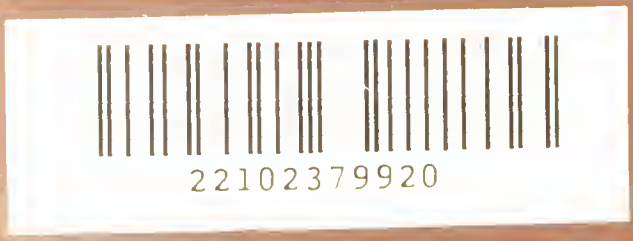
HELWÂN

A GUIDE TO THE

Health Resort of Egypt



HELWÂN
AND ITS
EASTERN SURROUNDINGS

surveyed by
G. Schweinfurth.
1895-96.

Scale 1: 60000.

○ Cairns_Trigonometrical Stations.
═ Roads practicable for Carriages.

London: Stanford's Geographical Estabt.

HELWÂN

AND THE EGYPTIAN DESERT


GEORGE ALLEN
PUBLISHER LONDON
156 CHARING CROSS ROAD
RUSKIN HOUSE

A Bedouin Encampment at the Edge of the Desert

Frontispiece

Mr Lionel Decle with the authors kind regards

HELWÂN

AND THE EGYPTIAN DESERT

BY

W. PAGE MAY, M.D., B.Sc., M.R.C.P.

FELLOW OF UNIVERSITY COLLEGE, LONDON
FORMERLY MEDICAL REGISTRAR AND PATHOLOGIST TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, ETC.;
F. R. MED. CHI. SOC., F. MED. SOC., ETC.,
F. R. MET. SOC., F.R.G.S.

WITH ARTICLES BY

PROF. A. H. SAYCE, LL.D.

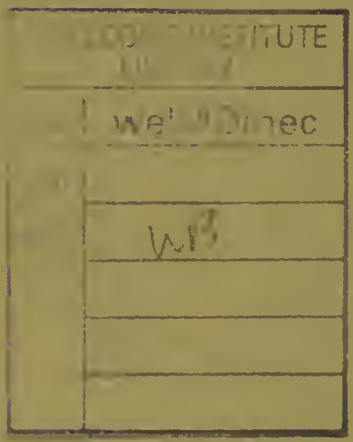
AND

PROF. G. SCHWEINFURTH

Three Maps and Thirty-two Illustrations

LONDON
GEORGE ALLEN, 156, CHARING CROSS ROAD
1901

Price Three Shillings
(Fifteen Piastres)



Printed by Ballantyne, Hanson & Co.
At the Ballantyne Press

PREFACE

THIS little volume is intended to serve as a finger-post for all those who seek during the winter months a place of residence combining health with artistic and pleasure-giving surroundings. As to the healthfulness of Helwân, I may perhaps be allowed to speak with some claim to authority, owing to the fact that for the last five years I have made elaborate meteorological observations there, and not only derived great personal benefit, but have had daily opportunities of watching the effect of the climatic conditions upon many others.

I desire to acknowledge my great indebtedness to Professors Sayce and Schweinfurth, whose names are of such world-wide reputation, for the articles included in this volume, which so much enhance its value. I also wish to convey my thanks to personal friends to whom I am indebted for several of the photographs herein reproduced supplementary to those now published from my own negatives, and especially to Mr. Sydney Hallifax and to Dr. H. Simson for their invaluable help in various ways.

In the matter of the names of such places as Saqqara, Giza, and Helwân itself, it has been found convenient to use throughout these pages the spelling adopted by Professors Sayce and Schweinfurth, and to discard the more popular and customary methods embodied in "Sakkara," "Gizeh," "Helouan," &c.

W. P. M.

VILLA SAQQARA,
HELWÂN.

9 MANCHESTER SQUARE,
LONDON, W.

CONTENTS

SECTION V

SECTION VI

SECTION VII

SECTION VIII

SECTION IX

LIST OF ILLUSTRATIONS


RUSSIA
GERMANY
FRANCE
AUSTRIA-HUNGARY
ITALY
TURKEY
SPAIN
ASIA MINOR
MOROCCO
ALGERIA
TRIPOLI
EGYPT
BAY OF BISCAY
BLACK SEA
MEDITERRANEAN SEA
Liverpool
London
Dover
Folkestone
Calais
Boulogne
Havre
Paris
Orleans
Bordeaux
Lyons
Amsterdam
Rotterdam
Brussels
Cologne
Strassburg
Munich
Rhine
Oberne
Berlin
Leipzig
Prague
Vienna
Danzig
Konigsberg
Warsaw
Cracow
Lemberg
Kief
Kursk
Kharkov
Odessa
Buda
Pesth
Trieste
Milan
Venice
Turin
Genoa
Nice
Marseilles
Barcelona
Oporto
Madrid
Lisbon
Valencia
Seville
Malaga
Gibraltar
Corsica
Sardinia
Rome
Naples
Ancona
Brindisi
Corfu
Sicily
Malta
Bosna Serai
Belgrade
Cettinje
Bukarest
Danube
Sophia
Varna
Constantinople
Scutari
Athens
Smyrna
Candia
Cyprus
Aleppo
Damascus
Beyrout
Jaffa
Jerusalem
Pt. Said
Ismailia
Suez
Alexandria
Cairo
HELOUAN
Fez
Algiers
Tunis
Tripoli
Liverpool to Lisbon 983m.
London to Lisbon 1120m.
Lisbon to Malta 1250 m.
Brindisi to Port Said 960 m.
Malta to Alexandria 785m.

INTRODUCTION

The township of Helwân, popularly known as Helouan, is situated fifteen miles south of Cairo, in the desert, and within three miles of the Nile.

The increasing demand for a place of winter residence, suitable not only for those in search of health, but also for persons of leisure anxious to escape from the severities and inequalities of a European winter, has during recent years had a very considerable effect in bringing Helwân into prominence.

Year by year it is visited by an increasing number of persons from all parts of the world, many of whom come back to it, not once but again and again.

The chief title to distinction possessed by Helwân is its climate, for which it is claimed that it can hardly be equalled and in no way excelled by any other known resort. It possesses first-rate hotels, which have been opened to keep pace with the increasing demand for accommodation.

In the later pages of this work will be found, set out in simple form, the average daily duration of sunshine and the humidity of the atmosphere, rainfall, &c., as compared with other places. Of the

hotels it need only be said that they are quite equal to any in Cairo or other large cities, and are moderate in their terms.

Here under the shadow of the Mokattam range of hills, with an almost infinity of desert, and the ever-varying lights and shades playing on the sandy heights on one side, and on the other the valley of the Nile, bright with the sail of craft on the river intersecting the green patches of cultivated land, the lover of nature may study the picturesqueness of the Orient in its most characteristic forms.

Around Helwân native life and the camel caravans moving across the desert may be seen at their best. Wherever the eye turns it meets with an education in colour and in artistic effect. The silent beauty of the palm groves with Arab villages nestling at their base present one picture. The majesty of the distant pyramids of Giza, Saqqara, and Darfûr and many others combine to produce another—unique not only in Egypt but throughout the world.

Here one looks down upon the history of dynasties embodied in over a hundred monuments bearing eloquent witness to the lives of empires dating back to epochs before Greece rose and Rome fell. Not even the glories of Athens can surpass the riches of historic interest preserved in these tombs of kings who, being dead, yet speak.

Turning to modern times, the Egypt of to-day can nowhere be better studied than in the native markets, such as are weekly held in the most important

A Contrast—The Desert and a Market

Page xiv

centres, easily reached from Helwân. It will be found on examination that not merely to the student of history but to those in health and to those in search of it, the advantages offered by a visit to Helwân are well worth careful consideration.

HELWÂN

AND THE EGYPTIAN DESERT

SECTION I

AMUSEMENTS AND RECREATIONS AT HELWÂN

STRANGERS to the life of a town situated on the edge of the desert may be inclined to ask with a smile, "What is there to do at Helwân?" The testimony of a great many visitors is to the effect that there is so much to do they cannot find time to accomplish all they wish. In addition to the various sports detailed below, it will be found that Helwân is a most convenient centre for excursions: it being within easy reach of the Nile, boats can easily be obtained (either native craft or steam-launch). It is an admirable centre from which to visit Bedrashên, with its picturesque market held on Wednesdays, and is the most convenient starting-place from which to reach Memphis.

Riding.—The desert surrounding Helwân offers unrivalled opportunity for riding in all its forms; donkeys can be obtained at any of the hotels at any moment, camels can easily be arranged for, and good

hacks in limited number can be hired. Visitors making a prolonged stay, however, may find it more convenient either to hire their horses in Cairo and stable them at Helwân (stabling, &c., being easily obtained); or as good riding-horses can be bought in Egypt from about twelve or fifteen pounds, it is often cheaper for intending riders to buy their own horses and sell them on leaving the country.

Driving. — Two-horse carriages (Arabeeah) can always be obtained in Helwân. There are several good roads extending for many miles into the desert (see Professor Schweinfurth's map), and there is a good road to the Nile and for some distance along its banks. For short drives in the town the cost is from three to five piastres; for the country round it is necessary to bargain beforehand as there is no tariff; fares are a little higher than in Cairo.

Picnics.—In the desert are innumerable nooks sheltered from the sun or wind, where one can enjoy the fresh desert air or views, also on the Nile, or at Saqqâra, Dahshûr, Abusîr, or Gîza, in the petrified forest, or at many of the numerous interesting localities around Cairo.

Golf.—The links of eighteen holes were laid out by the author, and immediately adjoin the town; the ground, being merely part of the desert, is, of course, not covered with grass, but has a hard sandy surface, and is extremely well adapted for the noble game.

There are large natural bunkers, varied hazards, with good lies through the green, allowing free use

THE GOLF CLUB HOUSE

THE HOME HOLE

of the brassie. The putting-greens are large, undulating, and extremely well kept. Recently a commodious club-house has been built, with complete and convenient accommodation for players of both sexes. It is also provided with a small restaurant. There has been a Scotch professional attached to the club for the last two winters, and the eighteen-hole course is now in extremely good condition. Many players come daily from Cairo; and, as golf is a rage amongst the habitués at Helwân, the club-house in the desert, especially in the afternoon, offers a lively centre of interest.

TERMS. — The golf-house belongs now to the George Nungovich Company, and visitors residing at this company's hotels, and householders in Helwân, pay no subscription. Other players pay at the rate of one shilling a day, five shillings a week, fifteen shillings a month, and three guineas for the winter, to the club custodian or professional.

The hon. sec. of the Helwân Golf Club is Dr. Page May.

Tennis. — There are two good courts in the grounds of the Grand Hotel, and intended chiefly for visitors residing at the hotel, but permission for others to play there is not difficult to obtain.

There is another tennis-court in the Helwân Public Gardens, but it is not in good condition.

Bicycling.—A bicycle is distinctly useful both in Helwân and in the neighbouring desert, in excursions around Cairo or on picnic occasions.

Shooting is easily obtainable on the Nile or cultivated land. Desert game is scarce, but repays investigation. Quail and snipe are abundant in their season, and water-fowl of all kinds are to be found on the Nile. A good "gilly" (Shikari) will be at once provided on applying to any of the hotel managers.

Library.—A large and carefully selected library is situated in the Grand Hotel.

Egyptology.—The Step Pyramid of Saqqâra—the oldest known pyramid in the world—is immediately opposite Helwân. The tombs and ancient Egyptian remains in its neighbourhood are among the most important and best preserved of any in Egypt. Many of them date from about 4000 B.C. For details of these and other fascinating points see the article by Professor Sayce.

Cairo, with its kaleidoscopic life and wonderful Eastern scenes, with its theatres, opera, races, polo, military tournaments, dances, and its unrivalled collection of mediæval and ancient treasures, is within thirty minutes of Helwân.

Trains.—One or two every hour each way from Cairo to Helwân in twenty-four to forty minutes, starting between 6 A.M. and midnight. The station in Cairo is at Bab el-Luk, and is ten minutes' drive from that for Alexandria, Ismailia, and Luxor.

A special through train can always be arranged for between Helwân and any part of the Egyptian railway system. Extra cost about £5 or £6.

Driving over the Khyber to the 12th Green

"That for it"

SECTION II

THE ARCHÆOLOGY OF HELWÂN AND DISTRICT

By Professor SAYCE, LL.D., &c.

The Antiquities of Helwân.—Helwân is one of the best archæological centres in Egypt. In its immediate neighbourhood there is much to be seen, while it is the best starting-point for the ruins of Memphis and the Pyramids, and the other early monuments on the western bank. The modern baths are built on Roman foundations, like the baths at Bath, and in the desert between the town and the river, Dr. Mook, in 1878, found far earlier remains in the shape of flint arrow-heads and other implements. Refuse heaps containing these relics of neolithic man, as well as manufactures of them, are still to be discovered by those who will look for them. In the Wadi Gerrawi, about eight miles south-east of Helwân, are the ruins of a barrage built to dam up rain water in the Wadi, discovered by Dr. Schweinfurth. The primitive character of the construction, and the deficient knowledge of engineering displayed in it, seem to indicate that it is earlier than the age of the Fourth Dynasty. On the north side of the Wadi are the foundations of the houses

inhabited by the workmen, and of a large enclosure, intended perhaps for cattle. The water the barrage was built to hold up was for the use of the workmen in some alabaster quarries a mile or two farther on. Traces of a road leading to the quarries are visible, and close to them are a number of wells sunk in the rock. Other alabaster quarries have been found by Dr. Schweinfurth farther north.

The Quarries of Massara and Tura.—Crossing the Wadi Hôf, north of Helwân (where there are some circles of rude stones, marking the tombs of desert tribes in the early centuries of the Christian era), we come to the range of quarries which provided stone for the Pyramids and the temples of Memphis, and which are still being worked. Those to the north are the most recent. An ancient embanked road leads from them to the railway and the village of Massara, where the Coptic monastery of Barsûm el-'Aryân ("the naked saint") is worth visiting. Northward at the back of Tûra are the oldest quarries. Even here, however, there are no inscriptions earlier than the time of Amon-em-hat of the Twelfth Dynasty and Amon-hotep II. and III. of the Eighteenth, the front of the cliff from which the stone for the Pyramids came having been entirely cut away before the age of the Middle Empire. The Massara quarries seem to have been first opened by the kings of the Twenty-sixth Dynasty, and in one of them is a representation of a sledge drawn by six oxen, and bearing a huge block of stone. The accompanying inscription states that the stone was

OVERLOOKING THE GOLF LINKS

ANCIENT AND MODERN

quarried in the twenty-second year of Amasis (548 B.C.) for the Temple of Ptah at Memphis, and that of Amon at Thebes. Among the royal cartouches met with in the quarries that of Hakoris (400 B.C.) is especially frequent. There are also numerous demotic inscriptions and a few Greek ones, but a little exploration is likely to bring more to light. Some years ago the present writer discovered an Aramaic inscription in one of the quarries, the author of which is called a native of Phut (Gen. x. 6), and mention is made in it for the first time of Babel or Babylon, now old Cairo (comp. 1 Peter v. 13). Tûra preserves the ancient Egyptian name of the quarries —To-Ro-uu, "the land of the wide opening," which the Greeks corrupted into Troja or Troy.

Old Helwân.—The road to the Nile and the western bank passes the old village of Helwân, where 'Abd el-'Aziz, the brother of the Khalif 'Abd el-Melek (A.D. 685) set up the first Arab Nilometer, about ten years before that of Roda was erected. He also excavated a large lake, bringing water for it by an aqueduct from the hills, and built by the side of it a pavilion of glass. It is possible that the burnt brick walls found under the sand near the native cemetery at the edge of the cultivated land are the remains of this pavilion. 'Abd el-'Aziz built several mosques at Helwân, and intended to remove to it the seat of government. Had the intention been carried out Helwân would have been the modern capital of Egypt instead of Cairo. But it was frustrated by his

death. Helwân, however, continued to be a favourite place of resort, and it was here that the mad Khalif El-Hâkim, the founder of the Druses, disappeared (A.D. 1020), probably by assassination. though his followers believed that he had vanished into the desert. The river has of late years considerably encroached on the east bank. This accounts for the fact that the island of Tarfayya on the east bank belongs to Helwân. According to tradition the villages of Helwân and Tarfayya once contended for its possession, and a native of Tarfayya was apparently struck dead in the fray. His corpse was brought before the Governor, who was accordingly proceeding to adjudge the island to the enemy when one of the villagers of Helwân lighted a reed and applied the burning end to the supposed corpse. The dead man thereupon sprang up and ran away, and the island became the property of the people of Helwân.

The West Bank—Memphis.—The Greek name of Memphis—Moph and Noph in the Old Testament—comes from the Egyptian Men-nofer, "good place." The sacred name of the city in old Egyptian, however, was Hâ-Ku-Ptah (Hikuptah in the Tel el-Amarna tablets), whence the Aiguptos of the Greeks, the Egypt of to-day. The mounds which represent its site are immediately beyond the village of Bedrashên, at a short distance from the river, and buried in a grove of palms. The city and its great temple of Ptah, the tutelary god of the locality, were founded

by Menes, the first king of united Egypt, and it remained the capital of the country for many centuries. With the rise of Cairo, which was partly built out of its ruins, Memphis was deserted, though 'Abd-el-Latîf (A.D. 1200) still speaks with admiration of its "marvellous" ruins and fallen statues. According to Diodorus it was seventeen miles in circumference, implying a length of from six to ten miles. The white-washed walls by which it was surrounded caused it to be known as "the city of the white wall"; a portion of this wall was standing until lately on the north side of the mounds. Part of the site of the temple of Ptah is now occupied by the village of Mit-Rahenna, east of which is the site of the sacred lake.* On the edge of this were found the two colossal statues of Rameses II., which Herodotus describes as standing in the temple of Ptah. The largest—the property of the British Museum—was raised from the ground and enclosed in a shed by Colonel Bagnold in 1883, who, at the same time, disinterred the second statue. Excavations on the south-west side of the sacred lake have since brought to light the foundations of some of the chambers of the temple, as well as two huge images of the god which are now in the Gîza Museum. Smaller objects, discovered in the neighbourhood from time to time, are kept at the guardian's house. Inscribed and sculptured stones, however, are to be found in various parts of the mounds, and in the north-west part of the latter a very perfectly preserved

stone house or chapel of the Roman period has recently been discovered. At the south end of the mounds are the remains of the kilns in which the blue porcelain was made.

Saqqâra. — About an hour's ride brings us to Saqqâra, the principal part of the ancient cemetery of Memphis, which extended from Abu Roâsh and Gîza southwards to Dahshûr. The name comes from that of Sokar, the god of the Memphite necropolis, who was afterwards identified with Ptah, the tutelary god of Memphis, and, after the reign of Menes, also with Osiris, the god of the necropolis of Abydos. During the Middle Ages, and even later, mummies were exported to Europe from Saqqâra for medical purposes, the rarity and astringent qualities of "mummy" causing it to be regarded as a panacea for all diseases.

The Serapeum.—To the east of Mariette's house, where lunch is taken, is the burial-place of the sacred Apis bulls, discovered by Mariette in 1861. Apis was believed to be the incarnation of Ptah, and his identification with Osiris in the Greek period created the composite Osiris-Apis, or Serapis. Originally the bulls were buried under separate chapels; after the time of Shishak I., however, of the Twenty-second Dynasty (950 B.C.) they were interred in a long subterranean gallery under a single temple. The so-called Serapeum now seen by visitors was begun by Psammetichus I. of the Twenth-sixth Dynasty (660 B.C.), and was in use down to the Ptolemaic times.

A Ferry on the Nile

Page 10

RECORDS OF THE PAST (1500 B.C.)

At Abydos

The bodies of the bulls buried in it were laid in huge granite sarcophagi, in chambers on either side of a subterranean passage. How the sarcophagi, which average thirteen feet in length by seven and a half in breadth and eleven in height, could have been carried round the angles of the galleries is a puzzle. Most of the votive tablets which adorned the walls are now in the Louvre. Above the galleries was the temple of the Serapeum proper, the scanty remains of which are now covered by the sand. In the age of the Ptolemies it was the home of numbers of Egypto-Greek monks, who led ascetic lives and never left their cells. It was approached by a long avenue of sphinxes, two of which are now on the terrace of Shepheard's Hotel. At one end of the avenue Mariette found eleven statues of Greek philosophers ranged in a semi-circle; they have been removed to the Louvre.

The Tombs.—After leaving the cultivated land and passing the cemetery to the right, we come to the tombs of Mera and Kaben, discovered by De Morgan in 1893, due east of the Serapeum. Mera shared his tomb with his wife and son. He lived under Teta, the founder of the Sixth Dynasty (about 3000 B.C.), and his statue at the end of the large chamber of the tomb is well preserved. We should notice the scenes depicted on the walls of the chambers—hippopotamus hunting, wine-making, goldsmith's work, &c. Similar scenes are represented in the adjoining tomb of Kaben.

Still more worthy of a visit is the tomb of Ti, a little to the north-west of Mariette's house. Ti was the son of a fellah, who rose to eminence under the kings of the Fifth Dynasty, and married a member of the royal family. The delicately painted bas-reliefs on the walls, though now much damaged from long exposure to the weather, are like embroidery in stone. The scenes depicted are numerous, and the details deserve study. A fowling scene on the right-hand side of the chamber at the end of the long passage is more particularly to be noted. In one part of it two hippopotami are engaged in a fight; in another part some water-birds are endeavouring by their cries to drive an ichneumon from their nest.

Even more beautiful and perfect are the paintings in the tomb of Ptah-hotep, of the Fifth Dynasty, to the south of Mariette's house, one of which represents a lion hunt. Recent excavations have brought to light two more chambers attached to the tomb, but belonging to Akhet-hotep, a son probably of Ptah-hotep. Those who wish to examine the tomb must obtain permission from the Museum authorities to clear away the sand with which it is covered.

In spite of the length of time during which the cemetery of Saqqâra has been ransacked, untouched tombs are still to be found there. Only this year (1900) two fine tombs of the Twenty-sixth Dynasty have been discovered close to the Pyramid of Unas, and in 1899 four tombs of early date were found side by side, the wall paintings of which will repay a visit.

TOMBS OF THE TWELFTH DYNASTY (2500 B.C.)

Saqqâra (Step) Pyramid—one of the oldest in the world, and immediately opposite Helwân

The Pyramids.—The Step Pyramid is one of the oldest in Egypt. If the royal name in it is correctly read, it was the tomb of Zoser of the Third Dynasty (about 4000 B.C.). Two of its chambers were lined with tiles of green faïence. A thorough exploration of the pyramid and the tombs of its neighbourhood would throw light on the beginnings of Egyptian history. Between the Step Pyramid and the tomb of Mera is the ruined Pyramid of Teta, called Dad-ast, "the firm place." A little to the south-west of the Step Pyramid is the Pyramid of Unas (Fifth Dynasty), called Nofer-ast, "the good place." The brightly coloured hieroglyphics which cover the walls of the inner chambers contain the earliest known Egyptian ritual for the dead, and have proved of the highest importance to students of Egyptian religion. Similar texts are found in the pyramids of Teta, Pepi I. and II., and Mer-en-Ra I. In the chamber to the right, with its walls of alabaster, is the huge basalt sarcophagus of the king. The pyramids of Pepi I. and Mer-en-Ra I., called Men-nofer, "the good place," and Kha-nofer, "the good rising," lie some way to the south, to the west of the village of Saqqâra. Still farther to the south is the Mastabat el-Fara'-ûn, a large oblong tomb which has not yet been thoroughly explored, and on the north side of it is the Pyramid of Pepi II., called Men-ankh, "the place of life." The origin and object of the great stone enclosure west of the Step Pyramid are unknown.

Abusîr.—About half-an-hour north of the Serapeum are five ruined pyramids west of the village of Abusîr (an Arab corruption of Busiris, *i.e.* the old Egyptian Bu-usir, "House of Osiris"). The northernmost is that of Sahu-Ra (Fifth Dynasty), called Khaba, "the rising of the soul." It is surrounded by a square enclosure, and the causeway leading to it can still be traced. The middlemost pyramid is that of User-en-Ra (Fifth Dynasty). The temple attached to it is about half-an-hour to the north (near Abu-Gurah), and has recently been excavated. It was dedicated to the sun-god by User-en-Ra in commemoration of a royal jubilee, the various scenes of which, including the coronation ceremonies, were represented on its walls. In another scene the ceremony of laying the foundation-stone of the building is represented. In the centre of the temple was an enormous obelisk, the symbol of the sun, planted on an alabaster pedestal, while eight large basins of alabaster were arranged on the east side. Most of the tombs to the south still await exploration. One of them, that of Ptah-Shepses (of the Fifth Dynasty), was excavated in 1893, and may be visited for the sake of the bright colouring on the walls, and its lotiform columns, the earliest hitherto found.

Dahshûr.—Dahshûr may be reached in about two hours from Bedrashên. On the north side of the northern pyramid, which appears to have belonged to Amon-em-hat III. (Twelfth Dynasty), De Morgan found the burial-place of the royal family, and hidden

THE (FALSE) PYRAMID OF MEDUM

Page 14

A Dom Palm

Page 14

in two natural hollows in the floor the jewellery of the four princesses Nofer-hont, Sent-senebt, Sit-Hathor, and Menit. It is now in the Gîza Museum, and includes gold pectorals inlaid with precious stones, on one of which is the cartouche of Usertesen III. supported by two hawk-headed lions, and on another Amon-em-hat III. smiting the Bedawin of Sinai. There is nothing now to be seen in the burial-place, which consists of galleries cut in the rock, with chambers opening out from them in which sarcophagi were placed. In the southern brick pyramid, De Morgan discovered the jewellery of the two princesses, Ita and Khnemt, relations of Amon-em-hat II. (Twelfth Dynasty); altogether 5760 jewels were found here, including the two crowns of gold inlaid with precious stones, which are now in the Museum. A good many other tombs were opened at the same time, among them being tombs of the Fourth Dynasty, with fine paintings; but it will be years before the vast cemetery of Dahshûr can be fully explored. The builders of the two stone pyramids are still unknown.

SECTION III

THE FLORA OF THE DESERT SURROUNDING HELWÂN (EAST)

TRANSLATION FROM THE GERMAN BY

PROFESSOR G. SCHWEINFURTH

INTRODUCTION

VISITORS to Helwân who take exercise either in walking, riding, or driving in the outlying districts, will be well advised not to confine themselves to the side of the Nile, but to take an eastward course, and to obtain the advantage of the vivifying breezes, which by reason of its high elevation the desert affords. The splendid prospect and picturesque light effects to be obtained from the desert hills are inadequately realised. The vegetation of the desert, too, though sparse in quantity, is unique and rich in variety.

THE DESERT FLORA OF HELWÂN

The desert at Helwân is a part of that extensive region which, stretching from Senegal across the northern third of Africa, and farther up eastwards over Syria, Arabia, Persia, and Beluchistan to the Lower Indus, is characterised by a vegetation of fairly

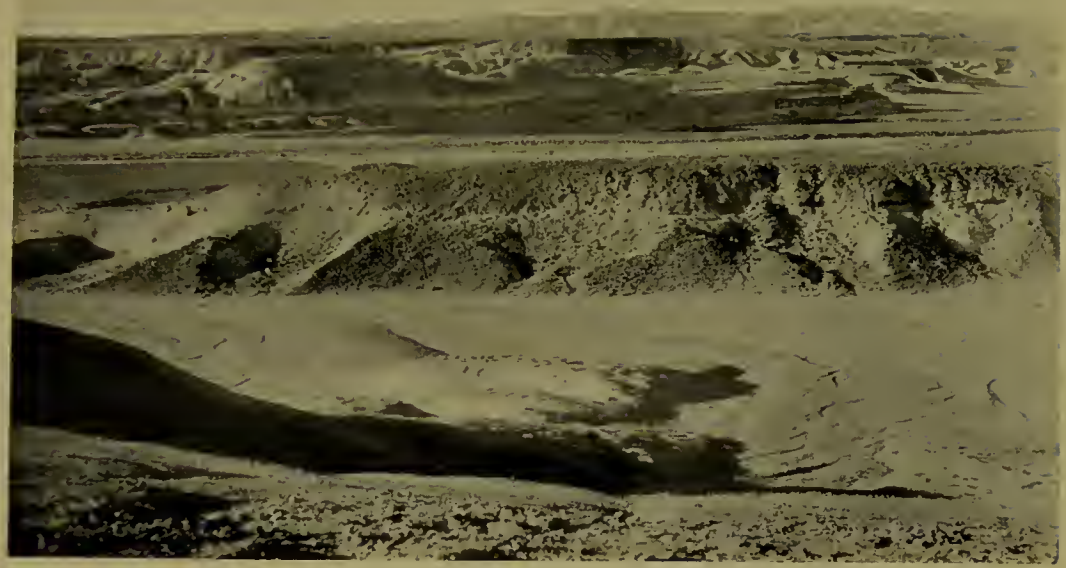
uniform character in its main features. It has been termed "the Region of the Date Palm"; since this tree—though nowhere met with really wild — well typifies the close affinity of the several floral areas and the desert character and peculiar climatic conditions which everywhere prevail.

Though the district around Helwân does not belong to one of the sections of the desert region most rich in species—for indeed the Egyptian desert includes towards its southern confines one of the most desolate and sterile areas known—it affords an admirable illustration of the marvellous way in which Nature husbands her resources, and the plants which grow there are fully typical of the desert flora.

The means whereby the existence of these desert plants is preserved resides rather in the peculiarities of their organisation than in any specially favouring influences of the environment. The most prominent feature of this organisation is the capacity which the vegetative organs have acquired to resist factors so inimical to life as heat and drought—factors whose common tendency is to annihilate all living things. Though the minute details of these multifarious protective arrangements are not visible to the naked eye, they find obvious expression in the external conformation of the various organs of the plants.

Thin-stemmed plants of delicate appearance have tubers or tuberous roots (44, 45) sunk deep in the strong ground for the storing of reserves of nutriment adequate to maintain them alive through long months

of absolute drought. The same end is gained in other delicate herbs by the possession of an enlarged woody basal portion. Then again, the tendency to general lignification through all the parts of the plant affords a capacity for resistance to many members of the families Cruciferæ and Compositæ, families known to us at home by their herbaceous, unprotected representatives. To restrict evaporation due to wind and solar radiation the desert flora exhibits a high degree of reduction in the surface area of its members. This principle is illustrated in numerous instances by poverty of foliage and considerable spininess, whilst, in apparent contradiction of this tendency, one often finds the surface of the plant clad in a hairy covering, or with glands and superficial excretions of wax or resin or strongly aromatic substances (among the aromatic species are 45, 58, 60, 77, 78, 79, 80, 86, 89, 90, 92, 131, 132). Further we find plants with smooth or shiny, thick and fleshy leaves. Nature doesn't work on one plan, but provides for every case special means of protection and fresh weapons to carry on the struggle. Side by side with the thorn-bristling Zilla we find the thick-leaved, wax-coated Capparis, whilst near by are the hedgehog-like Astragalus and Fagonia, and the soft, fleshy, fibreless Mesembryanthemum. In marked contrast, too, are the Salsolaceæ, a similar almost leafless everlasting —woody throughout, and one would think indestructible—and the delicate Parietaria with its thin and battist-like foliage.



THE DESERT FROM HELWÂN

Among the life-destroying agencies of the desert, the omnipresent *salt* should be mentioned, and primarily—in the particular district herein dealt with—common salt or sodium chloride, of which there are abundant quantities in almost all strata of the tertiary (eocene) formation, constituting the eastern desert, where it occurs both in the solid limestone beds, and in the alternative beds of clayey and calcareous marl. The winter rains are insufficient to wash away the salt from all the outcropping strata: all it can do is to remove it from the valley bottoms and gullies by which it runs off into the Nile. It is for this reason that vegetation occurs in the district adjoining Helwân to the eastward only in strips along the dry water-beds.

Not until an altitude of 1000 metres above the sea-level is reached, as upon the Galala tableland of the eastern desert, does vegetation occur, also on the sides and slopes of the valleys, owing to the less transitory nature of moisture in these parts, and especially to the more frequent fall of dew. This favouring condition is also shown by the tracts of desert bordering upon the sea-shore, which, like the high plateaux, possess a relatively rich covering of plants. The only phanerogamous plant to be found in the deserts adjoining Helwân away from the water-courses is *Telephium sphæro spermum*; this grows on the bare rock, defying the most arid drought. Lichens occur chiefly on slopes with northerly exposure, though in the latitude of Helwân they are often met with on the flat

ground of the plateaux. Farther south all Lichens soon die out. The Lichen-Flora comprises some eighty different species. An interesting feature from a biological point of view is the symbiotic co-existence of the distribution areas of rock lichens and land-snails (*Helix desertorum*, &c.).

Perennial plants are just about half as numerous as the delicate annuals. Their existence is independent of the fluctuating and variable annual winter rains. They shoot anew and blossom even after a rainless or all but rainless winter. In marked contrast are the annual herbs which depend absolutely upon the rain-fall; nor is all rain of equal value in promoting their development. The early rains of November, December, or January scarcely benefit the annual Flora at all, because the seeds of these plants cannot germinate during these colder winter months, and the ground dries up again in a few days, even after the heaviest rainfalls. Unless, therefore, they germinate at once they get no advantage from these rains.

For a rich spring vegetation of annuals, the rain should fall about the end of February and the early part of March, at which time the growing heat of the sun is capable of promoting germination. Only a limited number can germinate in mid-winter, provided some rain has fallen. Among these we may mention some of the Cruciferæ (2, 7, 8, 10), the Alsineæ (27, 28), Plantago (139), &c.

A few plants behave as biennials; they are perennial forms whose time of vegetation is limited,

THE ARABIAN HILLS BORDERING HELWÂN, WITH THE WÂDY HOF IN THE FOREGROUND

Page 20

and they include Zilla, the large Zygophylla, *Farsetia ægyptiaca*, &c.

Trees are hardly met with in the district. In the Upper Wady Gherrawi there stands (or at one time stood) a small tree of the species *Acacia tortilis*. In the Upper Wady Hof *Retama* is to be found, and here and there some Tamarisks. These several species, however, which in other parts of the desert occur as trees, with well-formed trunks, are here only to be seen in the condition of small shrubs. Of larger bushes the local Flora presents scarcely a dozen kinds (13, 57, 129, 145, 150, 161, 180, 181); whilst of date-palms this desert is entirely destitute, with the exception of the two specimens that manage to drag on a lonesome existence just on the border, one at the spring situated three kilometres south of the town, and the other near another spring to the east of Massarah.

The differences between the seasons are very marked in this locality, and, unfortunately, the one most unfavourable to the botanist coincides with the height of the tourist season. The least number of plants is in bloom during the months of January and February (though the following, in particular, are pretty sure to be found, viz.: 3, 7, 8, 10, 11, 12, 75, 90, 91, 109, 112, 124, 135); the majority bloom in March and April, when the local vegetation is at its height. In the summer months many perennial plants flower, especially members of the families Compositæ and Labiatæ, and also Pancratium. Of these the

winter visitor will find only a few miserable belated stragglers, inadequate perhaps for him to determine and add to the number of "finds" in his collection. Most of the remarkable Salsolaceæ (149–159) only come into bloom at the beginning of the cold season, say in November, but as a rule all traces of their flowers and fruit have disappeared by December.

Any one who is able to advance farther towards the interior of the desert (say for a distance of from ten to fifteen kilometres, or about eight miles east-south-east of Helwân) at the beginning or middle of November, and to push on to the Lyons Plateau, of 400 metres elevation, or to the somewhat more remote spring of the Wady Rished, will be surprised to come upon a Flora of rare beauty, for there Anabasis, Haloxylon, and Agathophora, covering wide stretches of ground with their pink and silver-winged fruits, unfold an enchanting spectacle. Visitors may, however, be afforded an even more convenient opportunity of seeing plants of this group near the Pyramids, especially that known as Abu Roash.

Towards the close of the winter, in February, upon the nearest height east of Helwân, one comes upon a very pretty, stock-gilliflower-like cruciferous plant, *Diplotaxis acris*, which is of very frequent occurrence there, unfolding its sweet violet or rose coloured flowers in the channels and excavations dug out by the gypsum-diggers, while it also covers the dry beds of many valleys for considerable distances. The

A Picnic in the Desert

succulent leaves, tasting like cress, make a delicious salad when dressed with oil and vinegar.

As regards the nature of the ground, this district offers but little variety. In the dry beds of the valleys and smaller gullies, practically the sole localities for plants, clay and marl are the predominant constituents of the soil. In addition to this, there exist gravel, limestone débris, pebbles, shingle, and solid limestone in the "dry cascades," *i.e.* the shelves or steps cut out of the valley. Sandy expanses are of limited extent in the interior of the desert of Helwân; they occur chiefly in the lower half of the Wady Gherrawi. The species of plants characteristic of these sorts of soils are numbered as follows in our list: 2, 10, 15, 16, 18, 19, 49, 55, 63, 71, 84, 89, 118, 119, 120, 121, 127, 140, 148, 158, 164, 183.

Nowhere in this part of the desert are springs to be found, but mostly artificial wells or "water-holes" (as at Wady Rished and Wady Te'em, for instance), which are dug in the sand or gravel of the dry water-courses at the bottom of the valleys. In some places also there exist in the rock natural water reservoirs or basins filled with rain-water, the finest of which, containing water all the year round, occur in the Upper Wady Rished Valley (thirteen kilometres from the town as the crow flies), and in the Upper Wady Hof (nine kilometres from the town).

The best localities for botanical researches are offered in the bottoms of the three large valleys lying within the district here described, viz., the Wady Hof,

Wady Rished, and Wady Gherrawi. Those within easiest reach are: Wady Hof, four kilometres from the railway station, north to east; and Wady Rished, six kilometres from the railway station, east to south, the mouth of the same Wady being situated four kilometres due south from the railway station.

We may now briefly refer to some of the most remarkable among the plants. One of the smallest forms of vegetation occurring in this district, and one certainly deserving notice if only on that account, is the so-called "Rose of Jericho." In point of fact, there are two distinct plants described by this name, both of which occur in the neighbourhood of Helwân. One, which in our opinion has been so named erroneously by Linnæus, is the *Anastatica hierochuntica*, or "the resurrection herb of Jericho," which occurs in great quantities on the lowermost level of the plateau to the east of the town. This plant belongs to the cruciferous family, and has nothing in common with a rose. It grows on the barren surfaces of rocks, following the smallest gullies made by the rain. In the wide valley-bottoms one may search for it in vain. It is a short-lived annual plant, whose branches, varying from one to three inches in length, bearing small thick leaves and snow-white quatrefoil blossoms, are spread out upon the ground. The plant dries up quickly, sheds its leaves, and then rolls up its branches (to which the fruits remain attached) towards the centre, thus forming a ball. In this condition it can remain indefinitely, still rooted in the

ground. When, however, it is thoroughly wetted with rain, the rolled-up branches expand once more, and resume their original divergent position. The experiment may be repeated at home as many times as may be desired. More astonishing, owing to the rapidity of their execution and the striking change in appearance involved, are the hygroscopic movements exhibited by another plant, *Asteriscus pygmæus*, belonging to the family Compositæ. This is a minute plantlet, scarcely rising an inch above the ground, with few leaves and surmounted by a single flower head, or at best by not more than from two to four flower heads of capitula arising from a single branch. It is to be found in the central and upper parts of the valley of Wady Hof (6½ and 11 kilometres respectively from the railway station as the crow flies) upon stone-covered patches of barren ground and along the narrowest of the gullies running up the scarp or bank of the valley. The flower-heads when blooming are easily recognised, resembling a nickel coin of one piastre in size, and standing out boldly by reason of their golden-yellow colouring. In a few weeks, however, the plantlets seemingly disappear, and can only be discovered with the greatest difficulty. The involucral leaves surrounding the flower-heads close up, forming a low pyramidal head, like a nail, upon the leafless stem. Assuming as they do a greyish hue, they are no longer distinguishable from the surrounding stones. But as soon as the rain moistens these capitula, stuck about

like nails amongst the stones, they open, the involucral leaves taking an outward reflexed position, and forming a small brown rose. This change is accomplished quickly, say from two to five minutes. The heads swell out to double their original size, and the seed, furnished with flying apparatus, a species of parachute, rises up from the bottom of the receptacle, and may now be scattered by the wind over the surface of the soil, which by this time has absorbed an amount of moisture sufficient for germination. Indeed, Nature carries her foresight to such a length as actually to prevent the capitula from opening before the rain falls in torrents; a mere drizzle cannot induce them to open at all. The several layers of cells which constitute the substance of the involucral scales possess different capacities for stretching and contracting, and it is through their agency by a readily demonstrable mechanical process that these opening and closing movements in Astericus are effected. As in the case of the Anastatica, so with this plant, the experiment may be repeated indefinitely by alternately wetting and drying the specimen. At the time of the Crusades this plant was held in great esteem by the pious pilgrims, who would take home specimens as relics, it being regarded as a symbol of the resurrection of Christ. The current belief was that the time when the plant had first opened of its own accord precisely coincided with the day and hour of the birth of our Lord; also, it is said to have been an object of veneration on the

THE DESERT WAVES

part of women about to be confined, as its possession was supposed to constitute a charm that would ease the pangs of childbirth and render delivery painless.

Any one going out in the forenoon—even after a dewless night or series of such nights, long after the close of the rainy season—will be surprised at the appearance of certain plants, which he will find besprinkled with drops of water, or which will, at all events, feel moist to the touch. Reaumuria is especially typical in this respect; it is a low shrubby plant of from six inches to a foot in height, and its small, fleshy, closely set leaves exude a hygroscopic secretion, mainly consisting of sodium chloride, and capable therefore of condensing the moisture of the air. The epidermal glands of the leaves are the means whereby the absorption of the water is effected, after which there is left behind a crust formed by the salt, which, during the period of active vegetation of the plant, had been eliminated from the water obtained by the roots from the then comparatively moist soil; during the dry season water is no longer available from this source. At noon, by which time the plants have become dry, they present an ashy, hoary appearance; if now one be washed clean it will be found to be green in colour. A branch so washed, if cut off, will wither in a few hours, whereas, if the saline incrustation has been left intact, it will remain fresh and juicy; a fact which confirms the supposition (emitted by Professor George Volkens) that, in

addition to the salt-secreting glands, there are others active in operation, which have the power of absorbing moisture from the incrustation. The crust of salt upon the leaves continues unchanged throughout the summer. At the same time Reaumuria should not be classified among the so-called "salt plants," for it evinces a decided preference for drained—generally rocky—situations, comparatively free from salt. In this respect Reaumuria differs from the other encrusted plants belonging to this district, though without doubt the crust of salt operates in the same way, *i.e.* enabling them to distil their own dew from an atmosphere far from saturated with moisture. Such plants are referred to in the appended list, and include Frankenia, Cressa (in Arabic, for the above reason, el nedawi, *i.e.* the bedewed one), Statice, and Tamarix: all these are dripping with dew, or at all events, are damp to the touch, in the morning.

In the preceding account of the desert flora we have kept within such limits as are readily accessible to visitors either driving or riding in the course of a day's expedition, and which covered a distance of from ten to twelve miles from the Nile. The higher parts of the desert, upwards of 500 metres above the sea-level, may be reached, indeed, in one day's journey from Helwân; but in that case it will be necessary to stay there for the night. Hence many species of plants which do not go so far down, and are confined to the higher parts of the plateaux of the desert,

A Desert Cliff, showing Weathering

must needs escape the notice of the plant-collector who is tied by a string to Helwân.

On the sandy wastes at the limits of the cultivated area west of Helwân there grow several plants *apparently* belonging to the desert. These, however, we have not considered here, inasmuch as they belong to the flora of the narrower Nile Valley, and, in point of fact, are not to be encountered in the desert proper.

APPENDIX TO SECTION III

The following is a list of all the species of plants which have been found in the desert east of Helwân, within a distance of from ten to twelve miles from the Nile, and of most of which a person visiting Egypt in the winter may have the opportunity of gathering specimens, provided he can stay in the country until March.

In our enumeration of the families and species of plants we follow the order adopted in the standard work on the Flora of the entire region here partly dealt with, viz., *Flora Orientalis*, by E. Boissier, Geneva, 1867–84, five vols.; also that followed in *Illustration de la Flore d'Égypte* (*Mémoires de l'Institut Égyptien*, 1889), by P. Ascherson and G. Schweinfurth.

The letters placed in brackets indicate—(*p.*) perennial; (*a.*) annual; (*b.*) biennial.

MENISPERMACEÆ.

1. Cocculus Leæba, G.P.R. (*p.*).

CRUCIFERÆ.

2. Mathiola livida, D.C. (*a.*)
3. Farsetia ægyptiaca, T. (*b.*).
4. Anastatica hierochuntica, L. (*a.*)
5. Rebaudia microcarpa, Cos. (*a.*)

THE NILE NEAR HELWÂN

Page 30

6. Moricandia clavata, B. (*a.*).
7. Diplotaxis Harra, B. (*a.*).
8. D.—— acris, B. (*a.*).
9. Brassica Tournefortii, J. (*a.*).
10. Savignya parviflora, Webb (*a.*).
11. Zilla myagroides, F. (*b.*).

CAPPARIDACEÆ.

12. Cleome arabica, L. (*a.*).
13. Capparis spinosa, L. (*p.*).
    var. ægyptia, B.

RESEDACEÆ.

14. Ochradenus baccatus, D. (*p.*).
15. Reseda arabica, B. (*a.*).
16. R.—— Boissieri, M. Arg. (*a.*).
17. R.—— pruinosa, D. (*b.*).
18. Oligomeris subulata, Webb (*a.*).
19. Caylusea canescens, H. H. (*a.*).

CISTACEÆ.

20. Helianthemum Kahiricum, D. (*p.*).
21. H.—— Lippii Pers (*p.*).

SILENACEÆ.

22. Gypsophila Rokejeka, D. (*p.*).
23. Silene villosa, F. (*a.*).
24. S.—— linearis Dene (*a.*).

ALSINACEÆ.

25. Alsine picta F. var. (*a.*).
    sinaica, B.
26. Spergularia fallax, Lowe (*a.*).
27. S.—— diandra, H. S. (*a.*).
28. S.—— salina, Presl. (*a.*).

PARONYCHIACEÆ.

29. Robbairea prostrata, B. (*a.*).
30. Polycarpon succulentum, W. B. (*a.*).
31. Polycarpia fragilis, D. (*a.*).
32. Herniaria hemistemon, Gay (*a.*).
33. Paronychia lenticulata, A. S. F. (*a.*).
34. Gymnocarpus decander, F. (*p.*).
35. Pteranthus dichotoma, F. (*a.*).

MOLLUGINACEÆ.

36. Telephium sphæro spermum, B.

TAMARISCACEÆ.

37. Reaumuria hirtella, J. Sp. (*b.*).
38. Tamarix nilotica, Bge. (*p.*).
39. T.—— articulata, V. (*p.*).

FRANKENIACEÆ.

40. Frankenia pulverulenta (*a.*).

MALVACEÆ.

41. Malva parviflora, L. (*a.*).

GERANIACEÆ.

42. Erodium cicutarium, l'Her. (*a.*).
43. E.—— laciniatum, W. (*a.*).
44. E.—— hirtum, W. (*p.*).
45. E.—— arborescens, W. (*p.*).
46. E.—— glaucophyllum, Ait. (*a.*).
47. E.—— bryoniifolium, B. (*a.*).

ZYGOPHYLLACEÆ.

48. Tribulus alatus, D. (*a.*).
49. Fagonia glutinosa, D. (*a.*)
50. F.—— Kahirina, B. (*a.*).
51. F.—— Bruguieri, D. C. (*a.*).
52. F.—— mollis, D. (*p.*).
53. F.—— arabica, L. (*a.*).
54. Zygophyllum simplex, L. (*a.*).
55. Z.—— album, L. (*p.*).
56. Z.—— coccineum, L. (*p.*).
57. Nitraria retusa, Asch. (*p.*).

RUTACEÆ.

58. Haplophyllum tuberculatum, T. (*a.*).

PAPILIONATÆ.

59. Retama Rætam, Webb (*p.*).
60. Trigonella stellata, F. (*a.*).
61. Medicago Aschersoniana, U. (*a.*).
62. Astragalus Schimperi, B. (*a.*).
63. A.—— gyzensis, D. (*a.*).
64. A.—— peregrinus, V. (*a.*).
65. A.—— tribuloides, D. (*a.*).
66. A.—— Forskalii, B. (*a.*).
67. A.—— Sieberi, D. C. (*a.*).
68. Alhagi manniferum, Desv. (*a.*).

CÆSALPINIACEÆ.

69. Cassia obovata, Coll. (*a.*).

MIMOSACEÆ.

70. Acacia tortilis, Hnc. (*p.*).

ROSACEÆ.

71. Neurada procumbens, L. (*a.*).

FICOIDEÆ.

72. Mesembryanthemum Forskalii, H. (*a.*).
73. Aizoön hispanicum, L. (*a.*).
74. A.—— canariense, L. (*a.*).

UMBELLIFERÆ.

75. Pityranthus tortuosus, Bth. H. (*b. et p.*).

COMPOSITÆ

76. Asteriscus pygmæus, Coss. D. (*a.*).
77. A.—— graveolens, D. C. (*b.*).
78. Pulicaria undulata, D. C. (*a.*).
79. Francœuria crispa, Cass (*a.*).
80. Iphiona mucronata, Asch. Schf. (*a.*).
81. Phagnalon Barbeyanum, A. Sf. (*p.*).
82. Gymnarrhena micrantha, Df. (*a.*).
83. Filago spathulata, Pr. (*a.*).
84. Ifloga spicata, Sz. B. (*a.*).
85. Lasiopogon muscoides, D. C. (*a.*).
86. Achillea fragrantissima, Sz. B. (*p.*).
87. Anthemis melampodina, D. (*a.*).
88. A.—— retusa, D. (*a.*).
89. Brocchia cinerea, Vis. (*a.*).
90. Artemisia herba alba, A. (*p.*).
91. A.—— monosperma, D. (*b.*).
92. A.—— judaica, L. (*b. et p.*).
93. Senecio coronopifolia, Df. (*a.*).
94. Calendula persica, C. A. Mey (*a.*).
95. C.—— ægyptiaca, Df. (*a.*).

96. Echinops spinosus, L. (*p.*).
97. Amberboa Lippii, D.C. (*a.*).
98. Centaurea ægyptiaca, L. (*a.*).
99. C.—— pallescens, D. (*a.*).
100. Leontodon hispidulus, B. (*a.*).
101. Picris sulphurea, D. (*a.*).
102. P.—— coronopifolia, D.C. (*a.*).
103. Zollikoferia mucronata, B. (*a.*).
104. Z.—— nudicaulis, B. (*p.*).
105. Z.—— glomerata, B. (*a.*).
106. Reichardia tingitana, R.H. (*a.*).
107. Crepis radicata, F. (*a.*).

ASCLEPIDACEÆ.

108. Dæmia tomentosa, V. Ke. (*p.*).

CONVOLVULACEÆ.

109. Cressa cretica, L. (*a*).
110. Convolvulus lanatus, V. (*p.*).

BORAGINACEÆ.

111. Heliotropium luteum, Poir (*p.*).
112. H.—— arbainense, Fr. (*p.*).
113. H.—— undulatum, V. (*p.*).
114. H.—— persicum, Burm. (*a.*).
115. Anchusa hispida, F. (*a.*).
116. A.—— Milleri, W. (*a.*).
117. Echium longifolium, D. (*a.*).
118. Echiochilon fruticosum, Df. (*p.*).
119. Arnebia linearifolia, D.C. (*a.*).
120. A.—— tinctoria, F. (*a.*).
121. Lithospermum callosum, V. (*p.*).
122. Lappula spinocarpus, Asch (*a*).
123. Trichodesma africanum, R. Br. (*a*).

SOLANACEÆ.

124. Lycium arabicum, Sf. (*p.*).
125. Hyoscyamus muticus, L. (*p.*).

SCROPHULARIACEÆ.

126. Linaria ægyptiaca, Dun. (*a. et b.*).
127. L.—— hælava, D. (*a.*).
128. Scrophularia deserti, D. (*p.*).

OROBANCHACEÆ.

129. Phelipæa lutea, Df. (*a.*).
130. Orobanche cernua, Loefl. (*a*).

LABIATÆ.

131. Lavandula pubescens, Dene (*p.*).
132. L.—— coronopifolia, P. (*p.*).
133. Salvia lanigera, P. (*p.*).
134. S.—— ægyptiaca, L. (*p.*).
135. Stachys ægyptiaca, Pers. (*p.*).

PLUMBAGINACEÆ.

136. Statice pruinosa, L. (*p.*).

PLANTAGINACEÆ.

137. Plantago cylindrica, F. (*b.*).
138. Pl.—— amplexicaulis, Cav. (*a.*).
139. Pl.—— ovata, F. (*a.*).
140. Pl.—— decumbens, F. (*b.*).
141. Pl.—— ciliata, Df. (*a.*).
142. Pl.—— coronopus, L. (*a.*).

SALSOLACEÆ.

143. Beta vulgaris, L. (*a.*).
144. Chenopodium murale, L. (*a.*).
145. Atriplex Ha us, L. (*p.*).

146. A.—— leucocladum, B. (*p.*).
147. A.—— dimorphostegium, K.K. (*a.*).
148. Bassia muricata, L. (*a.*).
149. Traganum nudatum, D. (*b. et p.*).
150. Haloxylon Schweinfurthianum, Asch. (*p.*).
151. Salsola fœtida, D. (*b.*).
152. S.—— longifolia, F. (*b.*).
153. S.—— vermiculata, L. (*b.*).
154. S.—— var. villosa, D. (*b. et p.*).
155. S.—— Volkensii, Sf. Asch. (*a.*).
156. Anabasis articulata, Bge. T. (*p.*).
157. A.—— setifera, Bge. T. (*b.*).
158. Cornulaca monacantha, D. (*b. et p.*).
159. Agathophora alopecuroides, Bge. (*b.*).

AMARANTACEÆ.

160. Aerva javanica, J. (*a*).

POLYGONACEÆ.

161. Calligonum comosum, l'Her. (*p.*).
162. Emex spinosus, Campd. (*a.*).
163. Rumex vesicarius, L. (*a*).

EUPHORBIACEÆ.

164. Euphorbia granulata, F. (*a. et. b.*).
165. E.—— cornuta, Pers. (*a. et b.*).

URTICACEÆ.

166. Parietaria alsinifolia, D. (*a.*).
167. Forskalia tenacissima, L. (*a.*).

AMARYLLIDACEÆ.

168. Pancratium Sickenbergeri, Asch. Sf. (*p.*).

LILIACEÆ.

169. Dipcadi erythræum, Web. (*p.*).
170. Asphodelus tenuifolius
var. micranthus, B. (*a.*).

GRAMINEÆ.

171. Panicum turgidum, F. (*p.*).
172. Pennisetum dichotomum, D. (*p.*).
173. Andropogon foveolatus, D. (*p.*).
174. A.—— hirtus, L. (*p.*).
175. Elionurus hirsutus, Mro. (*p.*).
176. Aristida plumosa, L. (*a.*).
177. A.—— brachypoda, Tsch. (*a.*).
178. A.—— ciliata, Df. (*p.*).
179. Stupa tortilis, Df. (*a.*).
180. Oryzopsis miliacea, Bth. H. (*p.*).
181. Trisetum pumilum, Kth. (*a.*).
182. Avena Wiestii, H. (*a.*).
183. Danthonia Forskalii, Tr. (*a. et b.*).
184. Dactylus officinalis, V. U. (*b. et p.*).
185. Phragmites communis, Trin. (*b.*).
186. Schismus calycinus, Coss. D. (*a.*).
187. Bromus madritensis, L.
var. Delilei, B. (*a.*)
188. Sporobolus spicatus, Kth. (*p.*).
189. Scleropoa memphitica, Parl. (*b.*).

GNETACEÆ.

190. Ephedra alte, C. A. Mey (*p.*).
191. E.—— alata, Dene (*p.*).

Perennial, 57 (*p.*).
Annual, 116 (*a.*).
Biennial, 18 (*b.*).

A View of the Town (Helwân)

SECTION IV

HELWÂN AS A WINTER HEALTH RESORT

By W. PAGE MAY, M.D., B.Sc., M.R.C.P.Lond.

Fellow of University College, London; formerly Medical Registrar and Pathologist to the City of London Hospital for Diseases of the Chest, &c.

Helwân, or, as it is sometimes called, Helwân-les-Bains, is a small town situated on one of the slopes of the Mokattam Hills, in latitude 30° N., and is surrounded on all sides by the vast Arabian Desert. It is an artificial oasis sixteen miles due south of Cairo, about 200 feet above the eastern bank of the Nile, which is three miles distant. Assouan lies 600 miles farther south, within 35 miles of the Tropics, and Luxor about 450 miles south. Helwân has a population of 8000, and covers about two-thirds of a square mile. It was planned and laid out under the direct auspices of the Egyptian Government. The late Khedive, H.H. Tewfik Pasha, built a large palace there and chose it as his favourite residence, an example quickly followed by many of the Egyptian princes and pashas.

Soil.—Helwân stands on a mixture of sand and gravel which is continuous with the surrounding desert. To the east gradually rise the Mokattam

Hills, which consist largely of early tertiary nummulite limestone, and pass without a break into the mountains and valleys of the Arabian Desert. The rounded summits of the hills in the vicinity of Helwân rise to a height of 1200 or 1500 feet, and alternate with broad plateaus or winding valleys. To the north and south are undulating slopes of the desert, the surface of which consists of sand or gypseous saline conglomerate, offering unrivalled opportunities to the equestrian. A few miles to the north also are the remains of a sea-beach through which the railway to Cairo has been cut. And within an hour's ride past occasional inscriptions are the huge quarries of Tûrah and Massarah, from which the stone was taken for building many of the Pyramids. To the west of Helwân the desert slopes gradually down for two and a half or three miles to the narrow strip of cultivated land which fringes the Nile. Just across the river lie the towns of Bedrashen and Memphis. At the former a large weekly market is held, and it is one of the many places in which the primitive life of the Egyptian fellaheen can be well seen and studied.

Just beyond Bedrashen are the ruins of Memphis, founded more than 4000 years B.C. by Menes, the first historic king of Egypt, while an hour's farther donkey-ride brings the visitor to the step Pyramid and Saqqâra, with its beautiful and vivid remains of the Egyptian civilisation some 3000 and 4000 years B.C. The character of the situation of Helwân and

PASTURES AT SUNSET

Characteristic Natives

of the view from it is sufficiently evident from the fact that it includes no fewer than fifty or sixty pyramids — namely, those at Giza, Abu Roash, Saqqâra, and Dahshûr, the Nile and its valley, with cultivated land and palms, the desert, the Arabian hills, and Cairo in the distance.

Air.—The air at Helwân is that from the desert, and usually described as quite free from germs and organic matter of all descriptions. It must in any case be remarkably low in those constituents. From the fact that the desert surrounds Helwân the air must be remarkably pure, dry, bracing, and invigorating; and as there is no doubt that one of the chief factors in the beneficial influence of a climate is the aseptic condition of its air, the importance of the practically sterile condition of the desert air at Helwân can scarcely be sufficiently emphasised. Any one who has experienced the effect of breathing the desert air on a fresh morning will vividly remember what a light-hearted, buoyant feeling it produces, combined with a desire for physical exercise.

The following account of the climate is based upon the results of my own observations made daily for four winters at 9 A.M. and 9 P.M., and upon the data given by self-recording instruments. The instruments had been chosen with care, and I believe that the facts ascertained are thoroughly trustworthy. The barometer was of the Kew pattern, and the maximum and minimum thermometers, the wet and

dry bulb instruments, the soil thermometers (4 feet and 1 foot), and those with black bulb *in vacuo* for solar radiation were all by Casella, and had been tested and approved at Kew Observatory. The rain-gauge had a diameter of 5 inches. The Robinson's anemometer and Jordan's sunshine recorder were by Negretti and Zambra, and worked admirably. The self-recording thermometer and hair hygrometer were made by Richard Frères, of Paris, and the chart for each was changed every Monday at 9 A.M. The shade instruments were placed in a Stevenson's screen of the pattern approved by the Royal Meteorological Society — viz., double wooden roof, with double louvred sides, &c.—on the large flat roof of the hotel, 40 feet above the ground.

Sunshine.—The average sunshine at Helwân during the last four winters (November to March) was eight hours a day, and 1250 hours 19 minutes of sunshine were recorded for the five months, of which the greatest amount (291 hours) in one month occurred in March, and the least in January (213 hours). It is interesting to note that on an average for the winter there were twenty-three minutes more sunshine registered daily before mid-day than after, whereas later it will be seen that there was 75 per cent. more wind through the day than through the night. Perhaps the most striking evidence of the character of the climate was the fact that not a single day occurred without some sunshine. Moreover, the atmosphere is peculiarly transparent

A Nile Cliff at Gebel-Abu-Feyda

Page 42

to the sun's rays, both luminous and chemical, as measurement of the actinic effects of the light demonstrates in a very precise way. The average maximum solar radiation as registered by a thermometer with its blackened bulb *in vacuo* was 143°. The heat in the sun was usually most agreeable, and many people preferred to wear an ordinary straw hat or cloth cap without any other protection, and were able to do so without inconvenience.

Temperature (see Table).—It will be seen from the tables that the temperature during the winter months at Helwân is well suited for invalids. It is true that there is a distinct difference between the mean maxima and minima for each twenty-four hours, but the difference (21°) is not a disadvantage, and is pleasant rather than otherwise. This daily range of temperature, however, is less at Helwân and Cairo than at Luxor or Assouan (which has a daily range of 7° more), and is very decidedly less than in the Alps and in Colorado and many well-known health resorts. Also, the comparative equability of temperature at Helwân is still more marked if one takes the range of extreme temperatures — Davos giving 10.5° more and Colorado Spring 26.3° more variation as the average for each month (see Tables). Taking the invalid's day as lasting from 9 A.M. to 9 P.M. it will be seen that he can live out of doors in pure desert air from the beginning of November to the end of March in an average temperature of from 60° F. at 9 A.M., increasing steadily

Table Showing the Temperature at Helwân in Degrees Fahrenheit

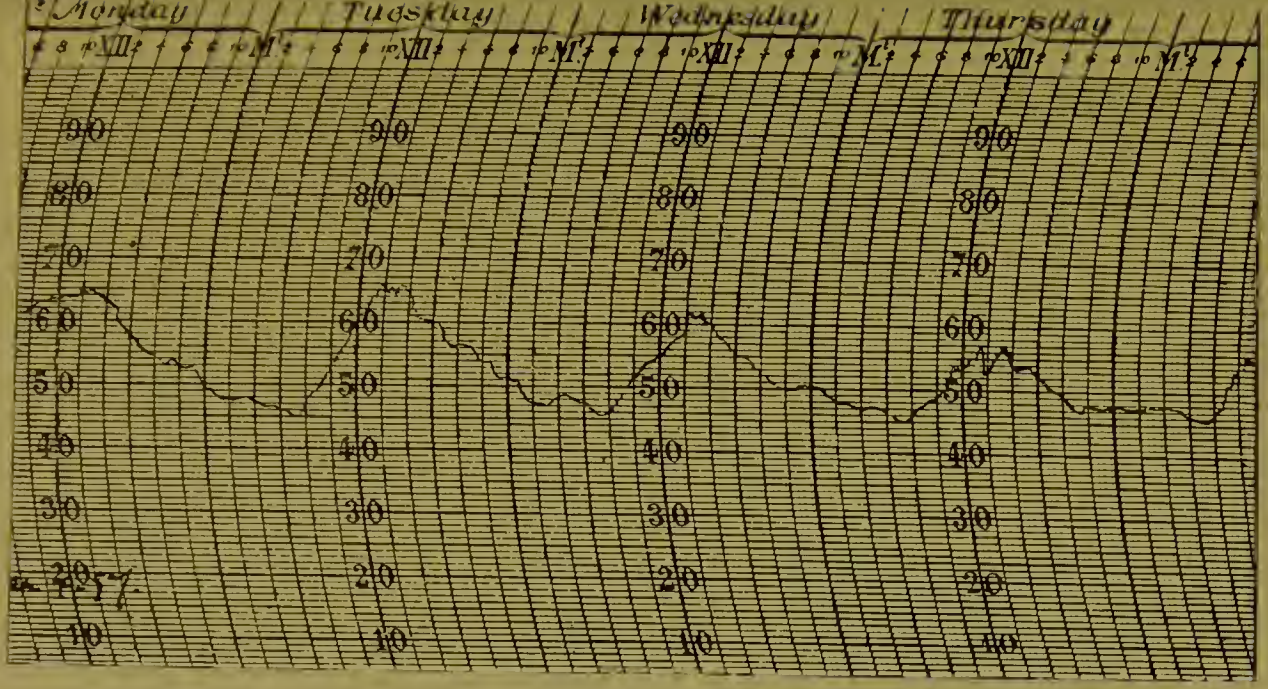
	Maxima, Mean.	Minima, Mean.	Mean of Maxima and Minima.	Daily Range.	Extreme Highest.	Extreme Lowest.	9 A.M., Mean.	9 P.M., Mean.	Soil Temperature (4 feet).		
									9 A.M.	9 P.M.	Difference.
1896	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.
Nov. . . .	79.1	58.7	68.9	20.4	88.4	51.0	67.0	67.6	78.0	78.6	0.6
Dec. . . .	73.0	51.0	62.0	22.0	86.4	43.0	60.0	63.0	71.93	71.94	0.01
1897 –											
Jan. . . .	67.3	47.5	57.4	19.8	78.0	43.4	56.2	57.0	69.77	69.8	0.03
Feb. . . .	66.9	47.1	57.0	19.8	78.0	43.4	56.9	56.9	69.97	70.01	0.4
March . . .	74.5	50.2	62.3	24.3	88.8	45.0	62.7	61.9	70.95	70.98	0.30
Average .	72.1	50.9	61.5	21.2	88.8	45.0	60.5	61.3	70.95	70.98	0.03
1897—											
Nov. . . .	69.52	51.20	60.18	18.32	79.2	47.0	62.11	60.65	78.51	79.06	0.55
Dec. . . .	64.98	45.83	55.40	19.15	68.8	31.8	54.87	54.81	73.43	73.32	0.11
1898—											
Jan. . . .	62.32	41.92	52.12	20.40	66.8	32.0	52.36	52.49	69.25	69.25	...
Feb. . . .	70.41	45.38	57.89	25.03	85.8	41.0	55.77	58.83	68.02	69.76	1.74
March . . .	75.21	50.82	63.01	24.39	98.6	43.2	63.81	64.06	69.98	70.01	0.03
Average .	68.48	47.03	57.72	21.45	79.26	38.82	57.78	58.16	71.83	72.28	...

1898											
Nov. . . .	75.96	59.47	67.71	16.49	87.6	52.2	67.81	66.74	80.46	80.10	0.36
Dec. . . .	65.72	48.74	57.23	16.98	85.4	40.4	56.38	58.85	75.04	75.00	0.04
1899—											
Jan. . . .	63.52	44.94	53.23	18.58	67.4	39.4	52.46	54.94	69.89	69.76	0.13
Feb. . . .	68.34	47.83	58.08	20.51	78.4	41.4	55.92	58.84	68.56	68.59	0.03
March . . .	76.43	51.84	64.13	24.59	98.8	30.2	64.52	64.67	69.83	69.87	0.04
Average .	69.99	50.56	60.07	19.43	83.05	40.43	59.41	60.80	72.75	72.66	...
1899—											
Nov. . . .	74.2	56.1	65.1	18.0	86.0	50.8	65.6	61.7	78.9	79.2	0.3
Dec. . . .	66.84	49.42	58.13	17.42	78.8	44.0	57.42	57.49	73.46	73.42	0.4
1900—											
Jan. . . .	65.21	45.40	55.30	19.81	75.6	38.0	54.7	57.45	69.63	69.59	0.4
Feb. . . .	69.02	50.6	59.80	18.42	76.0	45.2	58.11	60.73	68.85	69.45	0.60
March . . .	76.09	54.1	65.09	21.99	97.5	43.5	63.60	64.18	70.26	70.28	0.02
Average .	70.23	50.99	60.68	19.12	82.43	44.03	59.74	60.31	72.22	72.46	...
Average for 4 years	70.20	49.87	59.99	20.30	83.38	42.07	59.35	60.14	71.93	72.09	...

to 70° at about 3 P.M., and returning slowly to a temperature of 60° at 9 P.M. At night the average minimum for the same period is 50° F., and therefore, sleeping with open window, there would be no risk of catching cold. Indeed, owing to the retention of heat by the walls of the room the lowest temperature in the room itself would be about 5° or 6° higher.

So much is heard of a sudden fall in the temperature at sunset that a passing remark is necessary. At Helwân, as in desert climates generally, no sudden drop in the temperature occurs as is so frequent elsewhere; and that this is so a glance at the actual temperature chart for the four days, January 6th to 9th inclusive, 1897, will show. The temperature there is self-recorded, and given accurately for every moment in the period, yet there is no appreciable drop at the time of sunset, but the temperature gradually falls from the daily maximum to the minimum. Indeed, not only is this true of Helwân, but at a discussion of the Royal Meteorological Society, on December 16, 1896, Dr. Marcet and Dr. Theodore Williams stated that they "experienced no appreciable chill at sunset," even at Luxor or in Egypt generally.

It is important to notice that, as is well known, the temperature of drained land is more equable than that of undrained, and at Helwân the 9 P.M. temperature of the soil four feet in depth only showed an increase of less than one-fifth of a



Temperature of the air (Jan. 6–9, 1897) as recorded automatically. Shows no appreciable drop at sunset.

degree over the 9 A.M. temperature. In December, January, and February the difference was even less, and scarcely appreciable. During the winter this four-feet temperature scarcely varied from hour to hour or day to day, and from the beginning of December, when it stood at 75°, it descended gradually until it reached 68.8° at the end of January, and rose gradually to 71.8° at the end of March. At no time did it exceed these extremes. It will be noticed that the temperature of the soil four feet below the surface is above the average in other places, and this peculiarity is, without doubt, due to the conditions which cause, or are associated with, the thermal springs.

Humidity (see Table).—The mean of the 9 A.M. temperature for the five months, November to March, during the four winters, was 60°, the 9 P.M. temperature for the same period was 61.2°, and of the wet-bulb thermometer was 53.6°. These results were obtained by eye observations of the standard instruments at the hours named, and give by calculation with Glaisher's tables a relative humidity at 9 A.M. of 59 per cent. and at 9 P.M. of 57 per cent. The relative humidity as indicated by a recording hygrometer has daily maxima and minima for the same period of 84 and 30 per cent. respectively. Thus, again, taking the invalid's day as from 9 A.M. to 9 P.M., a visitor at Helwân could breathe desert air from November to April inclusive, containing on the average at that period of the twenty-four

hours, only between 30 and 60 per cent. of moisture (relative humidity).

Wind (see Table).—The mean numbers given by the Robinson anemometer were, for the five months November to March of the last four winters, 21.3 between 9 P.M. through the night to 9 A.M., and 34.3 for the mean twelve hours 9 A.M. to 9 P.M. That is, there was an increase of about 70 per cent. of wind during the day. From these numbers it will be obvious that Helwân is anything but a windy place. It will be seen on reference to the table that February was the most windy month, March rather less windy, and November least.

Dust.—So much prominence has been given by some writers to the dust in Egypt that a few remarks are necessary. It may be divided into two chief kinds, that arising from the dried cultivated land or towns, and that from the desert. The latter has a much higher specific gravity, and is in larger granules than the former. If one gives a kick into the desert soil so as to send up a small cloud, dust particles will be seen to remain in the air for a few seconds only and rapidly settle on the earth again; but if one performs the same little experiment with the dried soil of the cultivated land the particles of dust remain for several seconds, or even minutes, floating visibly in the air. Hence, in those parts of Egypt (viz., by the river and in the cultivated land chiefly) where dried agricultural soil predominates, dust in the air is much more

TABLE SHOWING HUMIDITY AT HELWÂN

	Wet Bulb, 9 A.M., Mean.	Dry Bulb, 9 A.M., Mean.	Relative Humidity, 9 A.M., calculated by Glaisher's Tables.	Wet Bulb, 9 P.M., Mean.	Dry Bulb, 9 P.M., Mean.	Relative Humidity, 9 P.M., calculated by Glaisher's Tables.	Relative Humidity, Maximum Mean. (By Recording Hygrometer.)	Relative Humidity, Minimum Mean. (By Recording Hygrometer.)
1896—	Degs.	Degs.		Degs.	Degs.			
Nov. . . .	59.1	+7.8	60	58.0	+9.5	54	83	26
Dec. . . .	54.4	+5.6	68	55.6	+7.3	60	86	35
1897—								
Jan. . . .	49.3	+6.9	61	50.5	+6.5	62	86	35
Feb. . . .	49.7	+7.2	59	50.2	+6.7	61	86	29
March . . .	54.2	+8.4	56	53.8	+7.1	60	82	24
Mean . .	53.3	+7.2	60	53.6	+7.4	59	84	30
1897—								
Nov. . . .	55.06	+7.05	57	53.4	+7.25	58	84.00	30.02
Dec. . . .	49.55	+5.32	65	49.51	+5.30	65	85.92	37.14
1898—								
Jan. . . .	47.23	+5.13	66	47.23	+5.26	65	84.62	34.6
Feb. . . .	48.7	+7.07	57	50.13	+8.70	53	77.07	22.42
March . . .	54.09	+9.72	47	54.01	+10.05	46	84.70	21.03
Mean . .	...	...	58.4	...	...	57.4	83.3	29.0

1898—								
Nov. . . .	60.66	+7.15	54	59.99	+6.75	62	84.68	31.24
Dec. . . .	51.66	+4.72	69	52.4	+6.45	65	89.39	35.67
1899—								
Jan. . . .	47.56	+4.90	68	49.20	+5.74	63	88.58	41.25
Feb. . . .	50.28	+5.64	64	51.85	+6.99	58	81.53	26.71
March . . .	53.85	+10.67	44	53.68	+10.99	43	75.49	20.63
Mean . .	...	...	59.8	...	...	58.2	83.9	31.1
1899—								
Nov. . . .	57.95	+7.65	58	53.67	+8.03	55	78.21	27.35
Dec. . . .	51.54	+5.88	63	51.30	+6.19	61	68.54	31.16
1900—								
Jan. . . .	49.6	+5.1	68	50.38	+7.07	59	68.19	23.51
Feb. . . .	52.42	+5.69	64	53.4	+7.33	57	66.03	22.64
March . . .	53.9	+9.70	47	54.58	+9.60	47	67.29	16.87
Mean . .	...	...	60	...	...	55.8	69.6	24.3
Average for 4 winters	...	...	59.8	...	...	57.6	80.2	28.6

Table Showing Wind and Rain at Helwân

	Wind Measured by Robinson Anemometer read at			Total Rainfall in Inches.[1]
	9 A.M. Mean.	9 P.M. Mean.	Total.	
1896—	Miles	Miles	Miles	
Nov.	19.9	33.0	52.9	0
Dec.	21.1	35.1	56.2	0.4362[2]
1897—				
Jan.	19.2	35.3	54.5	.020
Feb.	22.9	41.7	64.6	.005
March . . .	20.6	37.1	64.6	.010
Mean .	20.25	36.22	56.47	...
1897—				
Nov.	26.3	41.7	67.10	...
Dec.	9.90	23.61	33.51	.06
1898—				
Jan.	18.12	40.0	58.12	.45
Feb.	17.57	24.85	42.42	...
March . . .	24.35	41.03	65.38	.14
Mean .	19.24	34.23	53.30	...
1898—				
Nov.	23.6	43.2	66.8	.127
Dec.	9.90	23.61	33.51	.13
1899—				
Jan.	12.19	26.25	38.44	.41
Feb.	14.0	29.07	43.07	.23
March . . .	44.19	46.70	90.89	...
Mean .	20.77	33.76	54.54	...
1899—				
Nov.	24.5	38.2	62.7	.15
Dec.	26.25	34.45	60.70	.385
1900—				
Jan.	18.77	22.09	40.86	.21
Feb.	22.60	31.92	54.52	.65
March . . .	32.67	41.38	74.05	...
Mean .	24.95	33.20	58.5	...
Mean for 4 Winters	21.3	34.3	55.6	...

[1] Less than half an inch during the five months.
[2] In one evening, December 2.

common than in the desert, and from the golf links at Helwân clouds of dust can frequently be seen driving along by the river, while the air at Helwân remains perfectly clear. As Professor Flinders Petrie has pointed out, the occasional strong winds raising dust almost invariably originate to the west of the Nile, and expend a great deal of their force in crossing to the eastern bank. Hence dust is less abundant on the eastern bank.

Rain.—A rare shower and once or twice in the winter a heavy downpour for an hour or two is all that occurs. The average rainfall for four winters was less than three-quarters of an inch. Hence for practical purposes Helwân may be considered rainless.

HELWÂN COMPARED WITH ASSOUAN

The resort in Egypt that resembles Helwân most closely in its climatic conditions is Assouan.

Assouan, however, is nearly 600 miles farther south, and within 35 miles of the Tropics.

It is warmer than Helwân by 8.4° F. daily average;

It is drier, as 28 is to 30 (absolute humidity[1] calculated as grains of aqueous vapour in 10 cubic feet of air); but

It is more variable by 6.2° F. daily average;

It is windier, as generally known and proved by the anemometer;

[1] Dr. Leigh Canney, of Assouan.

It is dustier, partly owing to more wind, partly owing to the nature of the soil;

It has more sunshine, and being close to the Tropics the sun-heat is much more intense.

METEOROLOGICAL TABLES

The following tables, obtained from the Royal Meteorological Society by the kindness of Mr. Marriott, and giving results so far procurable for the same four winter months, are particularly interesting, and show in a striking manner the enormous advantages of Helwân as a winter station.

Helwân.

Years and Months.	Temperature.				Humidity.	Rainfall.		Sunshine.
	Mean.		Extremes.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.		Inches		Hours.
1896, Nov.	79.1	58.7	88.4	51.0	...	0	...	258.25
1897 ,,	69.52	51.20	79.2	47.0	...	...	...	250.31
1898 ,,	75.96	59.47	87.6	52.2	...	.127	3	264.79
1899 ,,	74.2	56.1	86.0	50.8	...	0	...	253.4
Mean .	74.69	56.36	85.02	50.02	...	...	...	256.59
1896, Dec.	73.0	51.0	86.4	43.0	...	.4362	...	257.62
1897 ,,	64.98	45.83	68.8	31.8	...	.06	...	244.6
1898 ,,	65.72	48.74	85.4	40.4	...	.13	...	249.50
1899 ,,	66.84	49.42	78.8	44.0	...	.385	...	250.73
Mean .	67.63	48.74	79.31	39.53	...	...	...	250.61
1897, Jan.	67.3	47.5	78.0	43.4	...	.020	...	213.5
1898 ,,	62.32	41.92	66.8	32.0	...	.45	...	225.17
1899 ,,	63.52	44.94	67.4	39.4	...	...	...	232.56
1900 ,,	65.21	45.40	75.6	38.0	...	.21	...	236.80
Mean .	64.58	44.94	71.54	38.2	...	...	...	227.0
1897, Feb.	66.9	47.1	78.0	43.4	...	.005	...	229.30
1898 ,,	70.41	45.38	85.8	41.0	...	...	...	234.47
1899 ,,	68.34	47.83	78.4	41.4	...	.41	...	225.35
1900 ,,	69.02	50.6	76.0	45.2	...	.65	...	218.26
Mean .	68.66	47.72	79.28	42.52	...	...	...	226.84
1897, Mar.	74.5	50.2	88.8	45.0	...	.010	...	291.12
1898 ,,	75.21	50.82	98.6	43.2	...	.14	...	284.12
1899 ,,	76.43	51.84	98.8	30.2	...	.15	...	280.24
1900 ,,	76.09	54.1	97.5	43.5	...	...	...	301.14
Mean .	75.55	51.74	95.31	40.4	...	...	...	289.15

LONDON.

Years and Months.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Means.		Extremes.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		Hours.
1895, Nov.	53.1	41.7	64.0	31.0	89	3.01	18	36.0
1896 ,,	46.0	34.7	51.0	26.0	88	1.15	9	41.7
1897 ,,	51.3	40.2	61.0	28.0	89	1.07	13	18.5
1898 ,,	52.4	40.6	61.0	29.0	89	2.58	13	36.5
Mean .	50.2	39.3	59.3	28.5	89	1.95	18	33.2
1895, Dec.	45.0	34.9	56.0	26.0	90	2.24	17	16.5
1896 ,,	44.1	34.3	52.0	25.0	91	3.18	22	13.4
1897 ,,	46.6	35.9	57.0	23.0	86	2.24	16	24.3
1898 ,,	50.4	40.4	58.0	27.0	86	2.62	11	29.1
Mean .	46.7	36.4	55.8	25.3	88	2.57	17	20.8
1896, Jan.	45.2	35.9	52.0	27.0	89	.79	12	15.1
1897 ,,	40.1	32.3	47.0	22.0	90	2.00	18	17.9
1898 ,,	47.7	38.9	55.0	29.0	86	.78	11	15.7
1899 ,,	48.5	37.5	56.0	29.0	88	2.57	20	45.2
Mean .	45.4	36.2	52.5	26.8	88	1.54	15	23.5
1896, Feb.	46.2	34.5	57.0	24.0	89	.39	9	43.3
1897 ,,	48.3	38.8	58.0	20.0	87	2.27	14	28.0
1898 ,,	47.1	35.3	56.0	25.0	86	1.18	14	47.4
1899 ,,	49.7	36.1	66.0	22.0	88	2.05	12	59.5
Mean .	47.8	36.2	59.3	25.0	88	1.47	12	44.6
1896, Mar.	53.2	39.6	69.0	31.0	83	3.16	23	63.2
1897 ,,	52.4	39.3	64.0	29.0	80	3.52	18	97.9
1898 ,,	47.4	33.8	60.0	27.0	84	1.33	12	69.3
1899 ,,	50.6	32.3	61.0	22.0	85	.43	6	88.6
Mean .	50.9	36.3	63.5	27.3	83	2.11	15	79.8

London.

Month.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Means.		Extremes.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		Hours.
Nov.	50.2	39.3	59.3	28.5	89	1.95	18	33.2
Dec.	46.7	36.4	55.8	25.3	88	2.57	17	20.8
January	45.4	36.2	52.5	26.8	88	1.54	15	23.5
February	47.8	36.2	59.3	25.0	88	1.47	12	44.6
March	50.9	36.3	63.5	27.3	83	2.11	15	79.8

Denver.

Month.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Means.		Extremes.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		
Nov.	50.5	24.5	75.3	0.5	48	.37	4	...
Dec.	44.5	24.0	64.8	4.8	48	.49	4	...
January	44.0	18.0	61.8	−5.5	51	.42	4	...
February	43.8	18.8	63.5	1.3	53	.55	6	...
March	48.3	23.0	70.3	0.0	53	.93	9	...

DENVER.

Years and Months.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Mean.		Extreme.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		
1895, Nov.	50	26	75	2	45	.27	2	...
1896 ,,	50	22	75	−9	40	.10	2	...
1897 ,,	54	28	77	7	54	.24	4	...
1898 ,,	48	22	74	2	51	.85	7	...
Mean .	50.5	24.5	75.3	0.5	48	.37	4	...
1895, Dec.	46	42	69	29	41	.01	1	...
1896 ,,	52	26	68	18	41	.31	2	...
1897 ,,	41	16	62	−8	53	.63	8	...
1898 ,,	39	12	60	−20	55	.99	4	...
Mean .	44.5	24.0	64.8	4.8	48	.49	4	...
1896, Jan.	52	23	67	0	44	.25	4	...
1897 ,,	39	15	59	−14	55	.58	4	...
1898 ,,	41	17	63	−3	53	.20	2	...
1899 ,,	44	17	58	−5	50	.65	7	...
Mean .	44.0	18.0	61.8	5.5	51	.42	4	...
1896, Feb.	50	26	68	9	46	.24	3	...
1897 ,,	43	20	65	8	54	.82	9	...
1898 ,,	51	25	65	10	49	.68	4	...
1899 ,,	31	4	56	−22	64	.58	9	...
Mean .	43.8	18.8	63.5	1.3	53	.55	6	...
1896, Mar.	50	25	76	0	60	1.43	9	...
1897 ,,	47	24	69	5	53	.90	9	...
1898 ,,	50	22	67	0	42	.28	7	...
1899 ,,	46	21	69	5	57	1.10	10	...
Mean .	48.3	23.0	70.3	0.0	53	.93	9	...

NICE.

Years and Months.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Mean.		Extreme.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		
1895, Nov.	59.8	47.6	75	36	82	1.98	10	...
1896 ,,	55.3	42.8	64	37	71	5.48	8	...
1897 ,,	58.9	45.1	68	36	71	.79	3	...
1898 ,,	60.5	49.2	70	41	72	6.96	11	...
Mean .	58.6	46.2	69.3	37.5	74	3.80	8	...
1895, Dec.	52.6	39.3	61	32	73	2.02	7	...
1896 ,,	52.6	40.5	61	32	71	9.45	9	...
1897 ,,	52.1	39.7	59	30	71	6.83	11	...
1898 ,,	55.0	40.5	68	31	66	.76	5	...
Mean .	53.1	40.0	62.3	31.3	70	4.77	8	...
1896, Jan.	51.7	36.2	61	28	65	.00	0	...
1897 ,,	49.5	37.8	57	23	69	4.30	12	...
1898 ,,	54.6	41.6	63	36	68	1.43	5	...
1899 ,,	54.5	40.9	64	34	68	2.08	7	...
Mean .	52.6	39.1	61.3	30.3	68	1.95	6	...
1896, Feb.	53.5	38.4	61	32	69	.28	3	...
1897 ,,	57.5	41.3	70	30	69	.16	1	...
1898 ,,	54.5	38.5	64	33	63	1.26	2	...
1899 ,,	55.0	40.5	64	32	78	1.38	5	...
Mean .	55.1	39.7	64.8	31.8	70	0.77	3	...
1896, Mar.	61.2	44.0	68	34	65	.39	2	...
1897 ,,	58.7	43.3	72	34	74	1.58	4	...
1898 ,,	55.9	41.5	66	30	71	4.89	10	...
1899 ,,	58.3	42.4	72	32	63	2.18	4	...
Mean .	58.5	42.8	69.5	32.5	68	2.26	5	...

ALGIERS.

Years and Months.	Temperature.				Relative Humidity.	Rainfall.		Sunshine.
	Mean.		Extreme.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per Ct.	Inches.		
1895, Nov.	23.6	16.3	28.6	...	69	16.7	7	...
1896 ,,	18.4	11.6	24.2	8.0	63	247.8	18	...
1897 ,,	22.3	15.6	28.7	10.8	61	22.9	10	...
1898 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1895, Dec.	19.4	12.6	25.0	7.2	65	88.2	12	...
1896 ,,	16.9	10.7	22.6	7.2	63	108.7	21	...
1897 ,,	17.9	10.6	22.0	5.9	66	135.5	12	...
1898 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	..	...	...	...	...
1896, Jan.	16.5	9.9	21.8	3.0	67	85.6	12	...
1897 ,,	17.1	9.8	27.6	5.4	54	73.6	16	...
1898 ,,	...	...	...	...	..	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1896, Feb.	17.4	10.2	25.0	7.8	61	18.6	7	...
1897 ,,	17.4	10.5	22.4	7.5	67	66.7	9	...
1898 ,,	...	...	...	...	...	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1896, Mar.	19.4	11.7	26.2	7.2	64	50.4	12	...
1897 ,,	21.4	12.8	30.4	9.4	55	14.0	4	...
1898 ,,	...	...	...	...	...	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...

Davos Platz.

Months and Years.	Temperature.				Relative Humidity Mean of 7.19.	Rainfall.		Sunshine.
	Mean.		Extreme.			Total Fall.	No. of Days.	
	Max.	Min.	Max.	Min.				
	Degs.	Degs.	Degs.	Degs.	Per C.	Inches.		Hours.
1895, Nov.	−2.3	...	19.0	−10.8	77	33	5	...
1896 ,,	−2.9	...	12.2	−13.6	87	27	8	...
1897 ,,	−0.3	...	12.6	−14.4	75	15	3	...
1898 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1895, Dec.	−5.2	...	4.8	−16.8	89	163	17	...
1896 ,,	−5.2	...	5.0	−15.4	94	31	12	...
1897 ,,	−6.4	...	4.6	−15.7	84	29	8	...
1898 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1896, Jan.	−8.8	...	1.8	−20.8	89	45	6	...
1897 ,,	−6.7	...	5.0	−19.8	83	21	7	...
1898 ,,	...	...	...	...	...	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1896, Feb.	−5.1	...	6.3	−13.4	82	34	5	...
1897 ,,	−2.2	...	8.4	−15.0	82	97	15	...
1898 ,,	...	...	...	...	...	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...
1896, Mar.	−0.4	...	10.8	−13.6	82	191	14	...
1897 ,,	−0.3	...	11.9	−11.4	80	74	17	...
1898 ,,	...	...	...	...	...	...	...	...
1899 ,,	...	...	...	...	...	...	...	...
Mean .	...	...	...	...	...	...	...	...

SECTION V

THE BATHS AND MINERAL WATERS OF HELWÂN

Helwân's Bath Establishments.—These are the property of the Egyptian Government, who take an active control and interest in them, and have appointed a Resident English Medical Director.

The baths were let on lease in 1899 to the George Nungovich Company.

The old baths, which were entirely renewed at a large expenditure four years ago, and which were the only baths then in existence at Helwân, are now reserved merely for second-class patients. The advantages of this arrangement, both for the first and second-class patients, are obvious.

The sulphur waters in use here are identical with those in the new baths, situated a hundred yards away.

Tariff for bath and linen—6 piastres (1s. 2d.).

The new bath establishments were planned in 1897–1898 by the Resident English Medical Officer, under the initiative of Mr. Felix Suares, and after being approved by the Public Works Department of the Egyptian Government, were put into execution. The architect was the late Mons. Bottigelli, and

Messrs. Suares undertook to finance the concern and carry out a certain stipulation formulated by the Public Works Department under Sir William Garstin, K.C.M.G.

It is no exaggeration to say that the new bath establishment, which was officially opened by H.H. the Khedive in December 1899, is equal to anything of its kind in Europe, and even superior to many well-known bath establishments.

The land on which it is built was given freely by the Egyptian Government, and the establishment has been built on Oriental lines, with Eastern magnificence.

It is unusually well lighted and ventilated, and whilst there is not a step in the whole building, it embodies the latest and best hygienic ideas. It contains a large verandah, fine entrance-hall and dome, immersion baths (large and small), about thirty separate dressing rooms, needle baths and douches of all kinds, electric, vapour, steam, and hot-air baths, dry and wet inhalation, with waiting rooms, cooling rooms, and every kind of convenience.

Owing to the powerful action of the sulphur and salt waters it was found impossible to employ any of the ordinary metals, and so aluminium pipes and taps have been used.

A glance at the photograph accompanying this will give a good idea of the general arrangements and comfort which these baths offer.

Immersion baths (thirty-four large and small); some in porcelain, some in white glazed tiles, and two so large as to be practically swimming baths.

Douches, column, rain or needle, for the whole body, spine, or part of the body.

Steam or vapour baths, general or local, made by Berthe, of Paris.

Hot-air baths, general or local. System—Berthe or electric.

Inhalations of the sulphur-saline water, or medicaments.

Pulverisations of sulphur-saline water.

Dry inhalation, as at Marlioz, Wiesbaden, &c.

Electric baths.

Aix-douche massage.

Helwân Special Baths, in which, whilst the body of the patient is immersed in sulphur-water running over him at any desired temperature, massage by one, two, or more masseurs can be carried out.

Experienced European masseurs and masseuses are in attendance.

There is a small but well-equipped café in the establishment, and visitors can obtain any kind of light refreshments.

Medical Director for the Egyptian Government—Dr. Page May. General Manager—Herr Springer.

HELWÂN-LES-BAINS

The New Baths (central portion)

Page 64

HELWÂN-LES-BAINS

H.H. the Khedive leaving after officially opening the New Baths, Dec. 1899

THE MINERAL SPRINGS

It is on record that the waters of Helwân were sought for their healing properties at least as early as the time of Amen-hotep (1600 B.C.), and probably long before that. From that time to the present, waves of Egyptians, Persians, Syrians, Romans, Greeks, and Europeans have sought their aid, though the difficulty of access and absence of suitable accommodation, until the last few years, have prevented Europeans visiting them except in quite small numbers. The waters may be divided into three groups, viz.: sulphur and saline; salt waters; chalybeate waters; which burst forth in several springs at a temperature of 91° F. (33° C.), and are so abundant that they are allowed to run to waste day and night. Three of the sulphur springs near the baths are reserved exclusively for use at the bath establishment; one of the springs gives twelve gallons of sulphur-saline water a minute; the other two give similar quantities, and are in the bath establishment itself. The chief water employed at the bath establishment is the sulphur and saline, and is used unaltered except as regards its temperature, which can be regulated at will. Its analysis, which the author obtained from Professor Attfield, F.R.S., is given in Table, page 66.

Analytical Data.—Grains per gallon: potassium, 10.7100; sodium, 139.5100; calcium, 24.5280; magnesium, 6.9300; iron and alumina, 1.1200; silica (SiO_2), 2.0300; sulphuric radical (SO_4), 31.9830;

chlorine, 225.0710; carbonic radical (CO_3), 34.6500; and sulphuretted hydrogen (H_2S), 6.4260. Total dissolved substances in grains per gallon—that is, parts per 70,000 parts—482.9580.

Table showing Analysis of the Sulphur Water of Helwân-les-Bains, by Professor F. Attfield, F.R.S. (Oct. 30, 1896).

Dissolved solids.	Grammes per litre.	Grains per gallon.
Potassium chloride . . .	0.2923	20.4610
Sodium chloride . . .	5.0690	354.8:00
Calcium sulphate . . .	0.0694	4.8580
Calcium carbonate . . .	0.8250	57.7500
Magnesium sulphate. . .	0.5069	35.4830
Iron and alumina . . .	0.0160	1.1200
Silica	0.0290	2.0300
Sulphuretted hydrogen . .	0.0918	6.4260
Total dissolved solids .	6.8994	482.9580

Table showing Analysis of the Saline Carbonated Iron Water of Helwân-les-Bains, by Professor F. Attfield, F.R.S. (Oct. 30, 1896).

Dissolved solids.	Grammes per litre.	Grains per gallon.
Potassium chloride . . .	0.2862	20.0340
Sodium chloride . . .	4.7050	329.3500
Calcium sulphate . . .	0.7340	51.3800
Calcium carbonate . . .	0.5157	36.0990
Magnesium sulphate . .	0.3613	25.2910
Iron and alumina . . .	0.0150	1.0500
Silica	0.0350	2.4500
Total dissolved solids .	6.6522	465.6540

CAMELS PASSING THE GOLF CLUB

Page 66

SWIMMING BATHS

Gentlemen's large open-air Swimming Bath, over 60 yards long and 25 broad, graduated in depth from 7 to 3 feet, contains sulphur and salt water, which is running day and night, and of an average temperature of 70° to 75° F. (39° to 42° C.). Bathing in this is at least as invigorating as bathing in the sea, and is wonderfully stimulating and strengthening to the hair.

The Ladies' Swimming Baths, similar to and adjoining the other, is about two-thirds the size.

TARIFF OF BATHS

Swimming and linen, 2 piastres (4½d.).

Second-class baths and linen, 6 piastres (about 1s. 1d.).

First-class baths and linen, about 10 piastres.

Electric and more complicated baths, from 10 to 20 piastres.

Douche and linen, 5 piastres.

Additional towels, 1 piastre.

WATER SUPPLY

Helwân enjoys a "constant supply" of admirable water, which is pumped up from the Nile, at a place 18 miles above Cairo, and supplied for toilet and drinking purposes at the chief hotels, through Pasteur-Chamberland filters. It is quite excellent.

SECTION VI

SUITABILITY OF HELWÂN IN SPECIAL CASES

It will be obvious that Helwân offers during the winter months exceptional advantages to those in search of health or rest and change.

The two chief factors are of course the climate (with the various influences included under that term) and the thermal waters; but to them should be added the powerful influence exerted on the body through the mind by the unfamiliar surroundings and the unique interest of Eastern life and the remains of Egypt's former greatness.

The climate, as pointed out above, is a desert climate, and therefore dry and invigorating, and during the winter months almost ideal from the point of view of the seeker after health.

From its geographical position, there can be no winter climate in Europe, nor even in Algiers, which is very considerably north of Egypt, to compare with that of the Egyptian Desert.

MEDICAL INDICATIONS

It is evident that by residence in such a warm, dry, equable climate, with air unusually free from dust

A Village Street

Page 68

and germs, with abundance of sunshine and practical immunity from rain, mist, or snow, with healthy mental occupation and surrounded by the resources of civilisation, sufferers from early chest trouble, enlarged glands, scrofula, renal disease, and albuminuria are likely to derive important benefit. Such conditions will obviously be very efficacious also to patients convalescent from severe illness, and to those who are anæmic and debilitated or in dubious health. Moreover, such a decided change as Helwân offers in physical and mental surroundings is of the greatest help in cases of functional diseases of the nervous system, especially if previously associated with overwork or mental strain. The thermal waters (sulphur, saline, and chalybeate), as pointed out above, may be used either internally or externally or combined. Judiciously employed they certainly exert an eliminative action, and are of distinct benefit in cases of gout, lithæmia, and allied conditions. They are useful also in cases of bronchial, laryngeal, and pharyngeal catarrhs, stasis of the portal system, and abdominal plethora, whilst sufferers from dyspepsia, engorgement of the liver and pelvic organs are often indirectly benefited, especially if their troubles are associated with a gouty or rheumatic diathesis.

Patients with rheumatoid arthritis distinctly improve. Egypt is par excellence the place for sufferers from that disease to winter in. Conditions such as sciatica, rheumatism, stiff joints, or arthritis, whether

affecting one joint or more widely diffused, nearly always undergo most marked improvement at Helwân, and in these cases it is difficult to apportion the amount of advantage derived from the waters and the peculiar warm, dry, desert air. Also, cases of chronic skin disease and special cases of debility are frequently much improved or cured by the use of the waters.

To sum up, Helwân is unique in Egypt in three important particulars and in what follows therefrom; viz., in being surrounded on all sides by the desert, in being not on the level of the Nile, but about 200 feet above it, and in the possession of thermal, sulphur, and muriated saline waters; moreover, so far as I know, no other resort within such easy reach of London possesses a combination of thermal sulphur waters, &c., and a warm dry climate during the winter months. Helwân possesses certain special characteristics, and undoubtedly if these are properly utilised must be of distinct benefit to a large number of persons.

The class of cases in which I have seen most marked improvement or cure take place are in rheumatic and gouty subjects with joint affections, cases of Bright's disease, and in pulmonary and asthmatic cases. Neurasthenics also do very well.

In conclusion, I can corroborate the testimony of Dr. Fenyes, who was for some years in practice at Helwân, and who has not seen a single case of

RAISING WATER BY A SHADOUF

Page 70

diphtheria, dengue, malaria, or so-called specific disease, which had originated in Helwân.

Invalids are strongly recommended to consult their medical man before leaving home, and if they wish to obtain the best results, to place themselves on arrival under medical advice.

SECTION VII

HOTEL AND PENSION ACCOMMODATION

THE hotel and pension accommodation for visitors at Helwân will be found second to that of no place in Egypt, not even Cairo, with its palatial establishments.

First and foremost must be mentioned the GRAND HOTEL, in which year by year considerable improvements have been made. The public rooms are well arranged, and include a good billiard-room and a well-stocked library; the sanitary arrangements are excellent. There is a lift; also tennis-courts, &c. The cuisine is first-class. The hotel is under the management of the George Nungovich Company, who also control the Savoy and the Grand Continental, among other hotels in Cairo of world-wide repute.

The situation of the Grand Hotel at Helwân has many conveniences; it is within five minutes' walk of the railway station, and about the same distance from the baths, and less than ten minutes from the golf club-house. The view from the roof of the hotel, which is of course flat, after Oriental fashion, and from the rooms looking over the valley of the Nile, and on the Pyramids, is unique.

It was at the Grand Hotel that the late Duke of Saxe-Coburg and Gotha stayed during his visit to Helwân a few years ago.

A trained nurse (English) resides in the hotel.

A military or string band frequently plays on the terrace of the hotel during the season.

The HÔTEL DES BAINS, also under the management of the George Nungovich Company, is adjoining the baths. Although not on so large a scale, and offering cheaper accommodation than the Grand Hotel, the Hôtel des Bains has been found to be very comfortable and convenient. It is on the edge of the desert, and in a well-favoured position for watching the halts of the camel trains resting before resuming their journey down to the Nile.

The TEWFIK PALACE HOTEL is situated at the northerly end of the town, and also offers excellent accommodation. Previously a residence of H.H. Tewfik Pasha, it has been bought and modernised by Dr. A. J. M. Bentley, who was formerly the resident physician at the Mena House Hotel.

The ENGLISH WINTER HOME is kept by Miss Dodd, and is well spoken of.

Other institutions in the town include the Hôtel Heltzel (German) and the Pension Antonio. Furnished villas can also be hired.

Approximately the tariffs of the different establishments are as under :—

Grand Hotel, board and pension, from 12s. or 14s. a day ;

Hôtel des Bains, from 8s. a day;
Tewfik Palace Hotel, from 10s. a day;
Hôtel Heltzel, from 7s. or 8s. a day
Miss Dodd's, 10s. a day;
Pension Antonio, from 6s. a day.

Grand Helwân Hotel (Pyramids in Distance)


MEDITERRANEAN SEA
Rosetta Mouth
Damietta Mouth
ROSETTA
Aboukir Bay
Aboukir
Rumieh
ALEXANDRIA
Lake Burlos
DAMIETTA
Lake Etko
Derut
Dessuk
Lake Mareotis
Damanhour
Mansourah
Lake Menzaleh
PORT SAID
SUEZ CANAL & RAILWAY
Kantara
AbuBellah L.
Tanta
Saliahiyeh
Libyan Desert
R. NILE
Zagazig
ISMAILIA
L. Timsah
Tel-el-Kebir
Benha
Fresh Water Canal
Bitter Lakes
Bulak
CAIRO
Petrified Forest
ARABIAN HILLS
SUEZ
Pyramids
HELOUAN-les-Bains
Memphis
Sakkara
G. of Suez

A Sketch

SECTION VIII

HOW TO GET TO HELWÂN

It can be said with approximate truth that all roads on the high seas lead to Egypt. Visitors from the United States during the season have frequent opportunities of proceeding direct by special steamer under one of the numerous excursions arranged from time to time with characteristic American enterprise. Ordinarily, however, it is still open to those coming from the United States to land in Egypt without incurring any tedious delay in Great Britain waiting for transhipment.

From the subjoined table it will be seen that, apart from the course known as "long sea," which involves embarking in London or Plymouth or elsewhere, and proceeding direct to Egypt by water the whole way, those anxious to escape the Bay of Biscay may join their ship at Marseilles, at which port most of the big liners call, or may proceed overland either to Naples, to Genoa, to Trieste, or Brindisi. The option of one or other of these routes, either outward or homeward, of course affords opportunities, sometimes valuable, for breaking the journey. This is particularly useful in coming home, as tending to obviate the discomfort arising from too sudden a change of climate.

Alexandria may be said to be the most convenient port for disembarkation in Egypt. By this route the railway journey in Egypt to Cairo is shortened. Many of the big liners, however, proceed to Port Said, where passengers generally have the option of going on to Ismailia by water if desired. In reference to this matter, it is worth while pointing out that although to most people the opportunity of traversing the first half of the Suez Canal is one not to be missed, especially at night-time, when the moon is up over the desert and the search-lights are affixed to the bows of passing ships, still, there is one obvious disadvantage attaching to this course, namely, the absence of certainty as to the time of day or of night at which the passenger may reach Ismailia and be compelled to embark on the steam-launch with his baggage to convey him to the Customs Office on shore. For this reason some passengers prefer to get off at Port Said, at the entrance to the Canal. The railway journey from the latter place to Cairo averages about eight hours; that from Ismailia to Cairo about four hours. There is hotel accommodation both in Port Said and Ismailia for those who desire it.

A View in Cairo

Rates of Passage-Money from English and Continental Ports to Egypt.

From	Line.	Departures.	Alexandria. First. £ s. d.	Alexandria. Second. £ s. d.	Port Said. First. £ s. d.	Port Said. Second. £ s. d.	Ismailia. First. £ s. d.	Ismailia. Second. £ s. d.
London	P. & O.	Weekly	...	...	20 0 0	12 0 0	20 0 0	12 0 0
,,	Orient	Fortnightly	...	...	20 0 0	12 0 0	20 0 0	12 0 0
,,	British India	Weekly	...	...	17 0 0	11 10 0	...	...
Liverpool	Moss	Every 10days	14 0 0	9 0 0	...	...	...	..
,,	Papayanni	,,	14 0 0	...	...	..	...	...
,,	Bibby	Every 3 wks.	...	...	17 0 0	...	18 0 0	...
,,	Anchor	Fortnightly	...	...	12 0 0	...	13 0 0	...
,,	Hall	As advertised	...	...	15 15 0	10 10 0	...	...
,,	Clan	,,	...	...	15 0 0	...	...	...
,,	City	,,	...	...	14 0 0	...	15 0 0	...
Southampton	N'deutscher Lloyd	Fortnightly	...	...	17 17 0	10 4 6	...	...
Marseilles	P. & O.	Weekly	...	...	...	...	15 0 0	8 0 0
,,	Messageries	...	...	...	...	...	12 0 0	8 8 0
Genoa	Italian Nav. Co.	Fortnightly	...	...	12 18 0	8 17 0	14 4 0	9 17 0
,,	N'deutscher Lloyd	...	...	...	13 0 0	9 0 0	13 0 0	9 0 0
Naples	,, ,,	...	...	...	10 0 0	7 0 0	10 0 0	7 0 0
,,	Italian Nav. Co.	...	...	...	12 18 0	8 17 0	14 4 0	9 17 0
Brindisi	P. & O.	Weekly	...	...	10 0 0	...	...	...
,,	Italian Nav. Co.	Fortnightly	...	...	...	...	...	...
,,	Austrian Lloyd's	Weekly	10 0 0	7 0 0	...	...	...	...
Venice	Italian Nav. Co.	Fortnightly	...	...	...	...	...	...
Trieste	Austrian Lloyd's	Weekly	11 17 0	8 1 9	...	...	...	...
Constantinople	Egypt. Mail Steam.	Weekly	8 4 0	5 2 6	...	...	...	...

*** Through tickets are issued to Cairo, £20, 14s. first class, and £12, 7s. second class, by the P. & O. and Orient Companies.

Railway Fares from London to Continental Ports.

Viâ	Marseilles.						Genoa.						Naples.						Venice.						Brindisi.					
	First.			Second.			First.			Second.			First.			Second.			First.			Second.			First.			Second.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Boulogne or Calais & Mt. Cénis		...			...		7	8	0	5	1	10	11	8	10	7	18	5	8	14	6	6	0	4	12	8	8	8	12	3
Calais, Paris, and St. Gothard		...			...			...			...			...			...		8	14	0	6	2	2	12	11	0	8	16	2
Calais and Paris	6	13	11	4	11	7		...			...			...			...			...			...			...			...	
Boulogne and Paris	6	7	10	4	7	2		...			...			...			...			...			...			...			...	
Ostend, Cologne, and Vienna		...			...			...			...			...			...			...			..			...			...	
Newhaven, Dieppe, & Bologna		...			...			...			...			...			...			...			...		11	7	0	7	18	10
Newhaven, Dieppe, & Taranto		...			...			...			...			...			...			...			...		12	7	3	8	13	0
Newhaven and Dieppe . . .	5	12	3	3	18	2	6	6	4	4	8	4	11	1	4	7	14	10	7	12	9	5	6	11		...			...	

Railway Fares in Egypt.

	First.			Second.		
	£	s.	d.	£	s.	d.
Ismailia to Cairo	0	14	5	0	7	2
Port Said to Cairo	1	3	11	0	14	4
Alexandria to Cairo	0	18	0	0	9	0
Cairo to Helwân	0	1	0		...	

*** There are two trains daily from Ismailia to Cairo (97 miles), leaving 1.20 P.M. and 7.5 P.M., and several from Alexandria (130 miles).

Postage—Letters from Great Britain	2½d. per ½ oz.
Telegrams from Great Britain	1s. 10d. per word.
Letters to Great Britain	1 piastre per ½ oz., or 15 grammes.
Letters (Local)	½ piastre.
Telegrams to Great Britain	8 to 10 piastres per word.
Telegrams (Local)	2 piastres for eight words.

SECTION IX

SUPPLEMENTARY INFORMATION

English Church at Helwân.—Intending visitors to Helwân may be interested to hear that a site has been secured on which operations are now practically commenced for the erection of a permanent building in connection with the Church of England. For several seasons services have been conducted in the drawing-room of the Grand Hotel (by kind permission of the management), and this arrangement will be continued until the new building is completed. Former chaplains have included the Rev. W. Blake and the Rev. Linton Smith; the present chaplain is the Rev. W. Sadler. As the church in course of erection is the outcome of voluntary contributions, the need for which is still severely felt to enable the building to be opened free of debt, it is hoped that visitors and others will contribute to the cost involved.

The Committee (of which Lord Cromer and the Anglican Bishop in Jerusalem are patrons) includes: W. Bearcroft, Esq.; E. W. Wortabet, Esq.; the local chaplain; and Dr. Page May (honorary treasurer).

Contributions may be sent to the honorary

treasurer, to any member of the Committee, or to the credit of the Helwân Church Fund at the National Bank of Egypt, Cairo.

Cairo.—So many excellent books have been written on Cairo that it is unnecessary to recapitulate here. The omnibuses of all the chief hotels meet the principal trains at the station, and the hotel porters await on the platform the arrival of visitors; also the agents of Messrs. Cook, Gaze, &c. Cabs (arabeeahs) are always to be had. The chief hotels in Cairo are the Ghizereh Palace, Savoy, Grand Continental, Angleterre, Shepheard's, Bristol, and Hôtel du Nil, their expense being roughly in the order given. The drive from the Cairo railway station to the railway for Helwân takes about ten minutes. The station in Cairo for Helwân is called Bab el-Louk, and trains leave there (see time-table) about every hour through the day till 12.20 A.M. At Helwân the Grand Hotel omnibus and hotel porters meet all trains. Visitors going to Helwân, and making only one stay in Cairo, should visit Helwân first, because Cairo gets progressively drier and healthier from the time of the high Nile in September till the following June. A special train or carriage can always be arranged for direct from Helwân to Cairo and the main-line railway system (or *vice versa*). The cost is about £6 to £10, depending on the number of passengers. The train passes then from the Cairo main-line station through Abbasieh, east of the Cairo citadel, and joins the Helwân line at Turah. The time occupied is usually about

forty minutes. The other and usual way (driving across Cairo) is, of course, perfectly easy, and only costs a few piastres.

WHAT TO SEE IN CAIRO AND ROUND ABOUT

The Citadel, the Alabaster Mosque, and Joseph's Well.
The Bazaars.
The University.
The Howling Dervishes (Fridays).
The Mosques and the Coptic Churches.
Esbekieh Gardens.
Tombs of the Khalifs.
Tombs of the Mamelukes.
The Aqueduct (Old Cairo).
Rhoda Island (for the Nilometer and Moses' Tree).
Giza Museum (closed on Mondays).
Giza Gardens.
Ostrich Farm (Matarieh).
Obelisk of Heliopolis (two miles from Matarieh).
The Petrified Forests.
The Barrage (for regulating the volume of Nile water).
The Sphinx and Pyramids—rather more than an hour by carriage or tram.

EGYPTIAN CURRENCY

The standard coin in Egypt is the piastre, of the value of about twopence-halfpenny or five cents. One, two, five, ten, and twenty piastre-pieces are mostly in use. The rate of exchange averages about 97½ piastres to the English sovereign and 77 piastres to the napoleon.

BRITISH AGENT IN EGYPT

Lord Cromer, The Agency, Cairo.

CLUBS IN CAIRO

CLUB KHEDIVIAL.
22 Sharia el-Manakh.

TURF CLUB.
Sharia el-Maghraby.

KHEDIVIAL SPORTING CLUB.
Ghezireh.

Patron—His Highness the Khedive.

The Khedivial Sporting Club Grounds for polo, cricket, pigeon-shooting, lawn tennis, golf, race meetings, and other sports at Ghezireh are open to visitors to Cairo who care to join the Club on the introduction of a resident member, for either the whole or a portion of the winter season.

The subscription for a visiting playing member is—

From Nov. to April	P.T. 300 (£3)
From Jan. to April	P.T. 200 (£2)
For a month or less	P.T. 100 (£1)

For non-playing members—

for the season	P.T. 100
or	P.T. 50 a month

BANKS IN CAIRO

The Anglo-Egyptian (Sharia Kasr el-Nil).
The Bank of Egypt (Sharia Kasr el-Nil).
The Crédit Lyonnais (Sharia Esbekieh).
The Imperial Ottoman (Sharia el-Maghraby).

ALEXANDRIA, CAIRO, PORT SAID, ISMAILIA, LUXOR, AND ASSOUAN TRAIN SERVICE

TIME-TABLES, WINTER 1900–1901

Alexandria ↓	A.M. 7 10	P.M. 2 0	P.M. 4 15	P.M. 10 45	A.M. 11 15	P.M. 12 38	P.M. 8 3	A.M. 6 15
Cairo . .	P.M. 12 34	P.M. 8 55	P.M. 7 34	A.M. 6 15	A.M. 7 30	A.M. 9 30	P.M. 4 45	P.M. 10 45
Port Said. ↓	A.M. 8 50	P.M. 3 10	...	...	...	A.M. 11 37	P.M. 7 7	...
Ismailia .	P.M. 12 7	P.M. 6 2	...	...	...	A.M. 8 20	P.M. 4 17	...
Ismailia . ↓	P.M. 12 50	P.M. 7 0	...	...	P.M. 3 47	P.M. 11 5	...	...
Cairo . .	P.M. 4 35	P.M. 10 40	...	...	Noon. 12 0	P.M. 7 0	..	...
Cairo . . ↓	A.M. 8 0	P.M. *6 30	P.M. 8 0	...	A.M. 9 26	A.M. 7 22	A.M. 8 56	...
Luxor . .	P.M. 11 40	A.M. 9 5	A.M. 10 20	...	P.M. 5 30	P.M. 5 0	P.M. 6 0	...
Luxor . . ↓	A.M. 4 25	A.M. 11 30	...	...	P.M. 12 55	P.M. 3 15	...	...
Assouan .	P.M. 12 45	P.M. 7 15	...	...	A.M. 3 0	A.M. 8 5	...	...

* Luxe.—Tuesday, Thursday, and Saturday.

CAIRO (BAB EL-LOUK) AND

NOVEMBER

Departs de Bab el-Louk (*Cairo*)

N. des Trains	Bab el-Louk	Saida Zenab	Foum el-Khalig	Old Cairo	Sahel el-Ebli	Meadi	Turah	Massarah	Helwân
Dep. matin	...	...	...	..	...	...	...	...	Arr. ...
2 ,,	6 50	6 54	6 58	7 3	7 10	7 14	7 20	7 30	7 40
4 ,,	8 6	8 12	...	8 18	8 23	8 27	8 33	...	8 50
6 ,,	9 0	9 3	...	9 10	...	...	9 20	9 30	9 40
8 ,,	10 10	10 13	10 17	10 21	...	10 30	10 36	10 45	10 55
10 soir	12 10	12 13	...	12 20	...	...	12 30	...	12 45
12 ,,	1 15	...	...	...	...	...	1 30	...	1 45
14 ,,	2 10	2 13	2 17	2 21	...	2 28	2 35	2 45	2 55
16 ,,	3 10	...	...	...	...	...	3 27	...	3 42
18 ,,	4 10	4 13	...	4 20	...	4 27	4 32	4 41	4 50
20 ,,	5 10	...	...	...	...	...	5 27	...	5 42
22 ,,	6 10	6 13	...	6 20	...	...	6 30	...	6 45
24 ,,	7 15	...	...	...	...	...	+	...	7 41
26 ,,	8 30	8 33	...	8 40	...	8 47	8 53	9 3	9 45
28 ,,	10 10	10 13	...	10 20	...	...	10 30	...	10 45
30 ,,	12 20	12 23	...	12 30	...	...	12 40	...	12 57

N.B.—*Ne seront admis dans les deux trains, No. 3 et 24, que les abonnés à ces deux classes. Le train No. 22 s'arrêtera les Dimanches*

N.B. Tous les Mardis et les Jeudis de chaque semaine, pendant Bab el-Louk à 12 h. 45 au lieu de 12 h. 20.

HELWÂN TRAIN SERVICE

1900

Departs de Helwân

N. des Trains	Helwân	Massarah	Turah	Meadi	Sahel el-Ebli	Old Cairo	Foum el-Khalig	Saida Zenab	Bab el-Louk
Dep. matin	6 0	..	6 16	...	...	6 30	...	6 38	Arr. 6 40
1 ,,	7 0	7 9	7 18	7 25	...	7 35	7 39	7 43	7 45
3 ,,	7 50	...	...	...	...	...	...	...	8 15
5 ,,	8 17	...	8 32	8 37	...	8 45	...	8 53	8 55
7 ,,	9 5	...	9 20	...	...	...	...	...	9 35
9 ,,	10 15	10 25	10 35	10 41	10 45	10 51	10 55	11 3	11 5
11 ,,	12 15	12 24	12 32	12 38	...	12 48	...	12 57	1 0
13 soir	1 10	1 20	1 30	1 36	...	1 42	...	1 50	1 52
15 ,,	2 20	...	2 35	...	...	...	...	...	2 52
17 ,,	3 8	3 18	3 27	3 33	...	3 41	...	3 50	3 52
19 ,,	4 15	...	4 31	...	4 41	4 46	4 50	4 55	4 58
21 ,,	5 8	5 18	5 27	5 34	...	5 42	..	5 52	5 55
23 ,,	6 15	...	6 30	...	...	...	...	...	6 47
25 ,,	7 5	7 15	7 24	7 30	.	7 36	...	7 43	7 45
27 ,,	8 35	...	8 52	8 57	...	9 5	...	9 13	9 15
29 ,,	11 0	...	11 16	...	..	11 25	..	11 33	11 35

voyageurs porteurs de billets de 1re et 2me classe seulement et les à Massarah au lieu du train No. 18.

la saison théâtrale à l'Opéra Khédiviale, le dernier train partira de

ARABIC VOCABULARY

English is used everywhere in the Hotels of Cairo and Helwân, and is generally understood at all places *en route*. A short Arabic vocabulary, however, is here appended for those who may find it helpful in making themselves understood by Arab servants, porters, &c.

NUMERALS.

one	*wahed*
two	*etnegn*
three	*telata*
four	*arba'a*
five	*khamsa*
six	*sitte*
seven	*seba'a*
eight	*temanieh*
nine	*tissa'a*
ten	*asherah*
eleven	*hedasher*
twelve	*etnasher*
thirteen	*telatasher*
fourteen	*arbatasher*
fifteen	*khamstasher*
sixteen	*sittasher*
seventeen	*sebatasher*
eighteen	*temantasher*
nineteen	*tissatasher*
twenty	*ashereen*
twenty-one	*wahed wa ashereen*
thirty	*telateen*
forty	*arbaeen*
fifty	*khamseen*
sixty	*sitteen*
seventy	*sebaeen*
eighty	*temaneen*
ninety	*tissaeen*

hundred	*meeyeh*
thousand	*elf*
the first	*el owwd*
the second	*et-tani*
the third	*et talet*
the fourth	*er rabit*
one piastre	*wahed irrsch*
two piastres	*irrschegn*
three „	*telata geroosch*
four „	*arba'a* „
five „	*khamsa* „
ten „	*asherah* „
eleven „	*hedasher irrsch*
one shilling	*wahed shilling*
one franc	*wahed franc*
ten shillings	*asherah shilling*, or,
„	*temanieh wa arbaeen irrsch wa nōs*
one pound	*wahed guinée Ingleez*, or,
„	*seba wa tisaeen irrsch wa nōs*

RAILWAY.	ES SICCA HADEED.
When does the train start for Cairo, Helwân?	*Aymta es-safir el waboor ala shan Masr, Helwân?*
How long do you stop here? Remain in Zagazig?	*Kam da'ee'ye isita tistanna hena? Tifdal fee Zagazig?*
One minute; two minutes; three minutes; five minutes.	*Wahed da'ee'ye; daeeyeteyn; tetata deēiya; khamsa deēiya.*
A quarter of an hour; half-an-hour; an hour.	*Robah saah; noss saah; wahed saah.*
Only a little. Not much. It starts at once.	*Bass shwyeh. Moosh keteer. Ysāfir dilwakhti.*
Weigh my luggage, if you please. Here is my ticket.	*Wizn el afsh bitāi, aymil māaroof. Hena il tazkara bitai.*
I want three tickets first-class, and one second.	*Awiz telata tazākir owwd durage, wa wahed ettani durega.*
A return ticket.	*Tazkara raih wa gaih.*
Where is the station-master?	*Fain el wakeel el mahattah?*
Which is my carriage? Is this my place?	*Fain il arabeeah bitai? Deh il matrah bitai?*
When do we arrive in Cairo?	(*Ehna*) *nosul fee masr aymta?*

ARRIVAL.	
Hi! Here!	*Inta! Henna!* (or *Taāla Henna!*).
Take this. Yes. No. Not good. Not nice.	*Hōt dee. Aīwa. La. Moosh tayyib. Moosh kwyyes.*
I want a porter, a carriage, a donkey, a horse.	(*Ana*) *Awiz shayyāl, arabeēah, homār, hossān.*
Come with me.	*Taāla weyāya.*
Here is my luggage. Where is the hotel—Hassan?	*Hena el afsh bitai. Fain el locanda—Hassan?*
I have three boxes, one basket, and one case.	(*Ana*) *Andi telata sanadeek* (*sandook*, singular), *wahed sabat, wa wahed shantah.*

Who are you? What is your name? What is he called?	*Inta meen? Ismak ayh? Ismoo ayh?*
Where do you come from? I am Mr. ——	*Inta geet min fayn? Ana Mr. ——*
Be quiet. Wait here for me, for him, for her, for us.	*Oscot. Stanna (or ifdal) hena ala shani, ala shano, ala shanha, ala shana.*
Go with him—with this lady.	*Rooh weeyo—weeya es sitt dee.*
Be careful. Do not break it. Gently.	*Dēr ballak. Ma tekassaroosh. Shwyeh shwyeh.*
Drive to the post-office, the telegraph, the hotel, the station.	*Sook lil Bosta, lil Telegraph, lil locanda, lil mahattah.*
I want a carriage. Put down the hood.	(*Ana*) *Awiz arabeeyah. Nazil il Capote.*
Go away. Stop. Wait here. Turn round.	*Imshi. Istanna. Ifdal hena. Dowwer (or howwid).*
I am going to Helwân, to Cairo, to the steamer.	(*Ana*) *raih lil Helwân, lil Masr, lil waboor (el markib).*
I want to change this money.	(*Ana*) *awiz isrif el feloos deh.*
What does this cost? It is very dear—not cheap.	*Deh yisrif kam? (or, tammano ayh?) (or, bikam deh?). Deh rhalle keteer—moosh rakhees.*
Please. Do me the favour.	*Min fadlak. Aymil māaroof.*
Thank you—very much. I am much obliged to you.	*Kattar kheirak—keteer. Mamnoonlak keteer.*
Good-day. Good-night. How are you?	*Neharak saiēed. Lailtak saieeda. Izayyak?*
At what time does the train start for Cairo?	*El waboor (or k'attr) ala-shan Masr ysafir es saah kam?*
When does the steamer start?	*El waboor (el markib) ysafir aymta?*
Show me the way. He is coming. He is not coming.	*Warreene es Sikka. Huwa raih. Huwa moosh raih.*
Are there?—any letters for me? Have you any?	*Fee?—gawabat ala shani? Fee andak?*
There are not.	*Ma feesh.*

I am coming now, presently, later.	*Ana agi dilwakti, bad shwyeh, ba'edayu.*
This is good, nice, very nice, not nice.	*Deh tayyib, kwyees, kwyees keteer, moosh kwyees.*
That is bad, large, very small.	*Deh battāl, kebeer, zwăyyer khaliss.*
Do not forget. Ask the waiter.	*Ma tensash. Isaal es soofragi.*
Here is the key. Untie this. Bind this with rope.	*Hena el miftah. Fig deh. Orbot deh weeye habl.*
Leave that. Take that. Cut this.	*Khallee deh. Imsik dekha. Ikta deh.*
Be quick. Run. There is no time.	*Ikhlass. Igri. Ma feesh wakt.*
Tell him to come, to-day, to-morrow, the day after to-morrow.	*Ullo yegi, ennehardeh, bukra, bade'bukra.*
I do not understand. Do you understand?	*Mafehemsh* (or vulgar, *moosh fahim*). *Inta fahim?*
Have you seen? Yes, yesterday, the day before yesterday.	(*Hal*) *inta shoft? Aiwa, embarih, owwd embareh.*
Do you know? Do you not know?	*Ta'araf? Ma ta'arafsh?*
Why do you do that? I do not want.	*Ala shan ayh inta temil deh?* (*Ana*) *moosh awiz.*
Give me a little, a little more.	*Iddeeni shwyeh — kaman shwyeh.*
Where is my room?	*Fain el odah bitai?*
Light the candle. Put out the light.	*Wallah el shama'a. Ittfi el noor.*
Shut the shutters, the window, the door.	*Ikfil el khashab, es shibak, el bab.*
Bring me hot water, cold water, drinking water.	*Hatlee moyyah sokhnah, moyyah barda, moyyah filtro.*
Bring me tea, coffee, bread, butter, milk.	*Hatlee shai, akhwa, aish, zibnah, lebban.*
Bring me jam, eggs, whiskey, brandy.	*Hatlee morubbah, baid whiskey, cognac.*

I want a cup, plate, glass.	(*Ana*) *awiz fingan, sakhn, kobeiyya.*
I want a knife, fork, spoon.	(*Ana*) *awiz sakeen, shokah, malakah.*
I want some fruit, oranges, bananas, dates, figs, melon.	(*Ana*) *awiz fowake bordo'kan, moz, ballach, teen, bateekh.*
Give me soap, towel, bath.	*Giblee saboon, fotah, hammam.*
Give me lamp, matches, candle.	*Giblee lamba, kabreet, shama'a.*
Clean these boots. Fetch my shoes, quickly.	*Naddaf gezme dol. Hatli madas bitai hālan.*
Call the waiter, chambermaid, porter.	*Indahh es soofragi, el kamerera, el ferash.*
I want my bill.	(*Ana*) *awiz el khisab.*
Wake me at seven o'clock, half-past.	*Saheene es saah seba, seba wa nōs.*
In the morning.	*Fee 'l subh.*
Where is the bell?	*Fain el garas?*

INDEX

THE END

Printed by BALLANTYNE, HANSON & Co.
Edinburgh & London

PUBLISHER'S NOTE

The Publisher wishes it to be understood that the Author is in no way responsible for the following Advertisements.

COOK'S NILE SERVICES

First Cataract Service.—First-class Tourist Steamers leave **Cairo** for **Assouan** (First Cataract) alternate Tuesdays from the middle of November until the end of the year; after which date every Tuesday throughout the Season (Three Weeks' Voyage). These Steamers allow ample time for visiting the Monuments on the Nile Bank, including the **Pyramids of Sakkarah (Memphis), the Rock Tombs of Beni Hassan, the Temples of Luxor, Karnak, Thebes, Edfou, Esneh, Philæ, Abydos,** &c.

First-class Tourist Steamers also leave **Assiout** for **Assouan** every Monday throughout the Season, affording similar facilities for Excursions (Two Weeks' Voyage).

Second Cataract Service.—First-class Tourist Steamers leave **Assouan** (Shellal) for **Wady Halfa** (Second Cataract) every Monday throughout the Season (One Week's Voyage).

Cook's Express Service. Express Steamers leave **Cairo** for **Assouan** Twice Weekly (Nineteen Days' Voyage). Combined Rail and Steamer Tours by this Service.

THROUGH BOOKINGS to the SOUDAN.

STEAM DAHABEAHS. Four Superior Private Steamers for Families and Small Parties.

LUXOR AND ASSOUAN HOTELS

The "LUXOR" and "KARNAK" HOTELS at LUXOR, and "GRAND" and "CATARACT" HOTELS at ASSOUAN, are now open. English Medical Gentlemen in residence during the Season.

THOS. COOK & SON,
Managing Agents for Thos. Cook & Son (Egypt), Ltd.
CHIEF OFFICE: LUDGATE CIRCUS, LONDON.

CAIRO OFFICE:
NEAR SHEPHEARD'S HOTEL.

RAMLEH

(THE OSTEND OF EGYPT)

A well-renowned bathing-place and health resort, with an extremely constant climate. Temperature rarely above 29 degrees Centigrade even in July and August.

RAMLEH is most beautifully situated on the seashore in one of the delightful suburbs of Alexandria, 20 minutes by rail. Trains leave Alexandria every five minutes (coming from Cairo, change at **SIDI-GOBER**).

HOTEL-CASINO SAN-STEFANO

FIRST-CLASS ESTABLISHMENT

OPEN ALL THE YEAR

Splendid position on the sea-shore, with a beautiful terrace. In Summer, Theatricals, Balls, Concerts, Fêtes, Military Band every afternoon.

SAN-STEFANO CLUB IN THE HOTEL

SPORTING GROUNDS ROUND THE HOTEL

THE GEORGE NUNGOVICH EGYPTIAN HOTELS COMPANY

OFFICES:
GRAND CONTINENTAL, CAIRO

TELEGRAPHIC ADDRESS:
NUNGOVICH, CAIRO

HELOUAN

NEW THERMAL ESTABLISHMENT.

HEALTH AND BATHING RESORT

25 minutes by train south of Cairo in the Desert. 24 trains per day.

Sulphur and Salt Springs. Sulphur Water stronger than any in Europe. Immersion Baths, d'Aix and de Berthe, steam and electric Baths. All kinds of Douches. Inhalation. Pulverisation. Massage. Dry and pure Desert climate. English, Protestant, and Catholic Churches.

GRAND HOTEL HELOUAN

OPPOSITE THE PARK AND CASINO.

Patronised by Royalty. Electric Light and every Modern Comfort. Lift. Pension and Room from P.T. 60 per day.

Manager.—R. SPRINGER.

HOTEL DES BAINS

CLOSE TO THE BATHS.

Entirely Renewed. Most Comfortable. Electric Light. Pension and Room from P.T. 40 per day.

Grand Park. Beautiful walks in the Desert and on the Mountains. English and Egyptian Military Bands. Various Performances at the Casino. Lawn Tennis. Cricket. Golf Links in the Desert with Golf Club-House (18 Holes with professional). Landing Station. Riding Horses. Donkeys. Camels. Dog-carts. Sand-carts, &c.

EXCURSIONS.—Quarries of Massara and Tourah, Wady Hof Valley, &c., Pyramids of Sakkarah, Memphis, and Dashûr. Hunting on and at the Nile.

POST. TELEGRAPH. TELEPHONE.

The Redemption of Egypt

By W. BASIL WORSFOLD, M.A.

With 4 Illustrations in Colour, 20 Full-page, and 70 Text Illustrations from Sketches and Photographs by the Author. Extra foolscap 4to, cloth, gilt top, **15s.** net.

Among the Contents are:—The Remains of Mediæval Cairo—The Mosques of Cairo, as illustrative of Saracenic Art—The Pyramids and the Temples in the Neighbourhood of Luxor and at Philæ—The Government Schools and the Mosque Schools—The New Irrigation Works—The Cotton and Sugar Industries—Agriculture and Light Railways—The Prisons—Local Administration—And the Industrial Development of the Soudan.

Some Opinions of the Press

"Mr. Worsfold's beautiful book, 'The Redemption of Egypt,' gives us, with pen and pencil, a vivid series of pictures of the people and the country as they are to-day. It will be especially welcome to the many visitors to Egypt who desire to possess an artistic reminder of what they have seen in the land of the Nile."—*Daily Chronicle.*

"Mr. Worsfold writes especially well on Art, and the chapters on the mosques and on Saracenic art generally show an intimate knowledge of the subject. . . . The ancient art of Egypt is also treated in the same interesting fashion, but not, perhaps, so admiringly as many would desire. . . . Mr. Worsfold found time to study and describe the social life in Cairo, with its strange mixture of East and West. He visited the districts and studied the local government under English rule, with its local courts, its native governors, its English inspectors, and English heads in Cairo. In short, he has written a good book, and he has filled it with excellent illustrations into the bargain."—*Literature.*

"The author has sketched the mosques and antiquities for himself, and sketched them well. . . . For Mr. Worsfold's illustrations we have nothing but praise."—*Athenæum.*

"Fortunately the author of 'The Redemption of Egypt' is gifted with a capacity to reflect a number of Egypt's many-sided attractions, and thus his readers are able to enjoy a singularly comprehensive view of the people and their ancient institutions, as well as of the results of British occupation. . . . The wonders of Egypt lie no less in the present than in the past, and perhaps the author is nowhere more absorbing than when he explains the transformation that is being rapidly effected under British influence."—*Morning Post.*

"Mr. Worsfold's four full-page water-colour sketches, which are charming, have given us a reminiscence of the vivid Eastern colouring in the midst of the November fogs in London, for which we are genuinely grateful."—*Pall Mall Gazette.*

GEORGE ALLEN, RUSKIN HOUSE, LONDON

AND OF ALL BOOKSELLERS

Guide-Books by Augustus J. C. Hare

DAYS NEAR ROME. With more than 100 Illustrations by the Author. Third Edition. 2 vols., crown 8vo, 12s. 6d.

WALKS IN ROME. Fifteenth Edition, revised. With Plan. 2 vols., fcap. 8vo, cloth limp, 10s.

WALKS IN LONDON. Sixth Edition, revised. With 104 Illustrations. 2 vols., fcap. 8vo, cloth limp, 12s.

WESTMINSTER. Reprinted from "Walks in London," as a Handy Guide. With 12 Illustrations. Paper covers, 6d. net.; cloth, 1s.

WANDERINGS IN SPAIN. With 17 Full-page Illustrations. Fifth Edition. Crown 8vo, 7s. 6d.

CITIES OF SOUTHERN ITALY AND SICILY. With numerous Illustrations. Crown 8vo, 10s. 6d.

CITIES OF NORTHERN ITALY. Second Edition. With numerous Illustrations. 2 vols., crown 8vo, 12s. 6d.

CITIES OF CENTRAL ITALY. Second Edition. With numerous Illustrations. 2 vols., crown 8vo, 12s. 6d.

SKETCHES IN HOLLAND AND SCANDINAVIA. Crown 8vo, with numerous Illustrations, 3s. 6d.

STUDIES IN RUSSIA. Crown 8vo, with numerous Illustrations, 10s. 6d.

FLORENCE. Fifth Edition. Fcap. 8vo, cloth limp, 3s. With 26 Illustrations and Plan.

VENICE. Fifth Edition. Fcap. 8vo, cloth limp, 3s. With 23 Illustrations and Plan.

THE RIVIERAS. Fcap. 8vo, cloth limp, 3s. With 67 Illustrations.

PARIS. With 50 Illustrations. New Edition, revised. Fcap. 8vo, in 2 vols., cloth limp, 6s.

DAYS NEAR PARIS. With numerous Illustrations. Crown 8vo, cloth, 10s.; or in 2 vols., cloth limp, 10s. 6d.

GEORGE ALLEN, RUSKIN HOUSE, LONDON

AND OF ALL BOOKSELLERS

Guide-Books by Augustus J. C. Hare

NORTH-EASTERN FRANCE. Crown 8vo, cloth, 10s. 6d. With Map and 86 Woodcuts.

Picardy—Abbeville and Amiens—Paris and its Environs—Arras and the Manufacturing Towns of the North—Champagne—Nancy and the Vosges, &c.

SOUTH-EASTERN FRANCE. Crown 8vo, cloth, 10s. 6d. With Map and 176 Woodcuts.

The different lines to the South—Burgundy—Auvergne—The Cantal—Provence—The Alpes Dauphinaises and Alpes Maritimes, &c.

SOUTH-WESTERN FRANCE. Crown 8vo, cloth, 10s. 6d. With Map and 232 Woodcuts.

The Loire—The Gironde and Landes—Creuse—Corrèze—The Limousin—Gascony and Languedoc—The Cevennes and the Pyrenees, &c.

NORTH-WESTERN FRANCE. Crown 8vo, cloth, 10s. 6d. With Map and 73 Woodcuts.

Normandy and Brittany—Rouen—Dieppe—Cherbourg—Bayeux—Caen—Coutances—Chartres—Mont St. Michel—Dinan—Brest—Alençon, &c.

SUSSEX. With engraved Map and 45 Woodcuts. Crown 8vo, cloth, 6s. Second Edition.

SHROPSHIRE. With 50 Woodcuts, and an engraved Map of the County. Crown 8vo, cloth, 7s. 6d.

By Alexander Robertson, D.D.

THROUGH THE DOLOMITES FROM VENICE TO TOBLACH. A Practical, Historical, and Descriptive Guide-Book. With 42 Full-page Illustrations, a Map of the District, and an Appendix giving Railway and Diligence Stations, Times, Fares, Carriage Tariffs, Guides, Hotels, &c. Small crown 8vo, cloth, 7s. 6d.

THE BIBLE OF ST. MARK, THE ALTAR AND THRONE OF VENICE. A History of St. Mark's Church, Venice, and a Description and Interpretation of its Sculptures and Mosaics. With 80 Full-page Illustrations, and Plans of the Atrium and Interior. Large crown 8vo, cloth, Designed Cover, gilt top, 10s. 6d. net.

GEORGE ALLEN, RUSKIN HOUSE, LONDON

AND OF ALL BOOKSELLERS