

COLLECTOR'S ITEM

Aerangis hariotiana

by Brenda Oviatt and Bill Nerison
Photographs and drawing by Brenda Oviatt

The *Aerangis* Formerly Known as ...



Aerangis hariotiana can produce a plethora of long-lasting, brightly colored flowers. Grower: Botanica Ltd.

WHAT'S IN A name? This plant is better known by its former name; *Microterangis hariotiana* or even *Chamaeangis hariotiana*. Prior to that, it was also called *Saccolabium hariotianum*, and was first described in 1897 as *Mystacidium hariotianum*. Names aside, this is a charming, floriferous, colorful semiminiature orchid and we are excited to write about it; it's a rewarding orchid to grow. Our specimen was beginning to bloom and we were sure we could get some excellent photos of this extraordinary plant. Mature, multigrowth plants will produce many spikes and are very long-lasting (read the culture section to find out why no such photo is included in this article). We began doing research about the history of the species and found that confusion seems to be prevalent with regard to it, especially on the Internet. We decided to look at the plant from a different angle for this article.



Brenda Oviatt and Bill Nerison

First, some background. The genus *Chamaeangis* was established by Rudolf Schlechter in 1915 and, even at that point, he divided it into two sections based on differences in the flower structure:

Chamaeangis and *Microterangis*. He noted that there were enough differences between the sections that section *Microterangis* might be elevated to genus level at some point (which was done in 1985 by Karlheinz Senghas). *Chamaeangis* is from Greek *chamai* (lowly) and *angos* (vessel) referring to the swollen vessel-like spur of many of the flowers in the genus. To our thinking, *MICROterangis* (small vessel) suited it well.

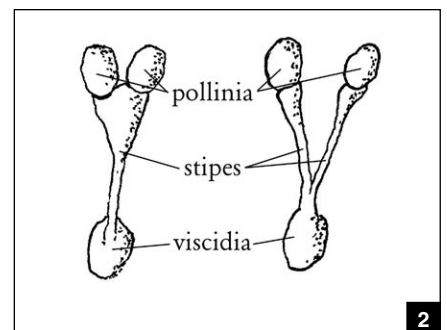
Updates to the Internet can be made nearly instantaneously, though outdated and inaccurate information is easily found there as well. We decided to dust off the books and see what we found in them about the species. Our oldest book to mention the genus (as *Chameangis*) is the *Encyclopaedia of Cultivated Orchids* by Alex D. Hawkes (1965). It is briefly mentioned, and the author noted that no species were currently in cultivation. So, although identified in 1915, the genus *Chameangis* was not in cultivation all those years later. Next, we checked *The Manual of Cultivated Orchid Species* by Bechtel, Cribb and Launert (1980). *Chamaeangis odoratissima* is the only species mentioned in this book and it is



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now called *Diaphananthe odoratissima*. Several other books we have featuring species orchids do not include it, which is unfortunate. Since *Aerangis hariotiana* is endemic to the Comoros or Comoro Islands, an island archipelago off the eastern coast of Africa, it gets a mention or a photo in the books about the orchids of Madagascar (also, other species in the genus are found there). Admittedly, our personal library is somewhat limited and our local library, though a wonderful resource for many subjects, is even more limited when researching something as specific as *Aerangis hariotiana*. Our best resources for information have been the books *Aerangis* by Isobyl la Croix (2014) and *Angraecoid Orchids Species from the African Region* by Stewart, Hermans and Campbell (2006).

With rather limited published information, we decided to be more inclusive and look over the section *Microterangis* that was elevated to a genus and more recently folded into



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- [1] Nectar is visible in each little flower spur. Grower: Botanica Ltd.
- [2] The defining features of the two sections of *Chamaeangis*; the section *Microterangis* on the left and *Chamaeangis* on the right: Pollinium (plural pollinia), a coherent mass of pollen grains; stipe (plural stipes or stipites), the stalk-like support that connects the viscidium with the pollinia; and viscidium (plural viscidia), a sticky pad/gland attached to the pollinium.

the genus *Aerangis*. Remember that when Schlechter set up two sections within the genus *Chamaeangis*, he noted differences based on flower structure: The section *Microterangis* (Malagasy and Comoro Island species) had single stipe and viscidium to the pollinia; the section *Chamaeangis* (African species) had separate stipites (plural of stipe) and a single viscidium (see drawing).

In 2012, when Philip Cribb and Barbara Carlsward transferred all the *Microterangis* species to *Aerangis*, they did so based on molecular phylogenetic analysis (DNA sequences) — quite a different approach than what was available to Schlechter! In their 2012 article, *New Combinations in Aerangis, Diaphanathe and Podangis* (Orchidaceae, subtribe Angraecinae), they state that “it seems likely that *Microterangis* are just small-flowered species of *Aerangis* that evolved in the Comoros or northern Madagascar from a common ancestor of large-flowered Malagasy *Aerangis*” (p.43). At the same time, they transferred the remaining *Chamaeangis* species (section *Chamaeangis*) to *Diaphanathe*, and one *Rangaeris* to *Podangis*.

Some of our findings provided more detail than we think most growers really want to know, but with all the name changes in the orchid world, we wanted to provide some information as to why these changes are made.

The genus *Microterangis* had seven species, only two of which have ever been readily available: *Mts. harioitiana* and *Microterangis hildebrandtii* (see sidebar). We’ve been asked, “what’s the difference between *Mts. harioitiana* and *Mts. hildebrandtii*?” and honestly, it’s hard



to say. The differences in the flowers are subtle at best. You’ll read that the spur is different, the flowers are slightly different in size and the leaves of the plants are different too. We take meticulous care when tagging our plants, and just don’t see those as reliable defining features. We grow both of these species; our *Mts. hildebrandtii* is from Gold Country Orchids and we grow it along with plants of *Mts. harioitiana* from three different sources. We have divided a specimen-sized *Mts. harioitiana*, keeping a part of it on a cork plaque and the rest in pots. We’ve noticed greater differences in the size of flowers, color intensity of flowers and form of plant between the divisions of the *Mts. harioitiana* than between the two different species! As a result, we

feel that culture plays a huge role in the variation of these plants and their flowers. In studying the plant, we have read that the telling difference between the species is leaf shape. Depending on where you read, the leaves of *Mts. harioitiana* are described as ovate, oblong-obovate or elliptic while those of *Mts. hildebrandtii* are lanceolate, ligulate and unequally bilobed. While it’s possible that the plants we have purchased over the years were mislabeled, the best description of ours would be elliptic and unequally bilobed. We’ve also found it cited that the flower bracts on *Mts. harioitiana* are scarious-brownish, yet others cite that this alone is not a determining factor. So many questions! The main difference we have noted over the years is a difference in

A review of the newest *Aerangis**

(formerly known as *Microterangis*)

Aerangis boutonii — Comoro Islands, named for its collector Louis Sulpice Bouton, uncommon/rather obscure.

Aerangis coursiana — Madagascar, named for collector of plant, smaller plant than *harioitiana*, flowers green.

Aerangis divitiflora — Madagascar, the Latin *dives* means “rich.” [dense/many-flowered] flowers yellowish white [brown].

Aerangis harioitiana — Grand Comore, named for Paul Auguste Harioit, a collector for the Paris Herbarium, first described as *Mystacidium harioitianum* by Fritz Kraenzlin in 1897.

Aerangis hildebrandtii — Comoro Islands, named for collector Johan M. Hildebrandt. If it is deemed to be synonymous with *harioitiana*, this name will take precedent as it was identified first.

Aerangis humblotii — Grand Comore, named in honor of Leon Humblot. Known only from the type specimen.

Aerangis lacroixiae — Madagascar, not known in cultivation. This plant was called *Microterangis oligantha* which means “few-flowered”. Try to follow this: there was already an *Aerangis oligantha* prior to 2012, so they changed its name to *Aerangis lacroixiae*. This made sense since it is NOT few-flowered, has white flowers and is from southern Tanzania and northern Malawi. But after this name change was published, it was determined that the change was made in error (based on the pre-existing use of the epithet) and the names *lacroixiae* and *oligantha* were exchanged. Confusing? Oh yes.

*Based on the books *Aerangis* and *Angraecoid Orchids Species from the African Region* and personal communication with Isobyl la Croix.

their fragrance.

Some years, we get keikis or new plants that form on the inflorescences, much like what can happen on a *Phalaenopsis*. This year we had some “unauthorized breeding” — we had seed capsules form without our aid. We wondered who in nature pollinates them? How did it happen in our greenhouse? It is assumed that these are pollinated by mosquitoes in nature, but they can also be self-pollinated, even by water droplets hitting the flowers. We suspect it was water droplets in our greenhouse that did the pollinating.

Aerangis hariatiana is endemic to Grand Comore (Ngazidja), one of four major islands in the archipelago nation. It is the largest of the Comoros, approximately equal in area to the other islands combined. The Comoros are 10 to 12 degrees south of the equator, halfway between northern Madagascar and eastern Africa at the northern end of the Mozambique Channel. Grand Comore is the youngest of the islands, and has an active volcano called Karthala, which is one of the most active volcanoes in the world and covers two-thirds of the island. The island has no permanent rivers. The climate is tropical, distinguished by two seasons based on rainfall. The rainy season runs from December to April with average high temperatures of 84–86 F (29–30 C). The “cool” dry season is from May to November, with an average low of 66 F (19 C). We had to chuckle reading this because, living in Montana, our highest “cool season” temperature is never that warm! *Aerangis hariatiana* grows at sea level to an elevation of 2,460 feet (750 m) classifying it as a warm to hot growing orchid.

Now let’s go back and look more closely at the plants. There have been three AOS awards given to *Mts. hariatiana*; two CCMs (Certificate of Cultural Merit) and one JC (Judges’ Commendation) with the comment that they didn’t know what else to do with it! There have been no hybrids registered using *Aerangis hariatiana* or any of the *Aerangis* formerly known as *Microterangis*.

CULTURE *Aerangis hariatiana* is, in comparison to many species orchids, quite easy to grow. We grow them both mounted on cork plaques and potted. We have potted them in a variety of bark mixes (and currently Orchidata) in both unglazed terra-cotta pots and plastic pots. The plants have very fine roots, and this typically means they must not be allowed to become overly dry. That said,



our greatest die-off came when we kept some potted plants too moist. They rotted — and it happened at an alarmingly fast rate. We water using reverse osmosis water, with ½-strength fertilizer and a periodic flush with clean water. We rotate fertilizer formulas and always provide micronutrients. We recommend watering early in the day.

Based on growing location, the foliage of our mounted plants (in brighter light levels) never looks as lush as the potted ones, but the presentation when they bloom is outstanding! Because they grow so well there, we keep our specimen plants mounted and the prettier *for-sale* plants in pots at a lower light level. On a sunny June day when the plants were in bloom, we took light readings of the area where we grow our plants. Outside in the bright sun, we measured 9,640 footcandles. We have white woven shade cloth covering our greenhouse during the summer, and where the mounted plants grow the reading was 1,330 footcandles.

[3] This is the typical leaf shape of our *Aerangis hariatiana* plants. Grower: Botanica Ltd.

[4] We occasionally have keikis grow on the inflorescences. Grower: Botanica Ltd.

The potted plants are in a range of 210 – 360 footcandles; the typical light condition for orchids like *Ludisia* and *Phalaenopsis*. In our greenhouse, the winter nighttime low is 55 F (12.8 C) where our potted *Aerangis hariatiana* grow (the mounted ones are in a slightly warmer spot) with a maximum summer daytime high of 96 F (35.5 C). We don’t give them “dormancy,” though in our conditions they slow down as a result of our shorter days and cooler winter temperatures.

We had hoped to have a noteworthy photo of a specimen plant for this article. It’s a 19-growth plant with 43 inflorescences. It looked very promising — then the leaves began to yellow and drop, buds began to drop and it wasn’t



A specimen plant after major leaf and bud drop due to air contamination from a failing heater. Inset: A small section of flowers on the same plant after the heater repairs were made. Imagine if all 43 inflorescences were covered with flowers like this! Grower: Botanica Ltd.

just this plant exhibiting these problems, it was widespread throughout the greenhouse. It took a while to realize the cause, but we finally discovered that our heater (a 330,000 BTU direct-fire, natural gas heater) was malfunctioning. It wasn't enough to cause temperature issues and set off our alarms, but it was misfiring and releasing enough natural gas fumes to damage many plants — what a disappointment. We live in a region where heating is a big part of life (orchids in Montana?!!) and it was a keen reminder of the importance of air quality for some plants. As orchid growers, we often address water quality, but don't often hear mention of air quality. We decided to look at common household pollutants that can affect you and your plants. The most common indoor pollutants and their causes are:

Ethylene — pilot lights, gas stoves and heaters;

Formaldehyde — off-gassing from particle board, concrete blocks, insulating foam, carpet, glue, paint, cosmetics, smoking, photocopiers;

Benzene — furniture, smoking, paint, glue, ink, carpet, insecticides, plastics, insulation, stain removers; and

Acetone — varnish/fingernail polish remover, glue, paint, solvents, insulation, textiles.

In our searches, we found a couple of websites that referenced plants being used to monitor air quality and less reliable studies of plants used to purify the air. In a home, proper ventilation can be the solution. In our greenhouse, it involved a few hundred dollars in new parts for the heater and time. We encourage you to be aware of your air quality and if you have plants showing unusual leaf yellowing and bud drop, to consider air quality as one potential reason. Also, it's a great excuse to surround yourself with more plants to use as indicators!

HOPE FOR SURVIVAL We couldn't locate any information about *Aergs. hariotiana* as it grows in its native habitat. It does not appear to be critically endangered; at least, it has not yet been assessed as such by the IUCN Red List of Threatened Species (International Union for Conservation of Nature). There are several species in the genus formerly known as *Microterangis* that are not in cultivation at all, and it appears there may be questionable identification to some of the others. We stress to all growers to keep track of the tag that comes with

your plant and learn what those parts of the name mean (e.g., is it a species or a hybrid?). Remember your sources so that if you have questions, you know who to contact. Sometimes mistakes are made. Also, keep learning! We learned more about air quality in our greenhouse this spring than we expected. Finally, share your information and encouragement about growing orchids, especially when it comes to the reproduction of rare and endangered species (even if they're not angraecoids).

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— *Brenda Oviatt is an artist and Bill Nerison is an architect. They live on the Clark Fork River in Missoula, Montana (a corner of paradise) with their daughter Marisa, son Tristan and an assortment of animals. They've been growing orchids together for 31 years and in that time have grown in many settings. For the last 11 years, their orchid growing has focused on the ex situ propagation of endangered Angraecoids and the education of hobbyists and growers (billn@bresnan.net, www.botanicaltd.com).*

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