate in front, white with two mauve-purple blotches on the disk, behind which stands the callus, consisting of a plate of radiating spines on each side, yellow with some red spots. It flowers in summer.—*New Grenada*.

O. spectatissimum.—See ODONTOGLOSSUM TRIUMPHANS.

O. stellimicans, *Rehb. f.*—This, according to Professor Reichenbach, is a very fine thing, and has turned up out of a batch of *O. Pescatorei*; it may be a mule between this and *O. triumphans* or *O. tripudians*, or even *O. Lindleyanum*; the sepals and petals are lanceolate stellate of a good clear yellow,

the petals having a single brown line at the base, and the sepals being washed with reddish mauve outside, and having a few large dark brown-purple blotches inside; blade of lip pandurate, white changing to lemon with a few crimson blotches.—*New Grenada*.

O. tripudians, *Rchb. f. et Warsc.*—Though scarcely occupying a place in the front rank of Odontoglosses, this is a really handsome and well-marked species, and, moreover, it is very free-flowering. In growth it resembles *O. Pescatorei*, along with which it is frequently imported. The pseudobulbs are ovoid-oblong compressed, the leaves narrow lanceolate acuminate, and the flowers, which grow in simple many-flowered racemes, are remarkable for the dull yellow green of the exterior surface and the bright colours of the inner surface. The sepals and petals are oblong elliptic acuminate, the former almost wholly of a rich maroon-brown with just the base and tip only yellow, the latter golden yellow with two or three broad unequal blotches of maroon brown; the lip oblong quadrate, constricted in the middle, the basal part obscurely crenate, the broader rounded apiculate apex erose at the edge, the colour white, having the region round the calli spotted with a beautiful purplish violet. The calli consist of about ten keels radiating from the claw, the four inner ones produced on to the surface of the basal lobe, and each ends in a spinous process; the wings of the column are deeply toothed. The plant flowers during the autumn months.—*Peru*.

FIG.—*Bot. Mag.*, t. 6029; *Floral Mag.*, 2 ser., t. 208; *Id.*, 2 ser., t. 407.

O. tripudians oculatum, *Rchb. f.*—A very beautiful variety, first flowered by J. Day, Esq., Tottenham. It has large glossy flowers, of which the sepals are almost entirely chestnut brown with yellow tips; the petals yellow banded with chestnut brown; and the pandurate lip white with several violet blotches around the crest, and a large brownish violet blotch on the anterior part, the margin denticulate and crisped.—*Peru*.

O. tripudians xanthoglossum, *Rchb. f.*—This variety is distinct from the preceding, having the lip wholly yellow with mauve blotches, the crests only pure white, thus forming a pretty contrast with the other varieties in our gardens.—*Peru*.

O. triumphans, *Rchb. f.*—A magnificent stout-growing species, with large ovate-elliptic compressed ancipitous pseudobulbs, oblong lanceolate acute dark green leaves, and many-flowered racemes of bold and brilliant blossoms, which are produced during the winter and spring months, and will last in perfection for several weeks. The flowers are four to five inches in diameter. The sepals and petals are lanceolate slightly undulated, the petals rather broadest, both golden yellow transversely barred and spotted with brownish crimson; and the lip is clawed elongate cordiform, white at the base, the acuminate front portion rich deep brownish crimson. There are many varieties of this plant, some much better than others, but all are worth growing.—*New Grenada*.

FIG.—*Illust. Hort.*, t. 609; *Batem., Mon. Odont.*, t. 23; *Pescatorea*, t. 46; *Orchid Album*, ii. t. 58; *Puydt, Les Orch.*, t. 30; *Florist and Pom.*, 1877, p. 217, t. 452 (yellow lip and white lip); *Gard. Chron.*, 1867, 516, with fig.

SYN.—*O. spectatissimum*.

O. Uro-Skinneri, *Lindley*.—A very beautiful strong-growing species worthily dedicated to Mr. Ure Skinner, who did so much towards introducing many popular Central American Orchids at a time when but little was known of the mode of securing a tolerably safe transit. It has a creeping rhizome, on which are produced the large ovate compressed shining pseudobulbs, which are spotted with purple, and from the base of which arises the tall scape, two feet or more in height, bearing a magnificent raceme of flowers, which are each nearly three inches across; the sepals and petals are oblong acute olive yellow heavily blotched with rich purple-brown; and the lip which is roundish cordate and convex, is of a charming mauve-purple irregularly mottled with white; the disk bears a pair of white crests, and the upper part of the column is orange-coloured. It blossoms during the autumn months, and continues flowering for a long time.—*Guatemala*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 17; *Batem., Mon. Odont.*, t. 2.

O. velleum, *Rchb. f.*—A curious and interesting species, with oblong compressed pseudobulbs, ligulate leaves about six inches long, and dense racemes of flowers which have the general shape of those of *O. Karwinskii*. The sepals and petals are yellowish with numerous sepia brown spots and lines; the lip is stalked, ligulate, broader and a little undulated, apiculate at the tips, white covered with numerous purple-mauve lines and blotches.—*Ecuador*.



ODONTOGLOSSUM



EXILLARIUM.

O. vexativum, *Richb. f.*—This showy plant is one of recent introduction, and is probably a natural hybrid between *O. nebulosum* and *O. maculatum*. It has oblong compressed pallid pseudobulbs, ligulate leaves, and tall racemes of large showy distant flowers. The sepals are light brown tinged with green and margined with white; the petals are broad, pure white spotted at the base with greenish brown, and the broad semiovate blade of the lip is white with a few spots at the base; the callus is trifid, yellow with a few reddish brown spots. The growth of the plant is intermediate between that of the two supposed parents. It was first bloomed by Lord Londesborough under the care of Mr. Denning, the flowers having been produced in August and September.—*Mexico*.

O. vexillarium, *Richb. f.*—This magnificent Orchid ranks among the most beautiful of the *Odontoglossums*, and is at the same time very distinct from its congeners. It has been known for about twenty years, but it is only within the last few years that, after numerous futile efforts, it has been imported in a living state. It now proves to be a most valuable addition to the genus on account of the large size and distinct colour of its flowers, which measure as much as four inches in depth and three inches across. The plant has small narrow oblong compressed pseudobulbs, and light green elliptic-lanceolate acuminate leaves eight to ten inches long and an inch broad; the slender scapes are produced from the sides of the bulbs, and bear from five to seven flowers each, the sepals and petals being oblong obtuse, of a bright rosy pink, and the large orbicular two-lobed lip of the same colour. There are many varieties of this charming species, some much lighter than others. We find this plant succeeds best in the *Cattleya* house during the winter months and up to the time of flowering, after which it should be placed in the *Odontoglossum* house; it delights in an abundant supply of moisture during the growing period.—*New Grenada*.

FIG.—*Xenia Orch.*, ii, t. 182; *Jennings, Orch.*, t. 36; *Bot. Mag.*, t. 6037; *Batem., Mon. Odont.*, t. 29; *Floral Mag.*, 2 ser., t. 73; *Id.*, t. 461 (*rubrum*); *Illust. Hort.*, 3 ser., t. 113; *Flore des Serres*, t. 2058; *Warner, Sel. Orch. Pl.*, ii, t. 38; *Gard. Chron.*, 1872, 667, fig. 163; *Id.*, 1873, 644, fig. 123.

O. vexillarium Hillianum, *Richb. f.*—A variety named in honour of C. J. Hill, Esq., Arnot Hill, Nottingham. The sepals and petals are rose-coloured; the base of the lip

yellow with three dark purple lines, and two purple lines on the equal sepals. The lip also has a rosy margin, and the area between is covered with purple spots in great number.—*New Grenada*.

O. vexillarium leucoglossum, *Rchb. f.*—This is a very striking variety, having the sepals and petals pale rose-coloured, with a pure white lip. It was first flowered by C. J. Hill, Esq., of Nottingham.—*New Grenada*.

O. vexillarium roseum, *Hort.*—A superior variety of *O. vexillarium*, in which the flowers are of a deeper rose colour than usual.—*New Grenada*.

O. vexillarium rubellum, *Bull.*—This is said to be an autumn-flowering form of the type. The flowers are medium-sized, and of a very pleasing tint of rose colour. The pseudobulbs, moreover, instead of being elongated, are blunt and roundish, and the foliage is shorter and broader than in the typical form.—*New Grenada*.

O. vexillarium splendens, *Williams.*—An exceedingly handsome dark-coloured variety, with flowers from four to four and a half inches in diameter, of an intense rose colour; the two lateral sepals have at their base a crimson stripe about three-quarters of an inch long; the lip is furnished with three short radiating stripes just below the calli. The colouring of the lip and segments of this flower is carried to the margins, and is not softened off as in many of the varieties.—*New Grenada*.

O. vexillarium superbum, *Rchb. f.*—This is the most distinct variety we have yet seen, and although the flowers are but of medium diameter, the colour is intensely brilliant, more than compensating for lack of size. The sepals and petals are rose colour, the sepals having a short purplish crimson longitudinal stripe at their base; the lip is bright magenta-rose, and in the white area at the base is a large triangular dark crimson-purple blotch veined with radiating lines of a darker tint, the three front lines running out into three club-shaped bars, a distinct white space separating the rose colour from the crimson. It flowers during the autumn months. This fine form was first flowered by Sir Trevor Lawrence, Bart., M.P., Dorking.—*New Grenada*.

FIG.—*Orchid Album*, iv. t. 171.

O. Vuylstekeanum, *Richb. f.*—Professor Reichenbach in describing this species says: “A grand thing. Take an *Odontoglossum mulus sulphureum*, give it a lip much dilated at the top, and add the sharp edges of the petals of *Odontoglossum Wilckeanum*.” The whole flower is sulphur-coloured, with the few blotches of the odd sepal, the petals, and the lip of the “deepest richest dazzling orange”; the lateral sepals are also of that colour, except at their base.—*New Grenada*.



ODONTOGLOSSUM WARNERIANUM (p. 470).

O. Wallisii, *Richb. f.*—A slender and graceful plant, with something the aspect of *O. Lindleyanum*, but superior to that species on account of the more pleasing colour of the lip. The pseudobulbs are ovoid ancipitous, the leaves linear-lanceolate plicate, and the flowers two and a half inches across, pedicellate, racemose, on a slender scape. The sepals and petals are oblong-lanceolate, the former more narrowed to the base, with a long central bar of reddish brown and a narrow even edge of pale yellow, the latter with the central colour more broken up and the yellow edge broader; the lip

has the base tubuloso-clavate, and the limb ovate, constricted in the middle, fimbriate, with a decurved front, white, having a double crest with six spreading horns at the base of the lamina, and behind these a series of rosy purple streaks, the anterior half being of the same rosy tint edged with white, and marked by a half-circular white loop. It blooms during the winter months.—*New Grenada*.

FIG.—*Illustr. Hort.*, 3 ser., t. 56.

O. Warnerianum, *Rehb. f.*—This very rare and handsome species forms as it were “a connecting link between *O. nebulosum* and *O. Rossii*, having the broad petals of the former, and the slender narrow pseudobulbs of the latter.” The plant is dwarf in habit, and the scape, which is longer than the leaves, bears four or five flowers. The pseudobulbs are tufted narrow elongate ovate monophyllous, the leaves ligulate acute, and the flowers about three inches across. The sepals are oblong acute, white with a few transverse brownish red bars, the dorsal one having also an ocellate spot at the base; the petals are blunter and wavy, white with an ocellate basal mark enclosed by a semicircle of roundish brownish red spots; and the lip broad cordate-triangular obtuse crenulate and minutely crisped, and having a cuneate obovate three-lobed yellow callus on the disk. A very rare species, beautifully figured in Mr. Warner’s work.—*Mexico, Guatemala*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 20; *Gard. Chron.*, 1865, 579, with fig.; *Batem., Mon. Odont.*, t. 3.

O. Warszewiczii, *Rehb. f.*—A very rare, very distinct, and very lovely Odontoglot, showing in its foliage and habit of growth a close affinity with *O. vexillarium*. The pseudobulbs are small, oblong ovate, compressed with the edges acute, and the distichous leaves elliptic lanceolate. The flowers grow six or eight together on a slender scape, each being two and a half inches across. They are pure white, each sepal and petal having a small bar of a lovely rose colour at the base, and the lip two larger blotches, one on each side of the crest. In form the sepals are ovate acute, the petals rather broader and blunter, and the large lip broadly panduriform and bilobed, all the parts being spread out flat; the golden crest consisting of a pubescent hippocrepiform belt, enclosing a short inflexed horn, in front of which are three short blunt yellow keels.—*Costa Rica: Veragua, on the Cordillera of Chiriqui*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 6163; *Xenia Orch.*, i. t. 81.

O. Warscewiczii, *Bridges*.—See ODONTOGLOSSUM SCHLIEPERIANUM.

O. Wilckeanum, *Rchb. f.*—This is a very distinct and beautiful species, whose long plumose racemes of yellow and brown flowers are very handsome and attractive, as might be expected when Professor Reichenbach says, “it is just intermediate between *O. crispum* and *O. luteo-purpureum*.” It was first flowered by M. D. Massange, Marche, Belgium, and is named after his gardener, Herr Wilcke. The pseudobulbs are rather large ovate-oblong, furnished with ligulate oblong leaves in pairs from the apex, and having radical scapes which spring from the axils of accessory leaves, and bear a stout raceme of over a dozen flowers, which are fully three inches across. The lanceolate acuminate wavy sepals are pale yellow with sundry bold blotches of light brown; the broader petals much serrated at the edges, are of the same yellow colour, but with fewer and smaller brown blotches; and the denticulate oblong undulated apiculate lip is of a still paler yellow, and has in the front part a roundish oblong blotch of pale brown, the disk being of a deep yellow, with crests consisting of two many-toothed ragged keels. It flowers during the spring months.—*New Grenada*.

FIG.—*Warner, Sel. Orch. Pl.*, iii, t. 23.

O. Wilckeanum pallens, *Rchb. f.*—A very handsome variety, of which the sepals and petals are white faintly tinged with yellow and heavily blotched with dull brown, the petals most irregularly serrated; the lip is white, having a blotch of brown in the centre, and a number of small spots around the crests. A grand spike of this variety was communicated to us by Mr. Grossart, gardener to J. Buchanan, Esq., of Edinburgh, in 1885.—*Colombia*.

FIG.—*Orchid Album*, v, t. 201.

O. Wilckeanum sulphureum, *Rchb. f.*—A fine new variety, with flowers of a bright sulphur yellow, and having a few red blotches and lines on the lip and column, and also one or two red blotches on the lateral sepals. The sepals and petals are much elongated, and the whole flower is very striking.—*Colombia*.

O. Williamsianum, *Rchb. f.*—A very beautiful large-flowered plant of noble proportions, supposed to be a natural hybrid between *O. grande* and *O. Schlieperianum*. It has oval com-

pressed tufted pseudobulbs, ligulate oblong acute leaves, and erect scapes bearing a dense oblong raceme of about a dozen flowers. These flowers are about four and a half inches across and about the same in depth, the lanceolate wavy sepals greenish yellow heavily barred with chestnut brown; and the broad oblong blunt-ended wavy petals pale yellow with a large pale reddish brown darker-veined patch at the base, which is distinctly clawed. The lip, which resembles that of *O. Schlieperianum* in shape, as also do the crests and the column, is creamy white in the anterior portion, with a few pale flesh-coloured blotches at the base. This plant was imported along with *O. Schlieperianum*, and resembles it in growth. It flowers in July.—*Costa Rica*.

FIG.—*Orchid Album*, iv. t. 163.

ONCIDIUM, Swartz.

(Tribe Vandææ, subtribe Oncidiææ.)

One of the older and also one of the larger genera of Orchids, some two hundred and fifty or more species being known and described, all of them South American. The species are all evergreen, and many of them are very beautiful, their flowers being richly coloured and showy. They make fine plants, both for exhibition and also for decoration. Some of them are large growers, while others are more compact; they have generally short thick pseudobulbs, from which the leaves and flower spikes proceed, but in this respect there is much dissimilarity among them, as there is in respect to their foliage, the majority having the leaves flat, with the flowers in one group is broad-lipped, and in another small-lipped; while some have the leaves terete, and others have them distichous and equitant. For the most part the flowers have a broad spreading lip contracted at the base, and a short column, bearing two petaloid wings or auricles. The species inhabit Brazil, Bolivia, Mexico, New Grenada, Ecuador, and the West Indies.

Culture.—Some kinds succeed well on blocks of wood, but

they are generally best grown in pots or baskets in a compost of peat and moss, with good drainage. They require a liberal supply of heat and moisture in the growing season, but afterwards only just enough water to keep their leaves and pseudobulbs plump and firm. The Cattleya house is most suited for the greater portion of them, but some kinds will do better in the cool house. These plants are very accommodating, since they will thrive in either house. They are propagated by division of the pseudobulbs. The following are all fine sorts, of easy culture, and ought to be in every collection. There are, however, many other species of *Oncidium* worth growing, besides those named in the following descriptions.

O. acinaceum, *Lindley*.—A very distinct and elegant species with oval pseudobulbs, each bearing three flat leaves, and producing flower scapes from one to two feet long, the upper portion of which becomes a twining raceme. The flowers are about an inch across, the sepals linear retuse, white, the lateral ones connate, the petals broad obovate, violet bordered with white, and the concave lip of the same colours, streaked with carmine. The column has two large acinaciform ears. It should be grown in the cool house.—*Peru*.

O. ampliatum, *Lindley*.—A showy species, with roundish compressed pseudobulbs, flat oblong lanceolate leaves, and erect flower scapes branched at the top, and forming an ample panicle, the flowers having a broad transverse subrotund bilobed lip of a clear yellow, paler almost white behind, and with a three-lobed callus at the base. There are two varieties of this species to be met with in gardens, differing only in the size of the flowers.—*Central America; Santa Martha; Colombia*.

FIG.—*Bot. Reg.*, t. 1699.

O. ampliatum majus, *Hort.*, is one of the finest *Oncids* in cultivation. It produces its large bright yellow flowers in abundance, on a long branching spike three or four feet high, in April, May, and June, and continues blooming for two months. The flowers are almost white on the outer surface. This variety *majus* is a robust-growing plant, and should be grown in a mixture of peat and sphagnum; when

in good health and well flowered it is one of the finest of the *Oncidium*s for exhibition purposes.—*Central America: Costa Rica, Nicaragua*, max. temp. 85°.

FIG.—*Flore des Serres*, t. 2140.

O. anthrocrene, *Rchb. f.*—A very distinct and curious species, somewhat resembling *Miltonia Warscewiczii* in its manner of growth. It produces large upright branched spikes of dark-coloured flowers, having the sepals and petals much undulated, chocolate brown transversely barred with yellow towards the base, and the lip white; it flowers during the winter months.—*Peru*.

O. aurosum.—See *ONCIDIUM EXCAVATUM*.

O. barbatum ciliatum, *Lindley*.—A pretty dwarf compact-habited plant, with ovate compressed pseudobulbs, bearing a solitary linear-oblong leaf two or three inches long, and producing a slender erect flexuose scape spotted with red, and terminated by a few yellow flowers spotted with crimson, the lip being wholly yellow, equally three-lobed, and bearing a five-horned crest at its base. It succeeds best on a block, but it must have good attention as to the supply of water at the roots.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1660.

SYN.—*O. ciliatum*.

O. Barkeri.—See *ONCIDIUM TIGRINUM*.

O. Batemannianum, *Knowles and Westcott*.—A beautiful and distinct though somewhat variable species, growing about eighteen inches high, and having oblong compressed diphyllous pseudobulbs, and erect oblong pale green leaves. The flowers grow in erect racemes, or in large branched panicles (*ramosum*), and have ovate acute sepals, broader petals, and a large roundish emarginate three-lobed lip which is clear yellow, the small sepals and petals being of a brownish purple, and the base of the lip of the same colour. There are two varieties, one (A) with racemes, the other (B) with a paniced inflorescence. It is rather a shy-flowering plant, but one which is worth growing on account of its beautiful bright yellow flowers, which are produced at different times of the year. It belongs to the section *Verrucituberculata*, and has a prominent crest consisting of three to five short plates at the base, and three others in front, diverging irregularly lobed,

and having around them several other processes, besides a few varicosities towards the edge of the lip.—*Brazil*; ? *Mexico*.

FIG.—*K. & W. Floral Cab.*, iii. t. 137; *Bot. Reg.*, 1845, t. 40; *Annales de Gand*, 1845, t. 1; *Journal of Hort. Soc. Lond.*, 1848, xvii. (*Pinellianum*).

SYN.—Var. A.: *O. spilopterum*, *O. gallopavinum*, *O. stenopetalum*; Var. B.: *O. ramosum*, *O. Pinellianum*.

O. bicallosum, *Lindley*.—A showy dwarf species without pseudobulbs, but producing a single dark green oblong leaf, which is remarkably thick and fleshy in texture, and keeled so as to become almost boat-shaped. The peduncle or scape rises with the leaf from between some basal scales, and is dwarfish, erect, bearing a many-flowered raceme. The flowers are large and showy, with obovate spreading sepals and petals, the latter rather larger, all undulated and yellow tinged with green, and a large three-lobed lip of a bright yellow, the lateral lobes small and obovate, the intermediate one large and two-lobed, with a bicallose crest at its base. This makes a fine plant for winter-blooming, and continues in perfection a long time. It is very much like *O. Cavendishianum* in its flowers and manner of growth, but is less robust.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 4148 (colour incorrect); *Bot. Reg.*, 1843, t. 12; *Illustr. Hort.*, t. 458.

O. bicolor, *Lindley*.—This fine species has oval compressed pseudobulbs, three-ribbed on each side, solitary oblong sessile leaves, and divaricate panicles of handsome flowers, which have ovate acute sepals and petals, and a flat bilobed lip, which is very large, deep yellow on the upper side, and almost white underneath, the sepals and petals and the base of the lip being spotted with chestnut brown. It blooms in September. This will thrive on a block suspended from the roof. Dr. Lindley now places it as a variety (*bicolor*) of *O. Martianum*, the type of which has whole-coloured yellow blossoms.—*Brazil*.

FIG.—*Bot. Reg.*, 1843, t. 66.

O. bifolium, *Sims*.—A handsome dwarf-growing species now very rare, having ovate dark green obsoletely hexagonal pseudobulbs, and short lance-shaped keeled deep green leaves, borne in pairs. The slender scapes proceed from the base of the bulbs, and bear elegant nodding racemes of eight or ten showy flowers, which have the small ovate or oblong sepals and petals yellow, barred and spotted with rich chestnut brown,

and the lip large, flat, two-lobed, of a transversely reniform outline, and a bright yellow colour. It produces these flowers in May and June, and they last a long time in perfection. There are two varieties of this plant, one much brighter than the other in the colour of the flowers. It is best grown in a pot, suspended from the roof, and requires to be potted in peat and sphagnum moss; ample drainage should also be given, as it enjoys a liberal supply of water.—*Monte Video*.

FIG.—*Bot. Mag.*, t. 1491.

O. bifolium majus, *Hort.*—A superb variety of the preceding species, in which the pseudobulbs are much larger, and the habit of the plant altogether more robust. The spike is quite double the length of that of the type, and bears fully double the number of flowers, of which the sepals and petals are brown faintly marked with yellow, and the very large lip is brilliant yellow. They are produced in May and June, and continue in perfection a long time. It requires the same treatment as the preceding, and, like it, should be placed at the cool end of the *Cattleya* house.—*Monte Video*.

FIG.—*Lodd. Bot. Cab.*, t. 1845.

O. bifrons.—See *ONCIDIUM WARSCEWICZII*.

O. Brunleesianum, *Rchb. f.*—A very pretty novelty, quite distinct from any other species with which we are acquainted; it produces dense upright spikes of bright yellow flowers, which are furnished with a dark sepia-coloured lip. This distinct feature gives the plant a most unique appearance.—*Native Country not stated*.

FIG.—*Orchid Album*, v. t. 206.

O. calanthum, *Rchb. f.*—A showy, distinct, and free-flowering species, which thrives best potted in peat, and placed in the cool house. The pseudobulbs are ovate furrowed, bearing a pair of lance-shaped leaves. The flowers are numerous, and borne on a slender twining panicle, the upper part of which is heteranthous; the sepals are oblong acute, the petals oblong obtuse and hastato-unguiculate, both nearly as long as the lip; the lip large, reniform, bilobed, with a short broadish isthmus, and behind that a pair of cuneate ovate auricles. The flower is rich golden yellow, the petals and sepals paler, and the crest of five papulose bodies tinged with red, as well as the column.—*Ecuador*.

FIG.—*Floral Mag.*, t. 384.

O. Cavendishianum, *Bateman*.—A very showy and noble species of bold and striking habit, remarkable for the absence of pseudobulbs, the large broad fleshy rich green leaves, together with the stout flower scape, growing out from between a few stout imbricated scaly bracts. The bright yellow flowers are produced in great abundance on the stout tall branching scapes, and appear in the dull months of winter, a fact which greatly increases its value, for even at that season they retain all their brilliancy for several weeks. The flowers are about an inch in diameter, the sepals obovate-obtuse with the upper one arched, greenish yellow spotted with bright chestnut, the petals oblong-obtuse wavy and of the same colours, and the lip three-lobed, the lateral lobes roundish unguiculate, the middle one larger reniform deeply emarginate and of a pure bright yellow colour. It has a crest of four prominent tubercles. In *O. pachyphyllum*, which Lindley considers a form of the same plant, the sepals and petals are spotted with crimson. Reichenbach keeps them distinct, and figures in *Xenia* a golden-lipped variety of *pachyphyllum*. It may be grown on a block or in a pot, but on account of its size seems to do best in the latter.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 3; *Bot. Mag.*, t. 3807 (*pachyphyllum*); *Xenia Orch.*, i. t. 99, fig. 4 (*pachyphyllum chrysoglossum*).

SYN.—*O. pachyphyllum* (spotted fl.), *O. pachyphyllum chrysoglossum*.

O. cheirophorum, *Rchb. f.*—A very pretty dwarf-growing species, producing slender panicles of small golden yellow sweet-scented flowers. It has small ovate ancipitous pseudobulbs, linear-lanceolate acute leaves, and dense short-branched panicles of flowers, which, though not of large size, should secure the admission of the species to any choice collection on account of its free-blooming properties and its delightful fragrance; the lip is comparatively large, and three-lobed; it flowers in October.—*Veragua: Volcano of Chiriqui*.

FIG.—*Xenia Orch.*, i. t. 69, fig. 1; *Bot. Mag.*, t. 6278.

O. chrysothyrsum, *Rchb. f.*—A very showy and abundant-flowered Oncid, of free and compact growth, seldom attaining more than a foot in height, the pseudobulbs being two to three inches high, oblong compressed, and at length ribbed, and supporting a pair of oblong acute light green leaves. The scape is some two to three feet in length, terminated by a thyrsoid panicle of numerous showy and lovely flowers, of

which the small oblong-ligulate sepals and petals are pale green, with a few bars of purplish red, and the lip is large reniform bilobed and bright yellow, with a few crimson lines on the claw, above which is a crest, consisting of a depressed callus, three-lobed at the apex, and having compressed lamellæ in front. It succeeds well upon a block. The plant flowers during the autumn months, and remains for a long time in bloom.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 5.

O. concolor, *Hooker*.—A very distinct and beautiful species, with small tufted ovate or ovate-oblong compressed ribbed pseudobulbs, and a pair of subcoriaceous oblong-linear or ligulate bright green leaves. The flowers are large and of a pure yellow, one and a half to two inches in diameter, produced upon radical scapes in long pendulous racemes, the sepals being lanceolate, and the lip large flat cuneate subpanduriform emarginate, and marked at the base with a pair of orange-coloured lamellæ. It blooms in March and April, running on into May or sometimes into June, the two latter being the principal exhibition months. This is a fine subject for growing in baskets in the cool house, where it succeeds best.—*Brazil: Organ Mountains*.

FIG.—*Bot. Mag.*, t. 3752; *Id.*, t. 4454; *Revue Horticole*, 1881, 30, with tab.; *Orchid Album*, t. 1; *Illust. Hort.*, 3 ser., t. 487.

SYN.—*Cyrtochilum citrinum*.

O. cornigerum, *Lindley*.—A highly ornamental species, and one that is very distinct both in habit and appearance. The pseudobulbs are oblong sulcate, about three inches long, bearing a solitary leaf which is oval and striate, deep green, and of a peculiarly thick and fleshy texture. The flowers are small but numerous, and are produced in a very elegant drooping close panicle on a slender scape upwards of a foot in length; this panicle is developed after the growth is mature, and on it are borne the beautifully gay flowers, which are yellow spotted with deep red; its season of flowering is April and May. The lip is panduriform (or obovate subrepand) wavy, with a horn-shaped lobe on each side at the base.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1542; *Bot. Mag.*, t. 3486.

O. crispum, *Loddiges*.—A remarkably handsome large-flowered species of ornamental character. The pseudobulbs are oblong, sulcate, and rugose, each supporting a pair of

oblong-lanceolate coriaceous obscurely nerved leaves, and a tall scape which bears either a raceme or panicle of large showy spreading flowers, from two to three inches across, often from fifty to sixty in a spreading panicle. The sepals are oblong-obtuse, narrowed below, wavy or crisped, of a greenish brown, spotted; the petals are broadly obovate-obtuse, also crisped, of a rich brown, the claw yellow striped with brownish red; and the lip is crisped, large, roundish cordate, of the same colour as the petals, its base contracted, yellow spotted or barred with red, and bearing two small yellow horn-shaped side lobes, with a deltoid three-lobed crest, which is yellow spotted with red, between them; the column is also yellow. This species blooms at different times in the year, and lasts three or four weeks in beauty. It requires to be grown on a block of wood in the Cattleya house, and should never be allowed to get dry, as it enjoys plenty of moisture.—*Brazil: Organ Mountains.*

FIG.—*Loddiges, Bot. Cab.*, t. 1854; *Bot. Mag.*, t. 3499; *Bot. Reg.*, t. 1920; *Flore des Serres*, t. 2148; *Knowles and Westc. Fl. Cab.*, t. 64; *Mauud, Botanist*, i. t. 26; *Warner, Sel. Orch. Pl.*, ii. t. 26.

O. crispum grandiflorum, *Hort.*—A very fine variety of the preceding. Its blossoms are very large, being twice the size of those of *O. crispum*, and of a deep rich brown colour; the sepals rather narrow and very wavy, the broad flat petals and lip with a narrow edging of golden yellow, and the yellow colour of the claw extended to the base of the lip, where it forms a large radiating blotch. It succeeds best on a block, and requires a good supply of water at the roots.—*Brazil.*

FIG.—*Floral Mag.*, t. 485.

O. crispum marginatum.—See *O. FORBESII*.

O. Cæsus, *Richb. f.*—A pretty dwarf-growing species of compact tufted habit, whose flowers are somewhat suggestive of those of a pansy. The pseudobulbs are small oblong-ovoid, tapering upwards, compressed, and supporting a pair of light green ligulate bluntish leaves, some four to six inches long, the erect scapes not taller than the leaves, bearing some three or four flowers, an inch across in the spread of the petals, and with a lip three-quarters of an inch broad; the sepals and petals are deep purplish brown, and the lip has two smaller yellow roundish lateral lobes and a broad golden yellow reniform front lobe, the crest prominent, deep velvety black. It blooms very freely during summer, and

continues a considerable time in full beauty. The plant succeeds best in the Cattleya house, either suspended from the roof upon a block, or potted in peat and sphagnum moss. It comes very close to *O. longipes*.—*Brazil: Organ Mountains.*

FIG.—*Floral Mag.*, 2 ser., t. 40.

O. cruentum.—See ONCIDIUM PELICANUM.

O. cucullatum, *Lindley*.—Although a small-flowered species, this is a very beautiful one. It is a dwarf-growing plant with oval obtuse costate pseudobulbs, and oblong-lanceolate leaves, flat and equalling the scape, which bears the charming flowers in nodding racemes, rarely in panicles. The upper sepal and petals are oval, and together with the connate lateral sepals are rose colour, and the lip cordato-panduriform, dilated and bilobed at the apex, reddish purple spotted with deep purple. These flowers are produced in the spring months, and last a long time in perfection. There are many varieties, differing very much in colour; the figure in *Flore des Serres* shows a form with a very broad rosy lilac lip spotted with dark crimson. This species will do well in the cool house with *Odontoglossums*.—*New Grenada*, at 8,700 feet elevation.

FIG.—*Paxt. Fl. Gard.*, iii. t. 87; *Lem. Jard. Fl.*, t. 317; *Flore des Serres*, t. 835.

SYN.—*Leochilus sanguinolentus*.

O. cucullatum flavidum, *Hort*.—This is a distinct and very desirable form, similar in habit to the type. The flowers have the sepals and petals yellow blotched with brown, and the lip purple margined with white. It must be placed in the coolest house; the flowers are produced in spring, and continue a long time in beauty.—*New Grenada*.

O. cucullatum macrochilum, *Lindley*.—An entirely different-looking plant from the previous one, but equally beautiful, being, according to Lindley, "the finest Alpine Orchid yet discovered." It grows about a foot high, and has larger pseudobulbs; the scapes also are stronger, the flexuose racemes being two feet in length, and well furnished with its beautiful flowers, which have the sepals and petals of a rich plum colour and crimson, and the lip, which is an inch and a half broad, mauve spotted with dark violet. It must be grown in the coolest house.—*Quitinian Andes*, at 13,000 feet elevation.



ONCIDIUM CURTUM.

O. curtum, *Lindley*.—A very handsome and distinct species, of compact growth, somewhat resembling *O. crispum* in foliage and in the shape of the pseudobulbs. The showy flowers are produced on elongated panicles which proceed from the base of the bulb, the sepals and petals obovate obtuse yellow barred and blotched with cinnamon brown, the latter undulated, the roundish bilobed undulated lip golden yellow having a broad margin of cinnamon brown, with golden auricles at the base on each side the five-lobed crest, around which many warts are scattered. It blooms during the spring months, and lasts several weeks in perfection. The plant will succeed best either in a basket or on a block with plenty of drainage.—*Brazil*.

FIG.—*Bot. Reg.*, 1847, t. 68.

O. dasystyle, *Rchb. f.*—A beautiful dwarf-growing species with ovoid ancipitous rugose pseudobulbs, from which proceed a pair of linear-lanceolate leaves four inches long, and a short slender peduncle terminated by a few gay blossoms, of which the incurved sepals and lanceolate petals are whitish yellow with handsome maroon-brown spots, and the dilatately reniform anterior blade of the lip is sulphur, the small side lobes marked with oblique chestnut brown bars, while at the base is a beautiful elongated obcordiform callus of a distinct blackish purple, from which dark purple veins radiate over the disk. It produces its flowers during the months of January and February, and is to be regarded as rather a gay little plant of the smaller-growing section. This species should be grown in the cool house suspended from the roof.—*Brazil: Organ Mountains*.

FIG.—*Bot. Mag.*, t. 6494.

O. Diadema.—See *ONCIDIUM SERRATUM*.

O. divaricatum, *Lindley*.—A small but abundant-flowered species, with roundish compressed monophyllous pseudobulbs, oblong obtuse concave coriaceous leaves, and scapes three to four feet long, bearing a divaricate panicle of small flowers produced during the summer months, and continuing in perfection a long time. The sepals and petals are obovate obtuse yellow with the basal half red, and the lip has roundish lateral lobes and an intermediate roundish subcordate emarginate lobe of a pale yellow spotted with red. The crest forms a pubescent four-lobed cushion. This, when well

grown, is a useful plant for all purposes ; pot culture suits it best.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1050; *Lodd. Bot. Cab.*, t. 1212; *Paxton, Mag. Bot.*, iii. 4, with tab.; *Rchb. Fl. Exot.*, t. 95.

O. eurycline, *Rchb. f.*—This pretty dwarf-growing species is very distinct. It has ligulate obtuse costate pseudobulbs, solitary cuneate-ligulate leaves, and two-flowered peduncles. The flowers have the sepals and petals light reddish ochre with a few dark bars at their base, the lateral sepals being a little longer than the lip, which is yellow with numerous brown spots at the base, and having rounded retrorse basilar lobes or auricles, and a cordate reniform bilobulate anterior lobe. It flowers in December. It was first flowered by W. E. Brymer, Esq., M.P., Ilington House, Dorchester.—*Venezuela*.

O. euxanthinum, *Rchb. f.*—A very pretty species belonging to the group represented by *O. bifolium*, and requiring similar treatment. The pseudobulbs are two to three inches long, ellipsoid compressed and furrowed, bearing a pair of linear ensiform acute keeled leaves. The numerous flowers grow in ample panicles, and are about one inch across, and very showy; the sepals and petals are small yellow dotted over with red, the lip large shortly clawed, with the claw protruded and winged, three-lobed, the lateral lobes large roundish crenate, the middle lobe much longer reniform bilobed, with numerous red spots on the disk between the lateral lobes, the rest of the surface rich clear yellow; the two-column wings are spreading, yellow with red spots. The broad lip, large rounded side lobes, and conspicuous spotting make the flowers not only pleasing but showy. It blooms during the autumn months.—*Brazil*.

FIG.—*Bot. Mag.*, t. 6322.

O. excavatum, *Lindley*.—A robust-growing species with light green pseudobulbs, oblong-ligulate leaves, and long branched scapes bearing an abundance of brightly-coloured flowers, the sepals and petals being rich yellow profusely blotched with cinnamon brown near the base, and the pandurate lip also deep golden yellow blotched only on the crest, which is very convex, and excavated in front, the base being cordate, and the tip rounded and emarginate. According to Lindley, *O. aurosum* can scarcely be distinguished from

this plant, though its flowers are perhaps a little larger, its panicle more compact, and its crest very rugose. It should be potted in good fibrous peat, and placed in the cool house.—*Peru*.

FIG.—*Bot. Mag.*, t. 5293; *Illust. Hort.*, 3 ser., t. 34 (aurosium).

O. excavatum Dawsoni, *Williams*.—Though bearing some resemblance to *O. excavatum*, this variety is very much stronger and more robust in all its parts. The branching scapes are five feet long, and upon these its large lovely bright yellow and rich brown flowers are borne in great profusion. When well managed the scapes will often produce upwards of a hundred flowers, and when seen in this state it is truly a noble object.—*Peru*.

O. flexuosum, *Sims*.—A pretty free-blooming and well-known old species, producing its showy yellow spotted flowers in abundance on large branching panicles. It has oval compressed two-leaved pseudobulbs, and oblong-lanceolate striated leaves. The flowers have the very small sepals and petals yellow barred with chestnut brown, and the large flat lip transversely roundish oblong and bilobed, yellow speckled over with minute chestnut red dots. The crest is pulvinate with three ridges in front. It blooms at different times of the year, and continues for several weeks in flower. This plant is invaluable for cutting purposes, the small bright yellow flowers producing a charming effect when mixed with other flowers and foliage. There are two varieties of this plant; the one called *majus*, which has much larger flowers than the other, though of the same colour, is scarce, and is best grown in a pot with moss.—*Brazil*.



ONCIDIUM FLEXUOSUM.

FIG.—*Bot. Mag.*, t. 2203; *Lodd. Bot. Cab.*, t. 424; *Rchb. Fl. Exot.*, t. 94.

O. Forbesii, *Hooker*.—A truly handsome dwarf species, closely related to *O. crispum*. It has rather small pseudobulbs, which are oblong blunt compressed and furrowed, and terminated by a solitary lanceolate acute leathery dark green leaf. The scape, which is radical, often springing from

the axil of an accessory leaf, bears a many-flowered erect panicle of showy flowers, which are about two to two and a half inches across, very distinct, the obovate sepals and the much larger undulated petals bright chestnut brown, broadly margined with broken golden yellow lines, as is also the lip, which is clawed, larger than the petals, and flabelliform; it blooms in November. This plant is best grown on a block with moss in the cool house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3705; *Orchid Album*, iii. t. 104; *Gard. Chron.*, N.S., xi. 525, figs. 71, 72.

SYN.—*O. crispum marginatum*.

O. fuscatum.—See MILTONIA WARSCEWICZII.

O. Gardneri, *Lindley*.—A most charming and free-flowering species, that should be grown by every admirer of Orchids. It is nearly allied to *O. curtum* and *O. pratextum*, and is a compact growing plant, having oblong-ovate furrowed pseudo-bulbs, and dark green oblong-lanceolate leaves, which are purple on the under side. The handsome flowers are produced in



ONCIDIUM GARDNERI.

large branching panicles, and are deliciously fragrant; the sepals are obovate, and the petals twice as large, roundish, wavy, clawed, both of a pale bright chestnut brown margined with pale yellow; the lip is large three-lobed, the middle lobe large, transversely oblong, emarginate, wavy, of a bright golden

yellow irregularly margined with oblong blotches of bright brown. It blooms during the months of June and July, and lasts for several weeks in perfection. It should be grown in the cool house.—*Brazil : Organ Mountains.*

FIG.—*Orchid Album*, i. t. 12; *Gard. Chron.*, n.s., xvi. 86, fig. 23; *Floral Mag.*, 2 ser., t. 401.

O. hæmatochilum, *Lindley*.—A compact-growing and handsome plant, similar in habit to *O. Lanceanum*. The pseudobulbs are absent or obsolete, the short thick fleshy oblong acute dark green red-spotted leaves springing directly from the crown. The scape is radical, deep purple-red, erect, bearing a panicle of moderate-sized flowers, of which the oblong sepals and petals are greenish yellow blotched with bright chestnut, and the transversely reniform lip is of a deep sanguineous crimson, the margin yellow mottled with deep rose crimson, and the claw and basal auricles of a deep magenta rose. This plant is seldom met with in collections, being very scarce. We have seen it very fine in the collection of G. W. Law Schofield, Esq., of Rawtenstall, near Manchester. It blooms in November.—*Guatemala.*

FIG.—*Orchid Album*, i. t. 32; *Paxt. Fl. Gard.*, i. t. 6.

O. Henchmanni.—See ONCIDIUM ROSEUM.

O. holochrysum, *Rehb. f.*—Though long known to botanists, this species, like many more fine things, has only recently become known to cultivators. The plant is similar in habit to *O. bifolium*, having the pseudobulbs oblong, sulcate, and beautifully spotted; the two leaves are thickish ligulate acute, and the flowers are in secund racemes, of a rich golden yellow, set very densely upon the spike, the lip being trifid with the large middle lobe clawed reniform and bilobed. No collection should be without this charming plant, which grows freely in a low temperature.—*Peru.*

O. Huntianum.—See ONCIDIUM ROSEUM.

O. hyphæmaticum, *Rehb. f.*—A beautiful little plant, with small oblong depressed three-ribbed pseudobulbs, bearing a single oblong-lanceolate obtuse leaf. The flowers are large, but somewhat laxly set upon the branching raceme; the sepals and petals are cuneate-oblong crispy of a chestnut brown with a yellow margin, the lip, which is reniform in the anterior part with an apiculus, being of a rich deep yellow. The

flowers of this species are very showy, as, in addition to the colours of the inner surface, they are blood-red on the outer side. It should be grown in peat and sphagnum, and kept in the cool house. The flowers are produced during the latter part of summer and beginning of autumn.—*Ecuador*.

O. incurvum, *Barker*.—A very pretty and distinct dwarf Orchid, with ovate ancipitous three or four-ribbed pseudobulbs, two or three ensiform leaves, and erect scapes two feet high, bearing a racemose panicle of the elegant sweet-scented flowers, which have the five sepals and petals linear-lanceolate wavy and quite free, white cross-banded with reddish purple and the concave roundish lip pure white. It flowers during autumn and winter, and lasts long in beauty. This plant is best grown in a pot with peat; it is indeed a very fine species when well grown. We have seen a specimen growing in a cool house bearing twenty-five spikes, and a charming object it was.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 29; *Bot. Mag.*, t. 4824; *Bot. Reg.*, 1845, t. 64; *Illust. Hort.*, t. 49.

SYN.—*O. albo-violaceum*.

O. incurvum album, *Linden*.—This is a chaste and distinct variety of the foregoing, having pure white flowers, in other respects resembling the type. It was exhibited by W. Lee, Esq., of Downside, Leatherhead, at South Kensington, in October, 1883. Its flowering season is September and October.—*Mexico*.

FIG.—*Illust. Hort.*, 3 ser., t. 444.

O. ionosmum.—See *ONCIDIUM TIGRINUM UNGUICULATUM*.

O. Jonesianum, *Richb. f.*—A very pretty and distinct new species in the way of *O. Cebolleta*. The pseudobulbs are very small, densely clustered, monophyllous; the leaves are slender and erect, subulate, channelled on the upper surface, and of a deep green; and the flowers grow in drooping racemes, very elegant in character. The sepals and petals are wavy obovate-cuneate, of a pale greenish straw-colour having numerous, sometimes confluent, dark sepia brown blotches; the lip is pure white, wavy, transversely reniform, bilobed, the claw having on each side a roundish yellow auricle with small purple dots, brown on the anterior border, and a prominent whitish crest dotted with red in front. It flowers from September onwards to December, and lasts for some time in beauty.—*Paraguay*.

FIG.—*Orchid Album*, iv, t. 183.

O. Kramerianum, *Rehb. f.*—A very handsome species, somewhat resembling *O. Papilio*. The pseudobulbs are small roundish obtuse four to seven-angled, the leathery leaves cuneate oblong acute dull green irregularly streaked with dark purple. The scape is long and knotty-jointed, and bears flowers resembling those of *O. Papilio*. The dorsal sepal and petals are narrow linear, all turned upwards, crispy, yellow at the base, dark brown on the upper part; the lateral sepals deflexed, ligulate acute, strongly undulated, pale yellow heavily spotted with brown; and the lip, which is beautifully undulated at the edge, is cordate-pandurate, of a pale yellow with a single irregular row of brown spots near the edge. It keeps blooming from the top of the spike for years, and it is often in beauty. This species is best grown in a basket or on a block.—*Central America*.

FIG.—*Flore des Serres*, t. 1956; *Jennings, Orch.*, t. 11; *Floral Mag.*, t. 465; *Puydt, Les Orch.*, t. 31; *Xenia Orch.*, i. t. 33.

O. lamelligerum, *Rehb. f.*—A very noble and handsome species in the way of *O. macranthum*, but with larger flowers. These flowers are produced on long branching spikes, and have the dorsal sepal reniform, wavy, stalked, deep brown bordered with yellow, the inferior sepals also stalked, oblong, much longer, the base cuneate on one side and semihastate on the other; the crispy petals are suddenly hastate oblong obtuse undulated, pale yellow spotted with brown towards the base; and the lip is similar in form to that of *O. macranthum*, trifid, with the lateral lobes triangular, and the middle lobe elongate linear-lanceate. We saw a fine specimen of this in the collection of C. Dorman, Esq., Sydenham. It flowers during the summer months.—*Ecuador*.

O. Lanceanum, *Lindley*.—A remarkably handsome and distinct species, one of those which are not furnished with pseudobulbs, but whose leaves and roots spring direct from the short knotty rootstock. The leaves are about a foot long, broadly oblong acute, leathery in texture, of a light green freely spotted with purple. The stiff erect flower scape grows a foot or more in height, and supports a rigid panicle, whose short branches sometimes assume a corymbose and sometimes a racemose arrangement. The flowers are an inch and three-quarters across, greenish yellow, brighter in the centre, closely blotched with crimson; the lip is broad and flat, of a rich bright violet, the basal part, where it is expanded

into a pair of angular teeth, deeper violet. The flowers have a rich spicy odour, recalling that of the garden pink, and they are produced during the summer months, lasting four or five weeks in good condition, if kept free from damp. This is best grown on a block or in a basket, with moss or peat, and makes a splendid plant for exhibition; but we seldom see it in good condition.—*Guiana: Surinam.*

FIG.—*Trans. Hort. Soc. Lond.*, 2 ser., ii. t. 5; *Bot. Reg.*, t. 1887; *K. & W. Floral Cab.*, t. 79; *Paxton, Mag. Bot.*, iv. 169, with tab.; *Flore des Serres*, tt. 1842—3; *Puydt, Les Orch.*, t. 32; *Hart. Parad.*, i. t. 12 (superbum); *Gard. Chron.*, N.S., xxi. 609, fig. 118.

O. lanceanum Louvrexianum, *Rchb. f.*—A most chaste and beautiful variety of this grand old species, from which it differs in that the lip, instead of being wholly mauve-coloured, has the expanded apical lobe of a pure white, which forms a fine contrast to the deep violet of the basal portion. It is named in honour of M. D. Massange de Louvrex, Marche, Belgium. The plant flowers during the summer months.—*Guiana.*

FIG.—*Orchid Album*, iii. t. 129.

O. leopardinum, *Lindley.*—A very free-flowering and pretty species, of compact-growing habit. It produces its showy flowers in large loose panicles some three feet high; they are yellow with very distinct dark brown bands on the sepals and petals, and at the base of the lip, which has the middle lobe unguiculate, transversely emarginate, and the base auriculate.—*Peru.*

O. leucochilum, *Bateman.*—A desirable and beautiful species, of which there are many varieties, some richer in colour than others. It has oblong-ovate slightly furrowed pseudobulbs, linear-lanceolate acute leaves, and long drooping panicles of pleasing flowers, which have the oblong spreading nearly equal sepals and petals yellowish green closely barred and blotched with dark brown, and the broad kidney-shaped two-lobed lip pure white with a blotch of purple red on the contracted unguis, supported by two spreading white retuse lateral lobes. The scapes are sometimes as much as ten feet long. It blooms at different times of the year, and lasts a long time in perfection. Best grown in a pot. Dr. Lindley, quoting Mr. Skinner, observes that the summer temperature of the country where this *Oncid* grows wild is between 55° and 70°, and that in December, 1839, the thermometer in Guatemala at 6 A.M. in

the open air for three days averaged 36°, and yet the plants continued to shoot their young stems.—*Mexico; Guatemala.*

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 1; *Flore des Serres*, t. 522; *Paxton, Mag. Bot.*, vii. 241, with tab.

SYN.—*Cyrtochilum leucochilum.*

O. Limminghei, *E. Morr.*—This pretty little species is one of the most singular in the whole genus, its habit being similar to that of a *Sophronitis*. The pseudobulbs are roundish compressed, wrinkled, about three-fourths of an inch long. The leaves are solitary sessile cordate ovate, an inch long, dark green speckled with dull crimson, arranged closely in a distichous manner on the surface, over which the stem is creeping. The flowers are solitary, or, according to the figure, two together, on a slender erect scape, the dorsal obovate sepal and two spreading oblong petals dull olive green with crossbars of brown; and the lip, which has roundish auricles and a long isthmus supporting the broad roundish reniform front lobe, is yellow freely dotted on the front edge and on the side lobes with crimson. It flowers in June and July. It succeeds admirably in an intermediate temperature.—*Caracas.*

FIG.—*Flore des Serres*, t. 1827; *Belg. Hort.*, vi. t. 23.

O. longipes, *Lindley.*—A pretty dwarf species of compact habit, growing about six inches high, and producing its short racemes of flowers in great abundance. The pseudobulbs are small oblong tapered upwards on a creeping rhizome, diphyllous, the leaves linear-oblong apiculate, and the flowers borne in short racemes about as long as the foliage. The sepals and petals are spreading, of a dark brown, the dorsal one spatulate, the lateral ones united at the base; the petals are oblong, tipped with yellow, and the lip is large and of a bright golden yellow, with a broad blood red ring surrounding the crest, which is downy, three-toothed at the apex. It blooms during the summer months, and will do well on a block or in a small basket. It very much resembles *O. Cræsus*.—*Brazil.*

FIG.—*Bot. Mag.*, t. 5193; *Bateman, 2nd Cent. Orch. Pl.*, t. 165.

O. ludens, *Rchb. f.*—A new species with the growth resembling *O. serratum*. Sepals rich brown merging into a mixture of yellowish brown, the upper one with a narrow yellow border; petals yellow with cinamon brown marbling; lip pale

yellowish ochre, coloured with brownish mauve at the base of the callus.—*Native Country not stated.*

O. luridum, *Lindley*.—A peculiar bulbless epiphyte, with large thick solitary carinate leaves upwards of a foot long, dull green and spotted, and a tall slender scape bearing a panicle of large olive-green flowers, having brown confluent blotches which nearly cover the surface; the sepals are clawed undulated, the dorsal sepal roundish rhomboid, the petals larger, and the lip three-lobed with the central lobe broadly kidney-shaped and emarginate; the flowers are freely produced.—*Tropical America.*

FIG.—*Bot. Reg.*, t. 727; *Bot. Mag.*, t. 3603.

O. luridum *Dodgsoni*, *Williams*.—A splendid variety, named in compliment to the late R. B. Dodgson, Esq., of Blackburn. The leaves are very thick and fleshy, but broader and longer than in *O. luridum*; the flower spikes are seven feet long, much branched, and bearing between three and four hundred flowers on each; their colour is orange and yellow, barred with dark brown. It should be potted in peat and sphagnum moss, and treated with a liberal supply of both heat and moisture.—*West Indies.*

O. luridum guttatum, *Lindley*.—A very rich and stately variety, producing panicles three to four feet long of gay flowers, which are yellow spotted all over with bright orange-red, the base of the lip being of a rosy crimson. It blooms during the summer months, and continues in perfection a long time. This is best grown in a pot with peat.—*Jamaica.*

FIG.—*Bot. Reg.*, 1839, t. 16.

SYN.—*Oncidium cuneatum*; *O. Boydii*; *Epidendrum guttatum*; *Cymbidium guttatum*.

O. macranthum, *Lindley*.—This magnificent *Oncidium* is a great acquisition to the genus, being one of the handsomest species yet introduced. It is of free growth, with large ovoid pseudobulbs, lanceolate loriform acuminate dark green leaves, and scapes several feet long, twining, branching, and many-flowered. The flowers are from three to four inches across, the clawed sepals and petals orbicular oblong broad thick and fleshy, the upper one of a golden olive brown, the two lateral sepals deep orange yellow, and the two petals of a clear bright yellow; the lip is hastate, much smaller than the petals,

white, the side lobes dark purplish brown. It is one of the finest species yet introduced, and blooms during spring and early summer, lasting long in full beauty. The cool house



ONCIDIUM MACRANTHUM.

suits it best, and it should be potted in peat and sphagnum moss, with good drainage.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5743; *Warner, Sel. Orch. Pl.*, ii. t. 17; *Jennings, Orch.*, t. 42; *Floral Mag.*, t. 386; *Gard. Chron.*, 1869, 739, with fig.

O. macranthum *Williamsianum*, *Rchb. f.*—A most distinct and curious variety, having on each petal a large blotch of Indian purple, a style of marking which makes it a striking contrast to the original or typical form. It flowers during the summer months.—*New Grenada*.

O. maculatum, *Lindley*.—A neat and pleasing species, with ovate compressed angulate pseudobulbs, bearing two broadly ligulate leaves at the top, and having others springing from the base, out of whose axils the scape arises. The flowers are in racemes, and consist of obovate-lanceolate acuminate yellowish green sepals and petals marked with purple blotches, and an oblong-ovate apiculate lip, which has a stout tooth on each side about the middle, and is of a pale sulphur yellow, whitish at the base, where there are also four simple cuspidate keels. It is a plant of free and compact growth, producing its flowers during the winter and spring months.—*Mexico*.

FIG.—*Sertum Orch.*, t. 25; *Bot. Reg.*, 1838, t. 44; *Bot. Mag.*, t. 3836 (*ecornutum*); *Id.*, t. 3880 (fl. larger); *Knowles & Westc. Floral Cab.*, t. 57.
 SYN.—*Cyrtorchilum maculatum*.

O. Marshallianum, *Rchb. f.*—This superb species is certainly one of the most noble and brilliant of *Oncids* belonging to the group which has large-sized petals. The pseudobulbs



ONCIDIUM MARSHALLIANUM.

are terete, ovoid-cylindrical, two to four inches long, with a pair of coriaceous oblong-lanceolate acute leaves six or seven inches long and two inches broad, of a bright green on the

upper surface, paler beneath. The flowers are very numerous, in ample much-branched panicles, and are individually large—two and a half inches across the spreading petals, and brilliantly coloured. The sepals are small, the dorsal one concave obovate, yellow banded with purple, the lateral ones oblong, connate at the base; the petals are an inch long, clawed, broadly fiddle-shaped, the margin undulated, the apex two-lobed, the colour deep golden yellow, with a series of large



ONCIDIUM MONACHICUM (p. 494).

unequal irregular chestnut brown blotches along the centre; and the lip is very large, contracted behind into an auricled claw spotted with orange red, and having a tubercled beaked callus, the broad oblong front portion bright yellow and deeply bilobed. There have been some fine varieties of this species bloomed of late years, and we are glad to say there have been some good importations of it. As an exhibition plant this is one of the most telling that can be staged, the rich golden yellow of

its blossoms contrasting well with the varied hues of other Orchids. It is best grown in the cool house, in a basket or on a block, as fully exposed to the light as possible. It blooms in April and May.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5725; *Floral Mag.*, 2 ser., t. 285; *Gartenflora*, t. 979.

O. metallicum, *Rchb. f.*—A very distinct species, the flowers of which are of a rich chestnut brown with a fine metallic hue, the borders of the short broad ovate upper sepal and the smaller petals blotched with rich yellow, and the lip pandurate with a triangular projection on each side at the base, contracted in the centre, and with a hastate oblong obtuse front lobe.—*New Grenada*.

O. monachicum, *Rchb. f.*—This is a very curious and distinct species allied to *O. metallicum*, and producing large branching spikes of flowers after the style of *O. serratum*. The dorsal sepal is reniform crisped overarching, dark brown with a narrow yellow crisp border, the lateral sepals are large, cuneate-oblong, on long stalks; the roundish hastate incurved undulated petals cinnamon-coloured, blotched and edged with sulphur yellow; and the ligulate lip is brown, and has an angulate base and a remarkable double callus. It flowers in March and April.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., xix. 368, fig. 54.

O. nigratum, *Lindley*.—A very pretty little species, with pyriform ancipitous shining green pseudobulbs, one or two ligulate acute leaves, and large branched panicles of small starry flowers, of which the sepals and petals are linear-lanceolate and much undulated, white barred with dark blackish brown, and the lip, which is bluntly triangular in shape, is yellow with pale cinnamon spots. It blooms in March and April. The flowers are much like those of *Odontoglossum navium*, but smaller.—*Guiana*.

O. nubigenum, *Lindley*.—A lovely small-growing but variable plant, sometimes regarded as a variety of *O. cucullatum*, and succeeding under the coolest treatment, growing as it does at an elevation of 11,000 feet above the sea level. It is somewhat more robust in all its parts than *Odontoglossum Phalanopsis*, but the flowers are in shape very like diminutive examples of that species. The pseudobulbs are small narrow-oblong, compressed, smooth, the leaves solitary linear-oblong

acute, and the flowers in simple erect or nodding racemes on very slender scapes. The sepals and petals are small ovate acute, white or dull purple with green tips, and the lip is broader than long, the front lobe almost reniform, white with purple blotches, and three small calli at the base, but in the manner of its markings and the intensity of its colour it appears to be very variable.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5708.

O. oblongatum, *Lindley*.—A handsome free-flowering species, of compact habit. It has short thick pseudobulbs, light green foliage about a foot in length, and very showy flowers of good size, and of a clear sulphur with bright light reddish brown specks at the base of all the parts; the petals are wider than the sepals and blunter, and the lip has the middle lobe deeply fissured. It blossoms during the winter months, and continues a long time in perfection. The plant succeeds best in a pot.—*Mexico*.

FIG.—*Pact. Fl. Gard.*, ii. 9, fig. 137.

SYN.—*O. xanthochlorum*.

O. obryzatum, *Richb. f.*—A showy species of neat compact habit, and growing freely in the cool house. The pseudobulbs are oblong-ovate compressed, monophyllous, with accessory basal leaves, oblong-ligulate in form. The flowers are produced in great abundance in branched panicles, and are bright yellow barred with brown, and yielding a delicious perfume. The branches of the panicle are short and flexuose, the sepals and petals are all reflexed, and the lip, which has a long claw-like isthmus and a broad reniform two-cleft anterior lobe, is clear yellow with an orange red stain about the crest. There are many varieties of this plant.—*Peru*.

FIG.—*Gartenflora*, t. 925.

O. ornithorhynchum, *Humboldt, Bonpland, and Kunth*.—A pretty free-flowering species, which has ovate-oblong compressed two-leaved pseudobulbs, ensiform acuminate leaves, and crowded gracefully drooping panicles, a foot long or more, of small but fragrant flowers of a clear rose, deeper in some forms than in others. The sepals and petals are wavy oblong, the latter broadest, and the lip is three-lobed, dilated rounded and emarginate at the point. There are two varieties of this, one having darker and larger flowers. It blooms during the autumn and winter months. This plant does best

in a basket, in which the flowers are shown off to good advantage; it is a general favourite with Orchid growers, and useful for cutting. The fragrance resembles that of the native *Gymnadenia conopsea*.—*Mexico; Guatemala; Peru.*

FIG.—*Humb., Bonpl., et Kth., Nov. Gen.*, i. t. 80; *Bot. Mag.*, t. 3912; *Bot. Reg.*, 1840, t. 10; *Batem, Orch. Mex. et Guat.*, t. 4; *Knowles & Westc. Floral Cab.*, t. 136.

O. ornithorhynchum albiflorum, *Rchb. f.*—In this white variety of *O. ornithorhynchum* we have a great acquisition for our Orchid collections, as white flowers are always valuable; being also sweet-scented, it will be all the more appreciated. The flowers are white, with the calli only yellow.—*Guatemala.*

FIG.—*Floral Mag.*, 2 ser., t. 398.

O. Papilio, *Lindley*.—A very remarkable and beautiful species, with flowers the shape of a butterfly. It has roundish



ONCIDIUM PAPILIO.

ovate compressed rugose dark purple pseudobulbs, bearing a single elliptical leathery one-nerved leaf, which is of a deep purple-brown, spotted and blotched over with green. The flower-scape, which springs from the base of the bulb, is two to three feet long, flexuose, jointed, the upper articulations compressed, ancipitous, and terminated by one or two large and very handsome flowers. The dorsal sepal and two petals are about three inches long, linear, erect, lurid green outside, purple within, the lateral ones oblong tapering wavy sub-falcate decurved, bright yellow, striped with transverse bands of orange-red; and the lip is shorter, roundish, an inch and a half across, wavy at the edge, emarginate, distinctly clawed, yellow, mottled all over with brown or having a broad margin of bright cinnamon brown (*limbatum*). This species is best grown on a block or in a basket.—*Trinidad, Caracas.*

FIG.—*Lodd. Cab.*, t. 1086; *Bot. Mag.*, t. 2795; *Bot. Reg.*, t. 910; *Jennings*, t. 11; *Maund, Botanist*, i. t. 10; *Paxton, Mag. Bot.*, v. 175, with tab.; *Knowles & Westc. Floral Cab.*, t. 12; *Rchb. Fl. Exot.*, t. 62; *Hart. Parad.*, i. t. 9; *Flore des Serres*, tt. 920—22.

O. Papilio Eckhardtii, *Lucien Linden*.—A superior variety of this old favourite, having larger flowers, and a very broad lip of larger size than in the type. The three erect narrow perianth segments are four and a half inches long, and the lip two and a quarter inches across, the latter yellow with a broad orange-red border, and the lateral sepals cross-barred with a similar colour.—*Native Country not stated*.

FIG.—*Illust. Horticole*, 3 ser., t. 500.

O. Papilio majus, *Rchb. f.*—A truly beautiful Orchid, which, like the other forms of the species, continues to bloom from the old flower stems for years—as soon as one flower fades, another appears in the same place. The form of the flowers, as already explained, is very peculiar; and the colour is rich dark brown, barred with yellow, with the lip very large, bright yellow in the centre, and edged with dark brown, varying in colour and size of flower. There are several varieties of *O. Papilio*, but that called *majus* is the best.—*Trinidad*.

O. pelicanum, *Martius*.—A very desirable species in which the pseudobulbs are of a dark green colour, and the leaves are elongate lanceolate and acute. It produces fine branching panicles of showy flowers, which have the sepals and petals yellow barred with brown, and the lip pale yellow.—*Mexico*.

FIG.—*Bot. Reg.*, 1847, t. 70.

SYN.—*O. cruentum*; *O. reflexum pelicanum*.

O. Phalænopsis, *Linden et Rchb. f.*—A beautiful and distinct slender-habited plant, growing about a foot in height. The pseudobulbs are ovate oblong, furrowed, about two inches long, and of a very dark green colour; the leaves in pairs, ligulate-oblong deep green; and the scape very slender, bearing a raceme of five or six large flowers, an inch and a half across and two inches deep. The sepals are lanceolate, mottled all over with reddish violet, except the edge, which is creamy white; the petals are of the same form and spreading, also creamy white, but with cross-bars of the rich reddish violet; and the lip is creamy white, pandurate, the front dilated and bilobed, the narrowed middle part and the less dilated base spotted with violet-crimson; the base also bears a crest of three golden lamellæ. It should be grown in the cool house.—*Ecuador*.

FIG.—*Illust. Hort.*, 3 ser., t. 3; *Orchid Album*, ii. t. 96.

O. phymatochilum, *Lindley*.—A pretty species, very distinct from all others in its flowers as well as in its growth. The pseudobulbs are broad fusiform, compressed, four to five inches long, the base invested by large distichous scales, and bearing at the tip a solitary dark green obovate-lanceolate leaf a foot long and three inches broad. The flowers are curious, and grow in a well-furnished paniced flexuose raceme a foot or more in length; the sepals and petals are linear-subulate, flaccid, yellowish green with a row of orange-red spots on the basal part; and the lip is shorter, three-lobed, the front trowel-shaped lobe white, the contracted claw-like portion thickened tuberculately, crested, yellow spotted with orange. This is a species which ought to be in every collection; it blooms during May and June, and continues in flower for two months at a time; it is best grown in a pot, in peat.—*Supposed to be from Mexico or Brazil*.

FIG.—*Bot. Mag.*, t. 5214; *Pescatorea*, t. 35; *Gard. Chron.*, 1848, 139, with fig.; *Past. Fl. Gard.*, i. 88, with fig.

O. pulchellum, *Hooker*.—A beautiful dwarf compact plant belonging to the group with equitant foliage, the slender flower scape attaining a height of about six inches. The base of the leaves is compressed, striated, and the upper part of each is articulated on this basal portion, and is thick, succulent, triquetrous, distichous and sharp-pointed, three to five inches long. The flowers grow in close racemes, and are roundish, the lip deeply four-lobed, with the sepals and petals much smaller, white with a tinge of pink around the yellow trifid crest; they are produced in abundance during the summer months, and remain for a long time in perfection. It thrives well on a block, with plenty of moisture at the roots.—*Jamaica; Demerara*.

FIG.—*Bot. Reg.*, t. 1787; *Bot. Mag.*, t. 2773; *Lodd. Bot. Cab.*, t. 1984.

O. pulvinatum, *Lindley*.—A free-flowering species, compact in habit, the pseudobulbs and foliage growing about a foot high. The flower scapes, however, are not unfrequently eight or nine feet long, smooth, much branched, with flexuous divaricate branches; the flowers are very numerous and gay-looking, about an inch across, bright yellow with the base of the sepals and petals crimson, and the roundish three-lobed lip also yellow, but dotted with crimson around the margin. On the disk is a convex cushion of dense hairs. It blooms

during the summer months, and lasts a long time in perfection. Pot culture and peat suit it best.—*Brazil*.

FIG.—*Bot. Reg.*, 1839, t. 42.

O. pulvinatum majus, *Williams*.—A fine variety of the preceding, with the same habit of growth, but having blossoms much larger and also brighter in colour. We saw this very fine in August, 1884, in the collection of the Comte de Germiny in France.—*Brazil*.

O. reflexum, *Lindley*.—A pretty species, of dwarf habit and easy culture. Its ovate pseudobulbs are monophyllous, and its leaves narrow lanceolate and acute. The peduncles grow a foot and a half high, and bear short remote flexuous branches, so that the numerous long spikes become covered with abundance of its comparatively large bright yellow flowers, of which the sepals and petals are regularly speckled with brown, and the lip has a few red specks at the base. Reichenbach describes the sepals and petals as dark purple and the lip white, and his uncoloured figure appears to agree with this description. Its flowers enliven the Orchid house as autumn is approaching, which should make it an universal favourite.—*Mexico*.

FIG.—*Maudsl. Botanist*, iii, t. 116; *Xenia Orch.*, i, t. 36.

O. Rigbyanum.—See ONCIDIUM SARCODES.

O. Rogersii.—See ONCIDIUM VARICOSUM ROGERSII.

O. roseum, *Loddiges*.—A pretty small-flowered species, regarded by Lindley as a variety of *O. carthaginense*. It is a bulbless plant with large solitary oblong leathery leaves, and a tall scape bearing short branches of small creamy white flowers spotted with bright crimson, and having a large blotch in front of the yellow disk. It blooms at different times of the year, and lasts six weeks in good condition. The plant is best grown in a pot with peat.—*Honduras*.

FIG.—*Sertum Orch.*, t. 27; *Bot. Mag.*, t. 3806 (*Huntianum*).

SYN.—*O. carthaginense sanguineum*; *O. sanguineum*; *O. Huntianum*; *O. Henchmanni*.

O. roseum superbum, *Hort*.—A fine large variety of the preceding, which we saw in the collection of the late T. West, Esq., Clapham Park. It is a magnificent plant, making panicles five feet long, covered with beautiful large rich crimson and white flowers.—*Honduras*.

O. rupestre, Lindley.—A very handsome cool house species, of stout habit, with ovate compressed pale green smooth pseudobulbs, dark green ligulate leaves a foot long and two inches broad, and a stiff pyramidal panicle two feet high bearing numerous flowers, which are large and showy, of a brilliant golden yellow, the sepals and petals with about three cinnamon blotches at the base of each, and the roundish bilobed lip with a stain of the same colour across its base.—*Peru, on walls and rocks*

O. sanguineum.—See ONCIDIUM ROSEUM.

O. sarcoodes, Lindley.—A remarkably fine species, producing its showy and handsome flowers during March and April. The pseudobulbs are subcylindrical, from three to four inches long, terminated by two or three broad lanceolate leaves, and developing from the base a many-flowered panicle of large and handsome flowers, of which the upper sepal is obovate, yellow with dull brown cross-bars, the two lateral ones lance-shaped and dull-coloured, the petals cuneate spathulate, the basal two-thirds bright chestnut brown with a few yellow cross lines, the apical portion yellow, and the broad repand undulated lip clear yellow except a few red spots in front of the crest. This showy plant has been scarce, but latterly there have been some large importations, which have yielded many varieties. It will do either in a basket or in a pot, with peat and moss.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 23; *Illust. Hort.*, 3 ser., t. 165; *Paxton, Mag. Bot.*, xvi. 257, with tab.; *Flore des Serres*, vi. 237, with fig.

SYN.—*O. Rigbyanum*.

O. serratum, Lindley.—A pretty species of very distinct aspect, on account of its long straggling semiscandent panicles. The pseudobulbs are oval, six inches high or more, bearing large rigid lorate acute leaves a foot long, and the scape twining and branched, from six to twelve feet long, bearing many large flowers, which are bright chocolate brown margined with yellow. The sepals, as are all the parts of the flower, are much crisped at the margins, the dorsal one reniform, and the lateral obovate, much lengthened out; the petals smaller, ovate acute, and connivent, the lip also small and hastate. It should be grown in rough fibrous peat, and placed in the cool house.—*Peru*.

FIG.—*Bot. Mag.*, t. 5632; *Batem, 2nd Cent. Orch. Pl.*, t. 194; *Gard. Chron.*, 1850, 279, with fig.

SYN.—*O. Diadema*.



ONCIDIUM SARCODES.



O. sessile, *Lindley*.—A pretty species of compact growth. It has two-leaved oblong compressed pseudobulbs, the leaves lorate papery, and the flower scapes bearing panicles of large pale yellow flowers, spotted in the centre with pale cinnamon colour. These flowers are an inch and a half across and nearly two inches deep, the sepals and petals oblong, and the lip auricled with the three-lobed crest smooth and hollowed out, and the broad front portion dilated and retuse. This species, which blooms during the spring months, and lasts in bloom four weeks, will do well in the *Cattleya* house.—*Caracas: Santa Martha*.

FIG.—*Pact. Fl. Gard.*, i. t. 21.

O. sphacelatum, *Lindley*.—A good free-growing, free-blooming species, with elongate ovate ancipitous pseudobulbs, long ensiform leaves, and long branching panicles of flowers, which are bright yellow, the sepals and petals transversely barred with rich deep chestnut brown on the basal half, and the roundish bilobed lip having a bar of the same colour across its contracted base. The flowers are produced in April and May, and last for three or four weeks in beauty. There are two varieties — *minus*, *Lindley*, with smaller flowers; and *majus*, *Lindley*, which is much to be preferred, the flowers being larger. It is best grown in a pot with peat or moss.—*Guatemala; Mexico*.



ONCIDIUM SPHACELATUM.

FIG.—*Bot. Reg.*, 1842, t. 30.

O. splendidum, *A. Rich.*—This is a noble species, and very rare; it is closely related to *O. tigrinum*, of which Dr. Hooker makes it a variety, and like that it is very showy and effective. It has short roundish or ovate somewhat compressed pseudobulbs, each of which supports a single erect fleshy oblong deep green leaf, and produces at the base a stout erect scape two feet long, terminating in a noble branched inflorescence of large and very handsome flowers. The oblong ligulate recurved sepals and petals are yellowish green heavily barred with rich brown, and the lip is large and flat, the midlobe transversely oblong, with a broadish unguis, and of an uniform rich

clear yellow, the disk being a long white ridge, which is continued quite on to the midlobe. The flowers are produced during the spring and early summer months. It should be grown in the Cattleya house, in a pot or basket.—*Guatemala ; Mexico.*

FIG.—*Bot. Mag.*, t. 5878; *Flore des Serres*, t. 1825; *Puydt, Les Orch.*, t. 33; *Gard. Chron.*, 1871, 42, fig. 4.

SYN.—*O. tigrinum splendidum.*



ONCIDIUM SPLENDIDUM.

O. Sprucei, *Lindley*.—This species belongs to the section *Teretifolia*, and is a near relation to *O. Ceboletta*, but its leaves, which are sometimes two and a half feet long, are more swollen in the centre. The bright yellow flowers are

produced in flexuose panicles in great profusion ; the sepals and petals are obovate obtuse, yellow, blotched with red above, and the lip has the transverse middle lobe narrowly clawed, two-lobed, yellow, stained with red at the base. From its distinct habit it makes a good addition to a collection.—*Brazil*.

O. stelligerum, *Rehb. f.*—This is an interesting and free-flowering species, allied to but little resembling *O. hastatum*. The stellate flowers are produced in panicles, the oblong ligulate sepals and petals yellowish, with many brown spots, the lip yellowish white, with a darker yellow callus, the lateral lobes short obtuse-angled, the isthmus narrow, and the mid-lobe roundish cordate, shortly and abruptly cuspidate.—*Mexico*.

O. superbiens, *Rehb. f.*—This handsome species belongs to the same section as *O. macranthum* and *O. serratum*. The pseudobulbs are elongate ovate compressed, about four inches long ; the leaves are about a foot long, linear-oblong acute, leathery, keeled ; and the scape is two to three feet long, including a lax flexuose panicle of twenty to thirty flowers, which are two and a half inches in diameter. The sepals are long-clawed, the upper trulliform much crisped, the apex reflexed, the lateral more ovate and less crisped, all chocolate brown, tipped with yellow ; the petals are smaller, cordate oblong, recurved, with a shorter broader claw, yellow in the apical half, barred with chocolate in the basal portion ; the lip is much smaller, revolute, trulliform, of a blackish purple, with the crest yellow.—*New Grenada ; Venezuela*.

FIG.—*Bot. Mag.*, t. 5980.

O. tigrinum, *Llave and Lex.*—One of the most beautiful and free-blooming of the large-flowered yellow Oncids. The pseudobulbs are ovate compressed, blunt-edged, three inches long, bearing two or three lanceolate oblong leathery leaves, and from the base a panicle of numerous large showy flowers, which have the odour of violets. The sepals are linear-oblong, acute, wavy, revolute at the margins, the lateral ones curving upwards so that all three stand above the base of the lip ; the petals are similar in form, and also curve upwards ; both sepals and petals are yellowish green, heavily marked with transverse bands of dark chestnut brown ; the lip is three-lobed, with the central part transversely oblong reniform, one

and three-quarter inches broad, emarginate and apiculate, the smaller lateral lobes being almost semicircular, and placed behind the distinct basal isthmus connecting the front with the hinder portion, the whole being of a bright clear yellow. It produces these branching panicles of flowers during the dull months of autumn and winter, which greatly enhances its value, and it lasts six weeks in bloom. There have been several importations during the last three years, which has made this fine Orchid more plentiful. It should be grown in the Mexican house.—*Mexico; Guatemala; Mechoacan.*

FIG.—*Sertum Orch.*, t. 48; *Bot. Reg.*, t. 1651; *Illust. Hort.*, t. 2; *Orchid Album*, iii. t. 137; *Paxton, Mag. Bot.*, xiv. 97, with tab.

SYN.—*O. Barkeri; Odontoglossum tigrinum.*

O. tigrinum unguiculatum, *Lindley*.—A pretty winter-blooming variety, in which the somewhat smaller flowers are produced on a long branching scape, three or four feet high, and last a long time in perfection; they are of a pale green colour, speckled with crimson, the lip clear yellow. It succeeds best potted in good fibrous peat.—*Mexico.*

SYN.—*O. ionosmum.*

O. trilingue, *Lindley*.—A very peculiar plant, still rare in collections, and very much resembling *O. serratum*, to which, indeed, it is nearly allied. The flowers grow in semiscandent panicles, rather sparsely furnished; the lateral sepals are unguiculate, connate at the base, elongate lanceolate and undulated, the dorsal one roundish ovate, crisped, the claw auriculate, all of a rich reddish brown; the lip is dagger-shaped, brown, edged with light yellow, with a yellow crest. It should be potted in fibrous peat, and grown in the cool house.—*Peru.*

FIG.—*Paxt. Fl. Gard.*, ii. t. 63; *Lem. Jard. Fl.*, t. 217.

O. varicosum, *Lindley*.—A very beautiful and well-marked species, having ovate oblong subtetragonal furrowed pseudobulbs two to four inches high, ligulate lanceolate bluntish keeled leaves, and stout glaucous panicles two to three feet long, literally covered with large showy flowers, of which the small oblong acute incurved sepals and reflexed obovate petals are pale dull green banded with dark brown, these being quite eclipsed by the large roundish or transversely reniform obsoletely four-lobed lip, which is flatly expanded and of a clear bright yellow. It flowers during the months of October and November.—*Brazil.*

FIG.—*Orchid Album*, iv. t. 192; *Lem. Jard. Fl.*, tt. 206—7.



ONCIDIUM VARICOSUM ROGERSII.

O. varicosum Rogersii, *Rchb.f.*—An exceedingly showy and beautiful free-flowering plant, which is now generally considered to be a variety of *O. varicosum*, to which it is evidently closely related. It has oblong ovate furrowed pseudobulbs, which bear two ligulate lanceolate leaves, and from their side a large densely branched nodding panicle which sometimes bears as many as one hundred and seventy flowers, each measuring about two and a half inches across. The sepals and petals are comparatively small, the lip large, reniform, flat and spreading, deeply four-lobed in front, and rich golden yellow in colour, with a few bars of red brown at the base. It blooms during winter, and should be grown in the Cattleya house, potted in peat and sphagnum moss.—*Brazil*.

FIG.—*Warner*, *Sel. Orch. Pl.*, ii. t. 31; *Jennings*, *Orch.*, t. 29; *Floral Mag.*, t. 477; *Florist and Pomol.*, 1870, 25, t. 304; *Gard. Chron.*, 1870, 277, fig. 48; *Flore des Serres*, xviii. 150, with fig.; *Belg. Hort.*, 1878, tt. 6–7.

O. variegatum, *Swartz.*—A pretty dwarf-growing species with fleshy equitant acuminate serrulate leaves three or four inches long, and of a dark green colour, the branching upright panicles six inches to a foot and a half high, bearing many blossoms of a rosy pink colour, richly stained with cinnamon red on the petals and at the base of the sepals and lip, these blossoms continuing in beauty for several weeks. The petals are largish obovate clawed, the apex emarginate and cuspidate; and the lip bears two small acute lateral lobes, and has a broad two-parted middle lobe with a denticulate claw, and a crest consisting of two sets of tubercles. It is best grown on a block with plenty of moisture at the roots.—*West Indies*.

FIG.—*Paxt. Fl. Gard.*, i. t. 33; *Lem. Jard. Fl.*, t. 99.

O. Warneri, *Lindley.*—A very pleasing and distinct dwarf-growing species, with cæspitose ovate ancipitous subangulate pseudobulbs, which are two-leaved, the leaves linear-lanceolate and recurved. The flowers grow in short racemes of five to eight together, the sepals being oval, spreading, the petals somewhat narrower and ascendent, and the lip three-lobed flat, with the middle lobe cuneate and deeply parted into two roundish lobes. There are two varieties, in both of which the lip is of a bright yellow; but in one (*sordidum*) the sepals and petals are dull yellow streaked with purple, and in the other (*purpuratum*) the sepals and petals are white streaked with bright purple. This latter form is the most desirable

for cultivation. It blooms during the autumn months.—*Mexico*.

FIG.—*Bot. Reg.*, 1847, t. 20.

SYN.—*Odontoglossum Warneri purpuratum*.

O. Warscewiczii, *Rchb. f.*—A rare and interesting ornamental species, remarkable for the great spathaceous bracts of its flower scape. The pseudobulbs are ovate, compressed, two-leaved, the leaves narrow oblanceolate, and the flowers in racemes a foot long, from twelve to seventeen being borne on the raceme. The sepals and petals are oblong-lanceolate obtuse, the petals broader and blunter, while the lip is broadly cuneate and auricled at the base, with a long narrow isthmus, which is thickened and blunt-angled on each side, and is continued into a broad reniform bilobed apex. The flowers are golden yellow, the borders of the isthmus tinted with brown. There is a crest of three raised lines on the disk. The *O. bifrons* of Dr. Lindley is regarded as a starved specimen of this plant by Reichenbach, who states that it perishes as soon as it descends into the warm zone.—*Costa Rica*, at an elevation of 8,000 to 10,000 feet, growing on oaks.

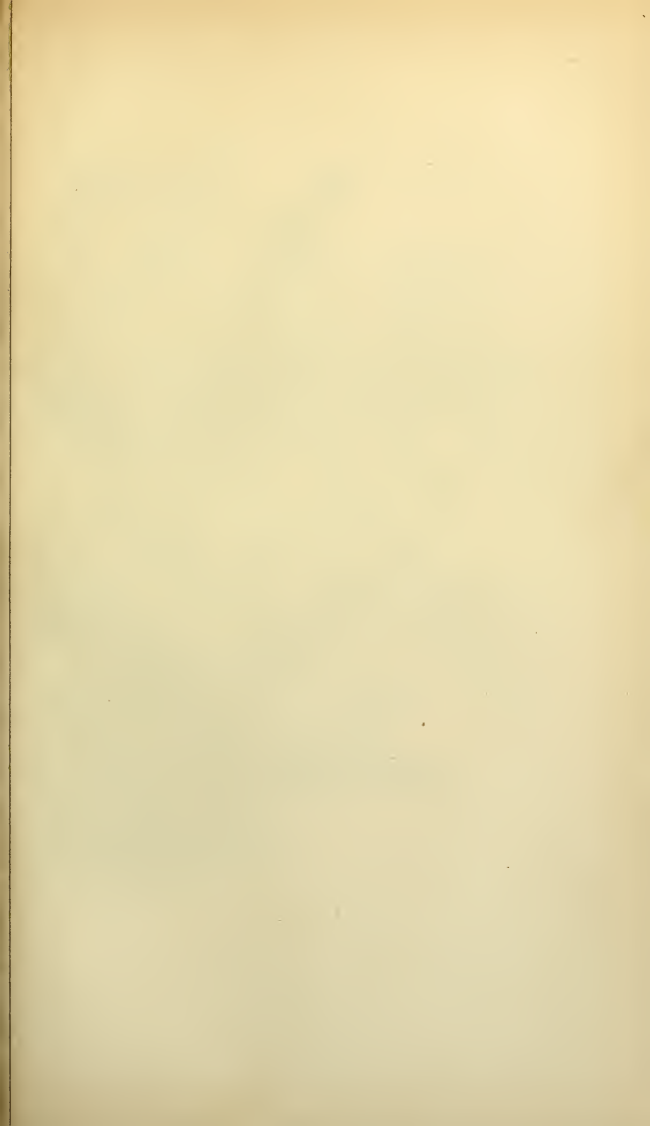
FIG.—*Gard. Chron.*, 1857, 84, with fig. (starved specimen, fide *Rchb.*).

SYN.—*O. bifrons*.

O. Weltoni.—See *MILTONIA WARSCEWICZII WELTONI*.

O. xanthodon, *Rchb. f.*—A very striking plant of the *O. serratum* section, and one which, although the flowers are not so large as in that species, yet makes a good display from their being very freely produced. In habit of growth it closely resembles *O. serratum*. The pseudobulbs are five inches long, narrow ovoid, much compressed; the leaves narrow linear-obovate, two feet long, one at the apex and several equitantly sheathing the base of the bulb. The scape is six to eight feet long, twining, bearing a large flexuately branched panicle of numerous flowers, which have the clawed obovate-rotundate undulate-crested crenate sepals and petals of a rich dark brown, bordered with bright yellow, the smaller narrower obovate recurved lip being of the same colours with the basal portion yellow, irregularly quadrate, and bearing a crest of several tubercular calli.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5756.





PACHYSTOMA



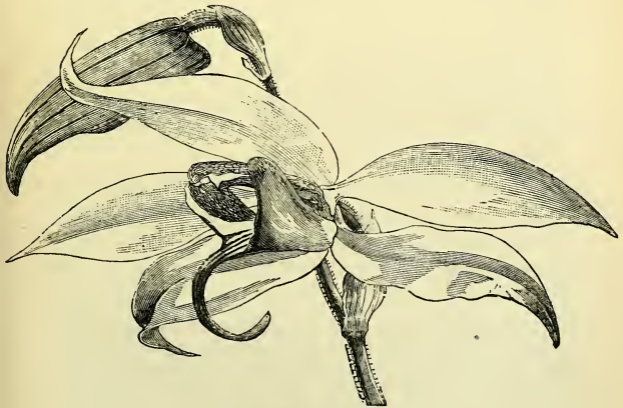
HOMSONIANA.



PACHYSTOMA, *Blume.**(Tribe Epidendrææ, subtribe Eriææ.)*

A small genus of Orchids allied to *Ipsea*, and producing from the rhizomes one or two-leaved pseudobulbs, often developed later on, and having simple leafless scapes bearing the flowers in short racemes. There are about ten species found in West Tropical Africa and the Malayan Archipelago. *Ipsea* is included in the genus by some authorities.

Culture.—This plant is best grown in a pot in a compost of fibrous peat, and sphagnum moss, and with good drainage. It should be grown in the East Indian house as near the light as possible.



PACHYSTOMA THOMSONIANUM.

P. Thomsonianum, *Rehb. f.*—A very pretty dwarf-growing plant, with small depressed orbicular tunicate pseudobulbs, solitary erect elliptic lanceolate plicate leaves, and erect slender scapes from the base of the bulbs bearing from one to three

flowers, each being from three to three and a half inches across and spreading; the dorsal sepal is erect oblong-lanceolate acuminate, larger than the rest, the lateral ones being decurved, the petals are also lanceolate spreading, all these being pure white; the lip is one inch long, trifid, with erect conchoid subquadrate lateral lobes, the central one lanceolate triangular, the apex tapered and recurved, white marked with broad reddish purple streaks. It flowers in October and November.—*West Tropical Africa*.

FIG.—*Bot. Mag.*, t. 6471; *Xenia Orch.*, iii, t. 213; *Gard. Chron.*, n.s., xii, 624, fig. 102—3; *Id.*, xviii, 501, fig. 87.

PALUMBINA, *Rehb. f*

(Tribe Vandææ, subtribe Oncidiææ.)

The only species referred here was at first very doubtfully stationed in *Oncidium* by Lindley, and next separated from *Oncidium* under the name of *Palumbina* by Reichenbach. Bentham puts it back into *Oncidium*. It appears to differ in its lateral sepals being connate into one, forming a short concave emarginate organ, in its peculiar "tabula stigmatica," and, according to Lindley, in its four pollen-masses. It is a Guatemalan plant.

Culture.—A rare and interesting species, which thrives best under rather cool treatment. It will do in a pot, with peat, moss, and good drainage, but it does not require much water at the roots at any time. It should be grown in the cool house.

P. candida, *Rehb. f*.—This interesting plant is very distinct in habit and appearance. The pseudobulbs are narrow compressed ligulate, bearing each a linear or cuneate-ligulate pale green leaf; the scapes are slender, dark purplish, bearing a raceme of several flat waxy white flowers, which continue in perfection a long time. Of these the sepals are oblong subacute, the lateral ones connate to the tip, the petals larger, also oblong, and the lip elongate ovate.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 5546; *Gard. Chron.*, 1865, 793, with fig.; *Id.*, n.s., xx, 233, fig. 35.

SYN.—*Oncidium candidum*.

PAPHINIA, *Lindley*.

(Tribe Vandææ, subtribe Cyrtopodiææ.)

Of this pretty genus there are only a few species known, but they are all well worth growing, being compact in habit, and having short pseudobulbs, plicate leaves from six inches to a foot in length, and pendulous scapes bearing flowers of rather a grotesque appearance from the peculiar distribution of their colours. They were originally assigned to *Maxillaria*, but Bentham places them under *Lycaste*. They are found wild in Demerara, Trinidad, and New Grenada.

Culture.—The species of *Paphinia* succeed best in the East Indian house, suspended from the roof in pots or pans of good fibrous peat and sphagnum moss, with the addition of a few lumps of charcoal, and with plenty of drainage. They enjoy a liberal supply of water at the roots during the growing season. Propagation is effected by separating the bulbs.

P. cristata, *Lindley*.—A pretty dwarf free-flowering species, which grows about eight inches high, and has small shining oblong-ovate compressed slightly furrowed pseudobulbs, with two or more oblong-lanceolate plicate leaves from their apex, and from the base a pendent scape, usually bearing about three flowers, which are some three inches across. The sepals and petals are all lanceolate spreading, the fleshy sepals and the smaller petals are white almost covered with longitudinal streaks, and near the base transverse bars of dark chocolate brown; the lip is much smaller, thick and fleshy, somewhat ovate in outline, shortly clawed, with oblong acinaciform lateral lobes, and a central rhomboidal one, almost wholly of a rich chocolate brown, but with a terminal tuft or pencil of club-shaped downy white fimbriæ, the disk bidentate, and the column yellowish green banded with chocolate. There are two varieties, one of which produces much darker flowers than the other. It blooms at different times of the year, and

will remain in beauty for about a fortnight.—*Demerara, Trinidad, New Grenada.*

FIG.—*Bot. Reg.*, t. 1811; *Bot. Mag.*, t. 4836; *Batem. 2nd Cent. Orch. Pl.*, t. 117; *Flore des Serres*, t. 335; *Maudslayi, Botanist*, ii. t. 75; *Orchid Album*, t. 34.

SYN.—*Maxillaria cristata.*



PAPHINIA CRISTATA.

P. grandis, *Rchb. f.*—This species produces handsome flowers about twice the size of those of *P. cristata*. It has small angular ovate clustered pseudobulbs, short elliptic lanceolate acuminate plaited leaves, and pendent three-flowered scapes, bearing semi-expanded flowers seven inches across. The sepals and petals are broad ovate-lanceolate, creamy white in the lower half, transversely spotted and barred with chocolate purple, the apical portion being entirely covered with this purple colour, and the petals having the markings in narrower and finer bands set more concentrically; the lip is

somewhat obovate in outline, with a blackish purple claw widening into an oblong-obovate cream-coloured disk, from which a pair of bluntly linear incurved chocolate brown side lobes proceed; it then becomes constricted, the front lobe furnished with two laterally spreading acute recurved blackish purple falcate teeth, and terminating in a roundish knob, covered with a bunch of shaggy cream-coloured glandular hairs. The column is green spotted with purple and tipped with bright yellow. A fine flower of this species was communicated by W. Williams, Esq., Sugnell Hall, Eccleshall, Staffordshire. It flowers in October and November.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 145.

P. rugosa, *Rchb. f.*—A pretty little free-flowering species. The pseudobulbs are very small, nearly terete, furrowed, the leaves cuneate below and much acuminate, and the scapes pendulous bearing two flowers as large as those of *P. cristata*. The sepals and petals are white or creamy yellow, distinctly spotted with dull purple; the lip reddish purple with a white fringe. It flowers during the summer months. This variety Reichenbach suggests should be called *Sanderiana*, and the other New Grenadan variety, which has the sepals and petals yellowish with few brown spots, and the lip white spotted with purple, should be regarded as the type of the species.—*New Grenada*.

SYN.—*P. Sanderiana*.

P. tigrina.—See HOULLETTIA TIGRINA.

P. Sanderiana.—See PAPHINIA RUGOSA.

PERISTERIA, *Hooker*.

(*Tribe Vandææ, subtribe Stanhopiææ*.)

A genus of remarkable species, one of which, *P. elata*, the Dove plant, is a noble object, and one which ought to be in every collection. These plants produce their flower scapes from the side of their large pseudobulbs, near the base, and have broad plicately venose leaves contracted into a petiole below. The flowers are showy, with thick broad sepals connivent into a globular form, a three-lobed lip with the lateral lobes erect and the middle lobe concave and inflexed,

and a column which is dilated and bears two large fleshy wings. There are three or four species found in the Andes of Colombia, and Central America.

Culture.—These fine and stately plants will succeed in either the East Indian or the Cattleya house, and should be potted in loam and leaf mould; a good quantity of water is necessary during their period of growth, after which they must have a good season of rest, and be kept nearly dry at the roots, for if allowed to get wet during their resting season they are apt to rot. They are propagated by dividing the plants.

P. cerina, *Lindley*.—A fine species, having strong oblong-ovate dark green pseudobulbs three inches high, supporting a pair of large coriaceous plicate leaves of the same colour. The flower scape is short, pendulous, bearing a dense raceme of nine or ten unspotted yellow flowers, which have the smell of bruised juniper leaves, only more aromatic. It blooms in June or July.—*Central America*.

FIG.—*Bot. Reg.*, t. 1953.



PERISTERIA ELATA.

P. elata, *Hook.*—A noble free-growing plant, with large broadly ovate pseudobulbs, surmounted by three to five light green plaited lance-shaped leaves three to four feet high. The flower scapes are erect, three to five feet in height, bearing a long raceme of white waxy almost globose flowers. The central parts of each flower present a very striking resemblance to the figure of a dove, whence it is called in the vernacular, *El Spirito Santo*. This plant usually flowers in July, August, and September, and continues blooming for two months when the growths are strong.—*Panama*.

FIG.—*Bot. Mag.*, t. 3116; *Jennings, Orch.*, t. 44.

P. guttata, *Knowles and Westc.*—A curious species which produces short pendent scapes bearing dense racemes of dull

salmon-red flowers, which are copiously marked on both surfaces with reddish purple or maroon spots, and which have an agreeable aromatic resinous odour. The pendulous flower spikes hang over the edge of the pot; it blooms in September, lasting two or three weeks in perfection.—*Demerara*.

FIG.—*Knowles and Westc., Floral Cab., t. 70.*

P. pendula, *Hook.*—A handsome species, with oblong-ovate furrowed pseudobulbs, bearing three or four lanceolate nervose leaves, and a short pendulous scape from the base of the bulb, bearing a close-set raceme of about five globose flowers, which are of a blush-tinted yellowish colour thickly sprinkled with purple dots, the lip dingy white spotted with purple, its disk bearing a thick elevated crest, and the anterior lobe deeply grooved with a recurved apex.—*Demerara*.

FIG.—*Bot. Mag., t. 3479.*

PESCATOREA, *Reichenbach fil.*

(Tribe Vandææ, subtribe Cyrtopodææ.)

This genus consists of epiphytal plants scarcely forming pseudobulbs, but having bold distichous evergreen leaves, and one-flowered scapes issuing from amongst them, and bearing large flowers, which have a clawed lip, with an ovate acute lamina, a deeply fimbriated crest, and a very broad column. The few species are from the Andes of South America.

Culture.—The *Pescatoreas* are easily grown if they get the treatment required, but they are often killed by having too much heat. We find they do best in the cool end of the East Indian house, with plenty of water all the year round, for they seem never to require any rest. The attention that may be given them will be well repaid by a profusion of their elegant, curious, and delicately scented flowers. The plants will do well either on blocks or rafts or in pots; if on blocks live sphagnum should be packed about their roots; if in pots, they should have a compost of peat and moss, with good drainage.

P. Backhousiana, *Rchb. f.*—A very distinct and beautiful species in the way of *P. Klabochorum*. The sepals and petals are creamy white heavily tipped with bright purplish violet, the deeply three-lobed lip is also creamy white, having a deep yellow hippocrepiform callus of nineteen ribs, with brownish lines to the keels, the anterior portion yellowish with a number of small purplish warts. It blossoms during the summer months. Introduced by Messrs. Backhouse & Son, York.—*Ecuador*.

SYN.—*Zygopetalum Backhousianum*.

P. bella, *Rchb. f.*—Professor Reichenbach describes this as being a grand beauty, with flowers larger than those of *P. cerina*. The sepals and petals are light or whitish violet, and have near their tips a broad band of the darkest purplish violet; the lip is rather hooded, and of a whitish yellow colour, with a large hippocrepiform callus, consisting of twenty-one ribs, the keels of which are purplish on their back line, the tip of the lip showing a large purplish violet blotch. The column is purplish with a triangular yellowish white space at the base, covered with numerous purplish spots. It flowers during the spring months.—*New Grenada*.

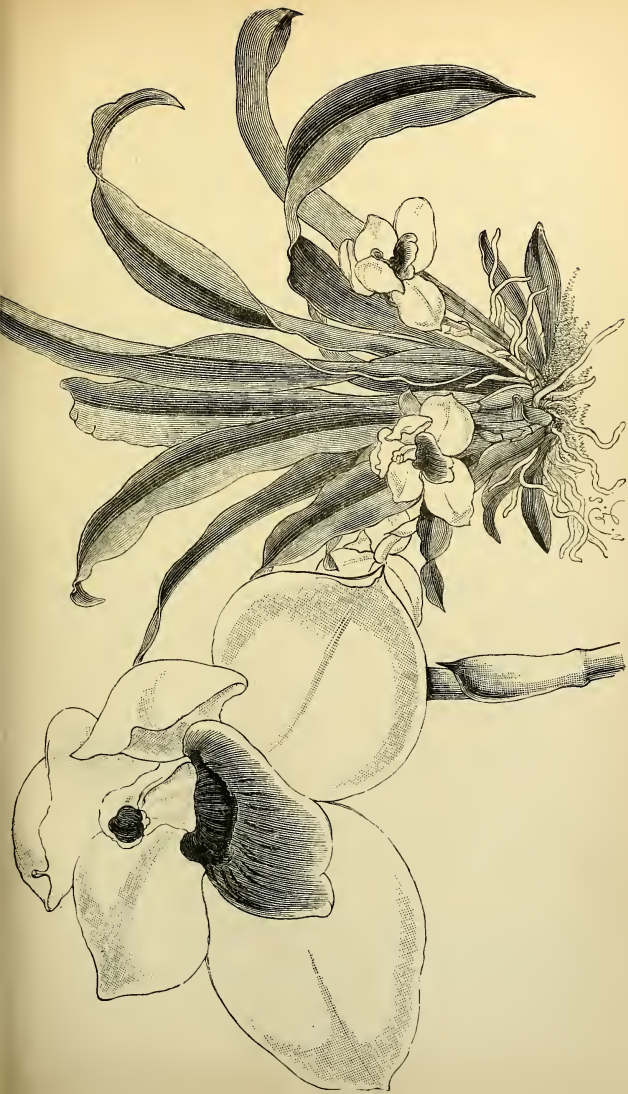
SYN.—*Zygopetalum bellum*.

P. cerina, *Rchb. f.*—A beautiful bulbless species, which produces from the crown tufts of several cuneate-oblong acuminate leaves a foot long, and from their axils one-flowered peduncles much shorter than the leaves, each producing a handsome flower some three inches across. The sepals and petals are fleshy, concave, roundish oblong, of a pale waxy straw-colour, the lateral sepals being rather darker; and the lip is yellow, clawed, ovate convex retuse, with a thick semicircular ruff or crest of numerous truncate plaits, within which is sometimes a band of deep purple, surrounding the base of the short clavate hoodless column. The plant is slow in growth, but of easy culture, producing at various seasons its delicate-coloured flowers, which are of very long duration.—*Veragua, Chiriqui*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 5598; *Batem. 2nd Cent. Orch. Pl.*, t. 183; *Xenia Orch.*, i. t. 65; *Flore des Serres*, t. 1815; *Floral Mag.*, 2 ser., t. 93; *Part. Fl. Gard.*, iii. 62, fig. 263.

SYN.—*Huntleya cerina*; *Zygopetalum cerinum*.

P. Dayana, *Rchb. f.*—A very pretty and distinct species, with flowers similar in shape to those of *P. cerina*. The



PESCATOREA DAYANA.



oblong-obovate sepals and roundish rhomboidal petals are of a milky white, the sepals tipped with green; the clawed oblong retuse emarginate lip, angulate at the base, is white, with the ruff or ring of folds forming the elevated callus purplish violet, the base as well as the rays in front of the callus being of the same colour, while the column is yellow with a broad reddish band at its base. It flowers in November and December.—*New Grenada*.

SYN.—*Zygopetalum Dayanum*.

P. Dayana candidula, *Richb. f.*—A chaste and beautiful variety, having the sepals and petals of a pure white, while the lip is tinted with purplish crimson.—*New Grenada*.

FIG.—*Gard. Chron.*, n.s., iii. 342, fig. 69.

P. Dayana rhodacra, *Richb. f.*—A very distinct variety, in which the sepals and petals are tipped with purplish rose.—*New Grenada*.

P. Dayana splendens, *Richb. f.*—A very lovely variety, having dark violet blotches at the tips of the sepals and petals, and the lip deep violet, which colour extends to the base of the column.—*New Grenada*.

P. Gairiana, *Richb. f.*—A distinct and handsome species, which Reichenbach calls “glorious.” The flowers are large, with the oblong ligulate sepals and petals deep violet, the anterior portion being of the deepest blackish purple on the inner face; and the lip purplish rose-coloured or light purple mauve, with the front portion reflexed on the limb so as to be nearly hood-shaped, and marked by obscure longitudinal keels, between which are numerous warts; the large ruff or callus has from fifteen to seventeen radiating keels, and in some of the forms is orange-coloured with purple ridges. The column is dark violet above, whitish yellow with some purple spots at the base. It is named in honour of John Gair, Esq., Falkirk, who grows the species of *Pescatorea* and *Bollea* to great perfection. It flowers during the summer months.—*Ecuador*.

SYN.—*Zygopetalum Gairianum*.

P. Klabochozum, *Richb. f.*—A very beautiful and free-flowering species, introduced by the late Franz Klabocho, after whom it is named. The flowers are very large, from three to three and a half inches in diameter; the oblong obtuse sepals

and the more wedge-shaped shorter petals are white deeply tipped with chocolate purple, the tint of which seems to vary in the different varieties we have seen; the lip is trowel-shaped, three-lobed, ochre-coloured or white, with the whole surface except the margin covered with short purple-tipped papillæ *papulæ radiantes* as Prof. Reichenbach calls them, ranged in lines; the ruff or callus at the base consists of nineteen lamellæ, sulphur-coloured with brown keels, and the column is yellowish washed with brown and purple. Several varieties have been observed.—*Ecuador*.

FIG.—*Illust. Hort.*, 3 ser., t. 431; *Orchid Album*, i. t. 17; *Pact. Fl. Gard.*, reissue, t. 21.

SYN.—*Zygopetalum Klabochorum*.

P. Lehmanni, *Richb. f.*—This, which is one of the most charming species of *Pescatorea*, in habit resembles its congeners, being bulbless, with linear lorate acute leaves, from one to one and a half foot in height, and about an inch broad, the solitary flowers emerging from their axils. These flowers are large, from three to three and a half inches across, and very showy; the sepals and petals are broadly cuneate oblong, white with close curved parallel lines of reddish purple extending nearly to the edge; and the lip is deep mauve purple, the anterior portion oblong, revolute, retuse, and covered with long bristle-like papillæ of a purple tint, the callus or ruff of about eleven ridges being of a chestnut brown colour. It appears to bloom at different times of the year.—*Ecuador*.

FIG.—*Orchid Album*, ii. t. 57; *Gard. Chron.*, N.S., xvii. 45, fig. 5; *Illust. Hort.*, 3 ser., t. 471.

SYN.—*Zygopetalum Lehmanni*.

P. Roezlii, *Richb. f.*—This is a very distinct plant, though allied to *P. Dayana*. It seems to vary a great deal in the colouring of its large flowers. In the form usually met with the oblong sepals and cuneate obovate petals are white, beautifully tipped with violaceous lilac or purplish rose, and the blade of the lip, excepting the callus, is of the same showy colours.—*Ecuador*.

P. Russeliana, *Richb. f.*—A large-flowered beautiful and free-flowering species, with broad sepals and petals which are cream-coloured, tipped with reddish purple; the lip is of the same reddish purple colour, with a yellow ruff or callus having fifteen lamellæ with deep crimson purple angles.

It was named in honour of the late Provost Russel of Falkirk.—*Ecuador*.

SYN.—*Zygopetalum Russelimum*.

P. Wallisii, *Linden et Rehb. f.*—This superb species resembles *P. cerina* in its general appearance, but has larger flowers. It forms a tuft of lorate acuminate leaves, from the axils of which issue the short peduncles, bearing each a solitary blossom of some three inches in diameter, the oblong obtuse apiculate sepals and rhomboid petals being of a rich creamy white tipped with bluish violet; the oblong retuse furrowed lip is of a deeper violet, with a white margin, and the ruff or callus of seventeen keels is also white tinted in front with purple. The column is white, with a band of dark violet at the base. It is a fine addition to this beautiful genus, requiring somewhat cool treatment.—*Ecuador*.

FIG.—*Flore des Serres*, t. 1828.

SYN.—*Zygopetalum Wallisii*.

PHAJUS, *Loureiro*.

(*T. ibe* Epidendreae, *subtribe* Bletieae.)

A fine genus of tall-growing terrestrial Orchids, which produce their well-furnished racemes of beautiful flowers very freely, and which when well grown are noble objects. The name is sometimes written *Phaius*. The stems are in some of the species pseudobulbous; the leaves are large and plicate; the flower scape in the genuine species is erect and leafless, and the flowers, which grow in racemes, are large and showy. The sepals are free, and the lip gibbose or spurred at the base, its lateral lobes broad and rolled over the elongated footless column. There are about a dozen species, which are found in Tropical Asia, India, Ceylon, the Malay Islands, Madagascar, Australia, and China. A few leafy stemmed species with nodding racemes are now referred to the genus *Thunia*.

Culture.—These plants are of easy culture, but they will amply repay any amount of attention and care. They are of

large growth, and even when not in bloom their noble foliage is extremely ornamental. If fine specimens are wanted, they should be grown in pots of large size, with loam, leaf mould, and rotten cow-dung, as directed in the remarks on Terrestrial Orchids. They require plenty of heat and moisture at their roots in the growing season, but the water should not touch the young growth. During their period of rest they may be placed in a cooler house, and should then be supplied with very little water. Propagation is effected by dividing the bulbs after the blooming season is past.

P. Blumei, *Lindley*.—A very handsome plant, resembling *P. grandifolius* in its habit of growth, as it does also in the size and the shape of its flowers. From a creeping root-like caudex it produces roundish ovate pseudobulbs, which are marked by annular scars, and develop lanceolate acuminate strongly plicate leaves two feet long. The scape springs up from the base of the bulbs and grows three to four feet high, terminated by a floral raceme a foot long; the sepals and petals are lanceolate acuminate, olive brown, the lip rolled up over the column, ochraceous outside, the larger ovate undulated front lobe mucronate, crimson with a yellowish margin. It flowers during the spring months.—*Java*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 1, et t. 5 D; *De Vriese, Ill. Orch.*, tt. 8, 11; *Gartenflora*, t. 464.

SYN.—*Limodorum Incarvillei*.

P. Blumei Bernaysii, *Rchb. f.*—A very showy variety, closely resembling *P. Blumei* in habit and general appearance, the pseudobulbs being roundish ovate, the dark green leaves lanceolate and strongly nervose, and the racemes of flowers terminating scapes from two to three feet high. The sepals and petals are lanceolate acuminate, white outside, soft pale yellow within; and the lip is three-lobed, as long as the petals, the convolute portion sulphur yellow, the lateral lobes rounded white, the middle lobe orbicular apiculate, with a white wavy recurved margin, yellow on the disk, and a conical curved greenish spur.—*Australia: Queensland*.

FIG.—*Bot. Mag.*, t. 6032.

SYN.—*P. Bernaysii*.

P. grandifolius, *Loureiro*.—This noble evergreen terrestrial Orchid is an old inhabitant of our gardens, having been

introduced upwards of a century ago. It has largish ovate pseudobulbs, oblong-lanceolate acute plicately nervose leaves, and radical scapes three feet or upwards in height, bearing long erect racemes of showy flowers, of which the oblong-lanceolate sepals and petals are white on the outer surface, and of a chocolate brown within; the oblong cucullate lip, the base of which is folded over the column, is white stained with yellow on the throat and disk, and there veined with crimson, the sides of the convolute portion being also flushed with crimson both outside and in. It blooms during the winter and spring months, and lasts long in beauty if kept in a cool house. This is a most useful plant for winter blooming, as it will flower beautifully when grown in small pots, and in this state may be used for the decoration of



PHAJUS GRANDIFOLIUS.

apartments during the dull months, without suffering the least injury. It also makes a noble plant for exhibition when grown into a large specimen, but to retard it for this purpose it requires to be kept very cool during autumn and winter. The variety *superbus* figured by Van Houtte has the inside of the sepals and petals of a brilliant chamois, and the lip bright amaranth margined with rose.—*China; Australia.*

FIG.—*Bot. Mag.*, t. 1924; *Lodd. Bot. Cab.*, t. 20; *Flore des Serres*, t. 738 (*superbus*); *Aiton, Hort. Kew.* iii. t. 12; *Andr. Bot. Rep.*, t. 426; *Schneevogt, Icon. Pl.*, t. 5; *Redouté, Lil.*, t. 43; *Gard. Chron.*, 1872, 733, fig. 176 (*specimen plant*); *Id.*, n.s., xviii. 565, fig. 99; *Kerner, Hort. Semp.*, t. 49; *L'Her. Sert. Ang.*, t. 28.

SYN.—*Phajus Tankervillei*; *Bletia Tankervilleæ*; *Limodorum Tankervilleæ*; *Pachyne spectabilis*.

P. irroratus, *Rchb. f.*—This beautiful and pleasing variety is the result of a cross effected by Mr. Dominy between *Phajus grandifolius* and *Calanthe vestita*. The pseudobulbs are ovato-conical, and bear dark green lanceolate plaited leaves, similar to those of *P. grandifolius*; the flowers are produced in an erect raceme, and are about three inches in expansion, the sepals and petals cream-coloured tipped and flushed with rosy pink, and the lip nearly round, notched on each side near the front, the anterior

part rather crisp, creamy white, stained with yellow towards the base, where there are three obscure keels. The filiform spur is compressed, hairy, retuse and bilobed at the apex.



PHAJUS IRRORATUS.

The flowers of this elegant form are produced during mid-winter, and the treatment recommended for the other kinds suits the plant admirably.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 426; *Gard. Chron.*, 1867, 264, with fig.; *Id.*, N.S. xviii. 565, fig. 100.

P. irroratus purpureus, *Hort.*—A very pretty variety of the foregoing hybrid, with the sepals and petals white, the lip dull rose colour, and the throat yellow. It flowers in March and April.—*Garden hybrid*.

P. maculatus, *Lindley*.—A very handsome species, by far too much neglected by the majority of Orchid growers, being of a very showy character during the spring months. The pseudobulbs are large, ovate oblong; the leaves are ovate-lanceolate acuminate, plicate, dark green spotted with yellow; the scapes are two feet or more in height springing from the side of the bulbs, and bearing a raceme of ten

or twelve flowers, which are yellow, the lip involutely cylindrical, fleshy, with a blunt spur, three-lobed in front, the middle lobe plicate-crenate streaked with reddish brown at the edge. There are two varieties of this plant, the best one being very showy and desirable.—*Northern India; Japan.*

FIG.—*Bot. Mag.*, t. 2719; *Id.*, t. 3960; *Blume, Orch. Arch. Ind.*, t. 5 E; *Lodd. Bot. Cab.*, t. 1803; *Rehb. Fl. Exot.*, t. 65.

SYN.—*Bletia Woodfordii*; *B. flava*.

P. tuberculosus, *Blume*.—A very handsome and distinct species producing short fusiform fleshy stems, from which proceed the new growths bearing a tuft of oblong-acuminate plicate leaves about a foot long. The erect flower stems are produced with the young leafy growths and terminate in a raceme of six or more flowers, which are each about two



PHAJUS TUBERCULOSUS.

and a half inches across. The sepals and somewhat broader petals are pure white, and the lip, which is obliquely funnel-shaped, has the two broad side lobes yellow thickly marked with dull crimson spots, which on the yellow ground produce a bronzy effect, while the front lobe is roundish

emarginate smaller and wavy, white with rosy purple spots, the disk being decorated with orange yellow crests. It is to be regretted that this plant should prove difficult of cultivation, as it is one of the most beautiful Orchids we have seen for many years. It blossoms during January and February. We saw a fine variety of this plant in the collection of Baron Schröder, The Dell, Staines; and another with A. Sillem, Esq., Sydenham, who has flowered three plants for two successive years, and fine large varieties they were. Mr. Billiard writes us as follows respecting their cultivation:—"Our plants have been grown on the north-east side of a span-roofed house, close to the glass, in a temperature ranging from 65° to 70°. We keep the sun from them as much as possible. They are potted in equal parts of peat and moss, with a small quantity of sharp sand, and plenty of crocks and charcoal as drainage. When making their growth they delight in an abundance of moisture at the roots. We find it necessary to sponge them weekly, as red spider, thrips, and green fly are particularly fond of them. This year from three plants we have four spikes, which have opened twenty-three flowers. Last year the same plants had one spike each, which gave us eighteen flowers in all."—*Madagascar*.

FIG.—*Orchid Album*, ii. t. 91; *Blume, Orch. Arch. Ind.*, t. 11 B; *Du Pet. Thouars, Orch. Iles d'Afr.*, t. 31; *Gard. Chron.*, n.s., xv. 341, fig. 67; *Id.*, xviii. 565, fig. 101.

SYN.—*Limodorum tuberosum*; *Bletia tuberosa*.

P. Wallichii, *Lindley*.—A large-growing plant of great beauty, attaining some four or five feet in height, producing its long upright racemes of flowers in March, April, and May, and continuing to flower for six weeks. The plant has entirely the habit of *P. grandifolius*, having largish ovate pseudobulbs, tufts of oblong-lanceolate nervose leaves, and tall flower scapes springing from the side of the pseudobulbs. The flowers are white externally, orange yellow or buff suffused with reddish purple inside. The sepals and petals are lanceolate, and as well as the cucullate crispy-edged lip much acuminate, the spur being curved and emarginate. It makes a noble plant for winter blooming, and, if retarded as directed for *P. grandifolius*, is invaluable for exhibition purposes. For further notice of these plants, see chapter on Preparing Orchids for Travelling to Exhibitions.—*India: Sylhet*.

FIG.—*Wall. Pl. Asiat. Rar.*, ii. t. 158; *Paxton, Mag. Bot.*, vi. 193, with tab.

PHALÉNOPSIS, *Blume.*

(Tribe Vandææ, subtribe Sarcantheæ.)

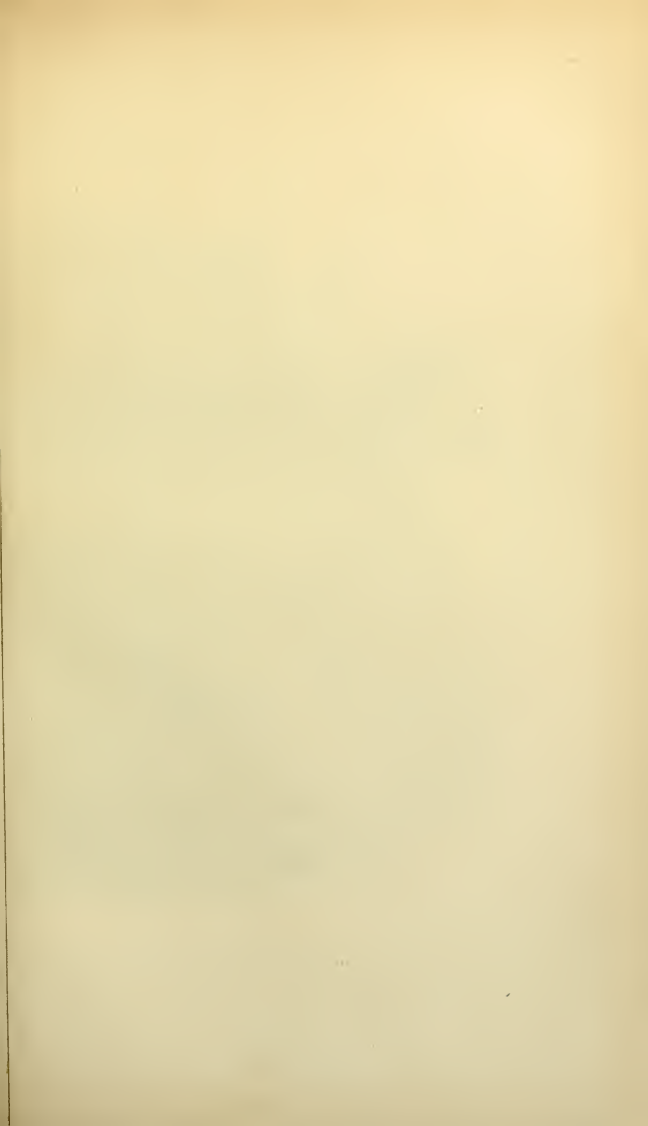
A moderately extensive genus of epiphytes, the species of which are not of very large growth, but the flowers of several of them are magnificent and last long in beauty. The genus has, moreover, received several grand and meritorious accessions within the last few years, so that it is much and deservedly esteemed, and worth a place in every collection, no less for the attractions of its flowers than for the comparatively small space which the plants occupy. The known species are all compact handsome plants, without pseudobulbs, but emitting stout fleshy roots from the crown, and also producing very thick distichous leaves, from the axils of which the scapes of charming flowers arise. The flowers are remarkably showy, with spreading sepals, much broader petals contracted at the base, and a spurless lip spreading from the base and continuous with the column, the disk and base of the lamina variously appendiculate. The flowers themselves are very freely produced, and last a long time; indeed, they may be had in bloom all the year round. We have seen *P. grandiflora* blooming for six months, and have ourselves exhibited the same plant for seven years at six exhibitions during each year, and sometimes with as many as from seventy to eighty flowers expanded on it at one time. Some of the species of *Phalænopsis* now in cultivation are amongst the finest Orchids yet introduced to this country, and no collection, however small, should be without an adequate number of representatives of these lovely plants, which are free-flowering, and, as we have already pointed out, continue for a long time in perfection—qualities which proclaim them to be plants of more than ordinary value.

There are two sections—*Euphalænopsis*, in which the petals

are much broader than the sepals, and the apex of the lip is emarginate or divided into two divaricate or cirrhiferous lobes; and *Stauroglottis*, in which the petals and sepals are similar and the tip of the lip entire. The species now number two dozen or more, and are found in the Malayan Archipelago, and in the eastern provinces of India.

Culture.—The various species all require the same kind of treatment, and an East Indian heat, together with a good supply of water during their growing season, for they are found in Tropical Asia, *e.g.* Java, Borneo, Sumatra, the Philippine and Sunda Isles, or some in the Burmese territory and other parts of the East, where the heat is high, a natural condition which under artificial circumstances ought to be imitated as nearly as possible. They are found growing on bare rocks and on the branches of trees in damp moist places, where, during the rainy season, an immense quantity of water falls. Nevertheless, they are of easy culture, and if properly attended to are seldom out of order; but since they have no succulent pseudobulbs to support them, they require, in order to grow them to perfection, somewhat more care and attention than the majority of the plants belonging to this natural order. Thus, they need more moisture at their roots during the growing season—in fact, they should never be allowed to get dry, for if so, they are apt to shrivel, and often lose their bottom leaves, which spoils their appearance, the beauty of these plants consisting almost as much in their having good foliage as good flowers.

The growing season is from March to the end of October, during which time the temperature by day should range from 70° to 75°, allowing it to rise to 80° or more by sun heat, provided the house be shaded, for the sun will scorch the thick fleshy leaves, and if so scorched they will soon decay and spoil the plant. Sometimes they will







PHALÆNOPSIS AT HOME.

do better in one part of the house than in another, therefore if they do not succeed in one part, the cultivator should remove them to another. The night temperature should range from 65° to 70° in March and April, but later on it may be allowed to rise a few degrees higher. During their resting season, from the end of October to February, the temperature should range from 60° to 65° by night, and 65° by day, or even a little more with sun heat will not do any harm. In ventilating the house air should be admitted close to the hot water pipes, so that it may be warmed before it becomes dispersed over the house, and to keep up a moist atmosphere some water should be sprinkled about on fine days, but this should be done in the morning, so that the house may become dry by night.

The species of *Phalænopsis* are grown in different ways. Sometimes they are placed on blocks, sometimes in pots or sometimes in baskets. We have found them to succeed well under all three modes of treatment; they require, however, more moisture at the roots if grown on blocks or rafts, whilst if grown in pots, more drainage will be required than when they are planted in baskets. For pot culture, the best way is to place an inverted pot in the bottom of the one intended for the plant, and fill in the intervening space with potsherds, broken into pieces about two inches square, to within two inches of the rim; sphagnum, having a few small pieces of charcoal mixed with it, should then be placed upon the drainage, and the plant elevated three inches above the rim, taking care to keep the base of the plant well above the moss. The successful culture of *Phalænopsis*, as well as of all other plants, depends upon efficient drainage. If grown on blocks or rafts they should be placed on good-sized ones, so that there may be plenty of surface for the roots to cling to. In fastening the plant on, first place a little live sphagnum on

the block, then fix the plant on with copper wire, and afterwards hang it up near the roof, but not too near the glass, or the plants may get injured by cold, which should be specially guarded against during winter.

If the plants should get into an unhealthy condition, the best plan is to turn them out of their pots or baskets, and shake all the material away from their roots, wash them with clean water, cut off all the decayed parts of roots or leaves, and replace them on blocks or rafts with a little sphagnum, giving them a good supply of moisture, and placing them at the warmest end of the house, but not too much exposed to the light. Under this treatment they will soon begin to root and improve in appearance. We need hardly add that they should be kept clear of insects, especially of the thrips, which soon disfigures the foliage. Constant attention is necessary, as they require the frequent washing of the leaves with a sponge and clean tepid water, or the fumigation of the house with tobacco smoke, to keep them clear of all such pests; the latter operation, however—that of fumigation—should be conducted with great care.

These plants are difficult to propagate, as they supply few opportunities for division. To this rule, however, *P. Lüddemanniana* is an exception, as it produces young plants upon the flower scapes very freely. Sometimes the other species also will produce young plants on the old flower stems, and we have seen *P. Stuartiana* produce young plants upon its roots. When this happens they should be left on till well rooted, and then placed on small blocks.

Too much water must not be given to these plants at any time, and they must not be watered overhead in the winter, or during dull weather, or disastrous results may follow. The reader would do well to refer to our remarks on watering at pages 89 and 90.





PHALÆNOPSIS AMETHYSTINA.



PHALÆNOPSIS AMABILIS.

P. amabilis, *Lindley* (? *Blume*).—The Queen of Orchids. This magnificent plant, which attaches itself to the trunks of trees by its stout fleshy roots, produces its graceful racemes of flowers nearly all the year round. The large thick elliptic-lanceolate obliquely retuse leaves form a distichous tuft, and from their axils proceed the long drooping racemes of spreading flowers, which are each three inches across, and arranged in a distichous manner along the rachis. The elliptic-ovate sepals and the broad subrhomboidal petals are pure white, the lip of the same colour, but beautifully streaked and spotted inside with rose pink and yellow, shorter than the sepals, three-lobed, the side lobes ascending petaloid, the central lobe hastate, bearing at the extremity two incurved twisted cirrhi. The flowers continue in perfection a long time, if they are kept free from damp, but if allowed to get wet they are apt to become spotted. There are many varieties of this fine species.—*Java, Amboyna, Philippine Islands.*

FIG.—*Bot. Mag.*, t. 4297; *Bot. Reg.*, 1838, t. 34; *Blume, Tabellen*, 44; *Id., Rumphia*, tt. 194, 199; *Flore des Serres*, t. 36; *Moore, Ill. Orch. Pl.*, *Phalænopsis*, t. 1; *Bennett, Fl. Jav.*, t. 8; *Maund, Botanist*, iii. t. 133; *Paxton, Mag. Bot.*, vii. 49, with tab.

SYN.—*P. Aphrodite.*

P. amabilis *Dayana*, *Hort.*—A very beautiful and distinctly marked variety, named in compliment to John Day, Esq., Tottenham, by whom it was first flowered. It has very large flowers, of which the two lower sepals are thickly but distinctly dotted with carmine over about half their surface; and the lip has the side lobes coloured deep yellow at the lower edge, and the central trowel-shaped or hastate lobe heavily marked with carmine-crimson across the base, having a distinct stripe of the same colour down its centre.—*Eastern Archipelago.*

FIG.—*Orchid Album*, i. t. 11.

P. amethystina, *Rehb. f.*—An elegant little plant, perhaps the dwarfiest of Phalænopsids, which, though not so showy as some of its congeners, is yet a nice addition to this beautiful and popular family. The plant is furnished with dark-coloured flattened roots, and the leaves are cuneate-obovate acute, striated, three to four inches long, stout, waved at the edges, and dark green. The scape is about a foot long, sometimes with a few short branches, and bears several rather small flowers, the sepals and petals white, spreading, and the lip white, tinged with yellow at the base, the centre part rich amethyst

suffused with purple, three-lobed, the lateral lobes wedge-shaped, the central one rhombiform with two small cirrhi at its base, and deeply emarginate in front. The flower is prolonged at the back into a short spur.—*Sunda Isles*.

FIG.—*Gard. Chron.*, 1870, 1731, fig. 299; *Puydt, Les Orch.*, 224, fig. 226—7.

P. antennifera, *Rchb. f.*—This species is in the way of *P. Esmeralda*, but is totally distinct in colour. It was introduced and flowered by us for the first time. As far as we have seen, the plants have the habit of *P. Esmeralda*, but are altogether stronger, and the foliage is entirely green. The flowers grow on scapes upwards of two feet long, and have the same shape as those of the species just named. The sepals and petals are light rose colour, the tips of the sepals brick red outside; and the unguiculate lip is trifid, the side laciniae and basilar antennae deep orange striped with red, and the anterior lobe amethyst. We have had plants of this species producing a branched inflorescence. It blooms in September and October.—*Burmah*.

P. Aphrodite.—See *PHALÆNOPSIS AMABILIS*.

P. casta, *Rchb. f.*—This plant is supposed to be a natural mule, having the leaves of *P. Schilleriana* and the flowers of *P. amabilis*. The leaves are slightly spotted in the young state, but the spots disappear as they attain maturity. The flowers are white as in *P. amabilis*, the bases of the upper sepals and petals being slightly tinted with purple, and those of the lateral sepals spotted. The callus resembles that of *P. amabilis*.—*Philippine Islands*.

P. Corningiana, *Rchb. f.*—A handsome species allied to *P. sumatrana*, but quite distinct in the peculiar callosity of the base of the lip. The sepals are bluntly keeled on the outer surface, the upper one cuneate-oblong, marked with longitudinal purple-brown stripes and a few transverse bars at its base, the longitudinal bars merging into numerous hieroglyphical blotches; the deflexed lateral sepals are almost wholly purple-brown bordered and spotted with yellowish white; the cuneate oblong-ligulate petals are marked with longitudinal purple-brown bars and blotches, and the lip, which is bent in front of the claw so as to stand forward, has its side lobes erect ligulate retuse, with a small bristle on the upper angle, white, yellow on the umbonate callus in the

middle, the central part oblong-ligulate, of a rich violet-purple, with a tuft of hairs on the anterior middle line. It is named in honour of Erastus Corning, Esq., of Albany, N.Y. The plant flowers during the spring months.—*Eastern Archipelago*.

P. Cornu-cervi, *Blume et Richb. f.*—A very pretty bulbless Orchid, which, though not particularly showy in a small state, blooms very freely when grown vigorously. The leaves are distichous leathery cuneate-oblong, eight inches or more in length, and of a bright green colour. The peduncles are lateral, erect, clavate, flattened out towards the apex, where from six to twelve flowers are produced in succession; the dorsal sepal is narrow lanceolate, the lateral ones slightly falcate, the former greenish yellow cross-banded with reddish brown, and having a wider blotch at the base, the latter with the outer halves only banded with brown; the petals are somewhat smaller, greenish yellow, with cross-bars of brown; and the lip is whitish, clawed, hollowed on the disk, and incurved, tripartite, the lateral divisions bluntly oblong, the intermediate one crescent-shaped and apiculate.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5570; *Batem. 2nd Cent. Orch. Pl.*, t. 178; *Kuhl and Hasselt, Gen. et Sp. Orch.*, t. 1.

SYN.—*Polychilos Cornu-cervi*.

P. equestris.—See PHALÆNOPSIS ROSEA.

P. Esmeralda, *Richb. f.*—Although not competing with some of the showier kinds as regards the size of its blossoms, this species is nevertheless worthy of cultivation on account of the attractive colouring of its flowers. The leaves are oblong-ligulate acute; and the flowers, which are produced on the usual lateral scapes, and are about the size of those of *P. equestris*, and from fifteen to twenty in an erect raceme, have bluntly oblong sepals and petals, and a three-lobed lip, of which the two largish lateral lobes are oblong divaricate, and the front lobe is longer and linguiform; they are of an uniform brilliant amethyst colour, and produced during the summer months.—*Cochin China*.

FIG.—*Floral Mag.*, 2 ser., t. 358.

P. grandiflora, *Lindley*.—A truly handsome and noble Orchid, second to none of which we as yet possess any precise knowledge. In its general character it is similar to *P. amabilis*. The plant is ebulbous, but the leaves are longer, and of

a lighter green than in *P. amabilis*, distichous, oblong apiculate, and very thick; the flower scapes spring from sides of the leaf tufts in the same way as in *P. amabilis*. The chief difference between the two, besides that of the length of the leaves, is that *P. grandiflora* has considerably larger flowers, with the front edge of the side lobes of the lip yellow instead of rose-colour, the cirrhi at the tip of the linear-hastate middle lobe being also yellow, not white. The flower stems are tinted with purple. This makes a fine plant for exhibition. It blooms at different times of the year, and lasts long in beauty.—*Java; Borneo.*

FIG.—*Bot. Mag.*, t. 5184; *Gard. Chron.*, 1848, 39, with fig.; *Batem. 2nd Cent. Orch. Pl.*, t. 114; *L'Hort. Franc.*, 1860, t. 19; *Puydt, Les Orch.*, t. 34.
 SYN.—*P. amabilis* (Blume—fide Rehb.).

P. grandiflora aurea, Hort.—This is certainly the grandest of the many varieties of this noble Orchid. It is a compact-growing plant, with distichous tufts of leathery oblong leaves of a light green colour, and very large flowers, which have the sepals and petals unusually broad and rounded, and of the normal opaque or ivory white, the lip being conspicuously marked with deep orange over its whole anterior portion, the front sides of the lateral lobes and the terminal cirrhi being more deeply coloured than the other parts. The variety is distinguishable by its yellowish green flower stems, which are developed at different times of the year.—*Borneo; Tamelan Islands.*

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 7.

P. intermedia, Lindley.—A very pretty species, supposed to be a natural mule between *P. amabilis* and *P. rosea*. Its general habit resembles that of other kinds of Phalænopsids. The leaves agree with those of *P. amabilis*, and are pale green in colour. The flowers, which grow on a deep brownish purple scape, are medium-sized, the sepals oblong acute, concave, white, the petals much larger, lozenge-shaped, pure white, with a few minute rosy speckles at the base; and the lip three-lobed, the lateral lobes erect, wedge-shaped, with blunt angles, violet with a few crimson spots, the middle lobe ovate deep crimson, with the point separated into two short tendrils, as in *P. amabilis*; the crest of the disk is nearly square, deep yellow with crimson dots. This beautiful plant is very rare.—*Philippine Islands; Manilla.*

FIG.—*Paxt. Fl. Gard.*, iii. 163, fig. 310; *Lem. Jard. Fl.*, iv., p. 44.
 SYN.—*P. Lobbii.*





PHALÆNOPSIS PORTEL.



P. intermedia Brymeriana, *Rehb. f.*—A distinct and very beautiful variety, named in honour of W. E. Brymer, Esq., M.P., Ilsington House, Dorchester. In habit of growth it is similar to *P. intermedia*. The leaves are about nine inches long, and slightly speckled. The flowers have the sepals and petals white, the lateral sepals spotted with purple at the base, the petals richly suffused with rosy lilac, and the lip a pale amethyst colour, the lateral parts white edged and spotted with magenta.—*Philippine Islands*.

FIG.—*Floral Mag.*, 2 ser., t. 263.

P. intermedia Portei, *Rehb. f.*—This beautiful plant, which is very rare, is not unlikely to be a natural hybrid, and if so



PHALÆNOPSIS INTERMEDIA PORTEI.

we should guess it to be a cross between *P. rosea* and *P. amabilis*; let it, however, be hybrid or species, it ranks among the very handsomest of its class. In general habit it resembles *P. grandiflora*, the leaves being broad oblong acute, about a foot in length, the upper side dark green, the under side dark purplish, more in the way of *P. amabilis*. The spikes are arched and branched, supporting the numerous large flowers. In one form the oblong sepals and rhomboid petals are white, suffused with light rose at the base, the lip rich dark purplish rose, with the lateral lobes bluntly wedge-shaped, rosy, the base of the front lobe tinted with orange-yellow, and the disk and callus yellow, the latter marked with deep purple spots. The flowers are of good substance, and remain in perfection a very long time. This species was introduced and first flowered, many years ago, by R. Warner, Esq.—*Philippine Islands*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 2; *Floral Mag.*, 2 ser., t. 162; *Gard. Chron.*, N.S., v. 369, fig. 71 (specimen plant), fig. 72 (flower).

P. leucorrhoda, *Rchb. f.*—This handsome and distinct *Phalænopsis* is supposed to be a natural hybrid between *P. Schilleriana* and *P. amabilis*. The roots are flat; the leaves, which in some forms are green, are usually mottled, but the spots are not so distinct as in *P. Schilleriana*; and the flowers are as large as in an average form of that species. The sepals and petals are white, the lateral sepals spotted with purple inside at the base, and the petals tinged towards the base with rose; the lateral lobes of the lip, which are large and rounded, are conspicuously striolate with purple at the base, the saddle-shaped callus is orange with dark purple spots, and the disk yellowish. It blooms in the winter season.—*Philippine Islands*.

FIG.—*Floral Mag.*, 2 ser., t. 166.

P. Lobbii.—See *PHALÆNOPSIS INTERMEDIA*.

P. Lowii, *Rchb. f.*—This charming species forms a tuft of few oblong acute fleshy bright green leaves, from the base of which very stout fibrous roots are produced, as well as the lateral slender four or five-flowered purplish scape. The flowers are very distinct in character, about an inch and a half across, with ovate acute dorsal and oblong lateral sepals, broad roundish cuneate petals, and a small three-lobed lip about as long as the lateral sepals, the side lobes of which

are linear and reflexed, and the intermediate one oblong ascending, rich violet-purple, the bases of the white sepals and petals flushed with pale purple, as are the lateral lobes of the lip, and the long proboscis-like rostellum or tip of the column. The large rounded petals give a fulness to the flower which adds greatly to its beauty. Though a small plant, it produces a good spike of flowers. It is not so robust in growth as many species, and requires to be kept near the glass, so that it may get an abundance of light. In its natural habitats it grows on bare rocks exposed to the full influence of the sun, where in the rainy or growing season it is perfectly deluged with water, and in the resting season it loses its leaves; under cultivation it requires great attention during this time, or it will entirely perish. Blooms in summer.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5351; *Batem. 2nd Cent. Orch. Pl.*, t. 168; *Warner, Sel. Orch. Pl.*, ii. t. 15.

P. Lüddemanniana, *Rchb. f.*—A very pretty dwarf species allied to *P. sumatrana*. The plant is very similar to *P. rosea* in general appearance. The leaves are thick in texture, ligulate-oblong acute, shining, six to eight inches in length, and the short flower stem is lateral and few-flowered. The flowers are entirely marked by parallel cross-bars of colour; both sepals and petals are oblong acute, white, beautifully barred with amethyst in the lower half, and with cinnamon brown in the upper half; and the lip is three-lobed, the lateral lobes ligulate bidentate, pale purplish, and the middle lobe oblong, of a rich deep violet. It flowers at different times of the year, and lasts in bloom for two months. This species produces young plants on the flower spikes more freely than any other kind.—*Philippine Islands.*

FIG.—*Bot. Mag.*, t. 5523; *Batem. 2nd Cent. Orch. Pl.*, t. 133; *Florist and Pomologist*, 1865, 257, t. 254; *Flore des Serres*, t. 1636; *Rev. Hort.*, 1872, 390, with tab.

P. Lüddemanniana ochracea, *Carrière.*—In this variety the flowers have the sepals and petals of a pale yellowish rose barred with pale brown, thus forming a distinct and pretty companion to the original brighter-coloured *P. Lüddemanniana*.—*Philippine Islands.*

FIG.—*Rev. Hort.*, 1872, 390, with tab.

P. Mannii, *Rchb. f.*—A very pretty species, rather near to *P. Cornu-cervi*, with oblong-ligulate acute leaves, a span to a

foot long, green, with a violet edge and many violet spots near the base. The flowers are numerous (thirteen or more), in deflexed racemes, with the stalks scarcely winged; they are about two inches in diameter, the oblong-ligulate sepals and smaller linear-falcate petals honey-yellow, conspicuously blotched and spotted with rich brown; the lip is very singular, the lateral lobes being erect ligulate retuse, whitish streaked with purple, and the whitish central lobe crescent-shaped and fringed.—*Assam*.

P. Mariæ, *Burbidge*.—This elegant dwarf-habited species resembles *P. sumatrana* in its manner of growth, and its flowers are also similar in form to those of that plant. The leaves are deflexed, distichous, ligulate acute, glossy, and obscurely striate. The flowers grow in a lateral drooping raceme, and are about an inch and a half across; the oblong bluntish sepals and the somewhat broader petals are white, each marked with about six bold transverse bars of chestnut brown, the basal blotches being amethyst; the lip, which has the middle lobe obovate oblong apiculate, convex, and plane, not pilose, is of a rich deep magenta-purple margined with white. It was discovered by Mr. F. W. Burbidge when collecting for Messrs. Veitch & Sons.—*Sunda Isles*.

FIG.—*Orchid Album*, ii, t. 80.

P. Parishii, *Rchb. f.*—A “lovely little plant,” with thick fleshy roots, distichous tufts of oblong-lanceolate acute deep green leathery leaves from two to four inches long, and short many (6 to 10) flowered racemes, the flowers actually small, being less than an inch in diameter, but comparatively large and effective for the size of the plants, from their being numerous with the parts well spread out. The sepals are oblong or ovate, the petals obovate spatulate, both white, and the lip has the lateral lobes small, horn-like, yellow with purple blotches, and the front lobe broadly triangular, spread out, and of a rich deep amethyst-purple; the disk has a semi-lunar callus, the edge of which is broken up into a fimbriate crest, and behind this is a projecting linear appendage divided into four slender filaments almost as long as the lobe itself. The strong contrast of colour in the rather crowded flowers renders the plant very beautiful when in blossom, which occurs during the summer season.—*Burmah*; *Eastern Himalaya*.

FIG.—*Bot. Mog.*, t. 5815; *Xenia Orch.*, ii, t. 156, fig. 1; *Refug. Bot.*, ii, t. 85.

P. Reichenbachiana, *Rchb. f. et Sander*.—In growth this plant resembles *P. Lüddemanniana*. It is a distinct species, with leaves upwards of a foot long, and nearly three inches broad, strongly keeled, and a stout unbranched peduncle a foot and a half long, bearing from one to two dozen flowers equal to those of a fine *P. sumatrana*. The sepals and petals are cream-coloured, irregularly blotched and barred with dull reddish purple, the lip triangular dilated mauve blue with the side lobes orange and white. The anterior disk bears a cushion of hairs.—*East Tropical Asia*.

P. rosea, *Lindley*.—A rather small-flowered but pretty species. The plant forms a tuft of leathery oblong convex or recurved leaves six to eight inches long, and of a bright light green colour. The scape is lateral, about a foot and a half in height, stiff and ascending, branched, with a drooping purplish panicle of some dozen or more flowers, which are an inch across. The sepals and petals are oblong-lanceolate, white, slightly tinged with rose pink, especially along the centre; the lip with the front lobe ovate acuminate, ascending, deep violet in the centre, the side lobes linear-spathulate, oblique, incurved, stained in some varieties with rich orange, the crest concave, lunate, rounded. It blooms at different times of the year, lasting long in beauty. It sometimes produces from twelve to fourteen spikes of bloom, and then makes a very handsome specimen. If the old spikes are left, they will keep blooming for several years, as in most other species of this genus, and as the spikes elongate the flowers come larger.—*Philippine Islands*.

FIG.—*Paxt. Fl. Gard.*, ii. t. 72; *Lem. Jard. Fl.*, iii. t. 283; *Bot. Mag.*, t. 5212; *Jennings, Orch.*, t. 27; *Flore des Serres*, t. 1645; *Gard. Chron.*, 1848, 671, with fig.

SYN.—*P. equestris*; *Stauroglottis equestris*.

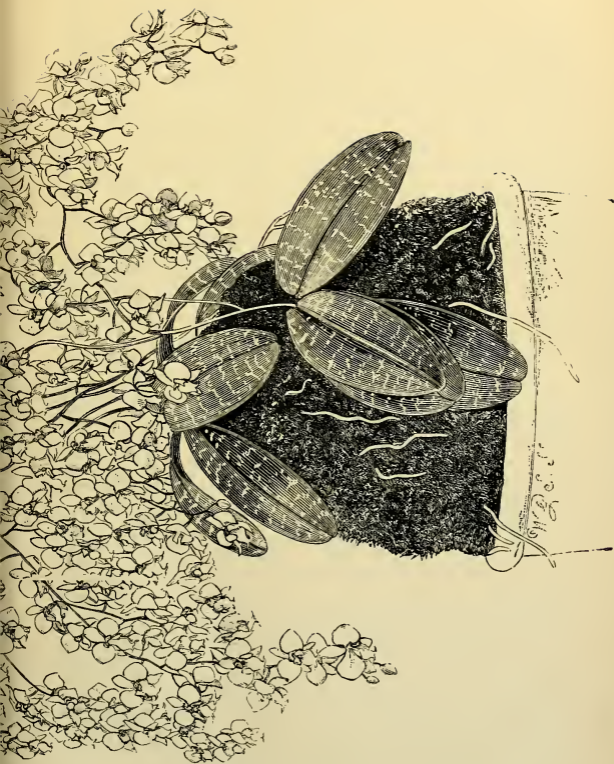
P. Sanderiana, *Rchb. f.*—A most charming plant, which it is suggested may be a natural cross between *P. amabilis* and *P. Schilleriana*. Its general appearance is that of a rose-coloured form of *P. amabilis*. The foliage is similar to that of *P. amabilis*, but the upper surface is a dark silver grey, similar in colour to the markings on the leaves of *P. Schilleriana*. The sepals, petals, and lip resemble those of *P. amabilis*, but are deeply flushed with a pleasing rose colour, some being whitish rose, some rose-purple, with well-defined areas of darker purple; the lip is white, marked with cinnamon or purple stripes, and some touches of yellow. Reichenbach

states that the very broad petals constitute the greatest charms of its flowers. The tendrils of the lip assume the anchor-like form seen in *P. Schilleriana*. The callus, which is peculiar, being horse-shoe shaped with one blunt angle outwards on each side, is white or whitish with brown or purple freckles. It flowers during the autumn months. In the var. *marmorata* the lateral sepals have numerous rows of small purple spots at the base, and the lip has three broad basal purple bars on the side lobes, and a middle lobe with purple dots in the central line and fine purple stains at the sides.—*Eastern Archipelago*.

FIG.—*Orchid Album*, v. t. 209.

P. Schilleriana, *Rchb. f.*—A magnificent plant, undoubtedly one of the finest species in cultivation, and quite dissimilar from all other kinds. The roots of this plant are very distinct, being flat and rough, and, moreover, very free in growth. The leaves are oblong-obtuse, six to eighteen inches long, beautifully variegated, being of a dark green colour, mottled with irregular bands or streaks of greyish white on the upper side, the under surface purple. The scapes or peduncles are produced from the axils of the leaves, and in their native country are sometimes more than three feet long, and more branched than those of other kinds. The individual blossoms measure more than three inches across, and are arranged in two rows along the spike; the obovate sepals and larger rhomboid petals are of a beautiful light mauve, edged with white; the lip, which is three-lobed, with rounded lateral lobes, and an oval central one split at the end into a pair of divergent curved horns, is of the same colour, with darker spots, the disk bearing a four-cornered callus, which is yellow, spotted with reddish brown, and the middle part handsomely spotted—indeed the whole aspect of the plant is very attractive. The flowers, which are produced in summer, continue for several weeks in full perfection. There are many different varieties of this plant. Mr. Warner sent a specimen to the St. Petersburg Exhibition in 1869, which had one hundred and twenty expanded blooms upon it, and presented a most glorious spectacle. The accompanying illustration was taken from a plant which flowered in the garden of Lady Ashburton at Melchet Court; it was figured in the *Gardeners' Chronicle*, 1875, and we are indebted to the editors of that periodical for the use of the block. This plant bore three panicles of





PHALÉNOPSIS SCHILLERIANA.



flowers bearing respectively 96, 108, and 174 blossoms, making a total of 378.—*Philippine Islands*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 1; *Bot. Mag.*, t. 5530; *Xenia Orch.*, ii. t. 101; *Flore des Serres*, tt. 1559—60; *Illust. Hort.*, t. 348; *L'Hort. Franç.*, 1863, t. 11; *Journ. Soc. d'Hort. Par.*, 1862, t. 609; *Jennings, Orch.*, t. 15; *Batem. 2nd Cent. Orch. Pl.*, t. 171; *Gard. Chron.*, n.s., iv. 169, fig. 31 (specimen plant); *Puydt, Les Orch.*, t. 35; *Warner, Sel. Orch. Pl.*, iii. t. 5 (*splendens*); *Floral Mag.*, 2 ser., t. 257 (*delicata*).

P. Schilleriana vestalis, *Rchb. f.*—In this plant we have a white-flowered form of *P. Schilleriana*, which was first bloomed by Messrs. Low & Co., of Clapton.—*Philippine Islands*.

P. speciosa, *Rchb. f.*—This is a handsome species allied to *P. Lüddemanniana* and *P. tetraspis*. It has large yellowish green cuneate-oblong obtusely-acute leaves, and racemes or panicles of elegant stellate flowers, which are very freely produced. The sepals and petals are whitish rose outside with rows of purple blotches, purple inside with a few white bars at the base of the petals, the side lobes of lip yellow, white at the top and base, the mid lobe white and rosy purple, or wholly purple, with a tuft of hairs at the apex.



PHALÉNOPSIS SPECIOSA.

This species seems to vary a good deal, some of the varieties having the blossoms much blotched and showing very little white. The flowers are also said to be very fragrant.—*Andaman Islands*.

FIG.—*Orchid Album*, iv. t. 158; *Gard. Chron.*, n.s., xviii. 745, figs. 130—132.

P. Stuartiana, *Rchb. f.*—A very distinct and strikingly beautiful species of *Phalænopsis*, introduced by Messrs. Low & Co., Clapton, and named in compliment to Mr. Stuart Low. In growth it resembles *P. Schilleriana*, as it does also in the shape of the flowers. The plant has flattened roots, and bears oblong acute leaves, which are marbled when young, but become almost green as they get older. The flowers are produced in large branching panicles, and

are about two inches across, with the anchor-like tips of the lip, as seen in *P. Schilleriana*; the rhomboid petals and oblong upper sepal are pure white, the lateral sepals are white on the upper side, and very pale sulphur on the lower side, where they are thickly spotted with cinnamon red, as is also the central part of the lip, which has white edges and white horns. It flowers in the winter months.—*Tropical Asia*.

FIG.—*Bot. Mag.*, t. 6622; *Gard. Chron.*, N.S., xvi. 748, 753, fig. 149; *Florist and Pom.*, 1882, 49, t. 559.

P. Stuartiana Hrubyana, *Rehb. f.*—A fine variety which has bloomed in the collection of Baron von Hruby, Peckau, Bohemia. The sepals and petals are purple at the back, with a broad white margin on the petals, and a narrow one on the upper sepal, the inner border of the lateral sepals being also white.—*Tropical Asia*.

P. Stuartiana nobilis, *Rehb. f.*—A superior variety of the preceding, resembling *P. Schilleriana* in the young growth, but assuming more the colour of *P. amabilis* as it gains age. The under side of the leaves of this variety and the flower scapes are of a deep reddish purple. The flowers are larger in all their parts than those of the type, and are marked with fewer and larger spots; the anterior lobe of the lip is rhombic, and the disk and callus are deep orange yellow densely spotted with brownish red.—*Tropical Asia*.

FIG.—*Orchid Album*, i. t. 39; *Illust. Hort.*, 3 ser., t. 540 (as *Stuartiana*).

P. Stuartiana punctatissima, *Rehb. f.*—This is a distinct and pleasing variety, in which the flowers in their general coloration are like those of the type, that is, the lower halves of the lateral sepals and the lip are heavily spotted with brownish red, and the callus and lower parts of the side lobes of the lip are yellow also spotted with red, in addition to which the sepals and petals are everywhere ornamented by innumerable small mauve-red spots on the parts which are normally white. The plant figured as *P. Stuartiana punctulata* in the *Lindenia* (t. 8) appears to be the same form.—*Tropical Asia*.

FIG.—*Lindenia*, t. 8 (*punctulata*).

P. sumatrana, *Korthals*.—A remarkable plant which flowered for the first time in this country with J. Day, Esq., in 1865. The leaves are few, obovate-oblong acute, six inches long,

somewhat fleshy and of a bright green colour. The peduncles are axillary, spreading, five to ten-flowered, the flowers about two and a half inches across, and rather more in depth; the oblong sepals and cuneate-oblong petals yellowish white, transversely barred with rich reddish brown; the lip narrow, three-lobed, its lateral lobes terminated behind in a curved tooth, yellow in front, and the middle lobe ligulate oblong, keeled, with four lines of violet-purple, two on each side the dense tuft of hairs which runs out to the apex. "The anther-lid is fringed after the manner of *Trichopilia*." It requires the same treatment as the other species.—*Sumatra: Palembang*.

FIG.—*Bot. Mag.*, t. 5527; *Gard. Chron.*, 1865, 507, with fig.; *Flore des Serres*, t. 1644; *Batem. 2nd Cent. Orch. Pl.*, t. 146; *Sieb., Flore des Jard.*, 1861, t. 10.

SYN.—*P. zebrina*.

P. tetraspis, *Rehb. f.*—A chaste beautiful very free-flowering species, in growth resembling *P. sumatrana*, the stem bearing but few leaves. The leaves are dark green, stout, cuneate-obovate oblong acute, and the flowers, which are said to have a fine perfume, are produced in rich drooping panicles, and have the general shape of those of *P. sumatrana*. They are ivory or waxy white, shining, with a trifid lip, of which the erect retuse side lobes have each a blotch in the centre, and the convex ligulate central lobe bears a large felt-like cushion. It flowers during the summer months.—*India: Himalaya*.

P. Valentini, *Rehb. f.*—This plant is probably a natural hybrid between *P. Cornu-cervi* and *P. violacea*. The flowers are larger than those of the former species and smaller than those of the latter. The leaves are light green, narrower than in *P. violacea*, and without the wavy crispness usually seen in that species. The sepals and petals are cuneate-oblong, purple, the lateral sepals and petals white at the base inside and marked with purple bands; the lip is similar to that of *P. violacea*, the side lobes with a spreading angle at the upper corner, white with purple spots on the upper border, the front lobe pandurate, three-parted at the top, which is mauve, and bearing a thick umbo in the middle; the disk is yellow, as also is the column, the latter with red stripes at the top.—*Malayan Archipelago*.

P. Veitchiana, *Rehb. f.*—This species is supposed to be a natural mule between *P. rosea* and *P. Schilleriana*. The

leaves are cuneate oblong rather obtuse, faintly and obscurely tessellated. The flower scape is similar to *P. rosea* but longer, while the flowers are not so close together as in *P. rosea*, but more nearly resemble *P. Schilleriana*, only they are smaller, purplish, with whitish margins to the sepals and petals; the lip is three-parted, the lateral lobes large bluntly cuneate oblong, bright purple, with a triangular yellow brown-spotted callus between them, the anterior lobe oblong, narrowed and forcipate in front, the teeth being straight, not arched or tendril like, and the colour a rich deep purple with a pale whitish or lilac margin.—*Philippine Islands*.

FIG.—*Floral Mag.*, 2 ser., t. 213.

P. Veitchiana brachyodon, *Rehb. f.*—In this form the sepals and petals are pure white, the lateral sepals with brown spots at the inner and superior part of the base, and having a slight tinge of sulphur; the side lobes of the lip are purple at top, white at the base, the anterior lobe is dark purple verging to brown, with some spots of the same colour on the whitish ochre ground and margins; the apical teeth short so that the lip is rather retuse or bidentate than forcipate as in the type.—*Philippine Islands*.

P. violacea, *Teijsman and Binnenljk.*—A distinct and richly coloured species, which has large broad bright green leaves, and very short peduncles, on which, as far as we have seen, one or two flowers only open at a time. The flowers measure each about two inches in diameter; the lower portions of the sepals and petals and the lip are a rich rosy purple with the upper portions yellow. The colouring is quite unique, and the flowers, which are deliciously scented, are produced during the summer months. There are several fine varieties distinguished by names.—*Malayan Archipelago*.

FIG.—*Sieb. Flore des Jard.*, 1861, t. 9; *Orchid Album*, iv. t. 182; *Floral Mag.*, 2 ser., t. 342.

P. violacea Bowringiana, *Rehb. f.*—A distinct variety, with flowers of a pure light yellow, having a very broad dash of purple inside each of the lateral sepals, and some fine bands and numerous freckles of the same colour at the bases of the petals and of the upper sepal.—*Malayan Archipelago*.

P. violacea Schröderiana, *Rehb. f.*—In this handsome variety the lower halves of the sepals and petals, instead of being wholly covered with rosy purple, are marked with

broken mauve-purple lines, at first sight reminding one of *P. Lüddemanniana*. It was named in honour of Baron Schröder, The Dell, Staines.—*Malayan Archipelago*.

PHYSURUS, *Richard*.

(Tribe Neottieæ, subtribe Spirantheæ.)

A charming genus of dwarf variegated terrestrial Orchids, resembling *Anæctochilus* in their general habit, and like them producing beautiful foliage elegantly marked with metallic variegations. The flowers are small, subringent, in erect spikes, and agree with those of *Anæctochilus* in having the lip spurred at the base, but differ in the intermediate portion being hollow and abruptly contracted, the limb being spreading or recurved. About twenty species from the warmer parts of Asia and America are known.

Culture.—This is a lovely group of plants, resembling *Anæctochilus* in their beautiful foliage, and requiring the same kind of treatment. They grow to about the same size, and have a creeping stem, by means of which they are propagated. Many of them will do well grown without bell-glasses, provided they are in a warm shady house—in fact, without shading the sun will soon destroy them; they, moreover, require more moisture when grown without the glasses. For further particulars see *Anæctochilus*.

P. argenteus, *Loudon*.—A handsome distinct free-growing species, of decumbent habit, having pale green stems four or five inches in height, with cordate ovate leaves two and a half inches long and one and a half inch broad, the ground colour light green, with the numerous veins marked out by well-defined silvery lines. It does not require so much care as some others; indeed, we have seen it grown in a warm house in a shady place, without a bell-glass, with a good supply of water at the roots.—*Brazil*.

SYN.—*Anæctoc' ilus argen' eus*.

P. fimbrillaris, *Lindley*.—A very pretty species, which has ovate leaves, exquisitely veined with silver, on a dark green ground, in the way of *P. argenteus*; the flowers, however, which are white, have broader sepals, marked outside by a central line of pellucid glands, and the lip is more inflated, yellow at the tip, where it is also delicately fringed. It was introduced by Mr. Weir to the Horticultural Society's Garden at Chiswick, from the forests about Rio Janeiro, and is one of the choicest of the family.—*Brazil*.

P. maculatus, *Hook.*—This well-marked species has very stout vermicular roots, and upright stems about six inches high, furnished with lanceolate acuminate leaves two and a half inches long, of a dark green colour on the upper surface, where they are marked with two rows of white oblong spots lying parallel with the mid-rib, the under surface pale green. The flowers are small, yellowish, in short dense spikes just emerging from the uppermost leaves.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5305.

P. nobilis, *Rchb. f.*—A large and very beautifully marked species, resembling *P. pictus* in the rich variegation of its leaves, but quite different in the fringed lip of its densely spicate flowers. The leaves are broadly oblong acute, of a dark green colour, prettily marked with silvery veins.—*Brazil*.

SYN.—*Anæctochilus nobilis*.

P. Ortgiesii, *Rchb. f.*—A very distinct and curious little species of dwarf habit, with prettily variegated leaves. They are oblong-ovate with a cuneate base, dark olive green with a velvet-like surface, silvery along the centre, and having scattered oblong blotches of metallic purple distributed over the entire surface of the leaf, so that it is said to be "mackerel-spotted." The flowers are white, in dense spikes.—*New Grenada*, at high elevations.

FIG.—*Florist and Pom.*, 1872, 243, with fig.

SYN.—*Anæctochilus Ortgiesii*.

P. pictus, *Lindley*.—A beautiful and distinct species, growing four or five inches high, and having the ovate acute leaves three inches long and one and a half inch broad, each leaf being edged with dark green curiously marked by silvery veins, and having a handsome silver-frosted band down the centre or disk. The flowers are small and grow in short spikes;

white with a bar of blackish brown on each sepal and petal. It rivals the Wana Rajah (King of the Woods) of Ceylon in the singular beauty of its foliage, and is a very free-growing plant, and one which may be cultivated without a bell-glass.—*Brazil.*

FIG.—*Refug. Bot.*, ii. t. 73; *Ann. de Gand.* 1845, t. 18.

SYN.—*P. argenteus pictus*; *Anæctochilus argenteus pictus*; *Anæctochilus pictus*; *Microchilus pictus*.

P. querceticola, *Lindley* (?)—A distinct and free-growing species, inferior in beauty to the silvery reticulated kinds, but interesting from its dissimilarity. It grows from three to four inches high or more, and has ovate acute leaves two to three inches long, of a light green colour, with blotches of silvery grey on each side the mid-rib, appearing as if the intervening spaces and not the veins were silvered over. The flowers grow in lax spikes, and the lip is three-toothed at the apex.—Said to come from *Java*, but *Lindley*'s plant is a native of *New Orleans*.

PILUMNA, *Lindley*.

(Tribe *Vandeeæ*, subtribe *Oncidieæ*.)

A small group of dwarf-growing epiphytes, closely allied to *Aspasia* and *Trichopilia*, with which latter some authorities unite them. They differ, however, not only in their aspect, but also in their sub-entire lip, which is adnate to the column and rolled round it at the base, and in the cucullate anther-bed being surrounded by membranaceous teeth. The few species are found in Central America, Mexico, Venezuela, and New Grenada.

Culture.—The species of *Pilumna* succeed well in the cool house, and are best grown in pots with rough peat, charcoal, and sphagnum moss; they require good drainage, as an ample supply of moisture is requisite during the growing season, but during the resting period less should be given. In potting the plants should be well elevated above the pot rim. They are propagated in the usual way, by division.

P. fragrans, *Lindley*.—This plant, which, as already noted, is very like *Trichopilia* in habit and appearance, has deliciously sweet-scented blossoms. The pseudobulbs are oblong, four to six inches long, slightly compressed, monophyllous, the leaves broadly oblong-lanceolate, and the flowers produced in pendent racemes of three or four together on radical peduncles. The sepals and petals are oblong-lanceolate acuminate, pale yellowish green, two and a half to three inches long, wavy and slightly twisted, and the lip, which is oblong, is apiculate and slightly three-lobed, pure white, with an orange spot towards the base. It blooms during the winter season.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5035; *Batem. 2nd Cent. Orch. Pl.*, t. 164; *Jennings, Orch.*, t. 38.

SYN.—*Trichopilia fragrans*.

P. nobilis, *Rehb. f.*—This beautiful species is worthy of a place in every collection, and indeed should be grown in quantity by every one, so attractive and useful are its fragrant flowers. The pseudobulbs are elongate oblong compressed, clustered, monophyllous, the leaves being broadly oblong acute. The flower scapes are radical, erect, bearing four or five deflexed blossoms, which are larger than those of *P. fragrans*, and are also sweet-scented; the white sepals and petals are linear-lanceolate undulated, and the lip is subquadrate, constricted near the top so as to appear obsoletely three-lobed, the upper lobes rounded and meeting over the throat, the front one much larger, retuse, one and three-quarter inch broad, pure snow white, having on each side of the throat an orange-coloured blotch, the two blotches meeting to form a central eye-like spot.—*Colombia*; *Peru*.

FIG.—*Orchid Album*, iii. t. 128; *Illust. Hort.*, 3 ser., t. 94; *Floral Mag.*, 2 ser., t. 21 (as *fragrans*).

SYN.—*Pilumna fragrans grandiflora*; *Trichopilia fragrans nobilis*.

PLATYCLINIS, *Bentham*.

(Tribe Epidendreae, subtribe Liparicæ.)

A small genus consisting of plants of graceful habit, forming the second section of Blume's genus *Dendrochilum*, and commonly known in gardens by the latter name. They ought to find a place in every collection. They are dwarf

and compact in habit, and have small pseudobulbs and narrow evergreen leaves about six inches in length; their flower spikes, which are slender and pendulous, are produced from the top of the bulbs, from which they hang down, forming long elegant racemes. There are eight or ten species found in India and the Malay Archipelago.

Culture.—These plants should be grown in the East Indian or Cattleya house, potted in peat and sphagnum, with good drainage. They like plenty of water during the growing season; but after they have finished their growth, should only be allowed a diminished quantity. They are propagated by dividing the pseudobulbs just as they begin to grow.

P. Cobbiana, *Hemsley*.—A curious and interesting species, with pseudobulbs and leaves resembling those of *P. latifolia*. The racemes of flowers are remarkably zigzag, and the flowers themselves have light sulphur-coloured sepals and petals, a flabellate orange-coloured lip, with small bristle-like side lobes, and a green column with the wings and hood white.—*Philippine Islands*.

SYN.—*Dendrochilum Cobbianum*.

P. filiformis, *Benth.*—A charming species, which grows about six inches high. The flowers, which are produced in June, July, and August, are of a yellowish green hue, and are prized for their gracefully drooping habit. When arrived at a good size, it makes a nice exhibition plant.—*Philippine Islands*.

FIG.—*Gartenflora*, t. 604; *Illust. Hort.*, 3 ser., t. 323 (glumaceum in text).

SYN.—*Dendrochilum filiforme*.

P. glumacea, *Benth.*—One of the most elegant of Orchids, forming a pretty species, with small evergreen foliage, and producing graceful spikes of greenish white flowers, which are delicately scented; it flowers in spring, and continues three or four weeks in perfection.—*Philippine Islands*.

FIG.—*Bot. Mag*, t. 4853.

SYN.—*Dendrochilum glumaceum*.

P. uncata, *N. E. Brown*.—A very graceful plant, approaching *P. filiformis* in size and appearance, but the drooping

floral racemes are shorter, the flowers larger, and of a pale green, and the sepals and petals acute. Introduced by Messrs. Low.—*Malayan Archipelago ; Philippine Islands.*

SYN.—*Dendrochilum uncatum.*

PLEIONE, Don.

(Tribe Epidendreae, subtribe Cœlogyneae.)

A genus of pretty dwarf deciduous plants, with flask-like pseudobulbs, and light green membranous leaves which are produced after the decay of the flowers. Some authors regard them as forming a section only of the genus *Cœlogyne* from which indeed they differ but slightly, except in habit, but their habit is so peculiar, that it would seem to indicate they are entitled to generic rank. Thus every season, after finishing their growth, the leaves begin to die away, and during this, which is the proper time to rest them, they should have only just enough water to keep them from shrivelling. After they have enjoyed their due season of rest, the flowers will be produced; this occurs during the autumn and winter months, and immediately precedes the appearance of the young growth, so that whenever the flowers are seen to be pushing up from the base of the pseudobulbs, water should be given in moderate quantities. The flowers are solitary, produced on sheathed peduncles, which spring from the root; and they have a fringed lip saccate at the base. These plants are frequently called Indian Crocuses, since they throw up their flowers in autumn and winter, much after the manner of our common *Crocus*, differing, however, considerably in shape, but like them very handsome and rich in colour. The few known species are nearly all natives of the Indian Alps.

Culture.—The *Pleiones* are far too little cared for by Orchid growers, many objecting to them on account of the leaves being absent at the time of flowering; but this is easily

remedied by grouping them with Ferns, or other graceful green-leaved plants. They give little trouble, if properly managed, but their wants must be supplied at the right time, which is the great secret in the treatment of most deciduous plants. In consequence of their deciduous habit they get neglected, and just at the time when they should receive most attention, and their beauties should be seen, they are found in a shrivelled condition. They require a good season of growth, and after that, one of rest. The way in which we treat them is to pot them in a mixture of loam, peat, moss, and sand, giving them good drainage and plenty of water while growing; the potting should be performed immediately the flowers fade. After the pseudobulbs are fully formed, give only enough water to keep them from shrivelling; but, as before stated, when they begin to show flower, water freely, which will induce their blossoms to come finer. The *Cattleya* house is the most suitable place for them.

P. birmanica, *Richb. f.*—A charming dwarf Orchid, allied to *P. præcox*, but according to present experience a later-blooming plant. Its pseudobulbs have the peculiar raised shoulder and depressed conical apex frequent in this genus, and are of a fine bluish purple marked with numerous white circles, the raised edge being much more prominent than in *P. præcox*. The leaves are of the usual character, and decay before the flowers are produced; these latter are of a light purple, the disk bearing three toothed keels, along which on a white ground are several small fine brown oblong or roundish spots or blotches. The anterior edge of the lip, instead of being fringed, has very short teeth; it is said to produce usually two flowered peduncles.—*Burmah*.

SYN.—*Cælogyne birmanica*.

P. concolor, *Hort.*—A very pretty and distinct plant, with the pseudobulbs and foliage similar to those of *P. præcox*. The sepals and petals are of a dark rose-colour, and the elegantly fringed lip is of the same colour with yellow blotches in which are several brownish crimson spots; the crests are pale yellow.—*India*.

P. Hookeriana, Moore.—This species may be distinguished from all its congeners by the circumstance that it produces its leaves and flowers at the same time, which is unusual in the genus. The pseudobulbs are about an inch long, ovoid, smooth, not grooved or covered with a network. The stems grow some three to five inches high, each bearing one leaf and a solitary flower. The leaf is ovate-lanceolate acuminate and plicate, and the flower is expanded, about two and a half inches across. The sepals and petals are elliptic lanceolate, bright rose-colour, and the lip, which is convolute at the base, is white, having five or six pale brown-purple spots on the anterior portion, the throat being pale yellow. Two forms of this species were discovered by Sir J. D. Hooker in the Himalayas, at an altitude of 7,000 to 10,000 feet. It flowers in May.—*Sikkim Himalaya*.

FIG.—*Bot. Mag.*, t. 6388.

SYN.—*Cœlogyne Hookeriana*.

P. humilis, Don.—A dwarf species of great beauty, having dark green flask-shaped pseudobulbs clothed with fibrous scales, and crowned with a lanceolate acuminate dark green leaf. The peduncles grow up by the side of the pseudobulbs after the leaves have ripened off, and each bears a solitary flower three to four inches in diameter. The sepals and petals are linear-lanceolate, spreading, blush white, and the lip, which is convolute at the base, and emarginate and fimbriate in front, is also blush white, traversed by six parallel fringed veins, with alternating stripes of rich purplish crimson. It blooms in the winter season, and lasts in beauty for two or three weeks.—*N. Indian Alps*, elevation 7,000—8,000 feet.

FIG.—*Bot. Mag.*, t. 5674; *Pact. Fl. Gard.*, ii. t. 51; *Lem. Jard. Fl.*, t. 158; *Smith, Exot. Bot.*, t. 98.

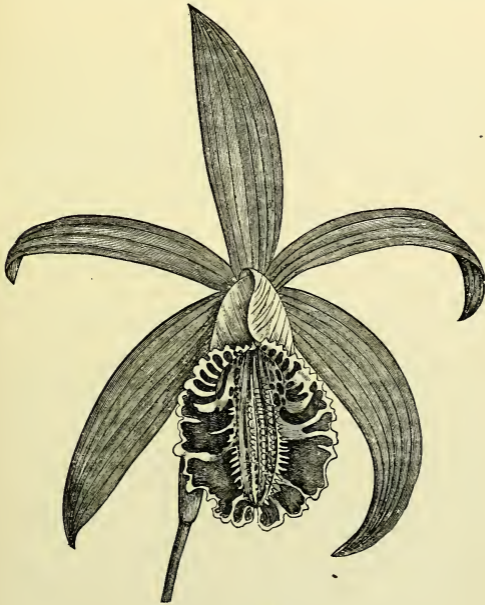
SYN.—*Cœlogyne humilis*; *Epidendrum humilis*.

P. humilis tricolor, Rehb. f.—A pretty and distinct form, in which the sepals and petals are pale rose colour, and the large expanded frilled lip is pale yellow, distinctly streaked with brownish yellow in the central part, the outer portions being margined with transverse blotches of the same colour. It flowers in January and February.—*Indian Alps*.

FIG.—*Orchid Album*, iii. t. 102.

P. lagenaria, Lindley.—A very handsome brilliantly-coloured dwarf species, with clustered wrinkled broadly flask-shaped pseudobulbs, which are flattened below the

conical neck, and are light green covered with brown spots, which give a netted appearance to the surface; these are surmounted by a solitary lanceolate leaf, which becomes matured and falls away before the flowers are developed. The flower scapes spring from the base of the pseudobulbs, and are about three inches high, bearing a solitary blossom



PLEIONE LAGENARIA.

three inches across; the sepals and petals are lanceolate, spreading, lilac rose, and the lip is white or whitish, convolute at the base, the large expanded front lobe emarginate, the central part yellow traversed by five bearded ridges, and the broad margin much crisped, white with transverse bars and

blotches of deep purple-crimson; the throat is yellow with a few crimson stripes. It flowers in January and February, when the other kinds are over, and continues a long time in perfection, if the blossoms are kept dry.—*Mountains of India.*

FIG.—*Bot. Mag.*, t. 5370; *Paxt. Fl. Gard.*, ii. t. 39, fig. 2; *Illust. Hort.*, t. 510; *Flore des Serres*, t. 2386; *Lem. Jard. Fleur.*, t. 93; *Jennings. Orch.*, t. 47, fig. 1; *Warner, Sel. Orch. Pl.*, i. t. 17; *Puydt, Les Orch.*, t. 36.

SYN.—*Cælogyne lagenaria.*

P. maculata, *Lindley*.—A beautiful dwarf Orchid, with roundish depressed pseudobulbs, tuberculate at the base, dark green, glossy, and bearing brown imbricating scales. The leaves, produced before the flowers, are lanceolate plicate, six inches long; and the flowers are solitary, two inches across, on short peduncles which spring from the base of the bulbs. The sepals and petals are narrow lanceolate, spreading, white, the lip also white, oblong, the basal part incurved, marked with oblique purple lines, the front lobe ovate, retuse, wavy, the disk yellow, with five elevated fringed veins having purple lines between, the margins wavy and boldly cross-barred with crimson-purple. It blooms in October and November, continuing three or four weeks in perfection.—*N. India: Khasya, Assam, 4,000—5,000 feet.*

FIG.—*Bot. Mag.*, t. 4691; *Wall. Pl. Asiat. Rar.*, i. t. 53; *Paxt. Fl. Gard.*, ii. t. 39, fig. 1; *Flore des Serres*, t. 1470; *Lem. Jard. Fl.*, t. 93.

SYN.—*Cælogyne maculata.*

P. præcox, *Don*.—A most distinct and beautiful species, of dwarf habit like its congeners, with pale mottled brownish purple turbinate pseudobulbs, covered with a strong veining of loose network, and surmounted by a solitary broadly lanceolate membranaceous plaited leaf, which decays before the appearance of the scape. The latter springs from the side of the pseudobulb, and bears one showy flower, which is fully three inches across, and saccate at the base; the lanceolate sepals and the smaller petals are deep rose-colour, and the lip, which is prominent and two inches long, is blush white, the basal part connivent over the column, the front portion beautifully fringe-toothed, and the disk yellow furnished with five toothed keels or crests reaching nearly to the apex, and a few yellow and rose-coloured spots. It produces its blossoms in November and December.—*N. India: Khasya, at 4,700 feet, Nepal at 7,500 feet, and Sikkim at 5,800 feet elevation.*

FIG.—*Paxton, Mag. Bot.*, xiv. 7, with tab.; *Bot. Mag.*, t. 4496 (as *Wallichii*); *Smith, Exot. Bot.*, t. 97; *Lem. Jard. Fl.*, t. 153; *Gartenflora*, t. 283 (as *Wallichiana*).

SYN.—*Cælogyne præcox*; *Epidendrum præcox.*

P. præcox Wallichiana, *Lindley*.—A truly handsome dwarf plant, "quite a gem," with large turbinate dark green pseudobulbs, mottled with paler green warts and brown scales; they have been compared as to form and colour to a truffle. The leaves, which grow up with the bulbs, and ripen off before flowering time, are lance-shaped, and plaited. The plants produce their large solitary flowers on radical scapes in October and November, and last two weeks in beauty; the colour is a deep magenta-purple, the sepals and narrower petals lanceolate, and the lip of the same colour, decorated with a broad streak of yellow on its disk, and traversed by five parallel ridges of white tubercles, a few deep crimson stains appearing in the throat, and the apex being toothed and two-lobed. The blossoms are three or four inches across.—*India: Pundua, Khasya.*

FIG.—*Faxton, Mag. Bot.*, vi. 25, with tab.; *Wall. Pl. Asiat. Rar.*, i. t. 54; *Bot. Reg.*, 1840, t. 24; *Jennings, Orch.*, t. 47, fig. 2.

SYN.—*Cælogyne Wallichiana*; *Pleione Wallichiana*.

P. Reichenbachiana, *Moore*.—A very beautiful and distinct species of this exceedingly handsome genus. The large pitcher-shaped pseudobulbs, which are constricted below the middle, are longitudinally six to eight-lobed; the lobes which form rounded prominences at the widest part, are of a very dark green reticulated with brown lines; and by their side appear the scapes, each bearing one or two large flowers, of which the narrow oblong sepals are rosy lilac, with paler edges, the narrower petals are paler, with a bar of rosy lilac down the centre, and the lip is white, the dilated front lobe ciliatodentate, bifid, the disk bearing three keels which are crested with papillose teeth, short lines of rosy crimson intervening between the veins in front, and a few spots of the same colour being scattered over the surface. This very rare species ought to be in every collection,—*Moulmein.*

P. Schilleriana, *Rehb. f.*—A very pretty species, peculiar in the genus for producing its foliage and flowers simultaneously, in which respect it accords with the otherwise very distinct *P. Hookeriana*. In this plant the pseudobulbs are very small, obpyriform clustered, pale green and somewhat pitted. The short peduncles support a pair of lanceolate obscurely nervose leaves about three inches long, and a solitary flower, of which the dorsal sepal is oblong acute, quite erect, and an inch and a half long, while the two lateral ones are considerably

narrower, somewhat falcate, and directed downwards; the petals are very narrow linear, also directed downwards, all these parts being of a clear tawny yellow; the lip is broad and distinctly three-lobed, the lateral lobes semiovate, erect, whitish with a margin of deep orange-red, and the middle lobe is transversely oblong from a constricted base, somewhat convex and emarginate with a toothed border, tawny yellow irregularly blotched and spotted with orange-red; the disk bears three elevated ridges or crests which are marked by several transverse orange-red lines. The sepals are represented as being green in the figure published in *Xenia Orchidacea*.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5072; *Flore des Serres*, t. 2302; *Xenia Orch.*, ii. t. 134, fig. 1.

SYN.—*Cælogyne Schilleriana*.

POLYCYCNIS, *Reichenbach fil.*

(Tribe Vandææ, subtribe Stanhopiææ.)

This is a small genus of epiphytes, the species of which very much resemble those of *Cycnoches* in their general appearance and the shape of their flowers. They have short one-leaved pseudobulbous stems, with large plicately-venose leaves, and showy flowers on scapes which arise erect from base of the stems, and terminate in loose or drooping racemes. The flowers have the sepals and petal narrow and free, and the lip of peculiar form, biauriculate at the base, the hypochil clawed with two large wings, the epichil arcuately patent, and the column slender and curved, dilated at the end around the minute stigmatic hollow. There are some two or three South American species. *Cycnoches barbatum* (p. 229), which is the handsomest of the species, should have been included here.

Culture.—These plants are best grown in baskets, with peat and moss, and suspended from the roof. The Cattleya house will suit them best.

P. barbata, *Rehb. f.*—See CYCNOCHES BARBATUM.

P. gratiosa, *Endr. et Richb. f.*—A very elegant species in the way of *P. lepida*, having the many-flowered racemes deflexed, not nutant, and a velvety rachis. It is, however, distinguished from *P. lepida* by the very short claw of the lip and by the anterior part of the same organ. There are two varieties as regards the size of the flowers, the finer one reaching that of *P. barbata*, the smaller one that of *P. lepida*. The sepals are ligulate acute somewhat bearded on the outside, the petals linear lanceolate very shortly clawed, and the lip has two oblong retuse auricles at the base, a rhomboid callus in the middle part, and the front part oblong narrowed to a ligulate apex. It is a very elegant species, one of the discoveries of Mr. Endres.—*Costa Rica*.

P. lepida, *Linden et Richb. f.*—A very pretty species, with ovoid clustered pseudobulbs about two inches in height, of a dark green colour, and stalked ovate plicately-veined leaves. The flower scapes proceed from the sides of the bulbs, and support a drooping raceme of from fifteen to twenty flowers, of which the lanceolate sepals and petals are pale yellow thickly dotted with purple so as to produce a pale brown or tawny hue, and the lip is pale yellow lightly spotted with chocolate brown, white towards the base.—*Colombia: New Grenada*.

FIG.—*Illust. Hort.*, 3 ser., t. 19.

POLYSTACHYA, *Hooker*.

(Tribe Vandææ, subtribe Cymbidiææ.)

This is a genus of epiphytal plants, with pseudobulbous stems, few distichous leaves, and terminal racemes of rather small dull-coloured flowers, and hence it does not find much favour at the hands of Orchid growers. The species named below is, however, of ornamental character. There are about forty species described, mostly Tropical and South African, some from Tropical Asia (India and Malaya), and a few from Tropical America.

Culture.—The South African species, of which *P. pubescens* is an example, grow well in the cool house, potted in peat

and moss, and like a good supply of water ; indeed, they should never be allowed to get dry.

P. pubescens, *Rehb. f.*—This beautiful dwarf-growing species, which attains about six inches in height, has for a long time been in cultivation in our gardens under the name of *Epiphora pubescens*. It has small pseudobulbs, producing two or three leaves, which are dull green, oblong-linear, plane, and slightly hairy beneath ; the floral racemes are erect, short and many-flowered, the flowers being fragrant, of a rich bright golden yellow with a few purple lines. It is an abundant bloomer, and is quite an exception to the majority of the species in being very showy. Although introduced many years since, it is still very rare.—*Caffraria ; Delagoa Bay.*

SYN.—*Epiphora pubescens*.

PROMENÆA, *Lindley.*

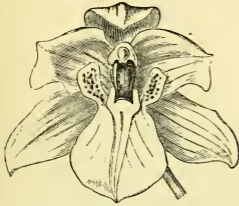
(Tribe Vandææ, subtribe Cyrtopodiææ.)

This is a small genus of pretty dwarf epiphytes growing about three inches high. They are pseudobulbous, with terminal leaves, and produce their flower-scapes, which are drooping, from the base of the pseudobulbs, so that they hang over the edge of the pot. The flowers have spreading sepals, and a three-lobed lip crested in the middle. They are not very showy plants, but very curious, and hence deserve to be in every collection. Some six or eight species, mostly Brazilian, are referred to the group, which is by some authorities retained as a section of *Zygopetalum*. The column often bears on its front a longitudinal elevated line or keel.

Culture.—The *Promenæas* are best grown in pots with peat, the same treatment as that recommended for *Paphinia* being suitable for them.

P. citrina, *Don.*—A neat and pretty dwarf-growing epiphyte, with clustered small ovate tetragonal diphyllous pseudobulbs, oblong-ligulate pale green leaves, and deflexed scapes two to

three inches long, bearing each a comparatively showy deep rich yellow flower with a dark crimson blotch at the base of the lip, which is obovate in the front part, with two oblong obtuse erect basal lobes which are spotted with crimson; they are produced at the end of the summer, lasting in beauty for several weeks.—*Brazil*.



PROMENÆA CITRINA.

FIG.—*Orchid Album*, i. t. 7.
 SYN.—*Maxillaria citrina*.

P. microptera, *Rchb. f.*—A distinct and pretty little species introduced by ourselves, and related to *P. xanthina*. The sepals and petals are creamy

white or light ochre-coloured, and the lip, which has the front lobe elongate and lance-shaped, and the two lateral lobes minute, is white, having three transverse bars of dull crimson on the disk, and small purple spots at the base. It flowers during the summer months.—*Brazil*.

SYN.—*Zygopetalum micropteron*.

P. Rollissoni, *Lindley*.—A curious little plant with roundish compressed pseudobulbs, bearing about two oblong-lanceolate venose leaves from the top and other accessory ones from the base. The deflexed scapes come from the axils of the latter, and bear one or two pale yellow flowers during the autumn months, lasting three weeks or more in beauty; the lip is whitish with the middle lobe oblong, apiculate, and the lateral lobes narrow ovate acute, like two erect ears standing up from the base, the whole being spotted with crimson.—*Brazil*.

FIG.—*Bot. Reg.*, 1838, t. 40.
 SYN.—*Maxillaria Rollissoni*.

P. stapelioides, *Lindley*.—An interesting and pleasing species, remarkable for its singular speckled flowers, which have suggested the specific name. The pseudobulbs are small, ovate, tetragonal, one or two-leaved, the leaves lanceolate, thin, light green, with a pale glaucous reticulation. The peduncle is deflexed, two-flowered, the sepals and petals roundish ovate, acute, spreading, greenish yellow, transversely spotted and barred with dark purple; the lip deep purple

approaching to black, oblong, three-lobed, the lateral lobes erect linear, the terminal one ovate oblong, cucullate at the base, the margins paler and cross-barred. It blooms in July, August, and September, and lasts long in perfection.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3877; *Bot. Reg.*, 1839, t. 17.

SYN.—*Maxillaria stapelioides*.

RENANTHERA, *Loureiro*.

(Tribe Vandeeæ, subtribe Sarcantheeæ.)

This genus, which is very nearly allied to *Vanda*, consists of showy plants, with climbing branching stems, clothed with distichous leaves, and bearing on lateral peduncles elegant panicles of flowers, which in some cases are of a very showy character. They have spreading sepals and petals, the lateral sepals often broader and longer, contiguous or somewhat coherent, and a short lip articulated with the base of the column, and produced at the base into a conical spur. There are some half-dozen species found in Tropical Asia and the Malay Archipelago, some of which are in high favour with Orchid growers. *R. Lowii*, the *Vanda Lowii* of many gardens, is placed in *Arachnanthe* by Bentham.

Culture.—The treatment recommended for *Vanda* as regards heat and moisture will also suit these plants. They require the temperature of the East Indian house, and should be potted in living sphagnum moss, with an abundance of drainage. They will do well on blocks if they obtain a good supply of water during the growing season. During winter give them only enough water to keep their stems and leaves from shrivelling. At all times they should be kept as much exposed to light as possible, and be shaded only sufficiently to keep them from the burning rays of the sun. They are propagated in the same way as *Aërides* and *Vanda*.

R. coccinea, *Loureiro*.—A somewhat scandent straggling plant, though when well managed a really superb and showy

subject. The stems often attain as much as twelve feet or more in height, and are freely furnished with long fleshy clinging roots, and on either side with distichous linear-oblong emarginate leaves about five inches long. The flowers are produced from the axils of the leaves, on long branching panicles; they each measure two inches in diameter and have the dorsal sepal and petals narrow linear ligulate obtuse, deep red mottled with pale orange, and the lateral sepals broad oblong spatulate, crispy, and deep scarlet; the lip is small, the ligulate front and the quadrated side lobes being deep crimson, and the throat white. This plant requires to be so placed as to be freely exposed to sunlight, which is the only sure way of inducing it to bloom; it is indeed a shy bloomer, which doubtless accounts for its not being so generally cultivated as one might expect. By letting it grow up the roof, where it gets plenty of light and sun, it will, however, most likely flower when sufficiently strong for that purpose. We have seen it do well on a large block suspended from the roof, and thus grown we have known it to produce as many as five spikes at one time. When well bloomed it is quite worth all the care that is bestowed upon it, for it is really a superb plant. During the summer it should be treated to a liberal supply of heat and moisture, as from March to October is the time it is in vigorous growth. While resting in winter, let it have but little water—just enough to keep it from shrivelling. The most suitable material to pot it in is sphagnum moss, which, as before remarked, should be kept moist during the growing season. We have several times seen it blooming very freely in the large Palm House of his Grace the Duke of Devonshire, at Chatsworth, and have been informed by the late Mr. Speed, when gardener there, that it has a predilection for fixing its roots on birch poles.—*Cochin China*.

FIG.—*Bot. Mag.*, tt. 2997—8; *Bot. Reg.*, t. 1131; *Warner, Sel. Orch. Pl.*, ii. t. 37; *Paxton, Mag. Bot.*, iv. 49, with tab.; *Puydt, Les Orch.*, 226, fig. 229.

R. Lowii, Rchb. f.—This most remarkable and exceedingly rare Orchid grows on high trees in the humid forests of Borneo. It is distinct in growth from any other species, and is readily known by its climbing stem an inch thick, and emitting stout fleshy roots from the lower part, its numerous obliquely obtuse strap-shaped leathery dark green leaves two to three feet long, and its remarkably long drooping

slightly hairy flower spikes, which attain from six to twelve feet in length, and each bear from forty to fifty flowers. The most remarkable feature of the plant is the production of dimorphous flowers, that is, of two dissimilar forms of flower on the same spike. The two blossoms at the base of the spike, which are separated widely from the rest, are of a tawny yellow, spotted with crimson, and have the sepals and petals lanceolate recurved and bluntish. The rest of the numerous flowers, which are three inches across, have lanceolate acute recurved wavy sepals and petals of a greenish yellow, marked throughout by large irregular blotches, mostly transverse, of a rich dark brown. It blooms during July, August, and September, continuing fresh for several weeks, and produces its flowers when not more than from two to three feet high. The plant, which is evergreen, succeeds well along with *Vanda* and *Aërides*. This plant was formerly included in the genus *Vanda*, and, indeed, is to be found in many collections under the name of *Vanda Lowii*. Baron Hruby, of Peckau, Austria, flowered in 1883 a large plant of this species which bore as many as twenty-two spikes of flowers, which is the greatest number we ever heard of. Mr. Bergman, gardener to Baron A. de Rothschild, at Ferrières, flowered in the same year a fine plant furnished with eleven spikes, which averaged about nine feet in length.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5475; *Batem.*, 2nd Cent. *Orch. Pl.*, t. 161; *Warner, Sel. Orch. Pl.*, ii. t. 4; *Illust. Hort.*, t. 417; *Puydt, Les Orch.*, t. 46.

SYN.—*Vanda Lowii*; *Arachnanthe Lowii*.

R. matutina, *Lindley*.—A very old and rare species, of dwarf habit, flowering when not more than a foot in height. It has stoutish speckled stems, producing thick fleshy roots, and ligulate obtuse unequally bilobed distichous leaves. The flowers, which are distantly set on the rachis, grow in axillary paniced racemes on purple scapes, and are about two and a half inches in depth, with the dorsal sepal linear-ligulate acute, orange, the lateral ones parallel directed downwards, rather dilated near the base, orange with a few deeper orange spots; the petals are narrow linear acute, orange with smaller deep orange spots, and the lip is very minute, white with a red central spot. We saw a fine plant of this flowering in the collection of Baron A. de Rothschild, Ferrières, under the care of Mr. Bergman, the spike bearing twenty flowers. It blossoms in July and August.

The plant figured under this name by Lindley in the *Botanical Register* (1843, t. 41) is *R. micrantha*; the flowers are small, but more numerous and more densely set than in *R. matutina* itself, and the colours are also brighter and more effective.—*Java*.

FIG.—*Pescatorea*, t. 12; *Blume, Tabell.*, xxiv; *Xenia Orch.*, i. t. 35, fig. 1.
 SYN.—*Aërides matutina*.

R. Storiei, *Rchb. f.*—A handsome species, “just matching the celebrated *R. coccinea*, or rather surpassing it,” for the parts of the flower, though one-sixth shorter than in that species, are much broader, and the lip much larger. The stem grows ten or twelve feet in height, and has distichous somewhat fleshy, dark green leaves eight to ten inches long, and a branching inflorescence bearing fifty to sixty flowers, the peduncles stronger than those of its ally, and very floriferous. The dorsal sepal and petals are dark orange, the lower sepals broad, and of a brilliant velvet crimson shaded with lighter crimson, and the lip, which has the middle lobe ligulate and the side lobes triangular, is small, deep crimson, with yellow bars, and a white centre. There are a pair of quadrate lamellæ in front of the mouth of the conical spur.—*Philippine Islands*.

RESTREPIA, *Humboldt, Bonpland, and Kunth.*

(Tribe Epidendreæ, subtribe Pleurothalleæ.)

A small genus of epiphytal Orchids, somewhat resembling *Pleurothallis*, and consisting of small-growing plants with slender tufted stems, each supporting a single leaf, and a solitary small flower of very singular structure. There are some twenty species described, all Tropical American, but very few of them are worthy the attention of Orchid amateurs, although, where the plants are grown for study or for scientific purposes, the smaller flowers displaying microscopic beauties are equally valuable with the larger flowers having showy colours.

Culture.—The *Restrepias* succeed best in the cool house

with *Odontoglossums*, and should be potted in a mixture of peat and sphagnum; a moderate supply of water all the year round will be found necessary for their well-being. They are increased by dividing the plants, taking care to have a leading growth or eye to each piece.

R. antennifera, *Humb. Bonpl. and Kunth*.—This is a very elegant little plant, with short slender tufted stems, which support a single ovate-lanceolate leathery dark green leaf, and from amongst them other short slender stems which bear the exceedingly curious and handsome flowers, in which the sepals are very long, the upper one lanceolate, running out into a filiform apex more than an inch long, yellowish white streaked with purple, the lateral ones directed downwards and connate into a broad lanceolate bipartite conspicuous segment, which is reddish crimson profusely dotted with blackish purple; the petals are antennæ-like, narrow, clubbed at the ends, and similar in colour to the dorsal sepal; the lip is small and of the same colour as the lateral sepals. It is well deserving a place in every collection for its extreme beauty, free-flowering properties, and curious structure. It blooms throughout the whole of the summer months.—*Colombia*.

FIG.—*Illust. Hort.*, t. 601; *Humb. Bonpl. and Kunth, Nov. Gen. et Sp. Plant.* i. t. 94.

SYN.—*R. maculata*.

R. elegans, *Karsten*.—A pretty little plant, which very much resembles the preceding in habit, but is dwarfer. The tufted stems bear broadly elliptic leathery leaves, and from their base the pretty flowers, which, though not so large as those of *R. antennifera*, are very curiously marked. The dorsal sepal is lanceolate, white streaked with purple, lengthed out into a yellow filiform tail, and the united lateral sepals are oblong emarginate, concave, yellow thickly marked with lines of small purple dots; the petals are small and resemble the dorsal sepal, and the small lip is panduriform emarginate, yellow spotted and edged with red. It succeeds admirably in the cool house, with the treatment recommended above.—*Colombia*; *Caracas*.

FIG.—*Bot. Mag.*, t. 5966; *Flore des Serres*, t. 743; *Karst., Auswahl neuer und Gen. Ven.*, t. 2.

SYN.—*R. punctulata*.

RODRIGUEZIA, *Ruiz and Pavon.*

(Tribe Vandeæ, subtribe Oncidiææ.)

This is a small group of Brazilian and Central American epiphytes, with which some authorities associate the *Burlingtonias*, another small group of interesting species already noticed at p. 157. The small flowers have the sepals and petals erect and subequal, the lip is clawed and entire, with a spur or gibbosity at the base, and the column is terete, bearded at the apex. The species are not generally very attractive, but that here described is well worth growing.

Culture.—This plant succeeds well on a block suspended from the roof, and should be grown in the *Cattleya* house.

R. secunda, *Humb. Bonpl. and Kunth.*—A neat and pretty epiphyte, with oval compressed pseudobulbs having a ridge on each face, and producing several linear-oblong coriaceous obliquely emarginate leaves, and axillary recurved scapes six to nine inches long, bearing numerous small flowers, which all turn to one side of the spike, and are of a pretty deep rose colour, sparkling as if frosted. It blooms in October, and through the autumn and winter months.—*New Grenada; Trinidad.*

FIG.—*Bot. Mag.*, t. 3524; *Bot. Reg.*, t. 930; *Lodd., Bot. Cab.*, t. 676; *Humb. Bonpl. and Kunth, Nov. Gen. et Sp. Pl.*, i. t. 92; *Hook., Exot. Fl.*, t. 129.

SYN.—*Rodriguezia lanceolata*; *Pleurothallis coccinea.*

SACCOLABIUM, *Blume.*

(Tribe Vandeæ, subtribe Sarcantheææ.)

This genus contains some of the finest Orchids in cultivation. They are evergreen plants, very compact in their growth, the stems furnished with long thick leathery or fleshy distichous pendent leaves, from the axils of which the flowers are produced, in long graceful simple or branched recurved

racemes, which often measure from one to two feet in length. The flowers are not very large, but are exceedingly effective from the large number collected into the densely packed racemes. They have the sepals and petals much spread out, and the sessile lip spurred or saccate at the base. There are a score or more species described, natives of the Malay Archipelago and the hottest parts of India, where they are found growing on the branches of trees. The following selection will be found to comprise the best species of this beautiful genus, of which there are several others in cultivation, some of which are small-flowered, these latter being interesting to connoisseurs. Those we have named ought to be in every collection, however small, as they form very handsome objects even without flowers.

Culture.—In their habit of growth the species of *Saccalabium* are similar to those of *Aerides*, and they require the same degree of heat and the same general treatment, except that they are best grown in baskets suspended near the roof, so that they may receive all the light possible and not too much shade—only enough to preserve their foliage from being scorched. The more light they receive, the more vigorous and better matured will be their growth, and this will lead to the production of finer floral racemes. They will also thrive in pots placed near the glass, and on blocks; but grown on this latter plan they require more water. They are propagated in the same way as the *Aerides*, and are liable to become infested by the same sorts of insects.

S. ampullaceum, *Lindley*.—A distinct compact-habited and pretty Orchid, with an erect simple stem eight to ten inches high, clothed with thick distichous ligulate channelled dark green leaves, about three or four inches in length, truncate and toothed at the end, and dense erect axillary oblong racemes of flowers about six inches long, of a beautiful deep rose colour, produced in May and June. The sepals and

petals are ovate, and the lip linear with a long compressed slender spur. This plant will succeed on a block, or in a basket with moss, and remains in beauty three weeks.—*India: Sylhet, Sikkim.*

FIG.—*Bot. Mag.*, t. 5595; *Batem.*, 2nd Cent. *Orch. Pl.*, t. 186; *Sertum Orch.*, t. 17; *Orchid Album*, iv. t. 191; *Paxton, Mag. Bot.*, xiii. 49, with tab.; *Wight, Icon. Pl. Ind.*, t. 1673.

SYN.—*S. rubrum.*

S. ampullaceum moulmeinense, *Hort.*—A superb variety of the preceding, than which it is somewhat more robust in growth; the leaves are spotted on both sides with dull brown, the flower spike is longer and denser, and the flowers are larger, of a uniform rich deep rose.—*Moulmein.*

FIG.—*Floral Mag.*, t. 393 (roseum).

S. bellinum, *Richb. f.*—A very pretty dwarf species, in the way of *S. calceolare*, with short erect stems, clothed with evergreen distichous lorate obliquely bifid leaves, and decurved peduncles bearing a compact corymb of elegant flowers, which are considerably larger than those of *S. calceolare*. The oblong sepals and petals are straw-colour blotched with large patches of dark brown, and the saccate lip is fleshy, white with mauve-purple spots, having on each side a large cushion of filiform processes, yellow in the centre, and there marked with spots of bright red. It flowers in February and March, lasting some time in beauty.—*Burmah.*

FIG.—*Orchid Album*, iv. t. 156.

S. Berkeleyi, *Richb. f.*—A beautiful species of the *Rhynchostylis* group, the leaves of which are præmorse, and the flowers large, loosely disposed on the raceme; they are white striped and spotted with amethyst, the anterior blade of the lip, which is acute and not bilobed, amethyst.—*Andaman Islands.*

S. bigibbum, *Richb. f.*—This very pretty species is at present quite rare. It is a small close-growing plant, with very short stems, bearing persistent linear-oblong bifid bright green leaves, about four inches long, and short-stalked drooping subcorymbose racemes, bearing about eight of its curious flowers, of which the spatulate sepals and petals are pale yellow, and the remarkable lip is triangular, white, with a very broad blunt spur, the centre yellow and the edge prettily frilled. It blooms about November.—*Rangoon; ? Arracan.*

FIG.—*Bot. Mag.*, t. 5767.

S. Blumei, *Lindley*.—A beautiful distinct species, with a short erect densely leafy stem, long arcuate distichous lorate persistent channelled leaves, unequally truncate at the ends, bright green with a few parallel lines of dark green, extending from base to apex, on the under side. The flowers grow in dense pendulous cylindrical axillary racemes, the ovate sepals and oblong petals white tinted with rose and dotted with magenta, and the lip with a compressed bluntish spur, and a roundish oblong laminae, ciliated recurved and emarginate at the tip, of a soft magenta rose. These flowers are produced in July and August, and last three weeks in perfection.—*India: Java*.

FIG.—*Sertum Orch.*, t. 47; *Wight, Icon. Pl. Ind.*, t. 1745 (*guttatum*—f. *Rechb.*) *Orchid Album*, iv. t. 169; *Puydt, Les Orch.*, t. 37; *Gard. Chron.*, N.S., xxiii. 573, fig. 105.

SYN.—*Saccolabium Rheedii*; *Rhynchostylis retusa præmorsa*; *Aërides præmorsum*.

S. Blumei majus, *Rechb. f.*—A charming variety of *S. Blumei*, in which the colours of the flowers are much the same as in the preceding plant, but the whole plant is of much stronger growth, and the flowers and flower spikes are much larger; the leaves are longitudinally banded with streaks of light and dark green on both surfaces.—*Moulmein*.

FIG.—*Pescatorea*, t. 21; *Illust. Hort.*, t. 545.

S. Blumei Russelianum, *Williams*.—This is the very finest form of the *S. Blumei* section we have ever seen. The spike of flowers is very long and massive, the blossoms are large, densely packed, and beautifully spotted. It bloomed in the collection of the late J. Russel, Esq., of Falkirk, under the skilful management of Mr. Sorley. We recently saw a well-flowered specimen of this variety in the collection of R. H. Measures, Esq., Streatham, with spikes twenty-four inches long. The flowers are produced in September.—*Java*.

S. cœleste, *Rechb. f.*—The habit of this new species is similar to that of *S. curvifolium*, with the inflorescence short, three to four inches long, and densely flowered. The blunt cuneate oblong sepals and petals are tipped with sky-blue, the compressed blunt recurved spur has a blue tint on both sides of its centre, and the rhombic anterior part of the lip is also sky-blue; while two falcate subulate bodies rise from the apex inside the spur. Flowered by Sir Trevor Lawrence, Bart., M.P.—*Native Country not stated, probably Moulmein*.

SYN.—*Rhynchostylis cœlestis*.

S. curvifolium, *Lindley*.—A handsome compact-habited dwarf-growing species, with a short erect stem from six inches to a foot in height, clothed with distichous linear acutely præmorse deflexed light green channelled leaves, and bearing erect axillary racemes of small crowded cinnabar red flowers. It is a free-flowering kind, and blooms in May and June. It will thrive well on a block suspended from the roof.—*East Indies*.

FIG.—*Bot. Mag.*, t. 5326 (as *miniatum*—f. *Batem.*); *Batem.*, 2nd Cent. *Orch. Pl.*, t. 130; *Illust. Hort.*, t. 493; *Orchid Album*, iii. t. 107; *Puydt, Les Orch.*, t. 38.

S. curvifolium luteum, *Hort.*—A somewhat rare plant, in habit resembling the preceding; the flowers, however, instead of being orange-scarlet, are clear yellow, which renders it very distinct from the ordinary form.—*Moulmein*.

S. furcatum, *Hort.*—A distinct and fine species, which grows somewhat slowly, and has stout leaves about eight inches long. The flowers of this are more laxly set on the spike than in *S. guttatum*, and are of a white colour spotted with rose. It blooms during July and August, and continues in perfection three weeks.—*India; Java*.

S. giganteum, *Lindley*.—A very beautiful free-blooming species, which has deliciously sweet-scented flowers; it blooms in winter, and will last in full beauty for six weeks during the dull weather of that season. The stem is short, erect; and the broadly lorate obliquely bilobed leaves, about a foot long and three inches in width, are stout in texture, and streaked on the surface. The flowers are produced in long dense drooping racemes from the axils of the leaves, the sepals and petals being white spotted with amethyst, the wedge-shaped dilated lip of a beautiful mauve-violet. The column is greenish.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5635; *Jennings, Orch.*, t. 8; *Flore des Serres*, tt. 1765—6; *Orchid Album*, ii. t. 56.

SYN.—*Vanda densiflora*.

S. giganteum illustre, *Richb. f.*—A splendid variety of the old favourite *S. giganteum*, in which the leaves are longer and broader, and have more prominent veins; the raceme of flowers is longer, the individual flowers are larger, and also set more loosely on the rachis, the colours are richer, the spots at the tip of the sepals and petals are larger, and the lip is altogether of a richer brighter hue. In other respects

it is similar to the Burmese variety. It flowers during the winter months.—*Cochin China*.

FIG.—*Illust. Hort.*, 3 ser., t. 517.

S. guttatum, *Lindley*.—A remarkably handsome species, which, according to Reichenbach, forms one of many varieties included by him under the name of *Rhynchostylis retusa*. The stems are short, furnished with distichous arcuate leathery channelled leaves, a foot long, unequally truncate at the end, and of a dark green colour. The floral racemes are cylindraceous and arcuate, as long as the leaves. It blossoms from May to August, and remains three or four weeks in perfection, if removed to a cooler house, and kept free from damp. The flowers are closely set, so as to form massive wreaths of blossoms; the sepals and petals are ovate; the petals narrower, waxy white, spotted with deep rosy purple; the lip is small, its front lobe lanceolate inflexed, wholly purple, its spur truncately conical compressed, pubescent inside. There are two or three varieties of this species, which makes one of the finest of all plants for exhibition. Some remarkable specimens of it were shown in the year 1850, with from twenty to twenty-five spikes of flowers on each.—*India*; *Java*.

FIG.—*Bot. Mag.*, t. 4108; *Bot. Reg.*, t. 1443; *Puydt, Les Orch.*, 227, fig. 230; *De Vriese, Illust.*, t. 14; *Gard. Chron.*, 1845, 364, with fig.; *Id.*, N.S., i. 219, fig. 55 (specimen plant); *Hart. Parad.*, ii. t. 3; *Blume, Tabell.*, 49.

SYN.—*Aërides guttatum*; *A. retusum*; *Epidendrum retusum*; *Limodorum retusum*; *Sarcanthus guttatus*; *Rhynchostylis retusa guttata*; *R. guttata*.

S. guttatum giganteum, *Hort*.—A magnificent variety of *S. guttatum*, having the leaves longer and spotted; the racemes are also much longer, and the flowers more distinct in the markings. It makes a superb exhibition plant, as it blooms in June and July, and will last three or four weeks in perfection.—*India*.

S. guttatum Holfordianum, *Williams*.—This splendid variety is one of the finest yet obtained. The leaves are broader than those of the ordinary form of *S. guttatum*, and more præmorse at the ends; the flower spikes are also much larger and longer, and the flowers of a richer colour than in those of the kind just named, the lip in the present form being a rich crimson. This was bloomed first by R. S. Holford, Esq., Weston Birt, Gloucestershire, in compliment to whom it is named.—*India*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 18.

S. Hendersonianum, *Rehb. f.*—This small compact-growing species is very distinct, and makes a pretty subject either for a basket or block. The ligulate keeled distichous leaves are about six inches long, of a lively green; and the erect racemes are produced from the axils of the leaves, and bear numerous flowers, which are of a beautiful rose colour, with a compressed white lip, reduced to little besides the spur. R. H. Measures, Esq., of Streatham, grows this plant to great perfection, and flowers it freely.—*Borneo*.

FIG.—*Bot. Mag.*, t. 6222.

S. Huttoni.—See *AERIDES THIBAUTIANUM*.

S. miniatum, *Lindley*.—A pretty distinct small-growing Orchid, not so showy as some of the other species, but well deserving attention on account of its distinct colour. It has short erect stems, clothed with lorate channelled distichous leaves obliquely truncate at the apex, and short spreading cylindraceous racemes of small but gay red-orange flowers, which are produced in March and April, and last three weeks in beauty. This will do well on a block of wood without moss. A variety called *S. miniatum citrinum*, said to be from the Philippine Islands, has the flowers of a lemon yellow with a dark centre, which probably indicates the mouth of the spur.—*Java*.

FIG.—*Bot. Reg.*, 1847, t. 58.

S. præmorsum, *Hort.*—A very lovely form, which would appear to be one of the many variations referred to by Reichenbach, under his *Rhynchostylis retusa*. The leaves are stout and fleshy, broad, dark green, præmorse at the end, and the racemes are long and dense, the flowers white, thinly spotted with lilac. It blooms in May and June, and lasts three weeks in perfection. A slow-growing kind, which makes a fine exhibition plant. There has been a variety imported which is freer in growth, produces much finer spikes, and is altogether superior to the form first introduced.—*Malabar*.

FIG.—*Gard. Mag. Bot.*, i. 253, with fig.; *Flore des Serres*, vii. 92, with fig.

S. retusum, *Hort.*—A fine handsome free-growing form, and probably like the last one of the many varieties of *Rhynchostylis retusa* indicated by Reichenbach when treating of this species. It is more robust in habit than most other

forms, blooms in May and June, and produces in great abundance long racemes of flowers, which are waxy white, beautifully spotted with pink. These continue in perfection three or four weeks. It is a useful plant, and one which comes into bloom rather earlier than any of the other kinds.—*Java*.

FIG.—*Flore des Serres*, tt. 1463—4.

S. Turneri, *Williams*.—This is the finest *Saccolabium* which has come under our notice. The leaves are about a foot long, and one and a half inch broad, the end of the leaf having a distinct præmorse termination. The floral racemes are fully two feet long, and are densely covered with its beautiful lilac-spotted flowers. It is much handsomer than the varieties of *S. guttatum*, and was first flowered by W. Turner, Esq., of Winsford, and exhibited by him under the name of *S. præmorsum*, but it is far superior to that species, both in the brilliant colouring of its flowers and the great length of its spikes. The original plant was exhibited at the Manchester Show in June, 1878, and bore four spikes, each two feet in length, of its handsome blossoms; it was then awarded the first prize as a specimen Orchid, and was the admiration of every one who saw it. It flowers in June.—*India*.

S. violaceum, *Lindley*.—This magnificent species is one of those referred by some authors to the genus *Rhynchostylis* of Blume. The stems are erect, stoutish, thickly clothed with the recurved distichous foliage; the leaves are a foot or more in length, and two inches in breadth, of a rich deep green, somewhat striated with lines of a deeper colour; and from the leaf-axils are produced the showy racemes, twelve to fifteen inches in length, in which the flowers are very numerous, the sepals and petals pure white, spotted with mauve, and the lip dark mauve, marked with deeper coloured lines. It generally blooms in January and February, and lasts four or five weeks in perfection if kept from the damp. The plant succeeds in a pot well drained, and surfaced with a little growing sphagnum moss.—*Manilla*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 14; *Puydt, Les Orch.*, t. 39 (poor).

SYN.—*Vanda violacea*; *Rhynchostylis violacea*.

S. violaceum Harrisonianum, *Williams*.—A beautiful white-flowered variety of *S. violaceum*. It is a stout-growing plant, with erect stems, bearing distichous leaves, which are



SCHLIMMIA TRIFIDA.

broadly oblong, keeled beneath, striated, and unequally bilobed at the apex, but of a somewhat lighter green colour than in the typical *S. violaceum*. It produces dense axillary racemes, sometimes as much as two feet long, of large pure white blossoms, which are remarkably sweet-scented, and as these are produced in the winter season they become doubly valuable on that account.—*Pulo Copang*, an island in the Chinese Seas.

FIG.—*Bot. Mag.*, t. 5433; *Flore des Serres*, t. 2412.

SYN.—*S. Harrisonianum*.

SCHLIMMIA, *Planchon*.

(Tribe Vandeeæ, subtribe Maxillariæ.)

A small genus of epiphytal plants, having oblong subfusiform one-leaved pseudobulbs, and erect simple spikes of largish flowers, the dorsal sepal of which is narrow, and the lateral ones broad and united to form an ample saccate chin, while the lip is small and included. There are three nearly related described species, all found on the Colombian Andes.

Culture.—These desirable and curious plants succeed well in the Cattleya house, grown in a pot with good drainage.

S. trifida, *Rehb. f.*—This is a very curious species, and well worth cultivation. In growth it resembles a *Stanhopea*, having a cluster of elongate-ovate pseudobulbs, each furnished with a solitary oblong acute membranaceous leaf, narrowed into a petiole at the base. The peduncle is lateral, drooping, deep purple, bearing a one-sided raceme of about four flowers of thick texture, and of which the ligulate dorsal sepal is turned downwards, and the lateral sepals are saccately connate into a helmet-like form, waxy white, with a few purple spots inside; the linear acute petals are bent outwards, and the lip has a pandurate hypochil trifold at the apex, which is white marked with rich orange, the epichil being lance-shaped. It is a great acquisition on account of its delicious perfume and its rarity; the perfume is said to be between that of jasmine and bergamot.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., vii. 141, fig. 22.

SCHOMBURGKIA, Lindley.

(Tribe Epidendreæ, subtribe Læliææ.)

Of this epiphytal genus but few of the species are desirable for cultivation where space is at all limited, for though the blossoms of many of them are individually very attractive, they are too shy in flowering, and as a rule they produce long spikes with but very few blossoms on them. In growth they resemble *Cattleya* or *Lælia*, except that they are less compact. The stems are erect, fusiform, twelve inches or more in length, with generally from one to three leaves on the top; and the flower scapes proceed from their apex, and are from three to five feet long. The flowers are large, with spreading sepals and petals, which are more or less undulated, and the lip is erect, shortly connate with the base of the column, which is loosely enfolded by its side lobes, the central lobe being roundish or bluntly two-lobed, flat, or sometimes wavy. About a dozen species natives of Tropical America are known. Those mentioned below may be recommended for cultivation.

Culture.—They succeed in the *Cattleya* house on blocks, or in baskets suspended from the roof, in moss or moss and peat mixed together, or they may be grown in pots equally well if that system is preferred. A liberal supply of water is necessary during the growing season; but after they have completed their growth, water should be withheld until they begin to show flower. Propagation is effected by parting the stems.

S. crispa, Lindley.—A pretty species, with fusiform stems a foot high, bearing at the top two or three large oblong-lanceolate leathery leaves, and from the base of the upper leaf a bracteated peduncle from three to five feet long, at the

apex of which is produced a broad crowded raceme of brown flowers, the oblong sepals and petals of which have a yellow undulated margin; the ovate oblong obtuse obscurely three-lobed lip is white. In the form figured in the *Botanical Magazine* the sepals and petals are wholly of a dull brick red. The plant does best in a pot or basket, and will grow to a considerable size; it blooms during winter, and will last three weeks in perfection if the flowers are kept dry.—*Demerara*.

FIG.—*Sertum Orch.*, t. 10; *Bot. Reg.*, 1844, t. 23; *Bot. Mag.*, t. 3729.

S. Lyonsi, *Lindley*.—A handsome kind, the “prettiest of the genus.” The stems grow about a foot in height, and from their apex are produced the leathery leaves, which are like those of *S. crispa*, and the tall flower scapes, which grow three or four feet long, and bear a broad raceme of numerous long-stalked flowers, the pedicels of which are yellow and deflexed at the tip, and the flowers themselves have obtuse ovate crispy sepals and petals, white, marked thickly with parallel transverse purple bars and spots on each side of the centre, and a smaller, acute lip, scarcely spotted, white edged with yellow. It will succeed either on a block or in a basket suspended from the roof, and lasts in bloom three weeks.—*Jamaica*.

FIG.—*Bot. Mag.*, t. 5172; *Flore des Serres*, t. 2130.

S. tibicinis, *Bateman*.—The most beautiful species of the genus, a truly noble and most effective plant. The stems are conical in outline, horn-shaped, annulate, furrowed, a foot and a half long, hollow, and of ample size when well grown—indeed it will not flower until the stems become strong; they bear at top two or three oblong leathery spreading leaves, and a terminal panicle of many flowers on a scape five feet or more in length. These flowers measure more than two inches across; the sepals and petals are oblong obtuse, wavy, pink spotted with rich chocolate, the lip white with rose colour on the large erect side lobes. Its usual time of blooming is May and June, and it will keep flowering for six weeks. We have found it to grow best on a block, with plenty of heat and moisture during the growing season. The variety *grandiflora* has larger and more handsomely coloured flowers, the sepals and petals palish purple, deeper and redder on the inner surface, especially towards the ends, the lip with the side lobes purplish towards the edges outside, orange streaked with

purple within, the disk white, and the front lobe white stained with yellow and bordered with purple.—*Honduras*.

FIG.—*Bot. Mag.*, t. 4476 (*grandiflora*); *Batem., Orch. Mex. et Guat.*, t. 30; *Bot. Reg.*, 1845, t. 30 (*grandiflora*); *Flore des Serres*, t. 49 (*grandiflora*); *Orchid Album*, v. t. 205.

SYN.—*Epidendrum tibicinis*.

SCUTICARIA, Lindley.

(Tribe Vandææ, subtribe Maxillariææ.)

A small genus of curious epiphytal plants, producing very short fleshy one-leaved stems, the leaves being very long, fleshy, subterete, furrowed, continuous with the stem. The scapes are one-flowered, about two inches high, and grow from the side of the stem, the flowers themselves being very handsome. The sepals and petals are erecto-patent, the lateral sepals adnate with the foot of the column forming a prominent chin, and the lip is sessile, articulated, broad and concave, the lateral lobes large, erect, the middle one smaller and spreading. Two or three species are known, all from Tropical America.

Culture.—The *Scuticarias* will do in the *Cattleya* or East India house, and may be grown either on blocks or in baskets with moss, a liberal supply of water being necessary at the roots in the growing season. They are propagated by dividing the plants just as they begin to grow.

S. Dodgsoni, *Williams*.—A very distinct and handsome species. The leaves are terete, a foot or more in length, and of a dark green colour. The peduncle is short, bearing two flowers; the sepals and petals light brown inside, darker at the base, and blotched with light yellow; the lip white, cup-shaped, beautifully streaked with light rose and yellow.—Said to have been introduced from *Demerara*.

S. Hadwenii, *Hort*.—A pretty and rare Orchid, whose few cylindrical fleshy roots grow from a short knotty rhizome, which also produces from a sheathing swollen base the terete

leaves, a foot and a half long, acute at top, and furrowed on the inner face. The scapes are erect, each bearing one flower, which has oblong spreading sharply acuminate sepals and petals of a pale yellow green irregularly blotched with dark brown, and a large obovate cucullate lip, white marked with flesh-coloured longitudinal spots, downy inside, and having an oblong crest, three-toothed in front. The plant is very much like *S. Steelii*, only the flowers of *S. Hadwenii* are more erect, and the scape is an inch or two higher.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4629; *Flore des Serres*, t. 731.

SYN.—*Bifrenaria Hadwenii*.

S. Steelii, *Lindley*.—A handsome epiphytal plant of peculiar habit. The branching rhizome, which is ebulous, bears on each branch a solitary terete channelled flagelliform leaf as thick as a swan's quill and two to four feet long, tapering to a fine point. The scape is one to three-flowered, the flowers large, fragrant, pale primrose yellow blotched with reddish brown, and the lip is three-lobed, pale yellow, striately marked with brownish crimson, especially on the lateral lobes, the crest being oblong with three orange-coloured teeth in front. It produces its blossoms at different times of the year, lasting a long time in perfection.—*British Guiana*.

FIG.—*Bot. Reg.*, t. 1986; *Orchid Album*, ii. t. 55; *Bot. Mag.*, t. 3573.

SYN.—*Mazillaria Steelii*.

SOBRALIA, Ruiz and Pavon.

(Tribe Neottieæ, subtribe Vanilleæ.)

This genus contains some very handsome species which are quite distinct from most other Orchids in habit and general aspect. They are all strong free-growing terrestrial plants, the long slender reed-like stems furnished with dark green plaited sheathing leaves, and bearing at their summit large showy flowers, as many as six or more being produced from a single stem, but rarely having more than one expanded at one time. The blossoms in most of the species are very large and brilliantly-coloured; and, although individually they last but a short time, this is compensated for by the quick

succession of new flowers, for as soon as one decays another appears. The sepals are subequal, erect, connate at the base, the petals similar or broader, the lip erect from the base of the column, around which its lateral lobes are folded, the limb concave, undulated or fimbriate, undivided or two-lobed, and the column elongate and subincurved. There are about thirty species, found in the Andes of Tropical America, from Peru to Mexico.

Culture.—The East Indian or Mexican house will either of them suit these plants, which thrive best in pots of large size potted in rough fibrous peat, in which they grow best, and which should overlie about three inches of drainage. An abundant supply of water at the roots in the growing season is essential to their well-being, but afterwards much less will suffice. The stems grow up in thick tufts, and when the plants get too large, they should be turned out of the pot, and divided into several pieces, each of which will soon grow and make a flowering plant. The genus is far too much neglected by Orchid growers.

S. leucoxantha, *Rehb. f.*—A handsome species, allied to *S. macrophylla*, but dwarfish in habit, the stems being a foot or more in height, and the plicate leaves cuneate oblong elongately acuminate, with the nervose sheaths marked by black warts. The bracts of the spathe are acute congested, scariose spotted with brown, and from between them issue the flowers, which are as large as those of *S. Fenzliana*, the oblong ligulate apiculate recurved sepals white, the somewhat shorter and broader petals also white, and the lip white outside, deep golden yellow flushed with orange in the throat and disk, passing off to white at the edge, oblong flabellate, convolute at the base round the thick clavate column, which is half its length, the expanded front portion bilobed and crenulate in front. A plant which blossomed at the Priory, St. Helen's, Isle of Wight, during August last, appears to correspond with this, but the lip in the present case was very much undulated at the margin.—*Costa Rica.*

S. Liliastrum, *Lindley*.—A distinct and handsome species, with stems eight to ten feet high, furnished with lanceolate very acute striated leaves with a vaginate base, and terminal distichous many-flowered racemes with spathaceous bracts, the flowers large, pendulous, white with yellow veins, produced in July and August; they, however, last but a short time in beauty. There are two varieties of this plant, one much better than the other. Dr. Lindley refers also to a bright rose-coloured form the lip having white veins, which is that figured in the *Sertum*.—*British Guiana; Bahia*.

FIG.—*Sertum Orch.*, t. 29.

SYN.—*Epidendrum Liliastrum*.

S. macrantha, *Lindley*.—A remarkably handsome species, no doubt the finest of the genus. The stems are six to eight feet high, with oval acuminate plicate leaves, and short racemes of flowers, the flowers being individually large, six inches across, aromatic, of a beautiful rich purple and crimson, the sepals oblong, the petals broader and crispy in the upper part, and the lip folded round the column at the base, very broad at the roundish bilobed apex, and wavy at the edge, having a pale yellowish spot in the centre. It blooms during the summer months, producing the blossoms successively, each flower lasting three days in perfection. This makes a fine plant for exhibition.—*Mexico; Guatemala*.

FIG.—*Bot. Mag.*, t. 4446; *Batem., Orch. Mex. et Guat.*, t. 37; *Paxton, Mag. Bot.*, xiv. 241, with tab.; *Moore, Ill. Orch. Pl.*, *Sobralia* 2; *Flore des Serres*, t. 669.

S. macrantha pallida, *Hort*.—A very distinct variety, having large flowers, seven inches across, of a beautiful pale rose colour; the lip nearly white. It blooms during the summer months, and continues a long time in perfection.—*Guatemala*.

S. macrantha splendens, *Hort*.—A charming variety which has darker flowers than those of *S. macrantha*, but they are not so large; they are produced from June to August. There is a form of this called "Woolley's" variety, which is very dwarf in habit, and produces magnificent flowers in June and July.—*Guatemala*.

S. rosea, *Pöppig and Enll.*—A very fine species, with a

stout stem four to six feet high, furnished with oval acuminate leaves, and very large flowers in a short raceme borne on a flexuose rachis with large boat-shaped bracts, the sepals and petals dark mauve, the lip, which is very open, crimson with a white centre. The plant will produce four flowers on a spike, open at the same time, and thus makes a grand display, while unlike many of the others, it remains in bloom a considerable time.—*New Grenada*.

FIG.—*Pöpp. et Endl., Nov. Gen. et Sp., i. t. 93 (rosea); Xenia Orch., i. t. 42 (Ruckeri); Warner, Sel. Orch. Pl., iii. t. 19; Paydt, Les Orch., t. 40.*
 SYN.—*S. Ruckeri*.

S. xantholeuca, *Hort.*—A very rare and handsome species of distinct character, which was flowered by Mr. Hill, gardener to the late R. Hanbury, Esq., The Poles, Ware, and subsequently by Mr. Palmer, gardener to T. N. Powell, Esq., Drinkstone Park, Suffolk, by whom it was purchased for *S. macrantha*. It has the usual reed-like stems, with lanceolate acuminate plaited leaves, the sheaths of which are dotted with brown, and large handsome deflexed flowers with oblong-lanceolate sepals, broader petals wavy at the edge, both of a pale or sulphur yellow, and a longer emarginate lip, which is very much frilled and of a deeper yellow.—*Native Country not stated*.

FIG.—*Garden, xxii. t. 366.*

SOPHRONITIS, *Lindley*.

(Tribe Epidendreæ, subtribe Lælieæ.)

A small genus of dwarf-growing tufted Orchids, some of the species of which are very beautiful. On this ground, as well as on that of their occupying but little space, most of those which are known are worth cultivating. They are evergreen plants, producing their flowers in short few-flowered racemes or solitary from the top of the pseudobulbs, which are small, clustered, and furnished each with one or two leathery or fleshy leaves. The broad-petalled flowers are very showy. There are four or five species recorded from the Organ Mountains of Brazil.

Culture.—These pretty little plants thrive best on blocks of wood, or in small baskets, with a moderate supply of heat and moisture all the year round. They are propagated by dividing the plants just as they begin to grow.

S. cernua, *Lindley*.—A remarkably small epiphyte found on trees, and attaining a height of about three inches, growing amongst the moss. It has short two-edged stems (scarcely pseudobulbs) sheathed with scales, produced on a creeping rhizome, each bearing a solitary oval apiculate leaf rather more than an inch long, and a short effuse axillary raceme of small rosy red flowers, yellowish in the centre; the column is white, with dark purple wings. It blooms during the winter, lasting long in beauty.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3677; *Bot. Reg.*, t. 1129; *Past. Fl. Gard.*, iii. 10, fig. 236.

SYN.—*S. Hoffmannseggii*; *S. nutans*.

S. coccinea, *Rchb. f.*—An exceedingly beautiful species, with short oval terete stems, each bearing a single oblong acute dark green leaf, about three inches in length, and solitary flowers upwards of three inches in diameter, of stout substance, and of a brilliant scarlet or cinnabar colour; the sepals are linear-oblong obtuse, the petals three times as broad, and the undivided lip ovate cucullate at the base. Dr. Lindley included this plant under *S. grandiflora*. It blooms during the winter months, and should be either grown on a block with a little moss attached, or in a small basket with moss and a little peat, and suspended from the roof.—*Brazil*.

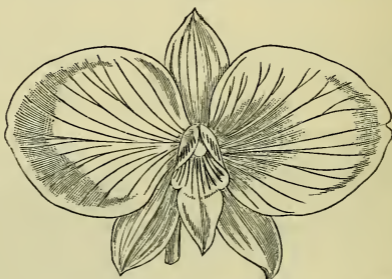
FIG.—*Flore des Serres*, t. 1716.

SYN.—*Cattleya coccinea*.

S. grandiflora, *Lindley*.—A truly handsome species, the finest of the genus, the flowers of which are large, and of a beautiful scarlet colour, lasting six weeks or more in perfection. The pseudobulbs are oblong cylindraceous, bearing one elliptic leaf, and a solitary flower fully three inches across, with oblong-lanceolate sepals and roundish elliptic petals of a bright cinnabar or deep crimson, and a three-lobed lip, the side lobes of which are incurved, and the acuminate front lobe flat, all these parts yellow with bright red streaks. This plant, which blooms in November and

December, ought to be in every collection. Two varieties of it are grown, the one producing short obtuse leaves, with exceedingly brilliant-coloured flowers, the other with the leaves and pseudobulbs longer; this latter appears to be the same as *S. coccinea*. Mr. Warner's figure represents forms with vermilion and crimson flowers respectively.—*Organ Mountains*.

FIG.—*Sertum Orch.*, t. 5; *Bot. Mag.*, t. 3709; *Moore, Ill. Orch. Pl.*, *Sophronitis*, 1; *Jennings, Orch.*, t. 5; *Floral Mag.*, t. 329; *Warner, Sel. Orch. Pl.*, iii. t. 3 (two forms); *Puydt, Les Orch.*, t. 41; *Paxton, Mag. Bot.*, ix. 193, with tab.; *Hart, Parad.*, i. t. 15; *Paxt. Fl. Gard.*, iii. 10, fig. 237.



SOPHRONITIS GRANDIFLORA.

S. violacea, *Lindley*.—A pretty and distinct species, having small oval pseudobulbs, each bearing a solitary linear dark green leaf longer than the one-flowered scape, which produces during the winter months violet-coloured flowers, which last long in beauty.—*Organ Mountains*.

FIG.—*Paxt. Fl. Gard.*, iii. 11, fig. 238.

STANHOPEA, *Frost*.

(Tribe Vandeeæ, subtribe Stanhopicæ.)

A genus of beautiful epiphytes, the majority of which have ovate furrowed pseudobulbs, bearing each at their summit a large dark green plaited leaf, some twelve inches or more long, and six or more inches broad; and from their base a

deflexed or drooping scape furnished with several large curiously formed flowers, thick and waxy in texture, in most of the kinds highly coloured, and emitting a very strong perfume; unfortunately, they remain but a few days in perfection, which has probably led many Orchid growers to relinquish their culture—a circumstance which is much to be regretted, as they are free-flowering plants, and consequently a succession of blooms keeps them gay for a considerable time. The flowers have free spreading sepals and petals, and a very thick fleshy lip, which is variable and remarkable in structure, the hinder portion, constituting what is called the hypochil, being usually saccate, a middle part, called the mesochil, being often two-horned, and the anterior portion or epichil being more or less movable. Sometimes one or other of these parts is deficient, and rarely they are all blended into a kind of slipper. They all come from Tropical America, some twenty or more species being known. We shall only mention a few of the best sorts, though there are many others well deserving a place in an Orchid collection, especially where room is not an object.

Culture.—*Stanhopeas* are of easy culture. They are best grown in baskets with sphagnum moss, and suspended from the roof; they require a liberal supply of water in the growing season, and plenty of shade. The baskets should be made shallow, and open at the bottom and sides, so that the flower scapes may easily find their way through. After their growth is completed they are the better for a good period of rest, during which they should be kept nearly dry at the roots. They will grow well in either the East Indian or Brazilian house. These plants are subject to the attacks of the red spider and the thrips, to prevent which the leaves should be well syringed whenever the weather is hot and dry with clean tepid water.

S. Bucephalus, *Lindley*.—A beautiful species, certainly one of the richest coloured in the whole family. It has small ovate ribbed pseudobulbs, each producing one stalked oblong acuminate plicate leaf, and a deflexed raceme of several large showy flowers, which are of a rich tawny orange, with large blood-red blotches, and in which the hypochil is boat-shaped, the mesochil is bicornute, and the epichil is roundish ovate and cuspidate. Dr. Lindley makes two varieties, one with pale rich yellow flowers, with purple dots and small blotches everywhere except on the hypochil; and the other (*guttata*) with the sepals, petals, and hypochil deep apricot, with four brown blotches on the hypochil and also on each petal. The flowers are usually produced about the month of August; and, like most of those in this family, they emit a powerful and fragrant odour.—*Peru; Ecuador*.

FIG.—*Bot. Reg.*, 1845, t. 24; *Bot. Mag.*, t. 5278; *Moore, Ill. Orch. Pl.*, Stanhopea 2; *Humb. et Bonpl. Pl. Æquin.*, t. 27.

SYN.—*Epidendrum grandiflorum; Anguloa grandiflora*.

S. Devoniensis, *Lindley*.—This beautiful species has ovate ribbed pseudobulbs, lanceolate plaited shortly stalked pale green leaves, and two-flowered peduncles. The flowers, which are produced during July and August, are extremely sweet-scented, pale creamy yellow, thickly blotched with irregular spots of deep crimson-purple, the markings on the petals and dorsal sepal taking the form of bold transverse bars near the base; the lip is whitish spotted with purple, the hypochil subglobose, with a deep purple stain over the lower half, the mesochil short two-horned, and the epichil obtuse-angled, rhomboid, obsoletely three-toothed at the end. It is distinguished from *S. tigrina*, which it resembles, by its slightly divided epichil.—*Peru*.

FIG.—*Sertum Orch.*, t. 1; *Fl. des Serres*, t. 974; *Puydt, Les Orch.*, t. 42.

S. gibbosa, *Rchb. f.*—A very fine and distinct species, flowering in June and July. The plant is in the way of *S. Wardii*, and bears very large flowers, about six inches in diameter, and of a dull yellow barred and blotched with dull crimson, this colouring assuming a much darker hue in the sepals; the hypochil is incurved, keeled on each side, the mesochil is furnished with falcate ligulate horns, and the epichil is oblong acute. This plant was well bloomed in 1883 by Mr. Peacock of Hammersmith, and Mr. Wallis, of Balham, who had a plant bearing five spikes of flowers.—*Native Country not stated*.

S. grandiflora, *Lindley*.—A distinct and pleasing species. The plant has ovate furrowed pseudobulbs, broad lanceolate plaited leaves, and short pendent scapes, bearing the very large flowers, which are fully six inches in diameter and very fragrant, pure white except a few crimson dots on the basal and middle parts of the lip; the hypochil is roundish, two-horned in front, the mesochil solid truncate hornless but obsolete tridentate, and the epichil ovate. The column is much elongated. It blooms at different times of the year, and lasts about three days in perfection.—*Trinidad*.

FIG.—*Lodd. Bot. Cab.*, t. 1414; *Maund, Botanist*, iv. t. 176.

SYN.—*Ceratohilus grandiflorus*.

S. insignis, *Frost*.—This is the original *Stanhopea*, and a very handsome plant it is. The pseudobulbs are clustered, ovate, furrowed, with a broadly lanceolate dark green plicate shortly stalked leaf, and a drooping spike of three or four large showy fragrant flowers.

The flowers are of a pale dull yellow, whitish or creamy towards the tips, and dotted with purple on the inner face, the spots being many of them ocellate; the lip is whitish spotted with purple, the hypochil being in addition deeply stained with purple; the hypochil is globose,



STANHOPEA INSIGNIS.

split in front, the mesochil bears falcate incurved horns, and the epichil is roundish ovate entire. The column is remarkable for its broad winged margin. The flowers are produced in August and September. There is a variety named *flava* by Dr. Lindley which has yellowish flowers, and is unusually sweet-scented.—*Brazil*.

FIG.—*Bot. Mag.*, tt. 2948—9; *Bot. Reg.*, t. 1837; *Lodd. Bot. Cab.*, t. 1985; *Rchb. Fl. Exot.*, t. 265.

S. Martiana, *Bateman*.—A magnificent species, quite distinct in character and appearance. The pseudobulbs are ovate and furrowed, the leaves lanceolate plicately venose, and the peduncles two-flowered; the sepals are very pale straw-coloured sparingly marked with small vinous spots, the petals white with larger spots, and a broad blotch of crimson at the

base of each, and the lip white; the hypochil is short, scrotiform, the mesochil short with cirrhose horns, the epichil oblong-linear, obscurely three-toothed, and the column pubescent. It blooms during the autumn.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, tt. 1, 27; *Bot. Reg.*, 1843, t. 44 (bicolor); *Moore, Ill. Orch. Pl.*, Stanhopea 5; *Flore des Serres*, tt. 2112—3.

SYN.—*S. implicata*.

S. oculata, *Lindley*.—A free-flowering and extremely showy species. It has small ovate furrowed pseudobulbs, each of which bears at the top a large broadly lanceolate nervose leaf, and from the base a peduncle supporting half a dozen large and handsomely spotted blossoms in a drooping raceme. The flowers are of a lemon-yellow, the sepals covered with a large number of lilac spots, often annular, the petals less thickly spotted, the centre yellow, with two or sometimes four large blackish brown patches on the side of the hypochil, which is elongately boat-shaped, as if unguiculate, the mesochil having two fleshy horns, and the epichil being ovate entire. There are many varieties, most of which are very sweet-scented. One called *Lindleyi* has the flowers dull wine-red and but little spotted, and is probably the same as *S. oculata Barkeriana*. The species blooms from July to November.—*Mexico*.

FIG.—*Bot. Mag.*, t. 5300; *Bot. Reg.*, t. 1800; *Lodd. Bot. Cab.*, t. 1764; *Gartenflora*, t. 189 (crocea).

SYN.—*Ceratochilus oculatus*.

S. tigrina, *Bateman*.—The handsomest of the species, and the most attractive, whether its strange form, singular markings, or powerful odour are concerned; the latter has been compared to a mixture of melon and vanilla. The pseudobulbs are ovate, furrowed, and support a large broadly lanceolate deep green plaited leaf. The peduncle supports a pendent raceme of three or four very large flowers, eight inches in diameter, deep orange yellow, the sepals longitudinally barred and blotched with sanguineous purple, the petals sparingly spotted with the same, and the lip with a roundish yellow hypochil having radiating toothed lamellæ within the cavity, a two-horned mesochil, and an oval trifold epichil, the two latter parts whitish spotted with purple. It blooms in July, August, and September. The variety *nigroviolacea*, with the whole flower deep brown-purple except the edges of the sepals and petals and the upper half of the lip, is very handsome. It is figured by Morren in *Ann. de Gand.*, i. t. 21.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 7; *Bot. Mag.*, t. 4197; *Bot. Reg.*,

1839, t. 1; Moore, *Ill. Orch. Pl.*, Stanhopea, 4; *Flore des Serres*, tt. 713—715 (*superba*); *Hart. Parad.*, i. t. 6.

SYN.—*Maxillaria lyncea*; *Anguloa Hernandezii*.

S. tigrina lutescens, *Williams*.—This is a fine variety, with the very large and handsome flowers of a brilliant yellow, inclining to orange, and barred with deep chocolate. It blooms at the same time as *S. tigrina*, and makes a grand plant for exhibition on account of its bold showy flowers.—*Guatemala*; *Central America*: *Chiriqui*; *New Grenada*.

S. Wardii, *Loddiges*.—One of the most beautiful of the species, remarkable for its brilliancy and for the delicious sweetness of its flowers. It has oblong-ovate furrowed pseudobulbs, broad acuminate plicate leaves, and drooping racemes of several showy flowers, of which the sepals and petals are golden yellow dotted with purple over great part of their surface, and the lip is pale yellow, with two large dark velvety purple spots on the deep yellow oblong depressed hypochil, reflecting a silvery light as if frosted; the mesochil has two fleshy horns dotted with purple, and the epichil is roundishovate acute with two semiterete falcate subcirrhose horns, also thickly spotted with purple.—*Guatemala*.



STANHOPEA WARDII.

FIG.—*Sertum Orch.*, t. 20; *Bot. Mag.* t. 5289; *Knowles and Westc. Floral Cab.*, t. 90.

S. Wardii aurea, *Lindley*.—A very beautiful variety, resembling the type in its general characters, but having flowers of a deep orange yellow, the hypochil bearing two dark spots “which are in some manner lost in the flood of yellow that surrounds them.” They are borne during the summer and autumn months.—The brilliant colour of the large fragrant blossoms should secure for it a place wherever there is sufficient space.—*Guatemala*.

SYN.—*S. aurea*.

THUNIA, *Reichenbach fil.*

(Tribe Epidendreae, subtribe Bletieae.)

A small genus of Asiatic Orchids, which are by some authorities included in *Phajus*, from which genus, however, they are readily distinguished by their manner of growth, and by several striking differences, as, for example, by their terete leafy stems, which grow in fascicles, by their deciduous leaves, and by their terminal drooping clusters of flowers provided with large membranaceous bracts. The structure of the flowers very closely resembles that of *Phajus*. Professor Reichenbach refers the genus to the tribe *Arethuseae*, and sums up the distinctions between it and *Phajus*, in these words:—“*Thunias* have a terminal inflorescence on the leafy shoots when *Phajuses* have their inflorescences and their fascicles of leaves apart. *Thunias* have fleshy membraneous leaves, *Phajuses* have plaited ones. *Thunias* have persistent, *Phajuses* deciduous bracts. *Thunias* have four, *Phajuses* eight pollen masses. *Phajus* flowers get blue when dried, *Thunias* keep white or get brownish. You can make cuttings of *Thunias* as of a *Dracæna*, try it with *Phajuses*!” There are some four or five species found in the Himalayas and in Burmah.

Culture.—The plants belonging to this genus should be grown in the East Indian house, and be treated liberally with water. They will grow upon blocks, but pot culture is much the best. In potting *Thunias*, the drainage provided should be perfect, and the potting material should be rough peat and sphagnum in about equal parts. After the flowers are past and the leaves have fallen, only just sufficient water should be given to keep them from shrivelling, and they should be removed to a lower temperature. *Thunias* may be propagated by division, and also by cutting up the old stems into pieces

about six inches long, and inserting them in a pot in the same manner as ordinary cuttings. This latter operation should be effected just when the young growths are complete.

T. alba, *Rchb. f.*—The stems of this handsome species are terete, usually about two feet high, clothed throughout with leaves, the lower ones, produced when the stem first begins to lengthen, broad, round, amplexicaul and scale-like, the upper ones also stem clasping, oblong-lanceolate acute, some six or eight inches long, glaucous beneath, falling during the resting season so as to leave the slender terete stems naked. The flowers are produced on a short dense terminal nodding raceme just as growth is finished. The sepals and petals are pure white, oblong-lanceolate, acute, and nearly equal; and the lip is oblong-cucullate, rounded at the apex, where it is denticulated, white, beautifully pencilled over the disk and front portion with purple and lilac. The plant under consideration should be potted in good fibrous peat and sphagnum, and during the growing season be kept in the East Indian house; but after the flowers are faded, water must be gradually diminished until it is entirely withheld, when the cool house will suit it best; care must, however, be taken to prevent its shrivelling while at rest. It blooms during July and August.—*Northern India; Burmah.*

FIG.—*Bot. Mag.*, t. 3991; *Bot. Reg.*, 1838, t. 33; *Paxton, Mag. Bot.*, v. 125, with tab.; *Wallich, Pl. Asiat. Rar.*, t. 198; *Knowles and Westc. Floral Cab.*, t. 125.

SYN.—*Phajus albus*.

T. Bensoniæ, *Hook. fil.*—A beautiful species, with the habit and general appearance of *T. alba*. The stems are erect, leafy, terete, fascicled, from one to two feet in height, their lower parts clothed with broad roundish reflexed leafy sheaths, which pass upwards into the true leaves; these are distichous, from six to ten inches long, green above, slightly glaucous beneath. The flowers are large, measuring some two or three inches across, and produced like those of *T. alba*, just when growth is finished, from the top of the stem in a short scarcely drooping raceme. The sepals and petals are spreading, oblong-lanceolate, two and a half inches long, open, bright magenta, becoming white towards the base; and the lip is large, open, the side lobes rolled over the column, magenta in front, white at the base, the central lobe oblong,

closely frilled at the edge, of a rich deep magenta-purple, the crests forming a broad oblong patch of yellow frilled keels occupying the disk. It flowers in June, and makes a fine plant for exhibition. We saw a spike of this species recently flowered by Mr. Swan, gardener to W. Leach, Esq., Fallowfield, Manchester, which bore eighteen flowers—a most unusual number.—*Mountains of Moulmein.*

FIG.—*Bot. Mag.*, t. 5694; *Jennings, Orch.*, t. 35; *Orchid Album*, ii. t. 67.

T. Dodgsoniana, *Williams*.—A handsome and distinct species, with erect terete stems, and oblong-lanceolate acute nervose stem-clasping bright green leaves. The flowers are produced in terminal drooping racemes like those of *T. alba*, which the plant resembles in its general aspect, the oblong-lanceolate acute sepals and petals being pure white, and the lip, which is denticulate in front, is sulphury white outside, yellow within, the throat freely striped with crimson. The lateral sepals are produced backwards so as to form a short blunt chin or incipient spur. This plant was exhibited by us at the Royal Horticultural Society's Meeting in August, 1871, and was awarded a first-class certificate.—*India.*

FIG.—*Floral Mag.*, 2 ser., t. 329.

SYN.—*Phajus Dodgsoni*.

T. Marshalliana, *Rchb. f.*—A lovely species of free-growing character. The reed-like stems are erect terete and leafy, as in the other cultivated species, and the leaves are oblong-lanceolate acuminate, six inches long, semiamplectant, distichous, pale green, glaucous beneath. The flowers, which are produced in June and July, are large, white, with the lanceolate-oblong acute spreading sepals and petals two and a half inches long, and the lip white, with the lower part convolute around the column, streaked with yellow and purple on the upper side near the front, and produced behind into a retuse falcate spur, the front part spread out, roundish, golden-yellow, with numerous forking veins of deep orange-red covering the whole surface except the extreme edge, which is white and beautifully frilled; the disk bears five yellow raised veins and five shorter ones on each side, all pectinately fringed with crystalline hairs. It continues to throw fresh flowers for a long time, and makes a good exhibition plant, being so distinct from any other Orchid.—*Moulmein.*

FIG.—*Orchid Album*, iii. t. 130; *Gartenflora*, t. 1098.

T. nivalis, *Hort.*—This plant, which resembles *T. alba*, has erect terete stems, seldom exceeding eighteen inches in height, and are furnished with glaucous distichous leaves, about six inches in length, which fall off during the resting season. The flowers are produced on a short raceme from the apex of the stem, each cluster containing some five or six pure white blossoms.—*Sylhet.*

T. Veitchiana, *Rehb. f.*—This plant, which has for some time been known to us under the name of *T. Wrigleyana*, was, we believe, first raised and flowered by the late Mr. Geo. Toll, of Manchester, who named it after E. G. Wrigley, Esq., and subsequently sold us the stock. Since then it has been exhibited by Messrs. Veitch and Sons under the name of *T. Veitchiana*, at the same time as exhibited by us under the name of *T. Wrigleyana*, at the Royal Botanic Society's Show, in May, 1885. It is a hybrid between *T. Bensoniæ* and *T. Marshalliana*; the sepals and petals are white, just tinged with mauve at their tips, the keels of the disk are of a peculiar orange-purple, the anterior part of the lip is fine mauve-purple, and the superior portion of the lip white, with some mauve-purple veins.—*Garden hybrid.*

SYN.—*T. Wrigleyana.*

TRICHOCENTRUM, *Pöppig and Endlicher.*

(*Tribe Vandææ, subtribe Oncidieæ.*)

This is a small genus of dwarf epiphytes, with small monophyllous pseudobulbs, and radical scapes, bearing one or two flowers of medium size. Many of the species are interesting only from a botanical point of view; there are, however, some few exceptions to this rule, of which the species here quoted are examples. They have free spreading sepals and petals, and a lip which is connate with the base of the column into a pitcher, and is produced into a longish spur, the middle lobe being flattened out, broadly two-lobed, and much longer than the sepals. Eight species are recorded from Brazil and Central America.

Culture.—These plants should be grown on a block, or in a small basket, and treated to a moderately cool temperature; care must especially be taken that no stagnant water remains about their roots.

T. albopurpureum, *Linden and Richb. f.*—A pretty dwarf epiphyte, having minute ovoid monophyllous pseudobulbs growing in tufts, and sessile oblong acute shining green leaves, four to six inches long, the one-flowered peduncles springing from the base of the bulbs. The flowers are large for the size of the plant, and freely produced; the cuneate oblong sepals and the more oblong petals are of a bright cinnamon-brown inside, tawny yellow outside; while the lip is large, projected forwards, pandurate, broad and bilobed in front, white, with two large purple spots near the base, the disk veined with rosy purple passing to yellow, and having a crest of four rosy purple keels. It should be grown at the cool end of the Cattleya house.—*North Brazil.*

FIG.—*Bot. Mag.*, t. 5688; *Orchid Album*, v. t. 204; *Gard. Chron.*, 1866, 219, with fig.

T. orthoplectron, *Richb. f.*—A curious and beautiful epiphyte, of dwarf habit. The flowers are large; the cuneate-oblong sepals and petals are light cinnamon brown, tipped with yellow, and the lip is large, subquadrate, emarginate, blunt-angled, white, with a crimson lake blotch on each side of the base, and five bars or semiabortive keels of the same colour between the blotches, the disk in front of the crest being yellow. The spur is straight and tapered off to an acute point. It flowers in October, and was exhibited by W. Lee, Esq., Downside, Leatherhead, at the Royal Horticultural Society's Meeting in October, 1883.—*South America.*

T. porphyrio, *Richb. f.*—A very handsome species, with dwarf scarcely pseudobulbous stems, cuneate-oblong leaves, and peduncles bearing each a solitary flower about two inches in diameter; the sepals and petals are cuneate-oblong acute, brown margined and tipped unequally with yellow; the lip is pandurately flabellate, emarginate, of a rich magenta-purple, faintly margined with white towards the point, and having a rectangular sulphur yellow blotch on the disk in front of the three purple lines of the crest; the spur is bent and attenuated, and the column bears falcate auricles.—*South America.*

FIG.—*Illust. Hort.*, 3 ser., t. 508.

T. tigrinum, *Linden and Rehb. f.*—A remarkably handsome and desirable species, which produces its blossoms while in a very small state. Its oblong foliage reminds one of a miniature *Oncidium Lanceanum*, being more or less dotted with deep red. The peduncles are produced from the base of the leaves, and bear one or two flowers, of which the ligulate-lanceolate sepals and petals are greenish yellow, transversely barred and distinctly spotted with purplish brown; and the lip, which is very large in comparison to the size of the flower—an inch and a half long, and nearly two inches across the dilated apex—is broadly cuneiform, deeply bilobed, pure white, with a yellow crest on the disk, and on each side at the base a wedge-shaped blotch of purple.—*Ecuador.*

FIG.—*Illust. Hort.*, 3 ser., t. 282.

TRICHOGLOTTIS, *Blume.*

(Tribe Vandæ, subtribe Sarcantheæ.)

A small genus of epiphytal Orchids, with elongate leafy stems, distichous leaves, and lateral peduncles bearing few flowered short racemes, or sometimes solitary flowers. The group is closely allied to *Sarcochilus*, from which it differs mainly in not having a fleshy lip. The species, of which about half a dozen are known, inhabit the Malayan Archipelago.

Culture.—The plants require the same treatment as *Aërides*, *Vanda*, and other genera of the same ebulbous character.

T. fasciata, *Rehb. f.*—A rather showy species of free-growing habit, with stoutish rooting stems attaining a moderate height, furnished with distichous oblong obtuse apiculate leaves, three inches long, sheathing the stem at the base, and bearing lateral spikes of rather large leathery flowers, suggestive of those of *Phalænopsis sumatrana*, few in number, but rather effective from their distinctly banded colouration. These flowers have trigonous peduncles and pedicels, cuneate oblong acute sepals and petals, the lateral sepals falcate, all white externally, pale greenish yellow inside

closely marked with transverse bars of cinnamon brown; and a curiously-shaped lip, which has dolabriform basal auricles and a trifid blade, with the side lobes triangular and spreading and the middle lobe keeled, obliquely obtuse in front—the lip whitish, with the side lobes yellow at the tip, and the keel with a few purplish spots beneath; the dolabriform auricles have three velvety lines between them.—*Eastern Tropical Asia*.

FIG.—*Orchid Album*, v. t. 208.

TRICHOPILIA, Lindley.

(Tribe Vandeeæ, subtribe Oncidiææ.)

This genus contains some very handsome and distinct-looking dwarf evergreen plants. They have monophyllous pseudobulbs, fleshy erect leaves, and deflexed scapes springing from the rhizome below the leaves, usually one or two-flowered, but sometimes producing four or five flowers, which are not only curious in form but also of a showy character. They have free narrow erecto-patent sepals and petals, and a large lip whose claw is adnate to the column, which it closely invests above, the limb being spreading, the slightly dilated lateral lobes connivent, and the middle lobe continuous and undulated. The anther-bed is usually ciliato-fimbriate. Bentham records sixteen species as growing in Columbia, Central America, and Mexico.

Culture.—The *Trichopilias* are best grown in pots, with peat and good drainage, and should be well elevated above the rim of the pot on account of their deflexed flower scapes, which proceed from the base of the bulbs. Too much water at the root at any time is highly injurious to them. They will do best in the Mexican house, kept as near the glass as possible, so that the bulbs may become well matured, which induces them to bloom more freely. They are propagated by dividing the plant.

T. candida.—See *PILUMNA FRAGRANS*.

T. coccinea.—See *TRICHOPILIA MARGINATA*.

T. crispa, *Lindley*.—A charming and very rare species, resembling *T. marginata* in its habit and foliage, but more robust, the pseudobulbs being larger. The drooping peduncles are produced from the base of the bulbs, and bear two or three large flowers on each. The sepals and petals are crispatto-crenate along the whole margin, light cherry crimson, faintly edged with white; and the lip is large, white outside, somewhat deeper in colour than the sepals, the margin



TRICHOPILIA CRISPA.

irregularly but strongly crisped, and the throat a rich deep crimson. It blooms during April, May, and June, and lasts about two weeks in perfection. The plant requires to be grown in a pot, and should be elevated three inches above the rim, in order to show off the flowers, which are drooping, to the greatest advantage. R. Warner, Esq., of Broomfield, exhibited a fine specimen of this plant, with upwards of a hundred flowers, at the St. Petersburg International Exhibition in

1869. This plant has the peculiarity of producing two crops of flowers from the same pseudobulbs every year; as soon as one lot goes off the other appears.—*Central America*.

FIG.—*Batem. 2nd Cent. Orch. Pl.*, t. 115; *Bot. Mag.*, t. 4857 (as *coccinea*); *Flore des Serres*, t. 1490 (as *coccinea*).

T. crispa marginata, *R. Warner*.—A decided acquisition to a very pretty genus. It is a finer plant than *T. crispa*, and will prove extremely useful for exhibition purposes, as it flowers during June and July. It resembles *T. marginata* in its growth, but has shorter and more ovate compressed pseudobulbs; the leaves are broadly lanceolate, recurved at the apex, dark green; and the peduncles, which are produced from the base of the bulbs, each bear two or three blossoms, which are large and very showy. The sepals and petals are linear lanceolate, crispy at the margin, of a pale purplish red, white at the edges; and the lip is white externally, funnel-shaped, the two rounded lateral lobes meeting over the throat, and the dilated central lobe deeply cleft at the apex, dull crimson, with the throat of a darker and richer crimson, the limb narrowly edged with white. This, which is from Mr. Warner's collection, is, without doubt, the finest of all the *Trichopilias*.—*Central America*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 5; *Puydt, Les Orch.*, t. 43; *Flore des Serres*, tt. 1925-6.

T. Galeottiana, *A. Richard*.—A distinct free-blooming and pretty plant, with tall ligulate ancipitous pale green pseudobulbs, solitary cuneate oblong acute dark green leaves, and abundant flowers on one-flowered peduncles. The sepals and petals are cuneato-lanceolate acute, the petals somewhat the broader, pale green, with a central bar of olive brown; and the lip is closely folded round the column, dilated and spreading in front, three-lobed, the lateral lobes rounded, the front lobe obreniform, the disk pale yellow with bars and lines of crimson-purple, the margin passing to white. It blossoms in August and September, and continues for a fortnight in good condition. It requires cool treatment, and should be potted in peat and sphagnum.—*Mexico: Chiapas*.

FIG.—*Illust. Hort.*, t. 225 (*picta*); *Bot. Mag.*, t. 5550 and *Batem. 2nd Cent.*, t. 162 (both as *turalbæ*.)

SYN.—*T. picta*, *T. turalbæ*, *Batem. non Rchb.*

T. hymenantha, *Rchb. f.*—A very distinct and curious plant, producing thick fleshy elongate ensiform acuminate leaves,

narrowed also to the base, where they are terete and clothed with close-fitting brown scales, the lower part representing a stem or pseudobulb. The flowers are small, in six or eight-flowered drooping racemes, on peduncles issuing from the axils of the stem sheaths; they are white, with the sepals and petals lanceolate and slightly twisted, and the lip sessile, broadly elliptic, nearly flat, with erose edges, speckled with deep sanguineous purple towards the base and sides. It flowers during the summer months.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5949; *Xenia Orch.*, i. t. 7.

T. lepida, *Hort.*, *Veitch*.—A very rare and handsome species, somewhat resembling *T. crispa* in growth. The pseudobulbs are oblong obtuse ancipitous, with solitary oblong ovate acute leathery leaves, and deflexed peduncles bearing large handsome flowers, which are from four to five inches in diameter, with a prominent fimbriated lip. The sepals and petals are linear lanceolate acute, pale rosy lilac, irregularly margined with white; and the lip, which is closely folded at the base, is expanded quadrate-oblong in front, of a deep purple-crimson with an irregular margin of white about a quarter of an inch wide, the lateral lobes broad and rounded, the central one deeply cleft into two rotundate undulated segments. It flowers during the spring months.—*Costa Rica*.

FIG.—*Floral Mag.*, 2 ser., t. 98; *Orchid Album*, v. t. 197.

T. marginata, *Henfrey*.—A very pretty and distinct species, with clustered oblong furrowed ancipitous pseudobulbs, bearing above the solitary lanceolate shortly acuminate dark green coriaceous leaves, recurved at the tip, and from their base the drooping one-flowered peduncles. The flowers are large, four to five inches in expanse, with a bold prominent lip, the sepals and petals are narrow linear-lanceolate acuminate, once twisted, brownish red with greenish yellow margins, and the lip is trumpet-shaped, white on the outside, the mouth spreading, three-lobed, the lateral lobes roundish and the central one emarginate, wavy, of a reddish purple sometimes edged with white, becoming deep crimson in the throat, or with the limb white and the throat only deep crimson. The margin of the anther-bed is very finely serrulate. It produces its blossoms in May and June, lasting three weeks in beauty. Of this plant there are many varieties. One called *olivacea*, *Richb. f.*,

has the sepals and petals of an olivaceous hue.—*Central America*.

FIG.—*Pact. Fl. Gard.*, ii. t. 54; *Gard. Mag. Bot.*, iii. 185, with tab. (1851); *Lemaire, Jard. Fl.*, t. 184.

SYN.—*T. coccinea*.

T. picta.—See *TRICHOPILIA GALEOTTIANA*.

T. suavis, *Lindley*.—A fine species, the thin almost foliaceous pseudobulbs and broad leaves of which very much resemble those of *Odontoglossum grande*. The pseudobulbs are monophyllous, oblong obovate, ancipitous, clustered; the leaves are large and broad, oblong acute wavy and nearly sessile; and the peduncles three or four-flowered. The flowers are white or creamy white, the lip yellow in the throat, and spotted with pale violet rose on the front part and on the sides; the sepals and petals are lanceolate acute narrowed to the base, scarcely twisted, the lip closely rolled up at the base, spread out in a funnel-shaped form, and three-lobed in front, the middle lobe being large and emarginate, and the entire edge being minutely crenulate and undulated. The flowers give out a most delicate odour of hawthorn. It blooms in March or April, lasting about two weeks in perfection, and is best grown in the cool house.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 4654; *Batem. 2nd Cent. Orch. Pl.*, t. 143; *Pact. Fl. Gard.*, i. t. 11; *Flore des Serres*, t. 761; *Lemaire, Jard. Fl.*, t. 227; *Warner, Sel. Orch. Pl.*, iii. t. 8; *Puydt, Les Orch.*, t. 44 (*Lamarchæ*).

T. suavis alba, *Hort*.—A pure white form of this old favourite, which Dr. Lindley calls “a delicious Orchid.” It has the sepals and petals pure white, and the lip white with a yellow stain in the throat. It blossoms during May and June, and lasts about two weeks in perfection.—*Central America*.

FIG.—*Orchid Album*, i. t. 14.

T. suavis grandiflora, *Hort*.—A lovely variety of this really handsome Orchid. The pseudobulbs and leaves are very large. The flowers expand very much better than those of the type, and are also more highly coloured; the sepals and petals are white, and the lip, which is upwards of three inches in diameter, is white, with large rich crimson spots, the throat deep orange.—*Central America*.

T. tortilis, *Lindley*.—A pretty and interesting species from the peculiar corkscrew-like sepals and petals. The pseudo-

bulbs are oblong or ligulate, compressed, two to four inches long, monophyllous, the leaf being oblong acute coriaceous, and the peduncles solitary and single-flowered. The drooping flowers are large and attractive, the sepals and petals narrow lanceolate, spirally twisted, yellowish green with lurid brownish purple blotches along the middle part, and the lip white outside, yellowish white or white within, spotted thickly with rose colour and blotched with yellow about the throat, the base closely rolled in, the front part spreading out and three-lobed, the rounded lateral lobes meeting as usual over the throat, the front flattened-out lobe two-cleft. It produces its flowers freely at various times of the year, and lasts two or three weeks in beauty. There are different varieties of this plant, one with much brighter-coloured flowers, and one with white flowers—the var. *candidum*, Linden and *Richb. f.*, imported from Chiapas by M. Linden.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3739; *Bot. Reg.*, t. 1863; *Maund, Botanist*, iii. t. 122; *Knowles and Westc., Floral Cab.*, t. 101.

TRICHOSMA, Lindley.

(Tribe Epidendrææ, subtribe Cœlogyneæ.)

A small Indian genus consisting of a single epiphytcal species, with the habit of *Calogyne*, having clustered two-leaved stems, subplicate somewhat fleshy leaves, and terminal racemes of largish flowers, of which the sepals and petals are spreading, and an articulated broadly three-lobed lip.

Culture.—This plant should be grown in a pot with rough fibrous peat and good drainage; when in active growth it must be kept moderately moist, and it must never be allowed to get dry, as it has no thick fleshy pseudobulbs to support it.

T. suavis, Lindley.—A very distinct and scarce plant, having thin tufted terete stems eight or ten inches high, furnished with two broadly lanceolate obsoletely three-nerved leaves, and bearing short terminal racemes of fragrant flowers; the sepals and petals are lanceolate, creamy white, and the lip has a three-lobed limb, the side lobes white

striped with brownish crimson, the middle lobe undulated, recurved, yellow margined with crimson, and bearing several crispy crests on the disk. It flowers during the spring months.—*Khasya Mountains*.

FIG.—*Bot. Reg.*, 1842, t. 21; *Orchid Album*, iii. t. 114.

SYN.—*Eria suavis*; *E. coronaria*; *Cælogyne coronaria*.

UROPEDIUM, Lindley.

(Tribe Cypripediæ.)

This genus contains but one species, a very interesting plant, agreeing entirely with the *Selenipedium* group of *Cypripedium* except as regards the character of the lip, which, instead of taking the form of a pouch or slipper, is like the petals, that is to say, long and caudate with the flat base slightly broader and concave. The only species is a native Colombia.

Culture.—Though not very showy, this plant is well worth growing on account of its peculiarly-shaped blossoms; and it is by no means a difficult plant to cultivate, if it gets the treatment it requires. We have found it to do best potted in a mixture of loam, peat, and sand, with good drainage. The plant should be placed just below the rim of the pot, and watered liberally at the roots during the growing season, which is nearly all the year. It requires but little rest; for having no fleshy bulbs to support it, a certain degree of moisture is necessary at the roots, even when it is comparatively at rest. After the growth is completed it will begin to show flower, and then care should be taken that it does not get dry at the root, for it requires a good quantity of nourishment to bring its flowers to perfection. We have seen this plant shrivelled when the blossoms have been showing, and from this cause they have been nearly spoiled and the plant injured. If this species is allowed to get into an unhealthy

state it is a long time before it recovers ; it blooms during the summer months, and lasts some time in beauty. Propagation is effected by dividing the plant when it has done growing, or just as it begins to push.

U. Lindeni, *Lindley*.—A monotypic plant of much interest on account of the singular structure of its flowers. It forms a distichous tuft of erect leathery ligulate obtuse pale green leaves, about ten inches in length, resembling those of *Cypripedium caudatum*, the branching two-flowered velvety scape growing up a foot high or more from the centre of the leaves. The blossoms, which are produced from the loose spathaceous bracts, are large and singular in shape ; the sepals are broad oval lanceolate with wavy edges, white with green veins, the linear-ligulate petals, and the lip which is oblong lanceolate at the base, are velvety white streaked with green at the base, the points being lengthened out into purplish red tail-like appendages, which frequently attain as much as two feet in length. It flowers in May.—*New Grenada*.

FIG.—*Pescatorea*, t. 2 ; *Xenia Orch.*, i. t. 15 ; *Flore des Serres*, vi. 123, with fig. ; *Belg. Hort.*, 1854, 193, with tab. ; *Gartenflora*, t. 315.

VANDA, R. Brown.

(Tribe Vandææ, subtribe Sarcantheæ.)

This genus contains a number of magnificent species ; indeed, there are not many Orchidaceous plants that surpass *Vandas* in the beauty of their foliage and flowers. What more beautiful picture can there be than an Orchid-house with flowering *Vandas*, and what more delightful than the atmosphere of such a structure filled with their delicious fragrance ? Their habit of growth is the same as that of *Aërides* and *Saccolabium*, that is to say, they have erect leafy stems, the leaves being evergreen, usually channelled, distichous and leathery, often long and gracefully decurved, præmorse or bilobed, sometimes though rarely terete ; the peduncles are lateral, produced from the axils of the leaves,

and the flowers, which are gaily coloured, fleshy in texture and usually very fragrant, are collected into loose racemes. The flowers have free subequal much spreading sepals and petals, and a lip which is continuous with the base of the column, saccate or obtusely spurred, the lateral lobes erect, the middle lobe spreading oblong. About twenty species are referred to this genus, mostly natives of Tropical India and the Malay Archipelago.

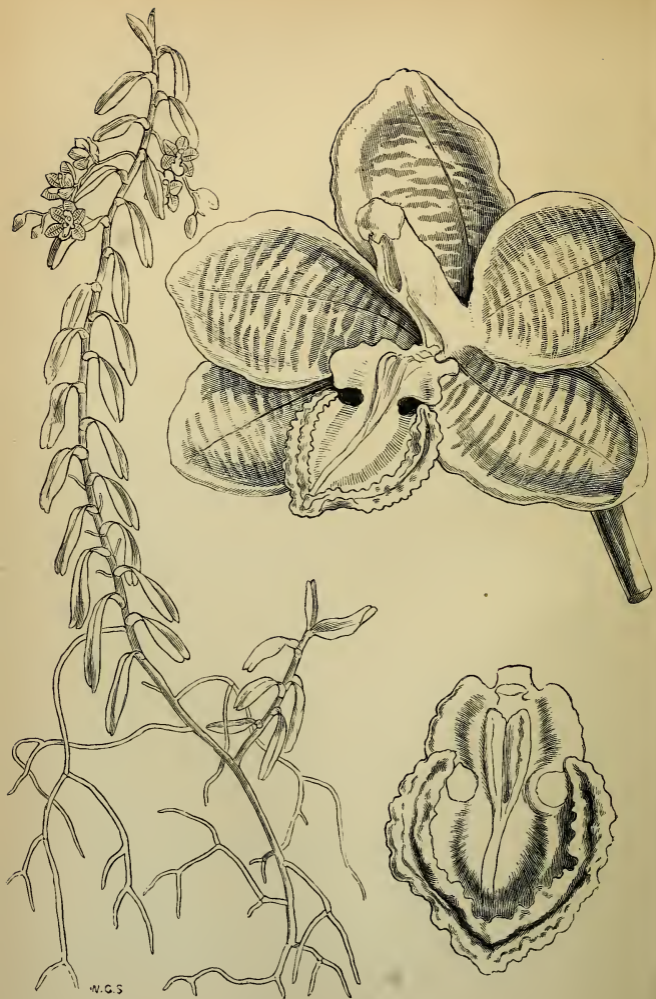
Culture.—They require the same treatment as *Aërides*, except that they require but little shade—the less they have the better they will flower. They will blossom two or three times during the year when treated in this way. Propagation is effected by taking off the young growths which spring from near the base of the stem, or by cutting the stem as directed in the case of *Aërides*.

V. Batemanni, *Lindley*.—A noble and stately plant of upright growth, the stout stem clothed with distichous leathery lorate leaves which are obtuse and obliquely emarginate at the tip, and of a pale green colour. The long erect scapes are axillary, and bear many large spreading flowers, of which the sepals and petals are thick and fleshy, falcate, obtusely obovate ensiform, yellow spotted with crimson in front, rosy purple at the back, fading to violet at the edge; and the lip is triangular saccate at the base, and of a purple-crimson colour, the front part furrowed and incurved, the disk bearing an elevated tooth, and its base a short transverse crest. It blooms in July, August, and September, and continues blooming for three months.—*Philippine Islands; Moluccas.*

FIG.—*Bot. Reg.*, 1846, t. 59; *Moore, Ill. Orch. Pl.*, *Vanda* 1; *Flore des Serres*, tt. 1921-2; *Gaudichaud, Freyc. Voy.*, t. 36.

SYN.—*V. lissochiloides*, *Fieldia lissochiloides*.

V. Bensoni, *Bateman*.—A very elegant addition to this beautiful genus, and allied to *V. Roxburghii*. It is a free-growing plant a foot or more in height, producing distichous channelled leathery lorate leaves, which are unequally toothed



VANDA CATHCARTII.

at the apex, and erect rigid scapes a foot and a half long from the base of the shoots. The flowers are about two inches in diameter, white on the outside, the sepals and the smaller petals obovate obtuse, yellowish green, dotted, not tessellated, with reddish brown on the inside, and the lip ovate in front, is convex, trilamellate on the disk, pink, with a kidney-shaped bifid violet-coloured apex, the small basal auricles and conical spur white.—*Rangoon*.

FIG.—*Bot. Mag.*, t. 5611; *Batem. 2nd Cent. Orch. Pl.*, t. 192; *Gard. Chron.*, 1867, 180, with fig.; *Flore des Serres*, t. 2329.

V. Cathcarti, *Lindley*.—A tall scrambling but very distinct and noble species, somewhat resembling *Renanthera coccinea* in its general habit, but stouter. The leaves are arranged in a distichous manner, pale green, six or seven inches long, linear-oblong, unequally bilobed at the tip, the lobes rounded. The flower-scape is erect, produced opposite the leaves, bearing four or five fleshy flowers three inches in diameter; the sepals and petals roundish oblong sessile concave, white externally, yellowish with numerous horizontal narrow often confluent bands of reddish brown; the lip three-lobed, the small lateral lobes white with red streaks at the base, the middle lobe whitish with a crenate incurved yellow border, and the disk bearing two erect truncate calli. The thick prominent column is green. This species has now become established in our collections, but is rare.—*Sikkim Himalaya*, 2,000 to 4,000 feet, in hot places.

FIG.—*Bot. Mag.*, t. 5845; *Jennings, Orch.*, t. 10; *Flore des Serres*, tt. 1251-2; *Illust. Hort.*, t. 187; *Floral Mag.*, 2 ser., t. 66; *Orchid Album*, iv. t. 168; *Hook. fil., Ill. Him. Pl.*, t. 23; *Gard. Chron.*, 1870, 1409, fig. 251.

SYN.—*Esmeralda Cathcarti*; *Arachnanthe Cathcarti*.

V. cœrulea, *Griffith*.—This remarkably handsome plant produces an erect stem two to three feet high, with the usual distichous loriform channelled coriaceous leaves, which are unequally truncate with a concave notch and acute lateral lobes. The erect scapes are much longer than the leaves, and bear dense racemes of ten to fifteen flowers or more—the flowers five inches across, with the membranaceous sepals and petals flat oblong blunt and shortly stalked, of a beautiful pallid blue, and the small lip linear-oblong, leathery, deep blue, the point blunt with two diverging lobes; the spur is short and blunt, and the disk bears three lamellæ. It does not require so much heat as the other kinds. The flowers

are produced during the autumn months, and last six weeks in perfection.—*Khasya Mountains*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 18; *Pescatorea*, t. 29; *Flore des Serres*, t. 609; *Paxt. Fl. Gard.*, i. t. 36; *Moore, Ill. Orch. Pl.*, Vanda 2; *Jennings, Orch.*, t. 34; *Illust. Hort.*, t. 246; *Lemaire, Jard. Fl.*, t. 102; *Puydt, Les Orch.*, t. 45; *L'Hort. Franç.*, 1862, t. 1; *Xenia Orch.*, i. t. 5.

V. cœrulescens, *Griffith*.—This elegant little species has elongated stems, with the leaves distichous, leathery, strap-shaped, truncately bilobed, five to seven inches long, dark green. The scapes are slender, axillary, erect, bearing from ten to twenty flowers; the cuneate ovate sepals and petals are pale mauve-blue, twisted at the clawed base; the lip smaller obcuneate dilated emarginate, of a rich violet with purplish lilac auricles, and the conical spur tipped with green. It blooms during March and April, lasting a long time in perfection.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5834; *Orchid Album*, i. t. 48; *Floral Mag.*, 2 ser., t. 256; *Griffith, Icon. Pl. As.*, t. 331; *Gard. Chron.*, 1870, 529, fig. 97.

V. cœrulescens Boxallii, *Rehb. f.*—A curious and charming form, in which the leaves are rigidly distichous, strongly keeled, obliquely erose at the apex, and the flowers form a rather close raceme on a comparatively short scape. The flowers are white and blue and very effective, the obtuse or retuse sepals and petals being white with a tinge of lilac, and the lip with its dilated front lobe deep violet bordered with white; the disk bears some smooth longitudinal ridges, with dark blue stripes alternating with white ones.—*Transgangetic India*.

FIG.—*Bot. Mag.*, t. 6328.

V. concolor, *Blume*.—A distinct-looking plant referred by Sir W. J. Hooker to *V. Roxburghii*. It has tall erect stems five to six feet high, with lax membranaceous evergreen leaves, which are obliquely tridentate at the ends. The flowers are numerous, rather distant, in lateral elongated racemes, the oblong obovate undulated sepals and petals white on the outer surface, and of a uniform cinnamon-brown within, the lip three-lobed, downy at the base, white with rosy dots on the side lobes, the front or middle lobe cinnamon-brown, cuneate and bilobed at the tip; it has a conical attenuated spur.—*China*.

FIG.—*Bot. Mag.*, t. 3416.

SYN.—*V. furva* (*Bot. Reg.*, non Bl.); *V. Roxburghii unicolor*.



VANDA CÆRULESCENS.

V. cristata, Lindley.—A distinct and curiously marked Orchid. The stems are erect free-growing, with distichous carinate leathery ligulate leaves, truncate and three-toothed at the apex. The peduncles are short axillary erect, three to six-flowered, the oblong obtuse arching sepals and narrower petals of a yellow-green, and the lip oblong, convex saccate towards the front, and divided at the apex into three narrow acute diverging lobes, green beneath, the upper surface deep velvety tawny yellow marked with blood-purple longitudinal stripes, the basal auricles ovate, of a deep blood-purple on the inner face. It produces its flowers from March to July, and lasts in bloom for six weeks or two months.—*Nepal; Bhotan; Sikkim.*

FIG.—*Bot. Mag.*, t. 4304; *Bot. Reg.*, 1842, t. 48; *Moore, Ill. Orch. Pl.*, Vanda 3.

V. Denisoniana, Benson and Rehb. f.—A very chaste and desirable species, the first white *Vanda* which has yet been discovered. In its habit of growth it much resembles *V. Bensoni*, but the foliage is broader and somewhat longer. Its stems are erect, with lorate rigid recurved dark green leaves deeply two-lobed at the apex, both the lobes being sharp-pointed. The racemes are axillary, five to six-flowered, on stout ascending peduncles, while the flowers themselves are medium-sized, thick and fleshy, the oblong spatulate dorsal sepal and the broadly ovate lateral ones, as well as the spatulate petals, being white slightly tinged with green, the lip being also white, pandurate, the apex two-lobed with the lobes divaricate like the tip of a blackcock's tail, the base with two subquadrate auricles, and the spur short and conical.—*Arracan Mountains.*

FIG.—*Bot. Mag.*, t. 5811; *Illust. Hort.*, 3 ser., t. 105; *Florist and Pomol.*, 1869, 249, with fig.; *Gard. Chron.*, n.s., xxiv. 105, fig. 21.

V. Denisoniana hebraica, Rehb. f.—In this new variety, which was introduced by us, the sepals and petals are sulphur-coloured on both sides, but darker within, where they are covered with numerous spots, and transverse short bars, somewhat resembling Hebrew characters; spur orange inside; anterior part of the blade of the lip olive green. Flowers in July.—*Burmah.*

V. gigantea, Lindley.—A noble and stately plant, with bold distichous dark green broadly lorate recurved tough fleshy leaves a foot and a half long, very blunt at the apex,

emarginate, with the lobes nearly equal. The racemes are axillary, about half the length of the leaves, bearing showy flowers three inches across, with oblong obovate blunt-ended sepals and petals of a rich golden yellow freely and irregularly marked with rich cinnamon-brown blotches; and a white fleshy lip, which is small incurved channelled dolabriform, with short rounded basal auricles. It blooms in the spring months, and



VANDA DENISONIANA.

continues a long time in full perfection if the flowers are kept dry. The flowers of this plant have not given general satisfaction to Orchid growers, but a large plant which we had in our collection some years ago produced two long spikes, each bearing a dozen blossoms of large size and good substance, and we have known it produce seventeen blossoms on one

spike. This is the most massive and majestic plant of the whole group.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5189; *Batem. 2nd Cent. Orch. Pl.*, t. 142; *Illust. Hort.*, t. 277; *Xenia Orch.*, ii. t. 112.

SYN.—*V. Lindleyana*; *Fieldia gigantea*.

V. hastifera, *Rehb. f.*—A very rare plant of tall-growing habit, bearing lax racemes of flowers surpassing those of *V. Boxallii*. The spathulate undulated sepals and petals are light yellow marked with fine red blotches inside; the lip, which is peculiar, having a compressed conical spur, semi-oblong triangular auricles, and a hastate blade covered with hairs at its base which is dilated thick tumid blunt and shining in front, is white marked with brown and mauve, and the column is white spotted with brown.—*Sondaic Islands*.

V. Hookeriana, *Rehb. f.*—This distinct and very beautiful species, which is in habit something like a small form of *V. teres*, has resisted many attempts to introduce it in a living state, but, thanks to the zeal of our collectors, we have now a plentiful supply. It has elongate rigid terete pale green rooting stems, and erect terete pale green leaves two to three inches long, and tapered to a subulate point. The peduncles grow out near the top of the stem, opposite the leaves, which they exceed in length, and bear a raceme of from two to five membranaceous flowers, each two and a half inches in diameter, the sepals white tinted with rose, the larger spathulate oblong undulated petals white spotted with magenta, and the lip expanded from a cuneate base, three-lobed, upwards of one and a half inch broad, white, beautifully lined longitudinally in the centre, transversely on the side lobes, and spotted near the edge on all the lobes with rich magenta-purple, a large triangular deep purple auricle standing on each side the column. It was recently flowered in the collections of Lord Rothschild, at Tring Park, and the late J. S. Bockett, Esq., Stamford Hill. In these cases only two flowers have been produced on the spike, but we have reason to believe that with improved cultivation it will produce as many as five. It flowers in September, and requires the same treatment as that recommended for *V. teres*.—*Borneo*.

FIG.—*Orchid Album*, ii. t. 73; *Illust. Hort.*, 3 ser., t. 484.

V. insignis, *Blume*.—This very beautiful plant has by repute been an inmate of our gardens for years, but its name was for a long time given in mistake to a variety of *V. tricolor*.

The true plant is, however, now in cultivation. Its stems are sub-erect, clothed with distichous rigid linear-ligulate curving channelled leaves, which are unequally cut away or denticulate at the tip; and producing five to seven-flowered racemes about equalling the leaves in length. The flowers are as large as those of *V. tricolor*; the obovate spathulate obtuse sepals and petals are of a light brown within spotted with deep chocolate-brown, yellowish white on the outside; and the lip is large, almost fiddle-shaped, with two short white side lobes, the front lobe white, semioval at the base, suddenly expanding into a concave semilunar limb of a light purplish rose, the disk traversed by two low ridges. It is exceedingly handsome, producing its blooms in May and June.—*Moluccas; Timor.*

FIG.—*Bot. Mag.*, t. 5759; *Jennings, Orch.*, t. 46; *Warner, Sel. Orch. Pl.*, i. t. 3; *Orchid Album*, iv. t. 172; *Blume, Rumph.*, t. 192 and t. 197; *Paxt. Fl. Gard.*, ii. 19, with fig.

V. insignis Schröderiana, Rehb. f.—A very chaste and distinct novelty, which was exhibited by Baron Schröder in 1883. The flowers are similar in form to those of the type, but their colours are quite distinct, being yellow and white; the sepals and petals are of a light yellow, and the lip, which has a large concave anterior limb, pure white. It flowers in autumn.—*Malay Islands.*



VANDA LAMELLATA BOXALLII.

V. lamellata Boxallii, Rehb. f.—A very distinct and charming variety, of very free-flowering character, and which on account of its dwarf habit takes up but little room. It has slender erect stems, long narrow ligulate channelled much recurved leaves, obliquely and acutely bidentate at the tip, and handsome floral racemes, which are longer than in the type, bearing fourteen to twenty flowers, which are handsomely coloured with white, rich

brown, and magenta. The dorsal sepals and two petals are directed backwards, the dorsal sepal oblanceolate, creamy white, the lateral ones obovate, with the inner side cut away in a curve half-way, this part reddish brown tinged with purple; the petals are oblong cuneate, white; and the lip has a squarish subpanduriform limb of a rich rosy magenta towards the front, the disk with six reddish purple stripes running back to the mouth of the tube. The creamy white outer half of the lateral sepals, contrasting with the reddish brown inner half, is peculiar. It flowers in November and December, affords some variety, and is vastly superior to the type.—*Philippine Islands*.

FIG.—*Garden*, xix. 574, t. 287; *Gard. Chron.*, N.S., xv., 87, fig. 18.

V. limbata, *Blume*.—This rare and beautiful species is distinct in growth, producing on longish peduncles the axillary racemes of from twelve to thirteen flowers. The stems are robust with long thick roots; the leaves are leathery, channelled, eight to ten inches long, and nearly an inch broad, with an obliquely retuse apex; the flowers, which grow in erect loose racemes, are two inches in diameter, the spatulate sepals and petals cinnamon-brown, blotched and tessellated with a darker shade of reddish brown, and evenly bordered with yellow, the exterior tinged with lilac; the lip is quadrate, slightly pandurate, rosy lilac margined with white, the disk tumid, with five to seven parallel grooves. This species flowers in June, and lasts a long time in perfection.—*Java*.

FIG.—*Bot. Mag.*, t. 6173; *Warner, Sel. Orch. Pl.*, iii, t. 9.

V. Parishii, *Rehb. f.*—A very handsome and distinct *Vanda*, having at first sight the appearance of a *Phalænopsis*. It is a dwarf stout-growing species, and produces broadly ligulate-obtuse fleshy distichous bright green leaves with an unequal bilobed apex; and a stiff erect scape supporting several large prettily spotted flowers, of which the cuneate-oblong acute sepals and petals are of a greenish yellow spotted with somewhat bold dots of reddish brown; and the lip, which is very powerfully scented with a peculiar odour, has the front lobe pale magenta, narrowly margined with white, rhomboid, gibbous below the apex with a median keel, and a violet-coloured conical callus at the base, where is a short

gibbous spur and small white orange-striped auricles. It flowers during the summer months.—*Moulmein*.

FIG.—*Orchid Album*, i. t. 15.

V. *Parishii* Marriottiana, *Richb. f.*—A very distinct and beautiful variety, first flowered by Sir W. H. S. Marriott, Bart. It is a dwarf compact plant, with the short stems closely set with distichous ligulate-obtuse fleshy leaves, slightly and unequally emarginate; the scape is axillary erect, bearing a raceme of about six handsome flowers, of which the sepals and petals, instead of being spotted as in the type, are bronzy brown richly suffused with magenta, and the lip has white basal auricles and a rich magenta rhomboid front lobe. The flowers of this variety are not scented. It blossoms during the summer months.—*Moulmein*.

FIG.—*Orchid Album*, ii. t. 61.

V. *Roxburghii*, *R. Br.*—A well-marked old species, having stout dwarfish erect stems, with two-ranked ligulate channelled recurved leathery leaves, obliquely tridentate at apex. The peduncles are erect, and bear a raceme of six to twelve flowers, which have the bluntly oblong-obovate sepals and petals pale green with chequered lines of olive brown, the outer surface white, and the lip violet-purple, and convex in the front parts, deeper purple towards the point, the lanceolate lateral lobes white, and the base projected backwards to form a short pinkish spur. The flowers appear during the summer, and last five or six weeks in beauty. There are several varieties of this plant, one having a darker-coloured blue lip than the other, and one having the lip pink.—*India: Bengal*.

FIG.—*Bot. Mag.*, t. 2245; *Bot. Reg.*, t. 506; *Flore des Serres*, ii. t. 2; *Id.*, t. 641, fig. 2; *Paxton, Mag. Bot.*, vii. 265, with tab. (pink lip); *Wight, Icon. Pl. Ind. Or.*, t. 916; *Richb. Fl. Exot.*, t. 121; *Orchid Album*, ii. t. 59; *Port. Fl. Gard.*, ii. t. 42, fig. 2.

SYN.—*V. tessellata*; *V. tesselloides*; *Cymbidium tesselloides*.

V. *Sanderiana*, *Richb. f.*—One of the most wonderful and distinct Orchids that has been introduced for many years, and one which produces the largest flowers of any *Vanda* known up to the present time. It was first flowered by W. Lee, Esq., Downside, Leatherhead. The growth resembles that of *V. carulea*, but the stem is stouter and larger in all its parts, and more densely leafy; the leaves are broadly ligulate rigid leathery recurved, from nine to twelve inches long and an inch broad, deeply channelled, and having the



VANDA SUAVIS.

usual distichous arrangement. The racemes are axillary and many-flowered; the largest on Mr. Lee's plant bore twelve blossoms. The flowers themselves are spread out flat, and are about four inches in diameter; the dorsal sepal is roundish obovate, and the smaller petals are obovate-cuneate, all these being blush pink slightly stained with buff yellow; the lateral sepals are much larger and broader, being about two inches across, divergent, obliquely and broadly obovate, pale nankin outside, greenish yellow distinctly reticulated with dull crimson over the entire surface; the lip is small, concave, pale purplish red at the base, the strongly recurved tip chocolate-purple, and with three prominent keels extending from the base to the apex. It flowers in September and October.—*Philippine Islands: Mindanao.*

FIG.—*Orchid Album*, iii. t. 121; *Illust. Hort.*, 3 ser., t. 532; *Gard. Chron.*, N.S., xx. 440, figs. 67-68 (habit and inflorescence).

SYN.—*Esmeralda Sanderiana*.

V. Stangeana, *Rchb. f.*—A species somewhat resembling *V. Roxburghii*, producing from four to five flowers on a spike. The sepals and petals inside are at first greenish, afterwards ochre-coloured, tessellated with dark purple-brown; the auricles of lip are blunt, white with yellow and some mauve-blue spots, the centre lobe cordate triangular, emarginate at the apex, white with mauve-blue, or wholly mauve-blue.—*Assam.*

V. suavis, *Lindley*.—A truly magnificent species, and one of the finest of Orchids for exhibition purposes. It is a strong-growing plant of erect habit, with lorate flaccid recurved dark green leaves, obliquely dentate at the apex. The peduncles are axillary, and bear a bold elongate raceme of large handsome flowers, which are very freely produced, and deliciously fragrant. The sepals and petals are bluntly spatulate, the dorsal sepal and two petals turned backwards away from the lip, convex, much undulated, and sublobate, the petals twisted so as to bring their hinder face foremost, all pure white unspotted outside, but on the inner surface freely spotted and barred with rich blood-purple; the convex three-lobed lip has the front lobe narrow, deeply bifid, and of a pale rosy purple, while the lateral lobes are ovate, flat, and of a deeper bright rosy purple. It blossoms at different periods of the year, and lasts a long time in perfection. So noble and sweet a plant should find a home in every Orchid collec-

tion. According to Lindley the plant figured in *Botanical Magazine*, t. 4432, is a yellow-flowered variety of *V. suavis*, which he calls *V. s. flava*.—*Java*.

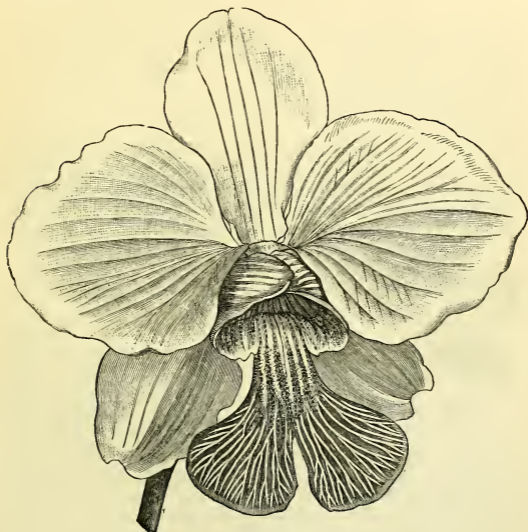
FIG.—*Bot. Mag.*, t. 5174; *Batem. 2nd Cent. Orch. Pl.*, t. 125; *Pescatorea*, t. 8 (media); *Jennings, Orch.*, t. 23; *Paxt. Fl. Gard.*, ii. t. 42, fig. 3; *Orchid Album*, iv. t. 180; *Puydt, Les Orch.*, t. 47; *Xenia Orch.*, i. t. 12; *Hort. Franç.*, 1861, t. 1; *Flore des Serres*, t. 641, fig. 3; *Id.*, tt. 1604-5 (Hrubyana); *Gard. Chron.*, N.S., xxii. 237, fig. 47 (Wingate's var.).

V. suavis *Gottschalcke*, *Williams*.—This is the finest variety of *V. suavis* that has ever come under our notice. It was first flowered in 1869 by G. Gottschalcke, Esq., of Manchester, and exhibited by him at the Manchester Show in that year. The stem and foliage are both much stouter than those of the type; the flowers, too, are much larger, and of stouter substance and better shape. The sepals and petals are more densely spotted than in *V. suavis*, and the pedicels are deeply tinged with rose; the lip is bright rosy purple tipped with white. The flowers are deliciously scented, and are borne at different times of the year.—*Java*.

V. teres, *Lindley*.—A very handsome and distinct species, of curious aspect, being of a scrambling or climbing habit of growth, extending several feet in length, the stems as well as the leaves being terete or cylindrical, and dark green. Its large flowers are produced in ascending mostly two-flowered racemes from June to August, and last four or five weeks in beauty. The sepals are oblong obtuse, the dorsal one erect, white slightly tinged with rose, the lateral ones twisted, parallel with the lip, creamy white; the petals are larger, suborbicular and undulated, rosy magenta, lighter towards the margins; the lip is large, cucullate, bright rosy magenta, strongly veined, the throat orange striped and spotted with crimson, with a conical spur at the base, and a rounded, dilated and emarginate apex. The racemes of flowers issue directly from the stems at a point opposite the leaves. It is rather a shy-flowering species with most people, but we think this may be traced to the plant being too much dried up during the growing season. We have found that the best way to cultivate and flower it successfully is to place the pots which contain the plants under a covering of damp sphagnum moss in a warm sunny house, as near the glass as possible. An abundance of water and air should be given to it while it is

making its growth; when at rest less will suffice.—*Burmah; Martaban; Sylhet; Khasya.*

FIG.—*Bot. Mag.*, t. 4114; *Bot. Reg.*, t. 1809; *Paxton, Mag. Bot.*, v. 193, with tab.; *Rev. Hort.*, 1856, t. 22.



VANDA TERES.

V. teres Andersoni, Williams.—A very fine variety of this handsome and distinct species. It has the same habit of growth as the type, but is far more free in blooming, producing its flowers when quite young. The racemes are ten inches in length, and bear from five to six flowers, which are richer and deeper in colour than in the old form. This plant is magnificently grown by J. Broome, Esq., Wood Lawn, Didsbury, whose specimen, which was trained cylindrically, produced last year over two hundred and fifty flowers, and was a grand object.—*Sylhet.*

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 2.

V. teres aurora, *Rchb. f.*—A very pretty variety; sepals white; petals white with a slight rosy tint; throat light ochre-colour with rosy lobes, which are furnished with two rows of small purple dots; column light rose purple.—*Sylhet*.

V. teres candida, *Rchb. f.*—A distinct and beautiful form which was first flowered by Mr. Whittaker, gardener to Lord Crewe. It differs from the type in bearing white flowers, which are produced during the summer months.—*Sylhet*.

V. testacea.—See *AERIDES WIGHTIANUM*.

V. tricolor, *Lindley*.—A charming free-growing species with tall erect stems clothed with distichous lorate channelled recurved leaves obliquely bilobed and somewhat erose at the tip. The peduncles are axillary from the upper leaves, and support short dense racemes of handsome and fragrant flowers, which are white outside. The oblong obovate obtuse sepals and petals are coriaceous, pale yellow, spotted with brownish red, the lip three-lobed, the convex cuneate deeply emarginate middle lobe bright rosy magenta, paler at the tip, the disk marked with five white lines; the basal lobes are



VANDA TRICOLOR
(much reduced).

erect rounded, white; there is a short compressed white spur, and a short thick white column. It blooms at different times in the year, and lasts long in perfection. There are several varieties of this plant, some much superior to others. It makes a superb specimen for exhibition purposes, as do all the varieties.—*Java*.

FIG.—*Bot. Mag.*, t. 4432; *Pescatorea*, t. 42; *Id.*, t. 42 B (pallens); *Part. Fl. Gard.*, ii. t. 42; *Flore des Serres*, t. 641; *Lemaire, Jard. Fl.*, t. 136; *Orchid Album.*, ii. t. 77; *Puydt, Les Orch.*, t. 48.

V. tricolor, *Dalkeith variety*.—This is a very high coloured form and is one of the best varieties of this noble species although not so large in the flower as *V. tricolor planilabris*. The sepals and petals are pale yellow, with rich cinnamon brown markings, and the lip is of a rich magenta.—*Java*.

V. tricolor, *Downside variety*.—Flowered by W. Lee, Esq., Downside, Leatherhead, and considered by him to be the best

of all the forms of *V. tricolor*. The flowers are large and very rich in their colour and markings.—*Java*.

V. tricolor *Corningii*, *Williams*.—A handsome and free-flowering variety, having very broad dark green foliage of stout texture. The flowers are large and of good substance, the sepals and petals rich yellow, spotted and streaked with deep crimson, and beautifully margined on the inner and outer surfaces with rosy purple, and the lip dark plum colour, softened off towards the base into a pale rose. This variety lasts a long time in perfection. It was flowered in the fine collection of E. Corning, Esq., of Albany, New York, under the care of Mr. Gray.—*Java*.

V. tricolor *Dodgsoni*, *Williams*.—A superb variety, named in honour of the late R. B. Dodgson, Esq., one of the most enthusiastic cultivators of these plants, with whom it originated. The flowers are large, and borne in great numbers on the racemes, the sepals and petals being light amber-colour, streaked and blotched with reddish brown and margined with violet, and the lip large, rich purplish violet, with a few white blotches near the base. It is very highly scented. There is a fine plant of this variety in the collection of Baron Schröder, Staines, where it flowers every year.—*Indian Islands*.

V. tricolor *insignis*, *Hort*.—This plant, which has been grown as *V. insignis*, must now take its place as a variety of *V. tricolor*, since the true *V. insignis* has been introduced; it will not, however, be any the less welcome to Orchid growers though it be but a variety of *V. tricolor*, for it makes a very handsome specimen. The sepals and petals are light yellow spotted with crimson, and the lip is pale lilac. It blooms at different times of the year, but generally in spring and autumn, and continues in bloom for six weeks.—*Java*.

V. tricolor *Patersoni*.—A very beautiful form, flowering when quite small. The flowers are about two inches in diameter, the sepals and petals broad, creamy white densely spotted with cinnamon-brown, and the lip bright magenta.—*Java*.

FIG.—*Gard. Chron.*, N.S., xxii. 236, fig. 46.

V. tricolor *planilabris*, *Lindley*.—One of the finest forms of *V. tricolor*, having the same general habit and character as the type, but producing larger, brighter-coloured flowers of

great substance. The sepa's and petals are very broad, roundish obovate clawed or narrowed to the base, citron yellow, thickly marked with rich brown spots, those on the claw rather elongate. The large flat lip is rose-coloured, margined with purplish mauve and striped with chocolate-purple on the disk. It flowers at different times of the year.—*Java*.

FIG.—*Orchid Album*, ii. t. 87.

V. tricolor Russeliana, *Hort.*—This beautiful variety is very distinct both in habit of plant and flower. It has a peculiar and gracefully pendulous style of growth, and is, at the same time, very robust. The racemes are long, and the flowers very bright in colour. It bloomed with Mr. Sorley, gardener to the late J. Russel, Esq., of Falkirk, and is an extremely fine variety.—*Java*.

V. tricolor Warneri, *Williams.*—A very handsome and most distinct variety, first flowered by R. Warner, Esq., of Broomfield, Chelmsford. It is distinct in its growth, and has peculiarly ribbed linear lorate leaves, while the sepals and petals are distinctly margined with deep rose, and the lip is deep rosy purple.—*Java*.

FIG.—*Warner*, *Sel. Orch. Pl.*, ii. t. 39.

VANILLA, *Swartz.*

(Tribe Neottieæ, subtribe Vanilleæ.)

This genus contains but a few species, all of which are climbing plants, with dark green terete rooting stems, oblong acuminate fleshy leaves rarely wanting, and short axillary spikes or racemes of largish flowers, which in most of the known species are dull-coloured and uninteresting. The sepals and petals are free and spreading, the lip adnate with its limb, broad and concave, and its base rolled around the elongate wingless column. The species, which number about twenty, occur in the tropics of both hemispheres. *Vanilla* is, perhaps, the only genus of Orchidaceous plants which is of commercial value. The fruits of various species

of this family produce the *Vanilla* so extensively used for flavouring chocolate, liqueurs, ices, &c., and which is considered one of the finest of aromatic perfumes.

Culture.—These plants require strong heat during their growing season, and should be potted in peat and sphagnum moss, and have either some rough logs of wood to grow upon, or should be trained against a wall. They produce roots freely from their climbing stems, and are consequently readily increased by means of cuttings.

V. Phalænopsis, *Rehb. f.*—An exceedingly interesting plant, and one which is quite an exception to the rest of the species, as it produces very showy flowers. It is of climbing habit, producing long rooting leafless stems as thick as one's little finger, terete fleshy and channelled on one side. The flowers are large, three inches across, and borne in umbels at the ends of the flowering branches, six or seven flowers being produced in an umbel, with a few ovate deep green bracts below. The sepals are ovate oblong acute, of a faint blush white, keeled behind, the two lateral ones divided quite down to the base on the lower side; the petals are more ovate and less sharply pointed, somewhat repand, of the same pale blush white, and channelled down the centre; and the lip is folded in a broadly funnel-shaped form with an oblique recurved repand obtuse limb, the outer side pale rosy blush, the inside tawny orange, rather over an inch long, and three-fourths of an inch wide. It is exceedingly rare, but well deserving of the attention of Orchid growers.—*Madagascar*.

FIG.—*Flore des Serres*, tt. 1769-70; *Puydt, Les Orch.*, t. 49.

WARREA, *Lindley*.

(Tribe Vandææ, subtribe Cyrtopodieæ.)

This is a small group of terrestrial Orchids, separated by Dr. Lindley from the old genus *Maxillaria*. They are pseudo-bulbous, with few distichous plicate-venose reed-like leaves, and tall radical scapes bearing a loose raceme of subglobose

nearly regular expanded flowers, which have a short rounded chin, and a sessile concave lip, with a crest of elevated fleshy lines on the disk. The few species are found in Peru and Colombia.

Culture.—The same as that noted for *Phajus*.

W. cyanea, *Lindley*.—A very pretty distinct and rare species, producing from the roots a close upright tuft of evergreen foliage, and slender radical scapes bearing a short erect raceme of pleasing but rather small flowers. The leaves are broadly lanceolate and strongly ribbed, and enfold each other distichously at the base; and the flowers have ovate acute white sepals and petals, and a roundish cuneate lip undulated at the tip, and bearing five elevated lines. It blooms in June, lasting a long time in beauty. It requires to be grown in a pot, with peat and good drainage, in the East Indian house.—*Colombia*.

FIG.—*Bot. Reg.*, 1845, t. 28.

W. cyanea alba, *Rehb. f.*—A very pretty variety of this old and much-admired species, the lip of which is pure white instead of being blue as in the type.

W. tricolor, *Lindley*.—A very distinct and handsome species. It has oblong terete attenuated jointed pseudobulbs, and long-stalked lanceolate plicate leaves, growing up with the lateral flower scape, which is purple jointed and about two feet in height, and bears at the top a raceme of eight or ten rather large globose drooping flowers. The roundish ovate concave sepals and petals are yellowish white, the two lateral sepals being continued backwards so as to form a blunt spur; and the lip is obovate, cucullate at the base, white at the edge, beautifully marked inside with yellow and deep purple. There are three elevated fleshy ridges on the disk. The blossoms are produced in June and July, and last a long time in perfection. It requires the same treatment as *W. cyanea*. There are several other species known.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4235; *Lodd. Bot. Cab.*, t. 1834.
 SYN.—*Maxillaria Warreana*.

WARSCIEWICZELLA, *Reichenbach fil.*

(Tribe Vandeeæ, subtribe Cyrtopodieæ.)

A small group of epiphytal bulbous species, sometimes included in *Zygopetalum*. It has the sepals and petals lanceolate, obliquely inserted, often undulated, and the lip, which is continuous with the short foot of the column, is clawed and dilated, bearing on its disk a depressed callus. The plants are without pseudobulbs, and the scapes are one-flowered. There are about half a dozen species, all from Central America.

Culture.—The treatment recommended for *Zygopetalum* will also suit these plants. They are often killed by having too much heat, and they must have plenty of water all the year round, for they seem never to require any rest. They will do on blocks, but if on blocks live sphagnum should be put about their roots; or they may be grown in pots with peat and moss, and good drainage.

W. aromatica, *Rehb. f.*—A rare and little-known plant, of moderately vigorous growth, the cuneate oblong acute leaves springing from the root crown, along with the erect scape, which bears a solitary flower three or four inches in diameter, of which the lanceolate acute sepals and petals are white, and the large obreniform multilobulate slightly crispy lip is azure darkening to purple at the base, and having a white border; the disk is smooth, and at the contracted base is a large semi-lunate many-furrowed callus. It emits a very strong but agreeable perfume, and succeeds in a pot with peat and sphagnum moss.—*Central America: Chiriqui.*

FIG.—*Xenia Orch.*, i. t. 73; *Gard. Chron.*, 1868, 75, with fig.

SYN.—*Zygopetalum aromaticum*; *Huntleya aromatica*.

W. candida, *Rehb. f.*—An extremely rare and handsome species of dwarf habit, seldom growing more than eight or nine inches in height. It has no pseudobulbs, but the few oblong-ligulate leaves form a loose distichous tuft, from the axils of which both the roots and peduncles are protruded.

The flowers are two and a half inches across, the lanceolate acute sepals and the broader reflexed petals white, and the quadrato-hastate lip rosy purple in the centre, with a broad bluish-tinted margin, the disk bearing a large obtriangular ivory white callus with a retuse five-toothed apex, and marked with five distinct bluish purple bars.—*Bahia*.

FIG.—*Pescatorea*, t. 15; *Paxt. Fl. Gard.*, i. 32, fig. 22.

SYN.—*Warrea candida*; *Huntleya candida*; *H. radians*.

W. velata, *Rchb. f. et Warscew.*—A very beautiful and fragrant species, growing about a foot high, bulbous, with a few oblong-ligulate acute leaves, a span long, springing with the shorter stoutish peduncle from the crown of roots. The flowers are solitary, the oblong broadly ovate acute sepals and petals and narrower lateral sepals all spreading upwards, yellowish white, and the large broad flat five-lobed lip yellowish white, margined with crimson, the disk radiately striate with numerous purple-crimson bars; at the base is a stout callus resembling a semicircular row of five or seven teeth.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5582; *Xenia Orch.*, i. t. 23, fig. 1; *Belg. Hort.*, 1878, t. 10, fig. 4.

SYN.—*Zygopetalum velatum*.

W. Wailesiana, *Rchb. f.*—A very elegant little species, with dark evergreen leaves, and flowers of moderate size, having the sepals and petals white or cream-coloured, and the roundish concave lip white, stained along the centre with violet; there is at the base a crest of five radiating violet finger-like bars, which are free except at their origin. The flowers smell like those of the sweet pea. It blooms during the autumn months, lasting long in perfection.—*Brazil*.

FIG.—*Paxt. Fl. Gard.*, i. 73, fig. 48; *Belg. Hort.*, 1878, t. 10, fig. 1.

SYN.—*Warrea Wailesiana*.

W. Wendlandii, *Rchb. f.*—A very desirable and handsome bulbous species, having a tuft of distichous oblong-ligulate leaves, and stout axillary peduncles, bearing flowers from four to five inches in diameter, the lanceolate sepals and petals white, somewhat twisted; the lip ovate cordate, multilobulate and much undulated at the margins, recurved at the apex, white, with a large oblong blotch of violet-purple, longitudinally marked by about seven darker purple lines, and having a semilunate frill or ruff with seven to nine violet-purple ribs. It flowers during August and September.—*Costa Rica*.

SYN.—*Zygopetalum Wendlandii*.

W. Wendlandii *discolor*, *Rehb. f.*—A very pretty and desirable variety, with light green evergreen foliage, and peduncles bearing solitary flowers, which are produced singly from the axils of the leaves, and are deliciously scented; they have the lanceolate sepals and petals yellowish green, and the ovate cordate lip about one and a half inch broad, much crisped and minutely lobed at the margin, white, having a large bright violet blotch in the centre. It flowers during August and September, and continues about two weeks in perfection.—*Costa Rica*.

FIG.—*Orchid Album*, iii. t. 126.

ZYGOPETALUM, *Hooker*.

(Tribe *Vandea*, subtribe *Cyrtopodieae*.)

This genus comprises a considerable number of handsome plants of epiphytical habit, with stout pseudobulbs, distichous venose evergreen leaves, and terminal scapes bearing a raceme of large and showy flowers. The sepals and petals are spreading, united at the base, and the lip is affixed to the foot of the column, and is slightly incumbent, forming a short chin, its middle lobe flat and spreading, and the disk bearing a transverse crest, which, from being ribbed or plaited, has the appearance of a ruff or frill. There are some score or more species known, found chiefly in Tropical and Central America. The name is sometimes written *Zygopetalon*. The flowers are generally produced during the winter months, a circumstance which makes them specially valuable as decorative plants.

Culture.—Most of the species are rather large-growing plants, of easy culture. The *Cattleya* house is the most suitable place in which to grow them, and they are best kept in pots, with peat and good drainage, and with plenty of water at the roots when growing. They are propagated by dividing the plants.

Z. brachypetalum, *Lindley*.—A handsome species, with ensiform lanceolate leaves, shorter than the tall many-flowered scape; the flowers are showy, with short stiff convex oblong obtuse sepals and petals, which are brown, a little marbled with green, much more brown than green from the blotches running together, the transverse roundish emarginate lip, which is white, veined with deep bluish violet. The crest or frill of the lip is closely striped with blue. It blooms in December, lasting long in perfection.—*Brazil: Minas*.

FIG.—*Journ. Hort. Soc.*, iv. p. xi., with fig.

Z. Burkei, *Rchb. f.*—A new and very distinct species, which was exhibited by Messrs. Veitch and Sons at the Royal Horticultural Society in November, 1883. The pseudobulbs are clustered, narrow oblong, furrowed, about three inches long, bearing a couple of elongate lanceolate acuminate nervose leaves, and a radical scape with four or five curiously marked elegant flowers, of which the ovate lanceolate sepals and petals are green, thickly marked with longitudinal bands of brown, which here and there break up into spots; the unguiculate obovate lip is white, with a ruff of about thirteen crimson plaits or folds. It flowers in November and December.—*Guiana; Demerara*.

FIG.—*Orchid Album*, iii. t. 142.

Z. Clayi, *Rchb. f.*—This distinct and beautiful hybrid, the result of a cross between *Z. crinitum* and *Z. maxillare*, was raised by Colonel Clay, of Birkenhead, and flowered for the first time in 1877. We had the honour of distributing this plant, having purchased the entire stock from him. It is of very free-growing habit, having oblong furrowed pseudobulbs about three inches long, and evergreen lanceolate nervose leaves a foot and a half in length. It is also a very free-flowering plant, producing its large showy blossoms in racemes on radical scapes at different times of the year according to its period of growth. The sepals and petals are deep purplish brown, with a narrow green margin and transverse bands of the same running through and in some cases forming broad blotches; the lip is broad, an inch and a half wide, deep violet-purple with darker purple lines, and paler at the edge, the ruff or callus being whitish with bluish violet plaits.—*Garden hybrid*.

FIG.—*Orchid Album*, ii. t. 50; *Floral Mag.*, 2 ser., t. 267.





ZYGOPETALUM CLAYI.



Z. crinitum, *Loddiges*.—A handsome species, with ovate pseudobulbs, and lorate-lanceolate plicate leaves, shorter than the scapes, which spring from the base of the bulb and support a raceme of several large beautifully variegated flowers, which are produced in winter, and last a long time in perfection. Sometimes two spikes come from the same pseudobulb. The oblong-lanceolate sepals and petals are green, barred with brown, and the broad obovate emarginate lip is white or cream-coloured, streaked with coloured veins which are densely hairy. The callus is small and incurved, yellow. The best variety is that called *cœruleum*, Hort., which has the veins of a deep bright blue. There is another form with the veins pink.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3402; *Lodd. Bot. Cab.*, t. 1687.

SYN.—*Z. Mackayi crinitum*.

Z. Gautieri, *Lemaire*.—An elegant and most desirable plant. The pseudobulbs are oblong, deeply furrowed, and bear dark green elongate-oblong plaited leaves. The flowers are large, several in a drooping raceme on scapes springing up with and in the midst of the young leaf tufts; the sepals and petals are oblong acute, green, heavily blotched and transversely barred with brown, and the lip is deep purplish blue, lighter at the edge, the ruff or frill around the column large and of a deep velvety purple. There are several varieties of this plant in which the colour of the lip ranges from a pale mauve to a deep bluish purple. This species grows well either in a basket or on a raft.—*Brazil*.

FIG.—*Illust. Hort.*, t. 535 (pale lip); *Orchid Album*, i. t. 28.

Z. intermedium, *Loddiges*.—A free-growing, useful o plant, easily grown, and a profuse bloomer; its flowers begi to open during autumn, and continue in full perfection fo five or six weeks. The leaves are ensiform, shorter than the raceme of flowers, of which the oblong acute sepals and petals are green tinged with brown; and the large flat roundish bilobed undulated lip is blue streaked with deep purple, and clothed with a downy pubescence. Reichenbach makes it a variety of *Z. Mackayi*.—*Brazil*.

SYN.—*Z. velutinum*.

Z. Mackayi, *Hooker*.—A very handsome plant, producing long spikes of large flowers during the winter months, and lasting in perfection a long time. The pseudobulbs are large ovate and scarred, with numerous distichous linear-

lanceolate leaves, and a radical scape, a foot and a half long, bearing a raceme of five or six large and very effective flowers, which have yellowish green lanceolate sepals and petals blotched with purplish brown, and a large horizontally spreading roundish undulated emarginate lip, white, marked all over with lines and spots of purplish blue, the disk bearing a large convex ruff or frill, which is also white striped with blue. There are several varieties of this plant, some much finer than others.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2748; *Lodd. Bot. Cab.*, t. 1664; *Paxton, Mag. Bot.*, iii. 97, with tab.

Z. Mackayi intermedium, *Hort.*—A very fine and distinct plant, having the leaves longer than in *Z. Mackayi*. The flowers are of a paler colour than in the type, with a fine large expanded lip, and are produced during the winter season.—*Brazil*.

Z. maxillare, *Loddiges.*—A free-flowering and handsome species, producing its drooping spikes at different times in the year, and keeping in beauty for a long time. We have had this species with seventy flowers on a plant at one time. It has oblong furrowed pseudobulbs, lance-shaped nervose leaves attenuated to the base, and large showy flowers on radical scapes. The ovate oblong acute sepals and petals are green, transversely blotched and barred with chocolate-brown, and the lip, which has a blunt spur and a large roundish front lobe, is of a rich bluish purple. The large frill or ruff on the disk is of a deeper purple, crenate, shaped like a horse's hoof (unguliform) and united to the small erect lateral lobes of the lip. This will do well on a raft or in a basket.—*Brazil*.

FIG.—*Lodd. Bot. Cab.*, t. 1776; *Bot. Mag.*, t. 3686; *Paxton, Mag. Bot.*, iv. 271, with tab; *Gartenflora*, 1879, 345, with fig.

Z. rostratum, *Hooker.*—A showy and rare free-flowering species, which blossoms three times a year, and lasts six weeks in perfection. This makes a fine exhibition plant when well grown. We have shown it with twenty or more flowers, and grown like this it is a beautiful object. It requires more heat and moisture than any of the other species. The plant has a creeping rhizome, forming at intervals an oblong-ovate subcompressed pseudobulb. The leaves and scapes appear on the young growths, the former lanceolate acute plaited, the latter one to two-flowered, radical. The flowers

are large, six inches in depth, the dorsal sepal and two petals linear-lanceolate, three inches long, whitish at the base, then green with the centre marked with dull brownish purple; the lip is ovate recurved, nearly three inches long, white, yellowish behind the disk, which bears a small unguulate frill or ruff of pale lilac-purple, about ten lines of the same colour radiating from it towards the front.—*Demerara*.

FIG.—*Bot. Mag.*, t. 2819; *Orchid Album*, ii. t. 78.

SYN.—*Zygosepalon rostratum*.

Z. Sedenii, *Rehb. f.*—A distinct and showy hybrid, between *Z. maxillare* and *Z. Mackayi*, partaking in its growth most of the character of the last-named or male parent. It has narrow lanceolate plaited leaves, and bold racemes of large showy flowers, of which the sepals and petals are deep purplish brown, with a very narrow even border of pale green, and not barred or blotched as in the parents; the lip is broad roundish emarginate, rich bluish purple, deeper towards the base, and breaking out into forked veins near the margin; the frill or ruff is bold and of a bluish purple.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 417; *Gartenflora*, 1883, 280, with fig.

ORCHIDS FOR THE GREENHOUSE, COLD FRAME, OR PIT.



WE are glad to find that the remarks made in former editions of this work have induced many persons to turn their attention to these beautiful plants, for there are many Orchids, which yield most exquisite flowers, that will thrive without any artificial heat. Orchid growers too often set on one side all those which do not succeed without warm treatment. Our object in introducing the subject is to bring into notice some of those beautiful terrestrial plants from the South of Africa, North America, the South of Europe, and Australia, which at present are only seen at rare intervals, but which when seen are always admired. Their

culture also opens a field for many not possessing the advantages of an East Indian and Mexican Orchid house, or, indeed, any plant house, to commence the study of this beautiful class.

The terrestrial species, from the Cape and other places, which do not, as a rule, produce large flowers, are yet most exquisitely coloured, and many of them most fantastic in shape. We have, moreover, some fine things yet to introduce from the Cape. Mr. Plant, in describing some of the rarities he met with in one of his journeys in South Africa, writes:—"The Terrestrial Orchids are numerous and very beautiful. In my opinion, there are many here but little inferior to the most showy of the epiphytous kinds. Fancy a plant with the general character of an *Ophrys*, producing a spike of bloom as large and as thickly set as those of *Saccolabium guttatum*, often, indeed, measuring two feet in length, of a bright salmon colour, intermixed with as bright a yellow. Another with plaited foliage, and a nodding head of some twenty bright yellow blossoms, having a deep stain of crimson on the cucullate lip, in the manner and of the size of a *Dendrobium*. Again, another with fleshy leaves and an erect stem of about two feet, supporting from fifteen to thirty large yellow flowers, the lip lined and blotched with pale purple, bearing the aspect of some robust *Epidendrum*." Many of these fine things would no doubt ere now have enriched our gardens, had Mr. Plant been spared to return alive. What can be more gorgeous than the *Disa grandiflora*? There are numerous members of this family at the Cape, and though they are not so large in the flower as the species just named, yet they are exquisitely beautiful. Again, the elegance of the North American *Cypripediums* is not surpassed by that of those which inhabit the tropics.

Now all these can be cultivated in a cool greenhouse or

frame, either planted out or in pots. Indeed, many of the terrestrial kinds will succeed well in the open air if a little care is bestowed upon the selection and preparation of the situation. The number of species we have here enumerated is not great; but in the course of a few years they might receive numerous accessions if plant-loving ladies and gentlemen, as well as gardeners, would take up the growth of these beautiful plants. Any one having friends at the Cape, or in North America, or Australia, should strongly impress upon them the desirableness of sending home the tubers of any Orchids they may find. By this means we should soon make many valuable additions to our collections.

The Orchids described in the following selection are all terrestrial species, and in cultivation must not be elevated above the rim of the pot, as is the custom with the epiphytal kinds, but there must be a space of an inch or more from the rim to the soil, to allow of a sufficient quantity of water being given at one time. The soil best adapted for their growth is a mixture of good fibrous loam, turfy peat and silver sand, adding more or less of each, according to the peculiar habitat of the particular plant to be potted. They must all have good drainage, and the addition of lumps of sandstone or of charcoal to the soil will have a beneficial effect, serving to keep the mass open, and the roots cool and moist. They are mostly propagated by division of the roots, just as the fresh growth commences; and though they all require a season of rest, they must never be allowed to become dry at the roots, nor must the temperature be allowed to be lower in winter than from 35° to 40°—not that certain kinds will not withstand some few degrees of frost, but we believe they will all thrive far better if not subjected to such extremes. In the growing season, abundance of water should be poured round

and about them, to keep a moist and cool atmosphere, in which they delight.

A SELECTION OF GREENHOUSE AND FRAME ORCHIDS.

Cypripedium Calceolus, *Linn.*—This, though a British species, is so rare and beautiful, that it well deserves a place in every collection. It grows about a foot high; the leaves are oval, smooth, and dark green; the flowers yellow and brown. FIG.—*Eng. Bot.*, t. 1; *Lodd. Bot. Cab.*, t. 363.—*Europe.*



CYPRIPEDIUM
CALCEOLUS.

Cypripedium candidum, *Willd.*—An elegant little species which at present is rare in cultivation. The leaves are somewhat lanceolate, dark green; the flowers are produced singly and are of moderate size, the sepals and petals green with brown streaks, the latter slightly twisted, and the lip is somewhat oblong, white, spotted with brownish purple inside. It is a very desirable plant. FIG.—*Flore des Serres*, t. 962.—*North America and Canada.*

Cypripedium guttatum, *Swartz.*—A perfect little gem, making a stem about three inches high, with two broad ovate elliptic leaves and a single flower, which is large, white, most beautifully blotched and spotted with rich purple. It is found in boggy, swampy places. FIG.—*Fl. des Serres*, t. 573.—*Canada and Siberia.*

Cypripedium humile, *Salisb.*—A pretty stemless species, the oblong slightly hairy light green leaves of which are produced in pairs; the large and beautiful flowers are borne singly upon short scapes from the centre of the plant, and have a very large rose-coloured lip veined with deeper red, the sepals purple; it flowers in May, and retains its beauty for a considerable time. FIG.—*Bot. Mag.*, t. 192; *Sweet, Brit. Fl. Gard.*, v. t. 161. SYN.—*C. acaule.* — *North America.*

Cypripedium Irapeanum, *Llave.*—A most beautiful tall-growing species, with large flowers, four to five inches across,

of a bright golden yellow. Being somewhat tender it should be grown where protection can be given to it. The *Flor de Pelicano* of the Mexicans. FIG.—*Bot. Reg.*, 1846, t. 58.—*Upper Mexico*, where it is found at an elevation of 2,000 to 5,000 feet.

Cypripedium japonicum, *Thunb.*—A very beautiful hardy species, which has a creeping scaly rhizome, and a pair of flabellate leaves. The flower segments are greenish sprinkled with reddish dots, the lip is whitish suffused with pink. It should be potted in light sandy loam, and have plenty of water during the growing season. FIG.—*Blume, Orch. Ind. Arch. et Jap.*, t. 59; *Gard. Chron.*, n.s. iii. 625, fig. 129; *Fl. des Serres*, tt. 2064-5.—*Japan*.

Cypripedium macranthum, *Swartz.*—One of the finest and most distinct of the terrestrial section. It grows about ten inches high, has oblong acute leaves, and produces its charming large purple flowers early in June. FIG.—*Bot. Mag.*, t. 2938; *Bot. Reg.*, t. 1534.—*Siberia; Altai*.

Cypripedium parviflorum, *Salisb.*—A handsome fragrant species, somewhat resembling *C. Calceolus*, but taller; the stem and oval acuminate leaves are slightly downy, the sepals and petals a little twisted, yellow streaked with reddish brown, the lip large and round, and wholly of a rich yellow. FIG.—*Bot. Mag.*, t. 3024; *Sweet, Brit. Fl. Gard.*, i. t. 80.—*North America*.

Cypripedium pubescens, *Willd.*—This fine plant makes a stem a foot high or more, with large oval acute downy light green leaves, and produces in June its charming yellow and purple flowers, which continue in perfection for a very long time. FIG.—*Bot. Mag.*, t. 911; *Lodd. Bot. Cab.*, t. 895.—*North America*.

Cypripedium spectabile, *Swartz.*—A superb plant, growing from one to two



CYPRIPEDIUM SPECTABILE.

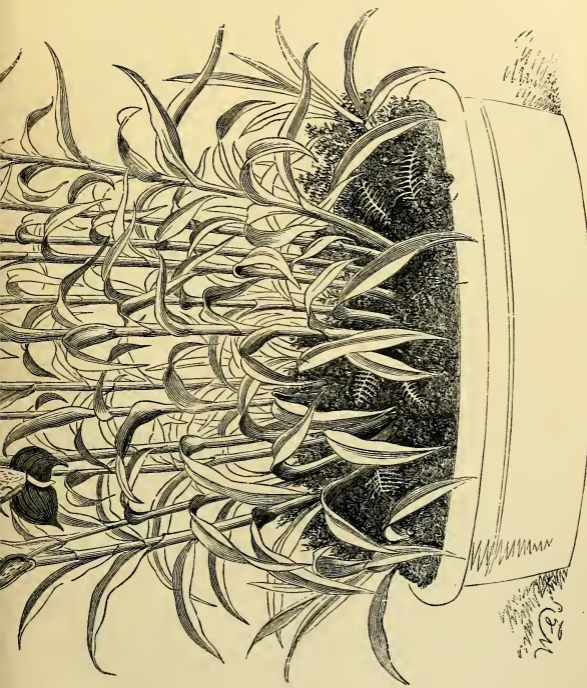
feet high, and supporting large downy leaves, with beautiful rose and white flowers. It generally blooms in May and June, and makes one of the finest plants for exhibition purposes, the flowers being so distinct from those of any other *Cypripedium*. FIG.—*Bot. Reg.*, t. 1666; *Bot. Mag.*, t. 216.—*North America*.

Cypripedium spectabile album, *Sweet*.—This charming variety resembles the preceding in habit of growth, and also in its foliage and inflorescence, but its large flowers are of a uniform creamy white, and are very attractive. FIG.—*Sweet, Brit. Fl. Gard.*, iii. t. 240.—*North America*.

Disa.—This is a rather extensive family, but those we here describe are the finest of the species. There are others in cultivation; but as they have not yet flowered, it is impossible to determine which they really are. Nearly the whole of the species are well worth growing, for although their flowers are not so large as those of *D. grandiflora*, they are very handsome, and of easy culture. The following, some of which we have seen growing, though not flowering, are well worthy of attention—*D. cernua*, flowers green and yellow; *D. chrysostachya*, golden yellow; *D. cornuta*, purple and white; *D. Draconis*, white and dark blue; *D. graminifolia*, azure; *D. lacera*, white; *D. longicornis*, blue; *D. maculata*, spotted blue; *D. melaleuca*, brown and white; *D. patens*, yellow; *D. prasinata*, green and reddish purple; *D. racemosa*, purple; *D. rufescens*, purple; *D. spathulata*, pale blue; *D. tenuifolia*, yellow. Many more might be named; but enough has been said to show that we have a rich stock of novelties in store yet.

The best mode of treatment for these plants is to pot them in shallow pans, in some good fibrous peat in a rather rough state, with a little silver sand, well-rotted manure, and live sphagnum moss added to it. They require a liberal supply of water during the growing and flowering season. During the time they are making vigorous growth, they may be syringed twice a day, or even oftener. This is far better than using a watering-pot, as it serves the purpose of a shower of rain, and helps to keep the red spider from the leaves—an insect which is very injurious to them. Green fly is also very troublesome; it should be kept under by washing them with a sponge and cold water. The plants rest after the flowering season is over, and during this time less





DISA GRANDIFLORA

W. & A. G. & Co.
New York

moisture is required. It is a good plan, after this growing and flowering season is past, to place the plants in rather a shady part of the garden, and syringe them occasionally, but not to keep them too moist, as they may probably perish if allowed to get dry at any time. The most suitable time for potting them is just as they are beginning to make roots, which is usually in the months of January and February.

These plants are easily propagated, as they throw up suckers in abundance. These should be left till well rooted, and then be taken off and potted in the material recommended for established plants; after which they must be kept moist, and in the shade, until they make fresh roots. When they become established, place them near the light, and apply more water to the roots. What they principally require is coolness and moisture at the roots, and a good season of growth during the winter months. The late C. Leach, Esq., of Clapham Park, grew the *D. grandiflora* in cold pits, and we never saw any shown in better condition than his plants were, which had been thus grown by him for years with undeviating success.

Disa Borellii, Hort.—This is a showy and handsome species in the way of *D. grandiflora*. The flowers are orange-scarlet with the lip of a lighter shade of the same colour and marked with crimson veins. It should receive the same treatment as *D. grandiflora*. FIG.—*Floral Mag.*, 2 ser., t. 104.—*South Africa*.

Disa crassicornis, Lindley.—A very distinct and handsome species, which was first flowered in the Glasnevin Botanic Gardens in 1879. The stems are robust, leafy, one to two feet high, the leaves lanceolate much acuminate, and the raceme of flowers terminating the stem about a foot high bearing eight flowers, which are white spotted with deep purple, the hood conical, ending in a long slender spur. It is an extremely rare species, and flowers in September. FIG.—*Bot. Mag.* t. 6529. SYN.—*Disa megaceras* (Hook, fil.).—*South Africa*.

Disa grandiflora, Linn.—This fine plant attains the height of a foot or eighteen inches, bearing on the stems numerous lanceolate acute leaves, and at the top from two to five of its beautiful scarlet flowers, which are three to four inches in diameter, with the large spreading lateral sepals crimson, and the dorsal one paler on the outside, and within bluish

delicately veined with crimson. The blossoms are borne in June and July, and last a very long time in perfection. FIG.—*Bot. Reg.*, t. 926; *Bot. Mag.*, t. 4073. SYN.—*Disa uniflora*.—*South Africa*.

Disa grandiflora superba, Moore.—This certainly ranks among the very finest of greenhouse Orchids. It has a creeping underground stem which throws up young shoots of a light green colour. The flower stems grow to the height of two to three feet, bearing the lanceolate leaves, and at the top part from two to eight flowers, each more than four inches in diameter, of a bright scarlet and crimson, veined with pink; the blossoms are generally produced in June, July, and August, and continue for five or six weeks. It makes a fine plant for exhibition on account of its splendid colour. This plant was well grown by the late Mr. Thomas Speed at Chatsworth. We remember on one occasion receiving from him a spike which was two feet six inches in length and bore twelve flowers. FIG.—*Warner, Sel. Orch. Pl.*, i. t. 36; *Florist and Pomol.*, 1863, 105, t. 221.—*South Africa*.

Eulophia Dregeana, Lindley.—Of this large genus, there are not many species in cultivation; indeed, the greater portion are not sufficiently showy to render them worthy of the attention of amateurs with limited space; yet there are some very pretty ones. *E. Dregeana*, which flowered in the collection of Lord Eversley, at Heckfield, is well worth growing. It has thick fleshy rhizomes, and is of free habit, with ensiform acuminate leaves, and erect scapes bearing many-flowered dense racemes of flowers which resemble little doves hanging by their beaks; the sepals and petals are chocolate colour, and the oblong three-lobed lip white. It requires the same treatment as the *Cypripediums*.—*South Africa*.

Goodyera pubescens, R. Br.—A charming species of dwarf habit, already noticed at p. 335. The foliage is green, enriched with silvery reticulated markings, and is in appearance something like that of *Physurus argenteus*. It is a beautiful foliage plant, suitable for the cold frame. To cultivate this well, put some live sphagnum moss with the peat, and also a portion of silver sand, and mix them well together. It requires a liberal supply of water; in fact, it should never

be allowed to get dry at the roots. *G. pubescens minor* (*tessellata*) is figured in *Bot. Mag.*, t. 2540. FIG.—*Sweet, Brit. Fl. Gard.*, iv. t. 47; *Lodd. Bot. Cab.*, t. 1.

Habenaria ciliaris, *R. Br.*—A very pretty and rare species, which has been for a long time an inhabitant of our gardens. It grows a foot or more in height, has light green ovate lanceolate leaves, and terminates in a dense oblong spike of orange-yellow flowers, the lip of which is beautifully fringed. It requires the same treatment as *Cypripediums*. FIG.—*Bot. Mag.*, t. 1668; *Andr. Bot. Rep.*, i. t. 42.—*North America*.

Lissochilus speciosus, *R. Br.*—A free-growing kind, noticed at p. 375. It is an old inhabitant of our gardens, though it is so much neglected as rarely ever to be seen. With proper treatment, it grows about two feet in height, and produces in June its spikes of magnificent yellow butterfly-like flowers, which remain in their beauty for a considerable time. FIG.—*Bot. Reg.*, t. 578; *Paxton, Mag. Bot.*, iv. 25, with tab.—*South Africa*.

Orchis.—A beautiful genus, containing many species well worthy of general cultivation. They require soil and treatment similar to those described in our introductory remarks. In their habit of growth they may be compared to Hyacinths.

Orchis foliosa, *Solander*.—This, though rarely seen, makes a very fine exhibition plant. It has been exhibited in splendid condition by the late A. Turner, Esq., Leicester, and has frequently been shown in our own collection, where it has always attracted universal admiration. It grows about a foot and a half high, has oblong lanceolate acuminate leaves, and in May and June produces its dense oblong spikes of beautiful purple darker spotted flowers, which continue in perfection for some time. It should be in every collection. FIG.—*Bot. Mag.*, t. 5074; *Batem. 2nd Cent.*, t. 170; *Bot. Reg.*, t. 1701.—*Madeira*.



ORCHIS FOLIOSA.

Orchis longicornis, *Smith*.—A really beautiful species. It blooms generally from about December to the end of May;

and as these plants are so easily grown, if not much disturbed or kept too warm, it is surprising that they are so neglected by the majority of Orchid growers. It grows from twelve to twenty inches high, and has oblong-linear obtuse leaves, and densely set flower spikes. The flowers have the side lobes of the lip roundish and dark purple, and middle lobe white spotted with crimson, the two parts forming a striking contrast; they have a very long spur. FIG.—*Bot. Mag.*, t. 1944; *Bot. Reg.*, t. 202; *Florist*, 1853, t. 74.—*South of Europe; Barbary.*

Orchis maculata superba, *Hort.*—This is a very fine variety of our British species, *O. maculata*. There are many of the native species which are very interesting, though they are difficult to manage, or get the credit of being so, because no one perseveres with them and endeavours to understand their peculiar requirements. The present plant has bloomed very finely with us upon several occasions, and is well worth general cultivation. It grows about eighteen inches high, the leaves dark green, beautifully spotted with purple, and the flower spikes about a foot long, densely set with the beautiful flowers, which are a rich mauve, spotted and blotched with purple, and which last in perfection a long time. It flowers in May and June, and is a good match plant for *O. foliosa*.—*Europe.*

Platanthera incisa, *Lindley.*—An interesting and pretty herbaceous Orchid growing from a foot to a foot and a half high, with obtusely lanceolate stem-leaves deep green in colour, and oblong many-flowered terminal racemes with small thickly set handsome fragrant flowers of a rich purple, the lip being three-parted and deeply fringed.—*North America.*

Satyrion aureum, *Paxton.*—This represents a very interesting genus of Orchids which succeeds admirably in a cold frame, in turfy peat and fibry loam and sand, with plenty of drainage. As is the case in other genera, some species are much handsomer than others. *S. aureum* is a really fine thing, growing a foot or more in height, producing its deep orange flowers, which are shaded with rich crimson, in July and August, and continuing in perfection a long time. We saw it growing very freely at Heckfield, in the collection of Lord Eversley, where many curious and interesting terrestrial species are to be found. FIG.—*Paxt. Mag. Bot.*, xv. 31, with tab.—*South Africa.*

ADDENDA.

Acacallis cyanea, Lindley.—A very fine and distinct Orchid with blue flowers, allied to *Huntleya* and *Warrea*, but distinguished by its long narrow hypochil, saccate and five-lobed in front, its short three-horned mesochil, and its concave epichil, which is ribbed at the base. The pseudobulbs are ovate, one-leaved, the leaves are upwards of a foot long and three inches broad, tapered below into a furrowed petiole; and the flowers, which are as large as those of *Odontoglossum Pescatorei*, grow in close erect five-flowered racemes on peduncles about a foot long. The sepals and petals are subrotund, apiculate, light blue, paler within, and the lip light bluish purple with pale veins, the back and wings of the column streaked with red. The blue of the flower is almost pure. In habit the plant most resembles a creeping *Maxillaria*, forming a long rhizome between the pseudobulbs. It should be grown on a block.—*Brazil*.

SYN.—*Aganisia cyanea*.

Äeranthus Leonis, Rehb. f.—This meritorious novelty, closely allied to *Angræcum*, was discovered by Mons. Leon Humblot. The plant is dwarf, and has peculiar sword-like falcate leaves, very stout in texture, about a span long, closely set on the stem, and not cleft except at the point of junction therewith. The flowers remind one of a gigantic *Angræcum articulatum*, and are pure white as in that species, the lip being broad, concave and rounded. The racemes consist of as many as seven flowers, the long spurs of which are funnel-shaped at the base, filiform towards the apex, and appear to be always twisted upwards.—*Comoro Islands*.

FIG.—*Gard. Chron.* N.S., xxiv. 80, figs. 17, 18; *Orchid Album*, v. t. 213.

SYN.—*Angræcum Leonis*.

Äerides Ballantianum, Rehb. f.—A fine *Äerides* in the way of *A. suavissimum*, but dwarfer, and having rather short bilobed leaves. The dorsal sepal and the petals are white and

somewhat toothed, while the lateral sepals are usually adorned with a purple eye-like blotch at the tip; the side lobes of the lip are equal to or shorter than the middle lobe, retuse and toothed at the tip, orange, sometimes self-coloured, at other times with purple streaks and transverse bars of different dimensions. It is named in honour of Mr. Ballantine, gardener to Baron Schröder, a great enthusiast among East Indian Orchids.—*Native Country not stated.*

Aërides marginatum, *Richb. f.*—A lovely new species, allied to *A. quinquevulnerum*, which it resembles in habit. It has broadish bilobed or emarginate lorate leaves, which are keeled on the under surface, and fine drooping racemes of handsome flowers densely packed on the rachis; the sepals and petals are of a very pale yellowish tint, with the anterior border purple; the spur is conical and of a light green; the side lobes of the lip are semioblong, toothed in front, and of a deep orange colour, while the midlobe is oblong-ligulate toothletted, yellow, changing to a deep sepia brown; a linear transverse callus occurs at the front side of the mouth of the spur, and a similar but narrower one behind. The colours are unusual in this genus, so that the plant has a peculiar interest for Orchid growers.—*Philippine Islands.*

Aërides Sanderianum, *Richb. f.*—This grand novelty, which was imported by Mr. F. Sander, of St. Albans, after whom it is named, proves to be an important and valuable acquisition, allied to *A. Laurenciæ*. It is of vigorous growth, with broad short retusely bilobed leaves, and long well-furnished racemes of handsome flowers, which are very large, measuring fully one and a half inch from the tip of the dorsal sepal to the tip of the curved spur. The sepals and petals are creamy white, distinctly tipped with magenta, recurved at the margin, the lateral sepals broader and adnate on the lower side to the back of the lip; the lip is large, the spur being fully half an inch in diameter, and very attractive, having the upper half of the side lobes of a clear yellow and frilled at the edges, while the middle lobe, which is folded up between them and looks like a purple crest, is obovate, frilled at the edges, and of a bright magenta; the lower end of the spur is greenish yellow. The little white column, which resembles a bird's head, is quite hidden by the upper part of the lip or spur, which closes over it.—*Eastern Tropical Asia.*

Aërides Wilsonianum, *Sander*.—A very distinct dwarf *Aërides* with a habit of growth similar to that of *A. odoratum*. The flowers are produced on drooping spikes, and are pure white with a lemon yellow lip.—*Native Country not stated*.

Calanthe colorans, *Rchb. f.*—This new and beautiful species has recently flowered with us, and we have to thank Professor Reichenbach for identifying it. It belongs to the *C. veratrifolia* section, and has large white showy flowers with a double-toothed spur. The leaves are like those of *C. veratrifolia* in form. It grows in grassy places, which indicates a terrestrial habit. This will make a useful autumn flowering *Calanthe*, as it produces its blossoms during August and September.—*India*.

Cattleya crocata, *Rchb. f.*—This according to Professor Reichenbach is near the Eldorado group, though the blossoms are larger. The flowers are broad and of the purest white, with a wide band of deep orange running from the base of the lip to the disk of the anterior lobe, where it expands into a pentagonal blotch toothed in front. It flowers during the autumn months.—*Brazil*.

Cattleya Hardyana, *Hardy*.—The most gorgeous *Cattleya* we have ever seen, doubtless a hybrid between *C. gigas* and *C. Dowiana aurea*, which grow together, and in a batch of which it was imported. The growth resembles that of *C. gigas*. The individual flowers measure eight inches across, the sepals and petals are of a deep rosy purple; the lip is three inches across, its anterior portion much frilled, of a pure magenta, the throat and upper portion of the lip rich yellow after *C. Dowiana*, and handsomely veined with deep purple. The lip has the two eyes peculiar to *C. gigas*, which are in this case of a richer yellow, margined with the magenta as in the anterior portion of the lip. The flower is very strongly scented. It blossoms in August, and was flowered by G. Hardy, Esq., Pickering Lodge, Timperley.—*New Grenada*.

Cattleya labiata leucophæa, *Bull.*—A distinct variety of *C. labiata*, with blush white sepals and petals, and a deep lilac-coloured lip margined with white, the throat yellow. It was flowered by R. H. Measures, Esq., Woodlands, Streatham.—*Brazil*.

Cattleya Mossiæ Nalderiana, *Rchb. f.*—This variety is

according to Prof. Reichenbach "an astonishing beauty." Its general colour is a peculiar rose-purple, with a slight greyish hue; the sepals and petals are of a much darker purple, which in the sepals is a border, and in the petals quite a distinct marking; there are two similar dark bands converging before the apex, leaving a purple rosy disk, and a similar margin at nearly equal distances.—*Venezuela*.

Cattleya resplendens, *Rchb. f.*—The growth of this plant somewhat resembles that of *C. granulosa* and the flowers those of *C. Schilleriana*. The dull olive-brown sepals and petals are spotted with purple, as in *C. guttata Leopoldii*; the lip is white with warm amethyst keels and small warts of the same colour, its cuneate bilobed stalked mid-lacinia has numerous rough warts in the central part, and many keels on the lateral parts, which are externally toothed, and its side laciniae are much developed and very acuminate. This is supposed to be a natural mule between *C. granulosa* and *C. Schilleriana*.—*Brazil*.

Cœlogyne lactea, *Rchb. f.*—An interesting species with short thick shining fusiform ribbed pseudobulbs, and short broad leaves of a thick texture. The flowers are produced in short pendulous racemes, and are white with brown veins on the lip and yellow spots on the disk. It flowers in May.—*India*.

Cypripedium Godefroyæ hemixanthinum, *Rchb. f.*—A curious variety flowered by J. Day, Esq., Tottenham. It has sulphury ochroleucous sepals quite distinct from the normal form.—*Cochin China*.

Dendrobium arachnites, *Rchb. f.*—A very distinct and brilliant novelty, with slender short shining honey-coloured stems, thickened at the articulated apex, and bearing large bright cinnabar red flowers with broad linear blunt sepals and petals, and a broader convolute lip which is ligulate with basilar angles, or sometimes much attenuated in front; the veins of the lip are of a peculiar hue.—*Burma*.

Dendrobium erythropogon, *Rchb. f.*—This plant was imported with *D. Lowii*, and resembles that species in growth. The sepals are of a pallid whitish ochre, partly ochre-coloured, and are deficient of the fine yellow of the typical *D. Lowii*; the lip has seven thick crimson keels on the disk of the middle lobe, the two external ones having short crimson

hairs on each side, and there is a crimson wash between the keels.—*Borneo*.

Dendrobium infundibulum carneopticum, *Rehb. f.*—A very distinct variety of *D. infundibulum*, in which the blotch on the lip, a broad central line, and a few streaks on the sides, are of a pretty flesh colour; whence, observes Professor Reichenbach, "I propose to give it the above mentioned name." He adds, "The *Dendrobium Jamesianum*, *Rehb. f.* is not distinguished from *D. infundibulum*, *Lindl.*, by the red paint on its lip, but by the side lobes of the lip being covered with asperities, and by the distinct shape of the lip itself."—*Burmah*.

Dendrobium nobile Cooksonianum, *Rehb. f.*—A very curious and distinct variety, which when we first saw it we believed to be a malformation, but it has since appeared in other collections, and we understand that plants propagated from it are identical with their parent. The sepals of this variety are similar to those of the type, but it is in the petals that the difference is found, these being in reality like two lips flattened out so as to take the form of petals, their markings and their surfaces being identical with those of the lip.—*India*.

Epidendrum paytense, *Rehb. f.*—A very pretty species, with roundish stems, short oblong acute leaves, and racemes of flowers of a most brilliant scarlet-vermilion, the lip orange, spotted with dark vermilion. Introduced by Dr. Wallace.—*United States of Colombia*.

Govenia sulphurea, *Rehb. f.*—A pretty terrestrial Orchid, with onion-shaped bulbs, and lanceolate acuminate leaves about two inches in breadth, with a dark wine-coloured median rib. The flowers are large, and grow in many-flowered racemes, the sepals being light sulphur-coloured, the petals white on the disk, and sulphur on the margin, with numerous transverse broken purple lines, and the cordate-oblong lip white with the base biplicate, and having some dark brown spots at the apex.—*Paraguay*.

Houlletia odoratissima xanthina, *Rehb. f.*—A yellow form of the type, in which the sepals and petals are orange, and the lip sulphur and white, with falcate horns, and a stipitate clavate callus. It is very distinct.—*Colombia*.

Lælia callistoglossa, *Rehb. f.*—Undoubtedly the best of the hybrid *Lælias*, being the result of a cross by Mr. Seden, between *Lælia purpurata* and *Cattleya gigas*; it was flowered in 1884 by Mr. Ballantine, gardener to Baron Schröder, The Dell, Staines, and was exhibited by him at the Royal Horticultural Society's Meeting in March, 1884, where it was deservedly awarded a first-class certificate. The flowers in outline resemble those of *L. purpurata*, the sepals and petals bright rose colour, and the lip two inches across, rich magenta-crimson shaded with mauve, the throat orange veined with brownish purple. It flowers in March.—*Garden hybrid.*

Lælia Canhamiana, *Rehb. f.*—At first sight this looks like a good variety of *L. purpurata*, but upon closer examination it is seen to be distinct from that species. The sepals and rhomboid petals are light rose, the lip dark velvety purple in its anterior wavy portion, margined narrowly in the upper part with white, and in the throat veined with brown stripes on an orange ground. This is the result of a Veitchian cross between *L. purpurata* and *Cattleya Mossia*.—*Garden hybrid.*

Lælia Measuresiana, *Williams.*—A very chaste and beautiful plant, with stems twelve to fifteen inches high, in some cases furnished with two ovate oblong obtuse leaves, sometimes with a solitary leaf only, which is oblong and acute, suggesting, as do also the flowers, that it is a hybrid between *L. elegans* and some other monophyllous species. The sepals and petals are oblong-lanceolate acute, plane, pure white, the lip entire, and not lobed as in *L. elegans*, but beautifully frilled around the entire margin, the anterior portion rose-colour, the centre paler veined with bright magenta-purple, and the throat pure white stained with yellow. It flowers in May.—*Brazil.*

FIG.—*Orchid Album*, v. t. 207.

Lælia purpurata atropurpurea, *Williams.*—The darkest variety of *L. purpurata* we have yet met with. The sepals and petals are of a deep rose colour, the lip large and open, rich magenta-purple, this colour extending from the point of the lip far into the throat, which is orange-colour veined with dark purple. It was flowered by R. H. Measures, Esq., of Woodlands, Streatham.—*Brazil.*

Lissochilus Krebsii purpuratus, *Ridley.*—This variety has

conical pseudobulbs three inches in length, with stout roots, and broad thin plicate leaves. The flower stem is three and a half feet high, and bears a spike of about twenty flowers, four or more of which open at a time; the sepals are dark green at the back, and deep maroon-purple in front, the margins revolute; the petals are ovate, bright yellow above, pale cream faintly veined with red beneath, and the lip is dull orange-yellow with the lateral lobes chocolate-purple, streaked with darker lines, and the spur tipped with pink. Introduced by Mr. Heath.—*South Africa*.

Masdevallia Gairiana, *Rehb. f.*—An interesting hybrid between *M. Davisii* and *M. Veitchii*, the result being the production of an intermediate form. The colour of the flower is that of *M. Davisii*, but the form is more like *M. Veitchii*, and it is furnished with the bluish purple areas which are found on *M. Veitchii*. It was raised at Messrs. Veitch & Sons' nursery at Chelsea.—*Garden hybrid*.

Masdevallia Harryana armeniaca, *Williams*.—A most distinct variety, with large rounded flowers, two inches across, of a deep apricot colour, resembling some of the varieties of *Azalea mollis*, the eye being of a rich yellow. It was flowered by R. H. Measures, Esq., Woodlands, Streatham.—*New Grenada*.

Maxillaria Sanderiana, *Rehb. f.*—This new species resembles a gigantic form of *M. grandiflora*. The sepals and petals are white, slightly stained with dull crimson at their base; the lip is similar to that of *M. grandiflora*, but larger in all its parts. It flowers in May.—*Native Country not stated*.

Mormodes luxatum eburneum, *Rehb. f.*—A very handsome variety, with large sweet-scented creamy white flowers, as many as twelve to fifteen being produced on a spike. This is a plant that should be in every collection, it being a general favourite. It flowers in July and August.—*Mexico*.

SYN.—*M. Williamsii*.

Mormodes luxatum punctatum, *Rehb. f.*—A distinct and beautiful variety, the flowers of which are white, densely spotted with red on the inner sides of the sepals and petals.—*Mexico*.

Odontoglossum Josephinæ, *Williams*.—A charmingly beauti-

ful plant, first flowered by R. H. Measures, Esq., Woodlands, Streatham. In its growth it resembles *O. crispum*. The star-shaped flowers have the sepals and petals bluish white, beautifully spotted with reddish chocolate, the lip cordate-oblong, undulated, recurved at the tip, and having a yellow disk. It flowers during the winter months, and lasts six weeks in perfection.—*United States of Colombia*.

FIG.—*Orchid Album*, iv. t. 188.

Odontoglossum macrospilum, *Rchb. f.*—This species has the sepals and petals cuneate-lanceolate acute, in the way of those of *O. odoratum*, with deep blotches of dark cinnamon; the broad triangular acute denticulate lip has numerous lateral keels terminating in one or several bristles, and a central one looking forward. A very handsome plant.—*Native Country not stated*.

Odontoglossum vexillarium album, *Finet*.—A very beautiful and distinct variety, with white flowers having only the faintest tinge of rose towards the lower portions of the sepals and petals. This was first flowered by M. Finet, of Argenteuil, France, an ardent admirer of Orchids.—*New Grenada*.

Odontoglossum vexillarium Kienastianum, *Rchb. f.*—A very fine variety with uncommonly large flowers. The sepals and petals have broad white margins and a rose-coloured disk, and the lip is light yellow at the base with the usual three central purple lines, besides which fine radiating rose lines run all over the grand lip except along the pure white margin. *New Grenada*.

Odontoglossum vexillarium Measuresianum, *Hort.*—A variety of extreme beauty, having flowers which are wholly white on the exterior as well as the interior surface. The flowers are somewhat smaller than in *O. vexillarium album*, but it is the purest white form we have yet seen.—*New Grenada*.

Oncidium caloglossum, *Rchb. f.*—A stately species, which in its habit of growth resembles *O. Marshallianum*. It has a large branching inflorescence bearing about thirty flowers, of which the sepals and petals are yellow striped with sepia brown, those on the petals being remarkably confluent; the lip is brighter yellow with brown blotches in front, the warts of the calli reddish with numerous brownish red spots all around.—*Tropical America*.

Phajus Humblotii, *Richb. f.*—A remarkable and beautiful new species, which bears its large showy blossoms in few-flowered racemes. The sepals are oblong acute, the petals twice as broad, and the large spurless lip three-lobed, the lateral lobes roundish and brought forward, the middle lobe transversely emarginate, and the disk bearing a fleshy saddle-shaped bilamellate callus running out in front into a little keel. The flowers are rose-coloured with blotches of white and red.—*Madagascar*.



INDEX.

N.B.—The names in Italics are synonyms.

	<i>Page</i>		<i>Page</i>
ACACALLIS	631	AËRIDES	
<i>cyanea</i>	631	<i>illustre</i>	102
ACINETA	91	<i>japonicum</i>	102
Barkeri	92	<i>Larpenae</i>	101, 103
<i>densa</i>	92	<i>Lawrenciae</i>	103
Hrubyana	92	<i>Leeanum</i>	103
Humboldtii	92	<i>lepidum</i>	103
— <i>fulva</i>	92	<i>Lindleyanum</i>	100, 104
— <i>straminea</i>	93	Lobbi	104
<i>superba</i>	92, 93	— <i>Ainsworthii</i>	104
<i>Warscewiczii</i>	92, 93	<i>maculosum</i>	104
ACROPERA	93	— <i>Schröderi</i>	105
<i>armeniaca</i>	93	<i>margaritaceum</i>	105
<i>aurantiaca</i>	93	<i>marginatum</i>	632
<i>cornuta</i>	93, 94	<i>matutina</i>	559
Loddigesii	94	McMorlandi	105
ADA	94	Mendelii	105
<i>aurantiaca</i>	95	<i>mitratum</i>	106
AËRANTHUS	95	<i>multiflorum</i>	98, 106
Leonis	631	<i>nobile</i>	106
<i>sesquipedalis</i>	95, 120	<i>odoratum</i>	106
AËRIDES	95	— <i>cornutum</i>	107
<i>affine</i> (Hook.)	109	— <i>majus</i>	107
<i>affine</i> (Wall.)	98	— <i>purpurascens</i>	107
— <i>superbum</i>	98	<i>pachyphyllum</i>	107
Ballantinianum	631	<i>praemorsum</i>	564
<i>Brookei</i>	99, 100	<i>quinquevulnerum</i>	107
<i>cornutum</i>	99, 106	— <i>Farmeri</i>	108
<i>crassifolium</i>	99	Reichenbachii	108
<i>crispum</i>	99	— <i>cochinchinense</i>	108
— <i>Lindleyanum</i>	100	<i>retusum</i>	566
— <i>Warneri</i>	100	Robbelenii	108
<i>cylindricum</i>	100, 110	Rohanianum	108
Dominianum	100	<i>roseum</i>	98
<i>Ellisii</i>	100, 111	<i>roseum</i>	109
Emericii	100	— <i>superbum</i>	109
<i>expansum</i>	101	<i>rubrum</i>	109
— <i>Leoniae</i>	101	Sanderianum	632
<i>falcatum</i>	101	<i>Schröderi</i>	109
— <i>expansum</i>	101	<i>suavissimum</i>	109
Fieldingii	101	— <i>maculatum</i>	110
<i>flavidum</i>	102, 110	<i>testaceum</i>	110, 112
<i>ovatum</i>	566	Thibautianum	110
Houlletianum	102	Vandarum	110
<i>Huttoni</i>	102, 110	Veitchii	110

	Page		Page
AÆRIDES		ANGULOA	
<i>virens</i>	110	Ruckeri sanguinea	132
— Dayanum	111	— <i>Wagneri</i>	132
— Ellisii	111	<i>superba</i>	92, 133
— grandiflorum	111	Turneri	133
— superbum	111	uniflora	133
<i>Warneri</i>	100, 111	virginalis	133
Wightianum	111	ANCECTOCHILUS	120
Williamsii	112	<i>argenteus</i>	541
Wilsonianum	633	— <i>pictus</i>	543
AGANISIA	112	argyroneurum	126
<i>cyanea</i>	631	Boylei	126
<i>pulchella</i>	112	Bullenii	126
ANÉCOCHILUS	340	concinnum	126
<i>Dawsonianus</i>	340	<i>Dawsonianus</i>	340
ANGRÆCUM	113	<i>Dayi</i>	126
<i>apiculatum</i>	114	Dominii	126
<i>articulatum</i>	114	El Dorado	126
<i>bilobum</i>	114	Friderici-Augusti	127
— <i>Kirkii</i>	114	Heriotii	127
Brongniartianum	116	hieroglyphicum	127
<i>caudatum</i>	114	intermedium	127
Chailluanum	115	javanicum	127
<i>citratum</i>	115	<i>latimaculatum</i>	127
<i>crenatum</i>	115	<i>lineatus</i>	419
<i>cryptodon</i>	115	<i>Lobbianum</i>	128, 129
<i>descendens</i>	115	<i>Lobbii</i>	126, 128
<i>eburneum</i>	116	<i>Lowii</i>	128, 307
— <i>superbum</i>	116	Nevillianum	128
— <i>virens</i>	116	<i>nobilis</i>	542
Eichlerianum	116	<i>Ortgiesii</i>	542
Ellisii	117	<i>Petola</i>	128, 384
<i>falcatum</i>	117	<i>pictus</i>	543
<i>fastuosum</i>	117	<i>querceticola</i>	128
<i>fuscatum</i>	117	<i>regale</i>	128
<i>Grantii</i>	118	— <i>cordatum</i>	128
Hildebrandtii	118	— <i>grandifolium</i>	128
Kotschyi	118	— <i>inornatum</i>	129
<i>Leonis</i>	631	Reinwardtii	129
<i>modestum</i>	118	Roxburghii	129
<i>pellucidum</i>	118	Ruckeri	129
<i>pertusum</i>	118	<i>setaceum</i>	128
Scottianum	119	— <i>cordatum</i>	128
<i>sesquipedale</i>	119	— <i>grandifolium</i>	128
<i>superbum</i>	116, 120	— <i>inornatum</i>	129
<i>virens</i>	116, 120	<i>striatum</i>	129, 419
ANGULOA	130	Turneri	129
Clowesii	131	<i>Veitchii</i>	130, 384
— <i>macrantha</i>	131	<i>xanthophyllum</i>	127, 130
<i>dubia</i>	131	<i>zebrinum</i>	130
<i>eburnea</i>	132	ANSELLIA	133
<i>grandiflora</i>	580	<i>africana</i>	134
<i>Hernandezii</i>	583	— <i>gigantea</i>	134
<i>Hohenlohi</i>	132	— <i>lutea</i>	134
<i>media</i>	132	<i>gigantea</i>	134
<i>purpurea</i>	132	<i>natalensis</i>	134
Ruckeri	132	ARACHNANTHE	134
— <i>retusa</i>	132	<i>Cathcarti</i>	599

	<i>Page</i>		<i>Page</i>
ARACHNANTHE		BLETIA	
<i>Lowii</i>	558	<i>Woodfordii</i>	521
<i>moschifera</i>	135	BOLLEA	146
ARACHNIS	135	<i>ccelestis</i>	146
<i>moschifera</i>	135	<i>Lalindei</i>	147
ARGYRORCHIS	127	<i>Lawrenceana</i>	147
<i>javanica</i>	127	<i>Patinii</i>	147
ARPOPHYLLUM	135	BOTRIOCHILUS	214
<i>cardinale</i>	136	<i>bellus</i>	214
<i>giganteum</i>	136	BRASSAVOLA	148
<i>spicatum</i>	136	<i>acaulis</i>	148
ARUNDINA	136	<i>Digbyana</i>	148
<i>bambusæfolia</i>	137	<i>Gibbsiana</i>	149
<i>densa</i>	137	<i>glauca</i>	149
ASPASIA	137	<i>lineata</i>	149
<i>lunata</i>	138	<i>Matheuana</i>	149
— <i>superba</i>	138	<i>venosa</i>	150
<i>odorata</i>	138	BRASSIA	150
BARKERIA	138	<i>antherotes</i>	150
<i>cyclotella</i>	139	<i>cinnamomea</i>	151
<i>elegans</i>	139	<i>Clowesii</i>	411
<i>Lindleyana</i>	140	<i>Gireoudiana</i>	151
— <i>Centeræ</i>	140	<i>guttata</i>	151
<i>melanocaulon</i>	140	<i>Keiliana</i>	151
<i>Skinneri</i>	140	<i>Lanceana</i>	151
— <i>superba</i>	141	<i>Lawrenceana</i>	152
<i>spectabilis</i>	141	— <i>longissima</i>	152
BATEMANNIA	141	<i>maculata</i>	152
<i>Beaumontii</i>	142	— <i>major</i>	153
<i>Burtii</i>	142	<i>verrucosa</i>	153
<i>grandiflora</i>	142	— <i>grandiflora</i>	153
<i>Meleagris</i>	143	BROUGHTONIA	153
<i>Wallisii</i>	143	<i>lilacina</i>	371
— <i>major</i>	143	<i>sanguinea</i>	154
BIFRENARIA	214	<i>violacea</i>	371
<i>bella</i>	214	BULBOPHYLLUM	154
<i>Hadwenii</i>	573	<i>auricomum</i>	155
<i>Harrisoniæ</i>	379	<i>barbigerum</i>	155
BLETIA	144	<i>Henshallii</i>	155
<i>acaulis</i>	148	<i>Lobbii</i>	155
<i>campanulata</i>	145	<i>maculatum</i>	155
<i>Digbyana</i>	149	<i>reticulatum</i>	155
<i>flava</i>	521	<i>saltatorium</i>	156
<i>glauca</i>	149	<i>siamense</i>	156
<i>graminifolia</i>	137	BURLINGTONIA	157
<i>grandiflora</i>	363	<i>amæna</i>	158
<i>hyacinthina</i>	145	<i>Batemanni</i>	157
— <i>albo-striata</i>	145	<i>candida</i>	157
<i>japonica</i>	145	<i>decora</i>	158
<i>lineata</i>	149	— <i>picta</i>	158
<i>Masuca</i>	162	<i>Farmeri</i>	158
<i>patula</i>	145	<i>fragrans</i>	158
<i>Shepherdii</i>	145	<i>Knowlesii</i>	159
<i>Sherrattiana</i>	146	<i>Leana</i>	159
<i>speciosa</i>	363	<i>venusta</i>	159
<i>Tankervilleæ</i>	519	CALANTHE	159
<i>tuberculosa</i>	522	<i>bella</i>	161
<i>venosa</i>	150	<i>colorans</i>	633

	Page		Page
CALANTHE		CATTLEYA	
<i>curculigoides</i>	161	<i>crispa delicatissima</i>	177
<i>Dominii</i>	161	— <i>purpurea</i>	178
<i>furcata</i>	162	— <i>superba</i>	178
<i>Masuca</i>	162	<i>crocata</i>	633
— <i>grandiflora</i>	162	<i>Dawsoni</i>	178
<i>porphyrea</i>	162	<i>Devoniana</i>	179
<i>Regnieri</i>	162	<i>dolosa</i>	179
— <i>fausta</i>	163	<i>domingensis</i>	371
<i>Sanderiana</i>	163	<i>Dominiana</i>	179
<i>sandhurstiana</i>	163	— <i>alba</i>	179
<i>Sedeni</i>	163	— <i>lutea</i>	180
<i>Sieboldi</i>	164	<i>Dowiana</i>	180
<i>Textori</i>	164	— <i>aurea</i>	180
<i>Turneri</i>	164	<i>Edithiana</i>	180
— <i>nivalis</i>	164	<i>elatior</i>	184
<i>Veitchii</i>	164	<i>elegans</i>	357
<i>veratrifolia</i>	165	<i>Eldorado</i>	181
— <i>macroloba</i>	165	— <i>alba</i>	181
<i>vestita</i>	165	— <i>ornata</i>	181
— <i>igneo-oculata</i>	166	— <i>splendens</i>	181
— <i>luteo-oculata</i>	166	<i>exoniensis</i>	181
— <i>oculata gigantea</i>	166	<i>fausta</i>	182
— <i>rubro-oculata</i>	167	<i>Gaskelliana</i>	182
<i>Williamsii</i>	167	<i>gigas</i>	183
CAMAROTIS	167	— <i>burfordiensis</i>	183
<i>purpurea</i>	168	— <i>Sanderiana</i>	183
CATASETUM	168	<i>Grahami</i>	363
<i>citrinum</i>	418	<i>granulosa</i>	183
<i>Christyanum</i>	169	<i>guatemalensis</i>	184
<i>Claveringii</i>	169	<i>guttata</i>	184
<i>macrocarpum</i>	169	— <i>Leopoldii</i>	184
<i>scurra</i>	169	— <i>lilacina</i>	185
<i>tridendatum</i>	169	— <i>Prinzii</i>	185
CATTLEYA	170	— <i>Williamsiana</i>	185
<i>Aclandiæ</i>	173	<i>Hardyana</i>	633
<i>amabilis</i>	173	<i>Harrisoniana</i>	185
<i>amethystina</i>	186	— <i>violacea</i>	185
<i>Amesiana</i>	173	<i>intermedia</i>	186
<i>amethystoglossa</i>	174	— <i>angustifolia</i>	364
— <i>sulphurea</i>	174	— <i>superba</i>	186
<i>aurea</i>	174, 180	<i>intricata</i>	186
<i>bicolor</i>	174	<i>labiata</i>	186
<i>Bluntii</i>	175	— <i>candida</i>	187
<i>Boissieri</i>	175	— <i>leucophæa</i>	633
<i>Boothiana</i>	188	— <i>pallida</i>	187
<i>Brabantiae</i>	175	— <i>Pescatorei</i>	187
<i>Brymeriana</i>	175	— <i>picta</i>	187
<i>Brysiانا</i>	175	<i>Lemoniana</i>	188
<i>bulbosa</i>	176, 207	<i>Lindleyana</i>	362
<i>calummata</i>	176	<i>lobata</i>	188
<i>candida</i>	176	<i>Loddigesii</i>	188
<i>Chamberlainiana</i>	176	— <i>maculata</i>	188
<i>chocoensis</i>	176	<i>Manglesii</i>	188
<i>citrina</i>	177	<i>Mardellii</i>	189
<i>coccinea</i>	577	<i>marginata</i>	189
<i>crispa</i>	177	<i>Marstersoniæ</i>	189
— <i>Buchananiana</i>	177	<i>maxima</i>	189

	<i>Page</i>		<i>Page</i>
CATTLEYA		CATTLEYA	
maxima aphlebia	190	Schilleriana	198
— Backhousei	190	— Regnelli	198
Mendelii	190	Schofieldiana	199
— grandiflora	190	Schröderiana	199
— Jamesiana	190	Sedeniana	199
— superbissima	190	Skinneri	200
Mitchellii	191	— alba	200
Morganæ	191	speciosissima Lowii	200
Mossiæ	191	— regina	200
— Alexandræ	192	<i>spectabilis</i>	189
— Arnoldiana	192	<i>sphenophora</i>	184
— aurea	192	superba	201
— — grandiflora	192	— splendens	201
— aureo-marginata	192	Trianæ	201
— Blakei	193	— Atalanta	202
— complanata	193	— Backhousiana	202
— conspicua	193	— Colemanni	202
— elegans	193	— Corningii	202
— fimbriata	193	— Dodgsoni	202
— flammea	193	— formosa	203
— grandiflora	193	— Hardyana	203
— grandis	194	— Hillii	203
— Hardyana	194	— Io	203
— Helenæ	194	— Leana	203
— kermesina marginata	194	— marginata	204
— Lawrenceana	194	— Osmanni	204
— magnifica	194	— quadricolor	204
— majestica	195	— reginæ	204
— Marianæ	195	— rosea	204
— marmorata	195	— Russelliana	205
— McMorlandii	195	— splendidissima	205
— Mooreana	195	— Williamsii	205
— Nalderiana	633	Veitchiana	205
— Napoleonis	195	velutina	206
— Pottsii	196	veriflora	206
— purpurata	196	virginalis	207
— Reineckiana	196	— rosea	207
— Rothschildiana	196	Wagneri	207
— splendens	196	Walkeriana	207
— striata	196	<i>Wallisii</i>	207
— superba	196	Warneri	208
— venosa	196	Warszewiczii	208
— Victoriæ	197	— delicata	208
— Williamsii	197	— — superba	208
nobilior	197	Whitei	208
Percivaliana	197	CERATOCHILUS	581
— alba	197	<i>grandiflorus</i>	581
<i>Ferrinii</i>	364	<i>oculatus</i>	582
porphyroglossa	197	CHEIROSTYLIS	307
pumila	198	<i>marmorata</i>	307
— <i>major</i>	189, 365	CHELONANTHERA	223
quadricolor	198	<i>speciosa</i>	223
quinquecolor	198	CHRYSOBAPHUS	129
<i>Regnelli</i>	199	<i>Roxburghii</i>	129
resplendens	634	CHYSIS	209
<i>Rollisoni</i>	198, 208	aurea	210
<i>Rothschildiana</i>	349	bractescens	210

	Page		Page
CHYSIS		COLAX	
Chelsoni	210	jugosus	224
lævis	211	COMPARETTIA	224
Limminghei	211	coccinea	224
undulata	211	falcata	225
CIRRHOPETALUM	212	macrolepton	225
Cumingii	212	speciosa	226
Medusæ	212	CORYANTHES	226
Pahudii	213	macrantha	227
CLEISOSTOMA	213	maculata	227
crassifolium	213	— punctata	227
Dawsonianum	214	speciosa	227
CCELIA	214	CYCLOSIA	418
bella	214	maculata	418
macrostachya	214	CYCNOCHES	228
CCELOGYNE	215	aureum	229
asperata	216	barbatum	229
barbata	216	chlorochilon	230
birmanica	547	Loddigesii	230
ciliata	216	pentadactylon	230
coronaria	596	ventricosum	230
corrugata	217	CYMBIDIUM	231
corymbosa	217	bambusifolium	137
cristata	218	affine	232
— alba	218	Dayanum	232
— citrina	218	Devonianum	232
— hololeuca	218	eburneum	232
— Lemniana	218	— Williamsianum..	233
— major	218	elegans	233
Cumingii	219	giganteum	233
Dayana	219	guttatum	490
elata	219	Hookerianum	233
fuscescens	219	Huttoni	234
Gardneriana	220	Lowianum	234
Goweri	220	hyacinthinum	145
Hookeriana	548	Mastersii	234
humilis	548	— album	234
lactea	634	Parishii	235
lagenaria	550	pendulum	235
Lowii	216, 220	— atropurpureum	235
maculata	550	tesselloides	606
Massangeana	220	tigrinum	235
media	221	CYPRIPEDIUM	236
ocellata	221	albo-purpureum	237
— maxima	221	Argus	238
ochracea	221	Arthurianum	238
odoratissima	222	Ashburtoniæ	238
pandurata	222	barbatum	238
Parishii	222	— nigrum	239
plantaginea	222	— superbum	239
præcox	550	— Veitchii	259
Schilleriana	552	— Warnerianum	239
speciosa	223	biflorum	239
viscosa	223	Boxallii	239
Wallichiana	551	Calceolus	624
COLAX	223	calophyllum	240
aromatica	376	calurum	240
Harrisoniæ	379	candidum	624

	<i>Page</i>		<i>Page</i>
CYPRIPEDIUM		CYPRIPEDIUM	
cardinale	240	Schlimii albiflorum	256
caricinum	241	Schröderæ	256
caudatum	241	Sedeni	256
— roseum	241	— candidulum	257
<i>Chantinii</i>	248	selligerum	257
chloroneurum	242	spectabile	625
ciliolare	242	— album	626
conchiferum	242	Spicerianum	257
concolor	242	Stonei	258
Crossianum	243	— platytænium	258
Curtisii	243	superbiens.	258
Dayanum	243	superciliare	259
Dominianum	244	Swanianum	259
Druryi	244	<i>Veitchianum</i>	259
euryandrum	244	venustum	260
Fairrieanum	245	— spectabile	260
Godefroyæ	245	vernixium	260
— hemixanthinum.	634	vexillarium	260
grande	246	villosum	261
guttatum	624	— aureum	261
Harrisianum	246	Wallisii	261
Haynaldianum	246	Williamsianum	262
hirsutissimum	247	CYRTOCHILUM	262
Hookeiæ	247	<i>bictoniense</i>	425
humile	624	<i>citrinum</i>	478
insigne	247	<i>leucochilum</i>	489
— albo-marginatum	248	<i>maculatum</i>	492
— Maulei	248	<i>pardinum</i>	456
— punctatum violaceum	248	CYRTOPERA	262
Irapeanum	624	flava	263
japonicum	625	sanguinea	263
<i>levigatum</i>	249, 254	CYRTOPODIUM	263
Lawrenceanum	249	Andersoni	264
Leanum	249	cardiochilum	264
longifolium	249	punctatum	265
Lowii	250	CYTHERIA	166
macranthum	625	<i>Griffithii</i>	166
marmorophyllum	250	DENDROBIUM	265
Meirax	250	aduncum	267
melanophthalmum	251	aggregatum	268
microchilum	251	— majus	268
Morganianum	251	Ainsworthii	268
nitens	252	— roseum	268
niveum	252	albo-sanguineum	269
œnanthum	252	amœnum	269
pardinum	253	anosmum	270
Parishii	253	Aphrodite	270
parviflorum	625	arachnites	634
<i>Pearcei</i>	241, 253	aureum	270
philippinense	253	— philippinense	271
politum	254	barbatulum	271
pubescens	625	Bensoniæ	271
purpuratum	254	— xanthinum	272
<i>Reichenbachianum</i>	250, 254	bigibbum	272
Robbelinii	255	— candidum	272
Roezlii	255	— superbum	272
Schlimii	255	Boxallii	272

	Page	Page	
DENDROBIUM		DENDROBIUM	
<i>Brymerianum</i>	273	<i>Guibertii</i>	286
<i>Bullerianum</i>	273, 286	<i>Hanburyanum</i>	286, 290
<i>calamiforme</i>	273, 303	<i>Harrisonia</i>	379
<i>Calceolaria</i>	273, 293	<i>Harveyanum</i>	286
<i>Calceolus</i>	274, 294	<i>hedyosmum</i>	286, 300
<i>Cambridgeanum</i>	273, 296	<i>Henshallii</i>	287, 304
<i>canaliculatum</i>	273	<i>heterocarpum</i>	271, 287
<i>capillipes</i>	274	<i>Heyneanum</i>	287
<i>chlorops</i>	274	<i>Hilli</i>	287
<i>chrysanthum</i>	274	<i>Hookerianum</i>	274, 287
<i>chrysotis</i>	274	<i>infundibulum</i>	287
<i>chrysotoxum</i>	275	— <i>carneopticum</i>	635
<i>clavatum</i>	275	<i>Jamesianum</i>	288
<i>cærulescens</i>	275, 295	<i>japonicum</i>	288, 293
<i>crassinode</i>	275	<i>Jenkinsii</i>	288
— <i>albiflorum</i>	276	<i>lasioglossum</i>	288
— <i>Barberianum</i>	276	<i>Leechianum</i>	288
<i>crepidatum</i>	276	<i>Linawianum</i>	289
<i>cretaceum</i>	276	— <i>majus</i>	289
<i>cruentum</i>	277	<i>lituiflorum</i>	289
<i>crystallinum</i>	277	— <i>candidum</i>	290
<i>cupreum</i>	277, 294	— <i>Freemanni</i>	290
<i>D'Albertisii</i>	277	<i>longicornu</i>	290
<i>Dalhousieanum</i>	278	<i>Lowii</i>	290
<i>Dearei</i>	278	<i>luteolum</i>	291
<i>densiflorum</i>	278	— <i>chlorocentrum</i>	291
— <i>albo-luteum</i>	279, 303	<i>MacCarthiæ</i>	291
— <i>Schræderi</i>	279, 299	<i>macranthum</i>	292, 302
— <i>Walkerianum</i>	279, 303	<i>macrophyllum</i> (Hort.)	292, 302
<i>Devonianum</i>	279	<i>macrophyllum</i> (A. Rich.)	292
— <i>candidulum</i>	279	— <i>Dayanum</i>	292
— <i>rhodoneurum</i>	280	— <i>Veitchianum</i>	292
<i>dixanthum</i>	280	<i>marginatum</i>	293, 306
<i>Dominianum</i>	280	<i>marmoratum</i>	293
<i>Draconis</i>	280	<i>moniliforme</i>	293
<i>eburneum</i>	280	<i>moschatum</i>	293
<i>endocharis</i>	281	— <i>cupreum</i>	293
<i>erythropogon</i>	634	<i>moulmeimense</i>	287, 294
<i>erythroanthum</i>	281	<i>mutabile</i>	294
<i>Falconeri</i>	281	<i>nobile</i>	294
— <i>albidulum</i>	281	— <i>Cooksonianum</i>	635
— <i>giganteum</i>	282	— <i>intermedium</i>	295
<i>Farmeri</i>	282	— <i>nobilis</i>	295
— <i>albiflorum</i>	282	— <i>pallidiflorum</i>	295, 297
— <i>aureo-flavum</i>	282	— <i>pendulum</i>	295
<i>fimbriatum</i>	282	<i>nodatum</i>	270, 296
— <i>oculatum</i>	283	<i>ochreatum</i>	295
<i>Findleyanum</i>	283	<i>Parishii</i>	296
<i>formosum</i>	283	<i>Paxtoni</i>	274, 283, 296
— <i>giganteum</i>	284	<i>Phalænopsis</i>	296
<i>fuscatum</i>	284	<i>Pierardii</i>	297
<i>Fytchianum</i>	284	— <i>latifolium</i>	297
<i>Gibsoni</i>	285	<i>primulinum</i>	297
<i>Goldiei</i>	285	— <i>giganteum</i>	297
<i>grandiflorum</i>	403	<i>pulchellum</i>	298
<i>gratiosissimum</i>	285	<i>rhodopterygium</i>	298
<i>Griffithianum</i>	286	<i>rhodostoma</i>	298

	Page		Page
DENDROBIUM		DISA	
<i>rhombum</i>	271, 298	<i>rufescens</i>	626
<i>sanguinolentum</i>	298	<i>spatulata</i>	626
— <i>superbum</i>	299	<i>tenuifolia</i>	626
<i>scabringue</i>	299	DOSSINIA	306
<i>Schröderi</i>	299	<i>marmorata</i>	307
<i>sculptum</i>	300	— <i>Dayi</i>	307
<i>senile</i>	300	— <i>virescens</i>	307
<i>splendidissimum</i>	300	EPIDENDRUM	307
<i>suavissimum</i>	300	<i>alatum</i>	308
<i>superbiens</i>	301	<i>aloifolium</i>	316
<i>superbum</i>	301	<i>amabile</i>	309, 313
— <i>anosum</i>	270, 302	<i>arachnoglossum</i>	309
— <i>giganteum</i>	302	<i>atropurpureum</i>	309
— <i>Huttoni</i>	302	— <i>roseum</i>	310
<i>Tattonianum</i>	273, 302	<i>aurantiacum</i>	310
<i>taurinum</i>	302	<i>aureum</i>	310
<i>teretifolium</i>	303	<i>basilare</i>	321
<i>thrysisiflorum</i>	303	<i>bicrnutum</i>	310
— <i>Walkerianum</i>	303	<i>Brasavolæ</i>	311
<i>tortile</i>	304	<i>calochilum</i>	309
— <i>roseum</i>	304	<i>Catillus</i>	311
<i>transparens</i>	304	<i>ciliare</i>	312
<i>triatenium</i>	294, 304	<i>cinnabarium</i>	312
<i>Veitchianum</i>	292, 304	<i>cnemidophorum</i>	312
<i>virgineum</i>	304	<i>Cooperianum</i>	313
<i>Wallichii</i>	305	<i>crassifolium</i>	314
<i>Wardianum</i>	305	<i>cuspidatum</i>	312
— <i>candidum</i>	305	<i>cycnostalix</i>	321
— <i>giganteum</i>	305	<i>dichromum</i>	313
— <i>Lowii</i>	306	— <i>striatum</i>	314
<i>Williamsoni</i>	306	<i>eburneum</i>	314
<i>xanthophlebium</i>	306	<i>ellipticum</i>	314
DENDROCHILUM	306	<i>erubescens</i>	314
<i>Cobbianum</i>	545	<i>evectum</i>	315
<i>filiforme</i>	545	<i>falcatum</i>	315
<i>glumaceum</i>	545	<i>Flos aëris</i>	135
<i>uncatum</i>	546	<i>formosum</i>	309
DIACRIUM	306	<i>Friderici Guilielmi</i>	316
<i>bicrnutum</i>	311	<i>fulgens</i>	320
DISA	626	<i>Grahami</i>	318
<i>Barellii</i>	627	<i>grandiflorum</i>	580
<i>cernua</i>	626	<i>guttatum</i>	490
<i>chrysostachya</i>	626	<i>Hanburii</i>	316
<i>cornuta</i>	626	<i>humile</i>	548
<i>crassicornis</i>	627	<i>ibaguense</i>	316
<i>Draconis</i>	626	<i>imperator</i>	312
<i>graminifolia</i>	626	<i>lactiflorum</i>	316
<i>grandiflora</i>	627	<i>Liliostrum</i>	575
— <i>superba</i>	628	<i>longipetalum</i>	309
<i>lacera</i>	626	<i>macrochilum</i>	309, 317
<i>longicornis</i>	626	<i>maculatum</i>	318
<i>maculata</i>	626	<i>myrianthum</i>	317
<i>megaceras</i>	627	<i>nemorale</i>	317
<i>melaleuca</i>	626	— <i>majus</i>	317
<i>patens</i>	626	<i>nigro-maculatum</i>	318
<i>prasinata</i>	626	<i>paniculatum</i>	318
<i>racemosa</i>	626	<i>Parkinsonianum</i>	316, 318

	Page		Page
EPIDENDRUM		GONGORA	
<i>paytense</i>	635	<i>macrantha</i>	227
<i>phœniceum</i>	318	<i>maculata</i>	331
<i>præcox</i>	550	— <i>alba</i>	332
<i>prismatocarpum</i>	318	— <i>tricolor</i>	333
<i>pseudepidendrum</i>	319	<i>odoratissima</i>	332
<i>punctatum</i>	265	<i>portentosa</i>	332
<i>radicans</i>	319	<i>quinquenervis</i>	332
<i>retusum</i>	566	<i>speciosa</i>	228
<i>rhizophorum</i>	319	<i>tricolor</i>	333
<i>sanguineum</i>	154	<i>truncata</i>	333
<i>Sceptrum</i>	319	GOODYERA	334
<i>Schomburgkii</i>	320	<i>Dawsoniana</i>	340
<i>Stamfordianum</i>	320	<i>discolor</i>	340
<i>syringothyrsus</i>	321	<i>Dominii</i>	335
<i>tibicinis</i>	572	<i>macrantha</i>	335
<i>Uro-Skinneri</i>	318	— <i>luteo-marginata</i>	335
<i>verrucosum</i>	317	<i>Ordiana</i>	341
<i>vitellinum</i>	321	<i>picta</i>	335
— <i>majus</i>	321	<i>pubescens</i>	335, 638
<i>Wallisii</i>	322	<i>Rollisoni</i>	336
EPIPHORA	554	<i>rubrovenia</i>	336
<i>pubescens</i>	554	<i>tessellata</i>	336
EPISTEPHIUM	323	<i>Veitchii</i>	336
<i>Williamsii</i>	323	<i>velutina</i>	336
ERIA	596	GOVENIA	337
<i>coronaria</i>	596	<i>deliciosa</i>	337
<i>suavis</i>	596	<i>sulphurea</i>	635
ERIOPSIS	323	GRAMMANGIS	339
<i>biloba</i>	324	<i>Ellisii</i>	339
<i>rutidobulbon</i>	324	GRAMMATOPHYLLUM	338
<i>Schomburgkii</i>	324	<i>Ellisii</i>	338
ESMERALDA	599	<i>speciosum</i>	339
<i>Cathcarti</i>	599	HABENARIA	629
<i>Sanderiana</i>	607	<i>ciliaris</i>	629
EULOPHIA	325	HÆMARIA	339
<i>Dregeana</i>	628	<i>discolor</i>	340
<i>guineensis</i>	325	— <i>Dawsoniana</i>	340
— <i>purpurata</i>	326	— <i>Ordiana</i>	341
FIELDIA	598	HAPLOCHILUS	419
<i>lissochiloides</i>	598	<i>regium</i>	419
<i>gigantea</i>	603	HELÇIA	341
GALEANDRA	326	<i>sanguinolenta</i>	341
<i>Baueri</i>	327	HOULLETIA	342
<i>cristata</i>	328	<i>Brocklehurstiana</i>	342
<i>Devoniana</i>	328	<i>chrysantha</i>	343
<i>dives</i>	328	<i>odoratissima</i>	343
<i>Harveyana</i>	329	— <i>antioquiensis</i>	343
<i>nivalis</i>	329	— <i>xanthina</i>	635
GALEOTTIA	142	<i>picta</i>	343
<i>Beaumontii</i>	142	<i>tigrina</i>	344
<i>grandiflora</i>	143	HUNTLEYA	344
GONGORA	329	<i>aromatica</i>	615
<i>armeniaca</i>	93	<i>candida</i>	616
<i>atropurpurea</i>	330	<i>cerina</i>	514
<i>bufonia</i>	331	<i>marginata</i>	344
<i>galeata</i>	94	<i>Meleagris</i>	143, 344
<i>Jenischii</i>	332	<i>radians</i>	616

	Page		Page
<i>HUNTLEYA</i>		<i>LÆLIA</i>	
<i>violacea</i>	344	<i>grandis</i>	360
<i>IONOPSIS</i>	344	<i>harpophylla</i>	360
<i>paniculata</i>	345	<i>irrorata</i>	361
<i>IPSEA</i>	345	— <i>Scottiana</i>	361
<i>speciosa</i>	346	<i>Jongheana</i>	361
<i>KELLENSTEINIA</i>	346	<i>Lawrenceana</i>	355
<i>ionoptera</i>	347	<i>Leeana</i>	362
<i>LÆLIA</i>	347	<i>Lindleyana</i>	362
<i>acuminata</i>	348	<i>majalis</i>	362
— <i>rosea</i>	348	<i>Measuresiana</i>	636
<i>albida</i>	348	<i>monophylla</i>	363
— <i>bella</i>	348	<i>peduncularis</i>	363
— <i>Marianæ</i>	349	<i>Perrinii</i>	364
— <i>sulphurea</i>	349	— <i>irrorata</i>	364
<i>amanda</i>	349	— <i>nivea</i>	364
<i>anceps</i>	349	<i>Pilcheriana</i>	364
— <i>alba</i>	350	<i>præstans</i>	365
— <i>Barkeriana</i>	350	<i>pumila</i>	198, 365
— <i>Dawsoni</i>	351	— <i>Dayana</i>	355
— <i>delicata</i>	351	<i>purpurata</i>	365
— <i>grandiflora</i>	351	— <i>atropurpurea</i>	636
— <i>Hilliana</i>	352	— <i>Brysiana</i>	366
— <i>Percivaliana</i>	352	— <i>Nelisi</i>	366
— <i>rosea</i>	352	— <i>Williamsii</i>	366
— <i>Veitchiana</i>	352	<i>Russelliana</i>	366
— <i>vestalis</i>	352	<i>Schilleriana</i>	367
— <i>Williamsiana</i>	353	— <i>splendens</i>	367
<i>autumnalis</i>	353	<i>Schröderi</i>	367
— <i>atrorubens</i>	353	<i>Stelzneriana</i>	368
<i>bella</i>	354	<i>superbiens</i>	368
<i>Boothiana</i>	354	<i>Turneri</i>	368
<i>Brysiana</i>	354, 366	<i>Veitchiana</i>	369
<i>callistoglossa</i>	636	<i>Warneri</i>	358
<i>Canhamiana</i>	636	<i>Wyattiana</i>	369
<i>caulescens</i>	359	<i>xanthina</i>	369
<i>cinnabarina</i>	354	<i>LÆLIOPSIS</i>	370
<i>Crawshayana</i>	354	<i>domingensis</i>	370
<i>crispa</i>	177, 355	<i>LEOCHILUS</i>	480
— <i>purpurea</i>	178	<i>sanguinolentus</i>	480
<i>crispilabia</i>	355	<i>LEPTOTES</i>	371
<i>Dayana</i>	355	<i>bicolor</i>	371
<i>Dominiana</i>	356	<i>serrulata</i>	372
— <i>rosea</i>	356	<i>LIMATODIS</i>	372
<i>Dormanniana</i>	356	<i>rosea</i>	373
<i>elegans</i>	356	<i>LIMODORUM</i>	518
— <i>alba</i>	357	<i>Incarvillei</i>	518
— <i>Bluntii</i>	357	<i>retusum</i>	566
— <i>Leeana</i>	357	<i>Tankervilleæ</i>	519
— <i>prasiata</i>	358	<i>tuberculosum</i>	522
— <i>Warneri</i>	358	<i>LISSOCHILUS</i>	373
— <i>Wolstenholmiæ</i>	358	<i>Horsfallii</i>	374
<i>exoniensis</i>	182	<i>Krebsii purpuratus</i>	636
<i>flammea</i>	358	<i>roseus</i>	374
<i>flava</i>	359	<i>speciosus</i>	375, 629
<i>furfuracea</i>	359	<i>LISTROSTACHYS</i>	118
<i>gigantea</i>	359	<i>pellucida</i>	118
<i>grandiflora</i>	360	<i>pertusa</i>	119

	<i>Page</i>		<i>Page</i>
LYCASTE		MASDEVALLIA	
aromatica	376	Harryana læta	391
citrina	376	— lilacina	392
Cobbiana	376	— miniata	392
cruenta	377	— sanguinea	392
Denningiana	377	— splendens	392
Deppei	377	— versicolor	392
— punctatissima	378	Houtteana	392
fulvescens	378	igneæ	393
gigantea	378	— aurantiaca	393
Harrisoniæ	378	— <i>Boddaertii</i>	387
— alba	379	— grandiflora	393
— eburnea	379	— Massangeana	393
lanipes	379	inæqualis	394
macrophylla	379	Lindeni	394
plana	380	macrura	395
Schilleriana	380	maculata	395
Skinneri	380	militaris	395
— alba	381	nycterina	396
— amabilis	381	polysticta	396
— delicatissima	381	radiosa	397
— gloriosa	382	Reichenbachiana	397
— nigro-rubra	382	Roezlii	397
— picturata	382	— rubra	398
— purpurata	382	rosea	398
— rosea	382	Schlimii	399
— roseo-purpurea	382	Shuttleworthii	399
— superba	383	tovarensis	400
— vestalis	383	triangularis	400
Smeeana	383	<i>Trochilus</i>	390, 400
MACODES	383	Veitchiana	400
<i>marmorata</i>	307	— grandiflora	401
<i>Petola</i>	384	Wageneriana	401
MACROCHILUS	413	Wallisii	401
<i>Fryanus</i>	413	— stipenda	402
MASDEVALLIA	384	xanthina	402
amabilis	386	MAXILLARIA	402
<i>Backhousiana</i>	386	<i>aromatica</i>	376
bella	386	<i>Brocklehurstiana</i>	343
Boddaertii	386	<i>citrina</i>	555
<i>candida</i>	387, 400	<i>cristata</i>	510
Chelsoni	387	<i>cruenta</i>	377
Chimæra	387	<i>galeata</i>	94
— <i>Backhousiana</i>	388	<i>grandiflora</i>	403
coccinea	388	<i>Harrisoniæ</i>	379
<i>Colibri</i>	388, 390	<i>Heynderyxii</i>	378
Davisii	388	<i>jugosa</i>	224
<i>Denisoni</i>	391	<i>luteo-alba</i>	403
elephanticeps	389	<i>lyncea</i>	583
Ephippium	389	<i>macrophylla</i>	380
Estradæ	390	<i>nigrescens</i>	404
Gairiana	637	<i>Rollissoni</i>	555
Harryana	390	<i>rubrofusca</i>	404
— armeniaca	637	<i>Sanderiana</i>	637
— atrosanguinea	391	<i>Skinneri</i>	381
— cœrulescens	391	<i>splendens</i>	404
— Denisoniana	391	<i>stapeliioides</i>	556
— grandiflora	391	<i>Steelii</i>	573

	Page		Page
MAXILLARIA		MORMODES	
Turneri	405	pardinum unicolor	418
venusta	405	uncia	418
virginalis	381	<i>Williamsii</i>	637
Warreana	614	MONOCHILUS	418
MESOSPINIDIUM	405	regium	419
<i>aurantiacum</i>	95	NANODES	419
<i>roseum</i>	462	Medusæ	419
<i>sanguineum</i>	406	NEOTTIA	384
<i>vulcanicum</i>	407	<i>Petola</i>	384
MICROCHILUS	543	OCTADESMIA	363
<i>pictus</i>	543	<i>monophylla</i>	363
MICROSTYLIS	407	ODONTOGLOSSUM	421
<i>calophylla</i>	407	<i>acuminatum</i>	462
<i>chlorophrys</i>	408	<i>Alexandrae</i>	423, 433
<i>discolor</i>	408	— <i>aureum</i>	433
<i>metallica</i>	408	— <i>Cooksoni</i>	433
<i>purpurea</i>	408	— <i>flaveolum</i>	433
MILTONIA	408	— <i>giganteum</i>	434
<i>anceps</i>	409	— <i>guttatum</i>	434
<i>bicolor</i>	410	— <i>Mariana</i>	434
<i>Bluntii</i>	409	— <i>roseum</i>	435
<i>candida</i>	410	— <i>Stevensii</i>	435
— <i>flavescens</i>	410	— <i>Trianae</i>	435
— <i>grandiflora</i>	410	— <i>virginale</i>	436
— <i>Jenischiana</i>	410	— <i>Warneri</i>	436
<i>Clowesii</i>	411	<i>Andersonianum</i>	423
<i>cuneata</i>	411	— <i>lobatum</i>	423
<i>festiva</i>	412	<i>anceps</i>	410
<i>Moreliana</i>	414	<i>angustatum</i>	423
<i>Pinellii</i>	410	<i>apterum</i>	462
<i>pulchella</i>	458	<i>aspersum</i>	423
<i>purpurea violacea</i>	414	<i>astranthum</i>	424
<i>Regnelli</i>	412	<i>baphicanthum</i>	424
— <i>purpurea</i>	413	<i>bictoniense</i>	425
— <i>rosea</i>	415	— <i>album</i>	425
— <i>speciosa</i>	412	— <i>splendens</i>	425
— <i>spectabilis</i>	413	— <i>superbum</i>	425
— <i>Moreliana</i>	413	<i>blandum</i>	425
— <i>atrorubens</i>	414	<i>Bluntii</i>	425, 433
— <i>rosea</i>	414	<i>Bowmanni</i>	425
— <i>radians</i>	414	<i>brevifolium</i>	426
— <i>rosea</i>	414	<i>candelabrum</i>	432
— <i>Warneri</i>	415	<i>cariniferum</i>	426
<i>Warszewiczii</i>	415	<i>Cervantesii</i>	426
— <i>Weltoni</i>	415	— <i>Andersoni</i>	427
— <i>xanthina</i>	415	— <i>decorum</i>	427
— <i>membranaceum</i>	427	<i>Chestertoni</i>	427
MORMODES	416	<i>cirrhosum</i>	428
<i>buccinator</i>	416	— <i>album</i>	429
— <i>majus</i>	416	— <i>Hrubbyanum</i>	429
— <i>citrinum</i>	418	— <i>Klabochorum</i>	429
<i>Colossus</i>	417	<i>citrosium</i>	429
<i>Greenii</i>	418	— <i>roseum</i>	430
<i>luxatum</i>	417	<i>Clowesii</i>	411
— <i>eburneum</i>	637	<i>constrictum</i>	430
— <i>punctatum</i>	637	<i>Coradinei</i>	430
<i>macranthum</i>	417		
<i>pardinum</i>	417		

	<i>Page</i>		<i>Page</i>
ODONTOGLOSSUM		ODONTOGLOSSUM	
cordatum	431	Lindeni	447
— sulphureum	431	Lindleyanum	447
— superbum	431	Londesboroughianum	448
coronarium	431	<i>lunatum</i>	138
crispum	432	luteo-purpureum	448
— aureum	433	— sceptrum	448
— Cooksoni	433	lyroglossum	449
— flaveolum	433	macrospilum	638
— giganteum	433	maculatum	450
— guttatum	434	— integrale	451
— Lehmanni	434	madrense	451
— Marianæ	434	<i>maxillare</i>	452, 454
— <i>mirabile</i>	436	mulus	452
— roseum	434	— Holfordianum	452
— Sanderianum	435	Murrellianum	452
— Stevensii	435	nævium	453
— Trianæ	435	— majus	453
— Veitchianum	435	nebulosum	454
— virginale	436	— candidulum	454
— Warneri	436	nevadense	454
cristatellum	436	<i>nobile</i>	454, 456
cristatum	437	odoratum	455
crocidipterum	437	— latimaculatum	455
cuspidatum xanthoglossum	437	Erstedii	456
Denisoniæ	438	pardinum	456
Dormannianum	438	<i>pendulum</i>	430
Edithiæ	438	Pescatorei	456
Edwardii	439	— Lowianum	457
elegans	439	— Schröderianum	457
excellens	439	— Veitchianum	457
Galeottianum	440	Phalænopsis	457
gloriosum	441	Pollettianum	458
grande	441	polyxanthum	458
— magnificum	442	prænitens	458
— <i>pallidum</i>	464	prionopetalon	459
Halli	443	pulchellum	459
— leucoglossum	443	— Dormannianum	460
— xanthoglossum	443	— majus	460
hastilabium	443	purum	460
— <i>fuscatum</i>	426	<i>radiatum</i>	448, 460
hebraicum	444	ramosissimum	460
— lineoligerum	444	<i>Reichenheimii</i>	446, 460
<i>Hookerianum</i>	431	retusum	461
Horsmanni	444	Roetzli	461
<i>Hrubbyanum</i>	429	— album	461
Humeanum	445	roseum	461
<i>hystrix</i>	445, 448	Rossii	462
Inseleyi	445	— majus	462
— macranthum	445	rubescens	463
— splendens	445	Ruckerianum	463
Josephinæ	637	— splendens	463
Krameri	446	Sanderianum	463
læve	446	Schlieperianum	464
— Reichenheimii	446, 460	Schröderianum	464
<i>Lawrenceanum</i>	445, 447	<i>spectatissimum</i>	464, 466
Leeanum	447	stellimicans	464
Lehmanni	437	<i>tigrinum</i>	504

	Page		Page
ODONTOGLOSSUM		ONCIDIUM	
tripudians	465	crispum	478
— oculatum	465	— grandiflorum	479
— xanthoglossum	465	— marginatum	479, 484
triumphans	466	Cresus	479
Uro-Skinneri	466	cruentum	480, 497
velleum	466	cucullatum	480
vexativum	467	— flavidum	480
vexillarium	467	— macrochilum	480
— album	638	cuneatum	490
— Hillianum	467	curtum	481
— Kienastianum	638	dasystyle	481
— leucoglossum	468	Diadema	481, 500
— Measuresianum	638	divaricatum	481
— roseum	468	eurycline	482
— rubellum	468	euxanthinum	482
— splendens	468	excavatum	482
— superbum	468	— Dawsoni	483
Vuylstekeanum	469	flexuosum	483
Wallisii	469	Forbesii	483
Warneri purpuratum	506	fuscatum	415, 484
Warnerianum	470	Galeottianum	430
Warscewiczii (Bridges)	464, 471	gallopavinum	475
Warscewiczii	470	Gardneri	484
Wilckeanum	471	Gireoudianum	151
— pallens	471	hæmatochilum	485
— sulphureum	471	Henchmanni	485, 499
Williamsianum	471	holochrysum	485
ÆCEOCLADES	117	Huntianum	485, 499
falcata	117	hyphæmaticum	485
ONCIDIUM	472	incurvum	486
acinaceum	473	— album	486
albo-violaceum	486	ionosmum	486, 504
ampliatum	473	Jonesianum	486
— majus	473	Keilianum	151
anthrocrene	474	Kramerianum	487
aurosom	474	lamelligerum	487
barbatum ciliatum	474	Lanceanum	487
Barkeri	474, 504	— Louvrexianum	488
Batemannianum	474	Lawrenceanum	152
bicallosum	475	leopardinum	488
bicolor	475	leucochilum	488
bifolium	475	Limminghei	489
— majus	476	longipes	489
bifrons	476, 506	ludens	489
Bluntii	409	luridum	490
Brunleesianum	476	— Dodgsoni	490
Boydii	490	— guttatum	490
calanthum	476	macranthum	490
caloglossum	638	— Williamsianum	491
candidum	508	maculatum	492
carthaginense sanguineum	499	Marshallianum	492
Cavendishianum	477	metallicum	494
cheirophorum	477	monachicum	494
chrysothyrus	477	nigratum	494
ciliatum	474	nubigenum	494
concolor	478	oblongatum	495
cornigerum	478	obryzatum	495

	Page		Page
ONCIDIUM		PACHYSTOMA	507
ornithorhynchum	495	Thomsonianum	507
— albiflorum	496	PALUMBINA	508
<i>pachyphyllum</i>	477	<i>candida</i>	508
— <i>chrysoglossum</i>	477	PAPHINIA	509
Papilio	496	<i>cristata</i>	509
— Eckhardtii	497	<i>grandis</i>	510
— majus	497	<i>rugosa</i>	511
<i>pelicanum</i>	497	<i>Sanderiana</i>	511
<i>Phalænopsis</i>	497	<i>tigrina</i>	344, 511
<i>phymatochilum</i>	498	PERISTERIA	511
<i>Pinellianum</i>	475	<i>Barkeri</i>	92
<i>pulchellum</i>	498	<i>cerina</i>	512
<i>pulvinatum</i>	498	<i>elata</i>	512
— majus	499	<i>guttata</i>	512
<i>ramosum</i>	475	<i>Humboldtii</i>	92
<i>reflexum</i>	499	— <i>fulva</i>	92
— <i>pelicanum</i>	497	<i>pendula</i>	513
<i>Rigbyanum</i>	499, 500	PESCATOREA	513
<i>Rogersii</i>	499	<i>Backhousiana</i>	514
<i>roseum</i>	499	<i>bella</i>	514
— <i>superbum</i>	499	<i>cerina</i>	514
<i>rupestre</i>	500	<i>Dayana</i>	514
<i>sanguineum</i>	499, 500	— <i>candidula</i>	515
<i>sarcodes</i>	500	— <i>rhodacra</i>	515
<i>serratum</i>	500	— <i>splendens</i>	515
<i>sessile</i>	501	<i>Gairiana</i>	515
<i>speciosum</i>	412	<i>Klabochorum</i>	515
<i>sphacelatum</i>	501	<i>Lehmanni</i>	516
<i>spilopterum</i>	475	<i>Roezlii</i>	516
<i>splendidum</i>	501	<i>Russeliana</i>	516
<i>Sprucei</i>	502	<i>Wallisii</i>	517
<i>stelligerum</i>	503	PHAJUS	517
<i>stenopetalum</i>	475	<i>albus</i>	585
<i>suaveolens</i>	151	<i>Bernaysii</i>	518
<i>superbiens</i>	503	<i>Blumei</i>	518
<i>tigrinum</i>	503	— <i>Bernaysii</i>	518
— <i>splendidum</i>	502	<i>Dodgsoni</i>	586
— <i>unguiculatum</i>	504	<i>grandifolius</i>	518
<i>trilingue</i>	504	<i>Humboldtii</i>	639
<i>varicosum</i>	504	<i>irroratus</i>	519
— <i>Rogersii</i>	505	— <i>purpureus</i>	520
<i>variegatum</i>	505	<i>maculatus</i>	520
<i>verrucosum</i>	153	<i>Tankervillei</i>	519
<i>Warneri</i>	505	<i>tuberculosis</i>	521
<i>Warszewiczii</i>	506	<i>Wallichii</i>	522
<i>Weltoni</i>	415, 506	PHALÆNOPSIS	523
<i>xanthochlorum</i>	495	<i>amabilis</i>	527
<i>xanthodon</i>	506	— <i>Dayana</i>	527
ONYCHIUM	293	<i>amabilis</i>	530
<i>japonicum</i>	293	<i>amethystina</i>	527
<i>mutabile</i>	294	<i>antennifera</i>	528
ORCHIS	629	<i>Aphrodite</i>	527, 528
<i>foliosa</i>	629	<i>casta</i>	528
<i>longicornis</i>	629	<i>Corningiana</i>	528
<i>maculata superba</i>	630	<i>Cornu-cervi</i>	529
PACHYNE	519	<i>equestris</i>	529, 535
<i>spectabilis</i>	519	<i>Esmeralda</i>	529

	Page		Page
PHALÆNOPSIS		PLEIONE	
<i>grandiflora</i>	529	<i>humilis tricolor</i>	548
— <i>aurea</i>	530	<i>lagenaria</i>	548
<i>intermedia</i>	530	<i>maculata</i>	550
— <i>Brymeriana</i>	531	<i>præcox</i>	550
— <i>Portei</i>	531	— <i>Wallichiana</i>	551
<i>lencorrhoda</i>	532	<i>Reichenbachiana</i>	551
<i>Lobbii</i>	530, 532	<i>Schilleriana</i>	551
<i>Lowii</i>	532	<i>Wallichiana</i>	551
<i>Lüddemanniana</i>	533	<i>PLEUROTHALLIS</i>	561
— <i>ochracea</i>	533	<i>coccinea</i>	561
<i>Mannii</i>	533	<i>POLYCHILOS</i>	529
<i>Mariæ</i>	534	<i>Cornu-cervi</i>	529
<i>Parishii</i>	534	<i>POLYCYCNIS</i>	552
<i>Reichenbachiana</i>	535	<i>barbata</i>	230, 552
<i>rosea</i>	535	<i>gratiosa</i>	553
<i>Sanderiana</i>	535	<i>lepida</i>	553
<i>Schilleriana</i>	536	<i>POLYSTACHYA</i>	558
— <i>vestalis</i>	537	<i>pubescens</i>	554
<i>speciosa</i>	537	<i>PRÉPTANTHE</i>	164
<i>Stuartiana</i>	537	<i>Sedeni</i>	164
— <i>Hrubyana</i>	538	<i>vestita</i>	166
— <i>nobilis</i>	538	<i>PROMENÆA</i>	554
— <i>punctatissima</i>	538	<i>citrina</i>	554
<i>sumatrana</i>	538	<i>microptera</i>	555
<i>tetraspis</i>	539	<i>Rollisoni</i>	555
<i>Valentini</i>	539	<i>stapelioides</i>	555
<i>Veitchiana</i>	539	<i>PSEUDEPIDENDRUM</i>	319
— <i>brachyodon</i>	540	<i>spectabile</i>	319
— <i>violacea</i>	540	<i>RENANTHERA</i>	556
— <i>Bowringiana</i>	540	<i>arachnites</i>	135
— <i>Schröderiana</i>	540	<i>coccinea</i>	556
<i>zebrina</i>	539	<i>Flos æris</i>	135
PHYSURUS	541	<i>Lowii</i>	557
<i>argenteus</i>	541	<i>matutina</i>	558
— <i>pictus</i>	543	<i>micrantha</i>	559
<i>fimbrillaris</i>	542	<i>Storiei</i>	559
<i>maculatus</i>	542	<i>RESTREPIA</i>	559
<i>nobilis</i>	542	<i>antennifera</i>	560
<i>Ortgiesii</i>	542	<i>elegans</i>	560
<i>pictus</i>	542	<i>maculata</i>	560
<i>querceticola</i>	543	<i>punctulata</i>	560
PILUMNA	543	<i>RHYNCHOSTYLIS</i>	564
<i>fragrans</i>	544	<i>cælestis</i>	564
— <i>grandiflora</i>	544	<i>guttata</i>	566
<i>nobilis</i>	544	<i>retusa guttata</i>	566
PLATANThERA	630	— <i>premorsa</i>	564
<i>incisa</i>	630	<i>violacea</i>	568
PLATYCLINIS	544	<i>RODRIGUEZIA</i>	561
<i>Cobbiana</i>	545	<i>lanceolata</i>	561
<i>filiformis</i>	545	<i>Leeana</i>	159
<i>glumacea</i>	545	<i>secunda</i>	561
<i>uncata</i>	545	<i>SACCOLABIUM</i>	561
PLEIONE	546	<i>ampullaceum</i>	562
<i>birmanica</i>	547	— <i>moulmeinense</i>	563
<i>concolor</i>	547	<i>bellinum</i>	563
<i>Hookeriana</i>	548	<i>Berkeleyi</i>	563
<i>humilis</i>	548	<i>bigibbum</i>	563

	Page		Page
SACCOLABIUM		SOBRALIA	
Blumei	564	macrantha pallida	575
— majus	564	— splendens	575
— Russelianum	564	rosea	575
cœleste	564	<i>Ruckeri</i>	576
curvifolium	565	xantholeuca	576
— luteum	565	SOPHRONITIS	576
furcatum	565	cernua	577
giganteum	565	coccinea	577
— illustre	565	grandiflora	577
guttatum	566	<i>Hoffmannseggii</i>	577
— giganteum	566	<i>nutans</i>	577
— Holfordianum	566	violacea	578
<i>Harrisonianum</i>	569	STANHOPEA	578
Heudersonianum	567	<i>aurea</i>	583
<i>Huttoni</i>	110, 567	Bucephalus	580
miniatum	567	Devoniensis	580
præmorsum	567	gibbosa	580
retusum	567	grandiflora	581
<i>Rheedi</i>	564	<i>implicata</i>	582
<i>rubrum</i>	563	insignis	581
Turneri	568	Martiana	581
violaceum	568	oculata	582
— <i>Harrisonianum</i>	568	tigrina	582
SARCANTHUS	566	— <i>lutescens</i>	583
<i>guttatus</i>	566	Wardii	583
SARCOPODIUM	155	— <i>aurea</i>	583
<i>Lobbii</i>	155	STAUROGLOTTIS	535
SATYRIUM	630	<i>equestris</i>	535
aureum	630	STENIA	142
SCHLIMMIA	569	<i>Beaumontii</i>	142
trifida	569	THUNIA	584
SCHOMBURGKIA	570	alba	585
crispa	570	Bensoniæ	585
Lyonsi	571	Dodgsoni	586
tibicinis	571	Marshalliana	586
SCUTICARIA	572	nivalis	587
Dodgsoni	572	Veitchiana	587
Hadwenii	572	<i>Wrigleyana</i>	587
Steelii	573	TRICHOCENTRUM	587
SELENIPEDIUM	237	albo-purpureum	588
<i>albo-purpureum</i>	237	orthoplectron	588
<i>calurum</i>	240	porphyrio	588
<i>cardinale</i>	240	tigrinum	589
<i>caricinum</i>	241	TRICHOGLOTTIS	589
<i>caudatum</i>	241	fasciata	589
— <i>roseum</i>	241	TRICHOPILIA	590
<i>Dominianum</i>	244	<i>candida</i>	591
<i>grande</i>	246	<i>coccinea</i>	591, 594
<i>longifolium</i>	250	crispa	591
<i>Roetzlii</i>	255	— <i>marginata</i>	592
<i>Schlimii</i>	256	<i>fragrans</i>	544
<i>Sedeni</i>	256	— <i>nobilis</i>	544
<i>Wallisii</i>	262	Galeottiana	592
SOBRALIA	573	hymenantha	592
leucoxantha	574	lepida	593
Liliastrum	574	marginata	593
macrantha	575	<i>picta</i>	592, 594

	<i>Page</i>		<i>Page</i>
TRICHOPIILIA		VANDA	
suavis	594	tricolor, Dodgsoni	611
— alba	594	— Downside variety	610
— grandiflora	594	— insignis	611
tortilis	594	— Patersoni	611
<i>turalbae</i>	592	— planilabris	611
TRICHOSMA	595	— Russeliana	612
suavis	595	— Warneri	612
TRIGONIDIUM	363	<i>violacea</i>	568
<i>monophyllum</i>	363	VANILLA	612
UROPEDIUM	596	Phalænopsis	613
Lindenii	597	WARREA	613
VANDA	597	<i>candida</i>	616
Batemanni	598	cyanea	614
Bensoni	598	— alba	614
Cathcarti	599	tricolor	614
cærulea	599	<i>Wailesiana</i>	616
cærulescens	600	WARSEWICZELLA	615
— Boxallii	600	aromatica	615
concolor	600	<i>candida</i>	615
cristata	601	velata	616
Denisoniana	601	<i>Wailesiana</i>	616
— hebraica	601	Wendlandii	616
<i>densiflora</i>	565	— discolor	617
<i>furva</i>	600	ZYGOPETALUM	617
gigantea	601	<i>africanum</i>	425
hastifera	603	<i>aromaticum</i>	615
Hookeriana	603	<i>Backhousianum</i>	514
insignis	603	<i>bellum</i>	514
— Schröderiana	604	brachypetalum	618
lamellata Boxallii	604	Burkei	618
limbata	605	Clayi	618
<i>Lindleyana</i>	603	<i>cerinum</i>	514
<i>lissochiloides</i>	598	<i>Dayanum</i>	515
<i>Lowii</i>	558	crintum	619
Parishii	605	— cæruleum	619
— Marriottiana	605	<i>Gairianum</i>	515
<i>parviflora</i>	112	Gautieri	619
Roxburghii	606	intermedium	619
— <i>unicolor</i>	600	<i>Klabochorum</i>	516
Sanderiana	606	<i>Lehmanni</i>	516
Stangeana	607	Mackayi	619
suavis	607	— <i>crinitum</i>	619
— Gottschalckii	608	— intermedium	620
teres	608	maxillare	620
— Andersoni	609	<i>micropterum</i>	555
— aurora	610	rostratum	620
— candida	610	<i>Russelianum</i>	517
<i>tessellata</i>	606	Sedeni	621
<i>tesselloides</i>	606	<i>velatum</i>	616
<i>testacea</i>	610	<i>velutinum</i>	619
tricolor	610	<i>Wallisii</i>	517
— Corningii	611	Wendlandii	616
— Dalkeith variety	610		

CORRIGENDA.



A few slight errors, mostly of punctuation, and too obvious to need a record here, are scattered through the text, chiefly among the small type references to figures. It may, however, be useful to point out the following, which are more important.

<i>Page</i>	<i>Line</i>	
92	... 34	For " <i>Flore de Serres</i> ," read " <i>Flore des Serres</i> ."
100	... 11	For " <i>Flore de Serres</i> ," read " <i>Flore des Serres</i> ."
102	... 27	For " <i>Orchidaceæ</i> ," read " <i>Orchidacea</i> ."
108	... 20	For " <i>cochinchinensis</i> ," read " <i>cochinchinense</i> ."
151	... 39	For " <i>maerostachya</i> ," read " <i>macrostachya</i> ."
256	... 20	For " <i>Ballantyne</i> ," read " <i>Ballantine</i> "; also at p. 358.
271	... { 28 } { 35 }	For " <i>Fytcheanum</i> ," read " <i>Fytchianum</i> ."
280	... 37	Insert "t." after " <i>Orchid Album</i> , iii."
320	... 8	For " <i>Schomburghii</i> ," read " <i>Schomburgkii</i> ."
328	... 36	After " <i>Maund. Bot.</i> " for " <i>v</i> ," read " <i>v</i> ."
352	... { 10 } { 33 }	For " <i>Percivalliana</i> ," read " <i>Percivaliana</i> ."
363	... 13	For " <i>Cattleyi</i> ," read " <i>Cattleya</i> ."
367	... 28	For " <i>Schroderii</i> ," read " <i>Schröderi</i> ."
369	... 24	Insert "N.S." after " <i>Gard. Chron</i> ."
372	... 25	For " <i>Phaius</i> ," read " <i>Phajus</i> ."
398	... 5	For " <i>rubrum</i> ," read " <i>rubra</i> ."
400	... 21	Insert "N.S." after " <i>Id</i> ."
401	... 9	Insert "N.S." before " <i>xvi</i> ."
421	... 26	For " <i>Warszewiczii</i> ," read " <i>Warszewiczii</i> ."
449	... 6	For " <i>Wilckéanum</i> ," read " <i>Wilckeanum</i> ."
456	... 26	For " <i>magnificent</i> ," read " <i>magnificent</i> ."
464	... 6	For " <i>Insleayi</i> ," read " <i>Insleayi</i> ."
472	... 28	Take out " <i>is</i> ."
476	... 27	Insert " <i>La Plata</i> " as the native country.
478	... 23	For " <i>Id</i> ," read " <i>Id</i> ."
478	... 24	For " <i>Illust</i> ," read " <i>Illust</i> ."
489	... 41	For " <i>cinamon</i> ," read " <i>cinnamon</i> ."
502	... 10	For " <i>Ceboletta</i> ," read " <i>Cebolleta</i> ."
540	... 22	For " <i>Teijsman</i> ," read " <i>Teijsmann</i> ."
545	... 14	For " <i>latifola</i> ," read " <i>latifolia</i> ."
548	... 32	For " <i>Epidendrum humilis</i> ," read " <i>Epidendrum humile</i> ."
550	... 25	For " <i>Cæloygne</i> ," read " <i>Cælogyne</i> ."
586	... 5	For " <i>Leach</i> ," read " <i>Leech</i> ."
589	... 17	For " <i>Vandæ</i> ," read " <i>Vandææ</i> ."
595	... 15	For " <i>candidum</i> ," read " <i>candida</i> ."
604	... 15	Take out reference to <i>Warner's Orchids</i> .
607	... 26	Insert "FIG.— <i>Xenia Orch.</i> , ii. t. 102."
610	... 9	For " <i>AERIDES</i> ," read " <i>AËRIDES</i> ."
610	... 34	For " <i>vaviety</i> ," read " <i>variety</i> ."
611	... 32	Insert "FIG.— <i>Warner, Sel. Orch. Pl.</i> , i. t. 3."

CHEAP ORCHIDS.

B. S. WILLIAMS

Having an immense Stock of all the leading species and varieties of Orchids, in small and specimen plants, both in the imported and established state, is now offering them at exceptionally low prices.

Particulars and Prices furnished upon application.

THE COLLECTION OF ORCHIDS

In these Nurseries is very extensive; several large Houses being filled with these plants. Specimens are grown in large numbers, as well as a very large stock of established, imported, and semi-established plants. The Orchid Houses are worthy of a visit at all times of the year, there being always a good display of plants in flower of all sizes.

SPECIMEN PLANTS.

B. S. WILLIAMS having for many years made specimen plants, suitable for Exhibition and decorative purposes, a speciality, Gentlemen about furnishing Conservatories and Winter Gardens, would do well before purchasing to pay these Nurseries a visit.

The Magnificent Collection of

FLOWERING & FOLIAGE PLANTS,

TREE AND OTHER FERNS,

CYCADS, PALMS, CAMELIAS, AND AZALEAS, &c., &c.,

Is perhaps the Largest in Europe.

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

New Illustrated Monthly Work on Exotic Orchids.
Dedicated by special permission to H.R.H. the PRINCESS OF WALES.

THE ORCHID ALBUM,
Comprising COLOURED FIGURES and DESCRIPTIONS of
NEW, RARE, & BEAUTIFUL ORCHIDACEOUS PLANTS,
CULTIVATED IN THIS COUNTRY.

CONDUCTED BY

ROBERT WARNER, F.L.S., F.R.H.S.,
Author of "Select Orchidaceous Plants,"

AND

BENJAMIN SAMUEL WILLIAMS, F.L.S., F.R.H.S.,
Author of the "Orchid Grower's Manual," &c.

THE BOTANICAL DESCRIPTIONS BY

THOMAS MOORE, F.L.S., F.R.H.S.,
Curator of Chelsea Botanic Gardens.

The Coloured Figures by JOHN NUGENT FITCH, F.L.S.

Illustrations of Orchidaceous Plants are in great request, and the ORCHID ALBUM has been projected with the object of supplying the demand for them. The Album is issued in Royal Quarto, which enables the Artist to produce ample and intelligible portraits of the plants, which are drawn and coloured by hand in the best style, and will, we trust, be acceptable to the Orchid-loving public.

The text comprises English botanical descriptions of the plants figured, notes on their cultivation, and such general observations concerning them as may be likely to prove of interest or utility to Orchid growers. The subjects selected for the Illustrations will comprise the most ornamental and attractive species and varieties, new and old, of this noble and beautiful family; and we shall feel obliged to those Amateurs or Trade growers who may communicate with us for the purpose of Illustrating either Novelties or specially fine forms of older kinds. No pains will be spared, on our part, to secure accuracy in every detail, both in regard to the figures and descriptions, and we hope to present to our subscribers an Annual Album of Floral Pictures, which will be at once welcomed to the Drawing-room and the Library.

The work is issued regularly in Monthly Parts, each part contains four handsomely hand-coloured Plates, with descriptive Letterpress; and a volume, consisting of Twelve Parts, is completed annually.

Part I. was published in July, 1881. All back parts up to date can be supplied.

Price 5s. per Part, or 60s. per Annum (12 Parts), Post Free.

The Annual Vols. can be supplied, bound complete, with gilt edges, price £3 6s. each.

Cloth Covers for binding the Volumes of this Work can be supplied, price 3s. 6d. each.

TO FOREIGN SUBSCRIBERS.

The Orchid Album will be sent Post Free, for 60s. per Annum, to any country within the Postal Union.

Agent for India :—Mr. S. P. CHATTERJEE, 78, Narcoledangah Main Road, Calcutta.

Agent for U. S. America :—Mr. CHARLES H. MAROT, 814, Chestnut Street, Philadelphia.

Agent for Brazil :—Mr. P. M. BINOT, Nurseryman, Petropolis.

WHERE SUBSCRIPTIONS MAY BE SENT.

PUBLISHED BY

B. S. WILLIAMS,

AT THE

Victoria and Paradise Nurseries, Upper Holloway, London, N.

The Gardeners' Chronicle,

"THE TIMES OF HORTICULTURE,"

A WEEKLY ILLUSTRATED JOURNAL,

(ESTABLISHED 1841).

DEVOTED TO ALL BRANCHES OF GARDENING AND
RURAL PURSUITS GENERALLY.

Every Friday, price Fivepence ; post free, Fivepence-halfpenny.

The "GARDENERS' CHRONICLE" is the leading Horticultural Journal, and is widely circulated at Home, in the Colonies, and Abroad, especially among Professional and Amateur Horticulturists, and those interested in Cultural Matters and Natural History.

The "GARDENERS' CHRONICLE" is written by Men of Science, Professional Gardeners, Amateurs, and Special Reporters. Its contributors include almost all the leading British Gardeners and most of the principal Botanists and Naturalists of this country, the Continent, India, the Colonies, and America.

ILLUSTRATIONS.

The "GARDENERS' CHRONICLE" is Illustrated from Woodcuts, from *original designs* by W. G. SMITH, and other Artists.

ALL SUBSCRIPTIONS PAYABLE IN ADVANCE.

THE UNITED KINGDOM :

12 Months, £1 3s. 10d. ; 6 Months, 11s. 11d. ; 3 Months, 6s., post free.

FOREIGN SUBSCRIPTIONS (EXCEPTING INDIA AND CHINA) :

Including postage, £1 6s. for 12 Months. India & China, £1 8s. 2d.

P.O.O., to be made payable at DRURY LANE, London, to W. RICHARDS.

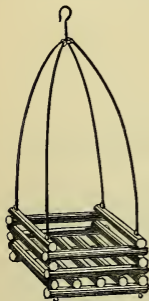
Cheques should be crossed "DRUMMOND."

Office: 41, WELLINGTON STREET, STRAND, LONDON, W.C.

ORCHID GROWERS' SUNDRIES.

OCTAGONAL TEAK-WOOD ORCHID BASKETS.

These Baskets, which are in increasing demand among Orchid Growers, are made with *Octagonal* Teak Rods, fastened with Galvanised or Copper Wire, as desired. They are ordinarily made square, but can be had in Cylindrical, Boat, or Raft Shapes. They are elegant in appearance, strong, and durable.



Outside Measure of Basket.	With Galvanised Wire & Iron Nails.		With Copper Wire & Nails.	
	Per doz.		Per doz.	
	s.	d.	s.	d.
3 inches	6	0	8	0
4 "	8	0	10	0
5 "	10	0	12	0
6 "	12	0	14	0
7 "	14	0	17	0
8 "	16	0	19	0
9 "	18	0	21	0
10 "	20	0	23	0
12 "	25	0	30	0
Cylinders, 12 ins. by 6 ins. ...	24	0	26	0
Boats, 12 ins. by 4½ ins. ...	18	0	21	0
Rafts, 9 ins. by 5 ins.	8	0	10	0

TEAK RODS (*Octagonal*), for making Baskets, $\frac{3}{4}$ in. by $\frac{3}{4}$ in., 1½d. per foot; 1 in. by 1 in., 2d. per foot.

Special Shapes and Sizes made to order.

WILLIAMS' ORCHID PANS.

These Pans are well adapted and highly recommended for growing Orchids in, suspended from the roof, and are a good substitute for wooden baskets and blocks. The Pans, as sold, have holes bored in the side for attaching the wires to.

Diameter.				Diameter.			
Per doz.—s. d.				Per doz.—s. d.			
2 inches	...	...	1 0	5 inches	...	...	3 0
2½ "	...	...	1 3	6 "	...	...	4 0
3 "	...	...	1 6	7 "	...	...	5 0
3½ "	...	...	1 9	8 "	...	...	6 0
4 "	...	...	2 3				

B. S. WILLIAMS, Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

ORCHID GROWERS' SUNDRIES.

WILLIAMS' NEW HOTHOUSE SHADING.

Especially recommended for Orchids.

After several years' successful trials at home, I have much pleasure in bringing this Article before the notice of Orchid Growers as being the best of all Shadings adapted to the culture of Orchids. It is a strong durable cotton netting, woven in squares, but so close as to exclude the direct rays of the sun, whilst it gives the greatest amount of light attainable through Shading. It also withstands the weather better than any other class of Shading, and may be beneficially used during cold weather to keep the frost out, owing to the thickness of its texture. It stands exposure much longer than canvas, and is altogether a better article. It is astonishing to see the difference in the growth of Orchids shaded with this material and those shaded with canvas. In one case the plants receive the greatest amount of light attainable through Shading, and consequently grow more robustly, and produce stronger spikes and better coloured flowers; in the other the plants are drawn up, and the houses appear quite dark, the spikes become slender and weak, and in many cases the plants do not flower at all. R. Warner, Esq., Broomfield, Chelmsford, has employed this material for many years on his Orchid Houses, and speaks very highly of it, and has pronounced it to be the best material for Orchids he has ever used.

Blinds can be made up to any size with this Material, and fixed complete in any part of the Kingdom,

Sold in Pieces 30 yards long by 1½ yards wide, price 45s. each.

ESTIMATES FREE.

BURTON'S ORCHID-GROWERS' FRIEND.

This preparation will supply a want that has long been felt by Orchid Growers in the destruction of insects peculiar to Orchidaceous plants.

It is the only preparation that will destroy Thrips, Scale, and Green Fly (except fumigation, which has proved destructive to many kinds of Orchids, especially those with thin leaves). It is also applicable for all kinds of plants, destroying Thrip, Red Spider, and Scale, where other insecticides have failed. It can be used without injury on the most tender plants or leaves, and has no disagreeable smell or unsightly appearance when on the plant.

Price 2s. 6d. and 5s. per bottle.

BEST SELECTED FIBROUS PEAT FOR ORCHIDS.

10s. 6d. per sack; 21s. and 42s. per crate.

FRESH SPHAGNUM MOSS FOR ORCHIDS.

3s. per bushel; 12s. per sack.

BEST LUMP CHARCOAL FOR ORCHIDS.

2s. 6d. per bushel.

B. S. WILLIAMS,

Victoria and Paradise Nurseries, Upper Holloway, London, N.

JOHN WARNER & SONS,

Hydraulic
AND
Sanitary Engineers.

Bell and Brass Founders,



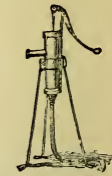
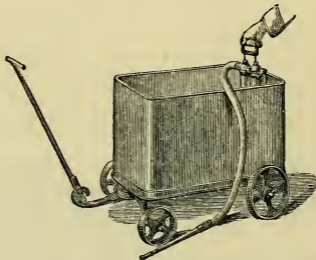
BY SPECIAL APPOINTMENT.

Braziers
AND
Coppersmiths.

CRESCENT FOUNDRY, CRIPPLEGATE, LONDON, E.C.,
AND FOUNDRY WORKS, WALTON-ON-THE-NAZE, ESSEX.



GARDEN PUMPS.



PORTABLE PUMPS,
for manure or
water.



COCKS & VALVES.

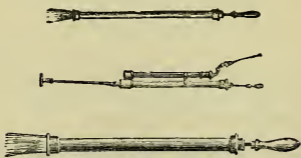


TAPS AND UNIONS.

ORCHID BATHS, AND PORTABLE GARDEN
AND FIRE ENGINES, in great variety.



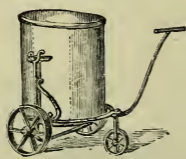
FOUNTAIN JETS.



GARDEN SYRINGES, in all sizes.



HOSE REELS AND
GARDEN HOSE.



WATER BARROWS.



AQUAJECT AND DOUBLE-ACTION SYRINGES.

J. W. & SONS' Horticultural List, or either of the following Catalogues, sent post free upon application, viz., Pump, Sanitary, Plumbers', Braziers, and Windmills. Drawings and Estimates for Wind Engines, Water Wheels, and Hydraulic Machinery of every description, for Steam, Horse, or Hand Power, will be forwarded upon receipt of description of requirements.

By Special Appointment to H.R.H. the Prince of Wales.

B. S. WILLIAMS

Respectfully invites the Nobility and Gentry about to furnish their Conservatories, Greenhouses, Stoves, and Orchid Houses, to an inspection of his Stock of Magnificent Specimens that are unequalled in this country, consisting of the **CHOICEST** and **RAREST EXOTICS**.

Tree Ferns, Dracænas, Palms, Camellias, Azaleas, Agaves, Yuccas, Cycads, Beaucarneas, Aralias, and all kinds of Flowering, Stove, and Greenhouse Plants.

Besides the **LARGE CONSERVATORY**, which is at all times of the year worth a visit, there are numerous Houses, consisting of **ORCHID HOUSES**, **PALM STOVES** (to which many new and interesting Plants have of late been added), **NEW HOLLAND HOUSES**, **FERN HOUSES**, **AZALEA** and **CAMELLIA HOUSES**, and **NEW PLANT HOUSES**, &c., replete with Plants which, by the interest and instruction they will afford, will well repay a visit.

All New Plants that are worthy of notice are to be seen here. The houses have all been erected to suit the requirements of the Plants, which is one of the surest roads to success in their cultivation. Should purchasers require Selections or Collections of Plants they may depend upon having them put up with judgment. In such cases it is advisable to supply a List of the kinds already possessed.

Priced Catalogues Gratis and Post Free to all Applicants.

SEED DEPARTMENT.

GENUINE SEEDS, CARRIAGE PAID AND FREE BY POST.

Complete Collections of Kitchen Garden Seeds for One Year's supply, to suit Large and Small Gardens, at the following Prices:

10s. 6d., 21s., 42s., 63s., and 84s. each.

B. S. WILLIAMS devotes special and particular attention to this branch of his business, and can strongly recommend all seeds offered by him as being grown from the most carefully selected and genuine Stocks, all true to name, and of the finest possible quality. His choice strain of Flower seeds, such as Primula, Cineraria, Calceolaria, &c., are unequalled; they are grown especially for him by persons who stand in the first position as cultivators of the respective kinds.

The **SEED CATALOGUE** published in January, which can be had post free on application, will be found to contain Lists of the latest really useful Novelties in Flower and Vegetable Seeds; also a detailed compendium of all previously known kinds. **NEW AND GENERAL PLANT CATALOGUE**, published in May. **BULB CATALOGUE**, published in August, includes selected Lists of Hyacinths, Tulips, Narcissus, Crocus, Ranunculus, Amaryllis, Ixias, Gladioli, Lilliums, and all other choice and rare kinds; with a Supplementary List of **VINES, FRUIT TREES, SHRUBS, &c.**

FOREIGN ORDERS.—Continent orders receive prompt attention. Plants of all kinds, carefully packed by experienced packers, forwarded by the most expeditious routes. American or Colonial Orders.—Seeds enclosed in air-tight cases, Plants in Wardian Cases shipped direct.

VICTORIA & PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

Every Horticultural Improvement

INTRODUCED IN

WEEKS'S Conservatories,
WEEKS'S Plant Houses,
WEEKS'S Orchid Houses,
WEEKS'S Exotic Stoves,
WEEKS'S Cucumber Houses,
WEEKS'S Forcing Houses,
WEEKS'S Propagating Houses,
WEEKS'S System of Ventilation,

WEEKS'S Ferneries,
WEEKS'S Vineries,
WEEKS'S Pineries,
WEEKS'S Orchard Houses,
WEEKS'S Melon Houses,
WEEKS'S Peach Houses,
WEEKS'S Glass Wall Coverings,
WEEKS'S Hot-water Apparatus.

All of which are of the very Best Description.

WEEKS'S PATENT DUPLEX UPRIGHT TUBULAR BOILER,

With "FUEL ECONOMISER,"

IS ACKNOWLEDGED TO BE

ONE OF THE GREATEST MODERN SUCCESSES.

Full Particulars of this Invention, also their Book of Designs, 13th enlarged Edition, with upwards of 50 Engravings, sent post free

ON APPLICATION TO

J. WEEKS & CO.,
Horticultural Builders,

HOT-WATER APPARATUS MANUFACTURERS, AND PATENTEES,
KING'S ROAD, CHELSEA, LONDON, S.W.

B. S. WILLIAMS' NEW AND CHOICE FLOWER SEEDS.

	Per packet—s. d.
AMARYLLIS, seed from choice sorts, carefully hybridised...	2 6
AURICULA, ALPINE	1 0
BALSAM, Williams' superb strain	2s. 6d. and 1 6
BEGONIA, Hybrid, finest mixed	1 6
CALCEOLARIA, Williams' superb strain	5s., 3s. 6d., 2s. 6d., and 1 6
CAPSICUM, Williams' Little Gem	1 6
CARNATION, extra choice mixed	1 6
CINERARIA, Williams' extra choice strain	5s., 3s. 6d., 2s. 6d., and 1 6
COCKSCOMB, Williams' Prize	2 6
CYCLAMEN PERSICUM, Williams' superb strain	5s., 3s. 6d., 2s. 6d., and 1 6
" GIGANTEUM, mixed	2 6
GLOXINIA, extra choice erect flowered... ..	1 6
" drooping flowered	1 6
MIMULUS, finest mixed	1 0
PANSY, saved from an unrivalled collection	2s. 6d. and 1 0
PENTSTEMON, choice mixed	1 0
PETUNIA, striped	1 0
PICOTEES, choice mixed	1 6
POLYANTHUS, Williams' prize strain	1 0
PRIMULA, Williams' Superb. We can with confidence recommend this strain as the finest in cultivation, red, white, or mixed	5s., 3s. 6d., 2s. 6d., and 1 6
" mixed packets, in 6 varieties, containing Alba Magnifica, Chiswick Red, Coccinea, purple, red, and white... ..	2s. 6d. and 1 6
PYRETHRUM AUREUM SELAGINOIDES... ..	1 6
STOCK, BROMPTON, Williams' Giant Scarlet, the finest ever offered, the centre spike being frequently 20 or more inches in length, while the lateral branches produce trusses from 12 to 14 inches	1 0

Packets of FLOWER SEEDS, excepting heavy kinds, Free by Post.

In ordering FLOWER SEEDS, it will be quite sufficient to send the number attached to each kind only, being careful that it is taken from the current year's Catalogue.

FREE DELIVERY.—All Orders for SEEDS amounting to £1 and upwards will be delivered FREE OF CARRIAGE to any Railway Station in England and Wales; and all Orders of £2 or more in value to any Railway Station in Scotland and any Steam Shipping Port in Ireland.

NEW AND CHOICE VEGETABLE SEEDS.

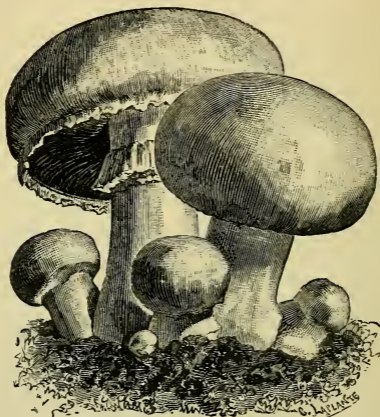
	s. d.
BEAN, Williams' Early Prolific Dwarf French	per quart 2 6
BROCOLI, Williams' Alexandra	per packet 1 0
BRUSSELS SPROUTS, Welch's Giant	" 1 0
CELERY, Williams' Matchless Red	" 1 0
" White	" 1 0
CUCUMBER, Osmaston Manor	" 1 6
" Walker's Hero	" 1 6
ENDIVE, Williams' Gloria Mundi	" 1 0
MELON, Harefield Grove (novelty for 1886)	" 2 6
" Williams' Semper Fidelis	" 1 6
LETTUCE, Williams' Victoria Cos	" 1 0
ONION, Williams' Magnum Bonum	" 1 6
PEA, Williams' Emperor of the Marrow	per quart 2 6
" Holloway Rival... ..	" 2 6
TOMATO, Williams' Golden Queen	per packet 1 6
" " Ne Plus Ultra	" 1 0
" " Red King	" 1 6
" " Orangefield Improved	" 0 6

B. S. WILLIAMS' Illustrated Seed Catalogue is published annually in January, and will be forwarded Gratis and Post Free to all applicants.

VICTORIA & PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

WILLIAMS' MUSHROOM SPAWN.

The best in the Market, never fails to give satisfaction.



MUSHROOMS.

Mushroom beds or boxes may be formed and planted at any season, but decidedly the best times are in the months of September and February; for instance, a bed spawned in September will last through the winter months, and will be succeeded by the February or March bed, which will in its turn give a supply through the summer and early autumn.

					Per bushel of 14 cakes.
Superior quality	...	...	...	...	5s.

For cultural directions, see Early's little book on "Mushrooms," price 1s.

From Mr. G. MITCHISON, The Gardens, Perry Hall, Birmingham:—"I must tell you I have had a splendid lot of Mushrooms from the Spawn I had from you. I also had FIRST PRIZE for them at Birmingham."

From Mr. L. TAYLOR, Gardener to the Duke of Grafton, Wakefield Lodge, Stoney Stratford:—"The last Mushroom Spawn I had from you was really first-rate."

From Mr. THOMAS CONWAY, The Gardens, Elm Park, Co. Limerick:—"The Mushroom Spawn you sent last year was the best I ever saw."

From THOMAS BUTLER, Esq., Cirencester:—"The Mushroom Spawn I had from you has proved the best I ever had. I have been a Mushroom grower for over 20 years."

**B. S. WILLIAMS, Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.**

Contractors to Her Majesty's War Department.

THE THAMES BANK IRON COMPANY,



OLD BARGE WHARF,
UPPER GROUND ST.,
LONDON, S.E.,

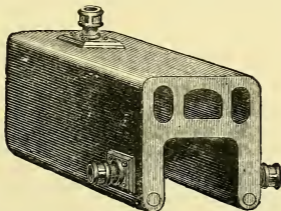


Surrey Side, Blackfriars Bridge,

HAVE THE LARGEST AND MOST COMPLETE STOCK IN THE TRADE.

Awarded Gold and Silver Medals, Birmingham, 1872, & London, 1883.

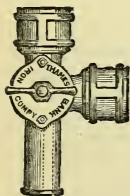
Hot Water
Boilers,
Pipes,
Connections,



And all
Castings for
Horticultural
Purposes.

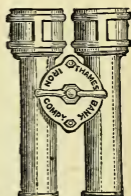
GOLD "MEDAL" BOILER.

(This Boiler is used by Mr. B. S. Williams at his extensive Nurseries at Holloway, who will testify to its most extraordinary capabilities of heating power, with economy in consumption of fuel).



PATENT RELIANCE ROTARY VALVES.

Awarded Special Certificate, 1883.



LIST PRICE on Application, or 12 Stamps for DESCRIPTIVE CATALOGUE (Sixteenth Edition).

WORKS BY B. S. WILLIAMS, F.L.S., F.R.H.S.

"Mr. WILLIAMS has long been known as one of our best and most successful plant growers."—*Gardeners' Chronicle*.

"Mr. WILLIAMS' skill as a plant cultivator is well and widely known."—*Journal of Horticulture*.

NOW READY.

Post octavo, cloth, price 7s. 6d.; post free, 8s.

CHOICE

STOVE AND GREENHOUSE FLOWERING PLANTS.

Third Edition, Enlarged and Revised.

The above work is now published and has been entirely revised up to the present time. It is copiously illustrated with seventeen page and thirty-two double-page engravings on wood, and comprises descriptions of upwards of Thirteen Hundred species and varieties of Stove and Greenhouse Plants, together with chapters containing full directions and plans for the erection of Plant Stoves and Greenhouses; also plans and practical instructions relating to the culture of the same, including Potting, Propagation, remarks upon Fertilisation, Ventilation, Shading, and Watering.

SELECT FERNS AND LYCOPODS.

BRITISH AND EXOTIC.

Second Edition, Enlarged and Revised, price 5s.; post free, 5s. 5d.

COPIOUSLY ILLUSTRATED WITH ENGRAVINGS ON WOOD.

Comprising descriptions of Nine Hundred and Fifty choice species and varieties, accompanied by directions for the cultivation of Ferns in pots, soil and mode of potting, Tree Fern culture, management of a Fernery under glass, construction and management of a Fernery in the open air, &c.

"We have no hesitation in stating that this is the best garden work on Exotic Ferns which has yet appeared."—*Gardeners' Chronicle*.

CHOICE STOVE AND GREENHOUSE ORNAMENTAL-LEAVED PLANTS.

Second Edition, Enlarged and Revised, price 5s.; post free, 5s. 5d.

PROFUSELY ILLUSTRATED WITH ENGRAVINGS ON WOOD.

Containing descriptions of upwards of Eight Hundred species and varieties, with full directions and plans for the erection of Plant Houses especially adapted for this class of Plants, Greenhouses, and Conservatories.

"This is a companion volume to Mr. Williams' admirable work on 'Stove and Greenhouse Flowering Plants,' and is as well got up as regards mechanism, and as terse and practical in style as the most business-like reader could desire."—*Gardeners' Magazine*.

PUBLISHED AND SOLD BY THE AUTHOR,

Victoria and Paradise Nurseries, Upper Holloway, London, N.

JOHN EDWARD BONNY,
IMPORTER AND GROWER OF ORCHIDS,
ORIGINAL MANUFACTURER OF
Orchid Baskets, Rafts, Boats, Cylinders, &c.,
ON AN IMPROVED PRINCIPLE,
88, DOWNS PARK ROAD, HACKNEY, LONDON.

HORTICULTURAL SOILS, MANURES, SUNDRIES, & BERKSHIRE POTTERY.

Trepho for Orchids.
Peat for Orchids.
Peat for General use.
Sand, fine and coarse.
Shell Shingle for staging.
Spar Gravel for staging.
Teak Baskets, Rafts, &c.
Labels and Sticks, various.

Insecticides, &c.
Tobacco Paper and Cloth.
Tebb's Fumigators.
Raffia, Mats, &c.
Garden Pots and Stands.
Orchid Pots and Pans.
Cutlery (Saynor's).
Wreaths and Crosses, &c., &c.

BENJAMIN FIELD, F.R.H.S.,

(Son-in-law and Successor to J. KENNARD),

SWAN PLACE, OLD KENT ROAD, S.E.

Established 1854. Catalogues free per Post.

SELECT ORCHIDACEOUS PLANTS.

By **ROBERT WARNER, F.R.H.S., F.L.S.**

THE NOTES ON CULTURE BY **B. S. WILLIAMS, F.L.S., F.R.H.S.**

Dedicated by special permission to Her Majesty Queen Victoria.

Third Series, now in course of publication, may be had in Parts, price 10s. 6d. each, containing Three beautifully hand-coloured Illustrations.

First and Second Series, price, bound complete, £7 7s. each.

MAY BE HAD OF

B. S. WILLIAMS,
VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

B. S. WILLIAMS' DESCRIPTIVE AND PRICED CATALOGUES

Are published annually at the time specified below, and will be forwarded gratis and post free to all applicants.

THE SEED CATALOGUE, ILLUSTRATED (JANUARY),

Contains upwards of Sixty pages, including descriptive Lists of Novelties in Flower and Vegetable Seeds, also a detailed compendium of all previously known kinds, with copious notes for the guidance of Amateur cultivators, together with a list of best varieties of Potatoes, Agricultural Seeds, Horticultural Implements, and Garden Requisites.

THE NEW & GENERAL PLANT CATALOGUE, ILLUSTRATED (SPRING),

Contains One Hundred pages, including detailed Lists of New Plants, Orchids, Ferns, Palms, Stove, Greenhouse, and Hardy Plants, &c., with full descriptions of the choicest varieties.

AN ILLUSTRATED LIST OF BEDDING & SUB-TROPICAL PLANTS IS ISSUED IN MAY.

THE BULB CATALOGUE, ILLUSTRATED (AUGUST),

Contains Fifty-two pages, including selected Lists of Hyacinths, Tulips, Narcissus, Crocus, Ranunculus, Freesias, Amaryllis, Ixias, Gladioli, Lilliums, and all other choice and rare kinds, with suggestions as to Culture, &c.; also a

Supplementary List of Fruit Trees, Vines, Strawberries, Herbaceous and Alpine Plants, Hardy Ornamental Shrubs, Climbers, &c.

LANDSCAPE AND SUB-TROPICAL GARDENING.

Estimates, Plans, and Advice given for the Laying-out of Parks, Pleasure Grounds, Rockwork, Ferneries, &c., and to keep the same in order by contract or otherwise in any part of the country.

GARDENERS.

B. S. W. has much pleasure in stating that he has upon his Gardeners' Register many men of the strictest integrity, thoroughly qualified to undertake the duties of Head Gardener, Bailiff, Gardener and Bailiff, or Under Gardener. Ladies or Gentlemen requiring such, may rely upon B. S. W. recommending only those whose conduct and abilities are worthy of their trust.

Paris, 1878.



London, 1884.



Calcutta, 1883-84.



LONDON 1862



LONDON 1851



PARIS 1855



PARIS 1867



Saynor Cooke and Ridal's
 Celebrated French Exhibition Prize
 English and Budding and Grafting
 Pruning Line and Truning Scissors

GARDEN SHEARS, TOOLS &c



Every Article warranted
 CORPORATE
 OBTAIN
 Established 138 years.

Raxton Works Sheffield.

LANDSCAPE GARDENING.

B. S. WILLIAMS having an efficient Foreman in this Department, is prepared to accept contracts for laying out

PARKS, PLEASURE GARDENS, &c.,
and to keep the same in order by contract or otherwise.

FLORAL DECORATIONS.

For many years this has been a special feature of this Establishment; B. S. W. having been entrusted with some of the largest **Floral Decorations** that have ever been carried out in London; and considering the immense stock of Plants, &c., always on hand, suitable for

FÊTES, BALLS, WEDDING & GARDEN PARTIES,
patrons may rely on B. S. W. carrying out their wishes in the most expeditious and artistic manner.

FURNISHING CONSERVATORIES, &c.

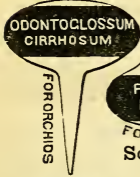
Contracts will also be given for keeping furnished with Plants, *Large or Small Conservatories, Halls, Jardinieres, Fern Cases, and Window Boxes,* both for summer and winter decoration, and to change the same when necessary; also for

PLANTING AND CONSTRUCTING FERNERIES
in any part of the Kingdom.

B. S. WILLIAMS,

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

THE ACME LABELS. (REGISTERED.)
IMPERISHABLE.



Specimens and Prices on Application.

NO WRITING REQUIRED.

Orchid Labels now in Stock.

Sole Manufacturer—**JOHN PINCHES,**
27, OXENDEN STREET, LONDON.



14 by 12
16 by 12
18 by 12
20 by 12
16 by 14
18 by 14
20 by 14



20 by 15
20 by 16
22 by 16
24 by 16
20 by 18
22 by 18
24 by 18



HORTICULTURAL SHEET GLASS.

21-oz. Foreign of the annexed sizes in 100 and 200 feet boxes; 3rds and 4ths qualities always kept in stock.

A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.

Propagating and Cucumber Glasses, and all miscellaneous glass

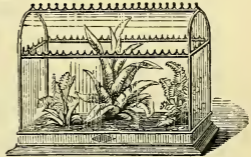
articles can be obtained from

GEO. FARMILOE & SONS, Glass, Lead, Oil, & Colour Merchants,
34, ST. JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
Stock List and Prices on application. Quote "Orchid Manual."

GLASS ! GLASS ! !



GLASS for Greenhouses, Orchard Houses, Conservatories, Pit Frames, &c. Also White Lead, Paints, Oils, and Colours of every description. Aquariums, Fern Cases, Cloches and Propagating Glasses. Zinc Hand Frames. *Illustrated Catalogues on application.*



JAMES PHILLIPS & CO.,

6 & 7, HALF MOON STREET, BISHOPSGATE STREET WITHOUT, LONDON, E.C.
Established 60 Years.

GRAND RESULTS OBTAINED by the use of
JEYES' "GARDENER'S FRIEND."

One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can, Effectually Destroys all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.

Price 3s. 6d. per gallon, including drum; 40-gallon casks, £4 10s. Carriage paid.

Testimonial.

"We have been favoured with a quantity of this Compound for trial, and have found it effectual as a destroyer of weeds and moss on garden paths, and as a powerful insecticide. Care must be taken, however, with this as with most insecticides, not to use it too strong, so as to injure the foliage and young growths of plants, and this can easily be done by reducing its power with water."—*Journal of Horticulture, &c.,* 11th June, 1885.

JEYES' SANITARY COMPOUNDS CO. (Limited),
43, CANNON STREET, LONDON, E.C.

CHOICE FLORISTS' FLOWER SEEDS.

Sold only in Sealed Packets bearing my Trade Mark.

WILLIAMS' SUPERB STRAIN OF PRIMULAS.
THE FINEST IN CULTIVATION.

B. S. W. begs to call special attention to his superb strain of this universally admired winter and spring-flowering Plant. He can with confidence offer it as being unequalled in cultivation. Plants from this seed have always been awarded First Prizes wherever exhibited. B. S. W.'s strain of Primula is so well known to all the principal Gardeners in the three Kingdoms that it is unnecessary to give Testimonials.

Red, White, or Mixed, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

*WILLIAMS' PRIMULA SINENSIS FIMBRIATA ALBA
MAGNIFICA.*

A variety of exquisite form and substance, with very compact habit; the flowers are pure white in colour, with large bright yellow eye, and measure $2\frac{1}{4}$ inches in diameter. They are borne in large trusses well above the foliage.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

PRIMULA SINENSIS FIMBRIATA CHISWICK RED.

This is the most brilliant crimson-scarlet Primula yet sent out, with habit as robust as *Alba magnifica*, the foliage is very finely cut and of a deep green colour.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

PRIMULA SINENSIS FIMBRIATA COCCINEA.

The flowers are as large as those in my superb strain of red and white, and are of a brilliant scarlet, with a bright sulphur eye, exquisitely fringed and of great substance.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

PRIMULA SINENSIS FIMBRIATA RUBRO VIOLACEA.

It is a remarkably fine plant of extremely robust habit, bearing flowers of an exceedingly peculiar violet-crimson shade; hence its name, most appropriately given by the Royal Horticultural Society of Chiswick.

2s. 6d., 3s. 6d., and 5s. per packet.

PRIMULA SINENSIS FIMBRIATA METEOR.

The blooms are of medium size, good form and substance. They are well fimbriated. The colour is of an intense rich crimson, relieved by a bright yellow eye.

2s. 6d., 3s. 6d., and 5s. per packet.

CALCEOLARIA (*Williams' Superb Strain*).

The peculiar features of these Calceolarias are their dwarf robust habit and strong constitution. They produce immense trusses of very large, finely-shaped flowers, of exquisite and varied colours, such as cannot fail to give universal satisfaction.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

CINERARIA (*Williams' Extra Choice Strain*).

This superb strain of Cineraria is of very dwarf branching habit, with robust constitution. The seeds have been saved with special care, and are the produce of extremely fine flowers of the most diverse colours; indeed, for form, size, and colour, they far surpass the majority of the named varieties.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

CYCLAMEN PERSICUM (*Williams' Superb Strain*).

The Plants of this superb strain are remarkable for their dwarf robust growth; the flowers are of great size, form, and substance, while the colours consist of pure white, white with deep crimson base, delicate rose-tinted flesh, and various shades of carmine, rose, and crimson, all worthy to be named.

1s. 6d., 2s. 6d., 3s. 6d., and 5s. per packet.

Cyclamen Persicum Brilliant, fine crimson, 2s. 6d., 3s. 6d. and 5s. per packet.

Cyclamen Persicum Crimson King, brilliant crimson, 3s. 6d. and 5s. per packet.

CYCLAMEN PERSICUM GIGANTEUM.

This variety has very broad beautifully mottled leaves, and stout flower stalks, throwing the flowers well above the foliage; each flower measuring from 2 to 2½ inches in length, with broad petals of great substance, pure white, with a fine bold violet-purple eye.

2s. 6d., 3s. 6d., and 5s. per packet.

Cyclamen Giganteum Album (white), 3s. 6d. and 5s. per packet.

Cyclamen Giganteum Compactum, 3s. 6d. and 5s. per packet.

Cyclamen Giganteum Roseum (rose), 3s. 6d. and 5s. per packet.

Cyclamen Giganteum Rubrum (crimson), 3s. 6d. and 5s. per packet.

NOVELTIES FOR 1886.

CYCLAMEN PERSICUM ALBERT VICTOR (new).

Awarded First Class Certificate. Colour intense brilliant carmine, dwarf and compact habit. 5s. per packet.

CYCLAMEN GIGANTEUM ROSE QUEEN (new).

Splendid variety, of pale rose colour, suffused with bright rosy carmine, and deep rosy crimson base. 5s. per packet.

**B. S. WILLIAMS, Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.**

B. S. WILLIAMS,
HORTICULTURAL BUILDER
AND
HOT-WATER ENGINEER.

Conservatories, Plant Houses, Vineries, Orchid
Houses, Stoves, Ferneries, &c.,

Erected complete on the most approved principles
in any part of the Kingdom.

EXISTING BUILDINGS ALTERED OR RENOVATED,

*For which Plans and Specifications will be prepared, free of cost, when the
Contracts are accepted, either on large or small scale.*

HEATING CARRIED OUT ON THE MOST APPROVED PRINCIPLES.

The whole of the work is carried out under our own supervision,
and by our own staff of Builders.

*The Plant Houses in these Nurseries have all been erected by our own
men; and parties about constructing Conservatories, Stoves, &c., should
pay these Nurseries a visit, and inspect the Plant Houses, when any advice
will be gladly given.*

BEST DESIGNS, BEST MATERIALS.

*Gentlemen about erecting ORCHID HOUSES should send
for Plans and Estimates.*

VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.





