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Pre-Conference Notes

As this is written, the 15th annual Native Orchid Conference is less than a month away. Airplane, auto, and - yes - train connections should all be pretty well firmed up, and by now lists should be made as to what to take along rather than remembering, about halfway to Benson, what *should have been* packed, but wasn't!


***Malaxis soulei*, (see it this year!)**

The kick-off actually begins the late afternoon of Sunday, 31 July with the reception and registering, and the following week's "work" winds up with the annual members' meeting Wednesday afternoon, but area field trips are open for the next two days. By the conference's close, members should be more familiar with *Malaxis abieticola*; *Malaxis brachystachys (corymbosa)*; *Malaxis porphyrea*; *Malaxis soulei*; and *Platanthera limosa*., and possibly *Platanthera purpurascens* and *P. brevifolia* as well.

For members traveling by car, it should also be a chance to check with other members and inspect a new vehicle or two as well as compare notes on some earlier road-tried older iron horses that have seen previous conference's and explorations. For all, it should be a time for meeting new friends as well as well as picking up with older ones where conversations (and tales) at Gorham, Maine left off.

For individuals arriving early, and particularly so for ones equipped with roadworthy vehicles, it would be helpful to contact Ron Coleman in advance and be available for scouting expeditions in advance of the conference.

In addition to conference activities, if your editor's memory serves him correctly, there are a few rock shops worth checking out in the Benson area, and in an area where much of the country may casually appear to be little more than rocks, barren hills, and brush, it can be easy to overlook the magnificence of the natural geological treasures and other vegetative forms of this area of the North American southwest. All in all, the conference time promises to be a busy week!

In closing, for ones traveling eastward, by personal vehicle, consider digressing a little south, off I-10, and stopping by your editor's home and library in Victoria, Texas. We do have some space, and if you can make it the door's open!

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Return of A Native - Ohio's 47TH Orchid Species
Neottia cordata (L.) Rich De Orchid. Eur.: 37 (1817)

Tom Sampliner
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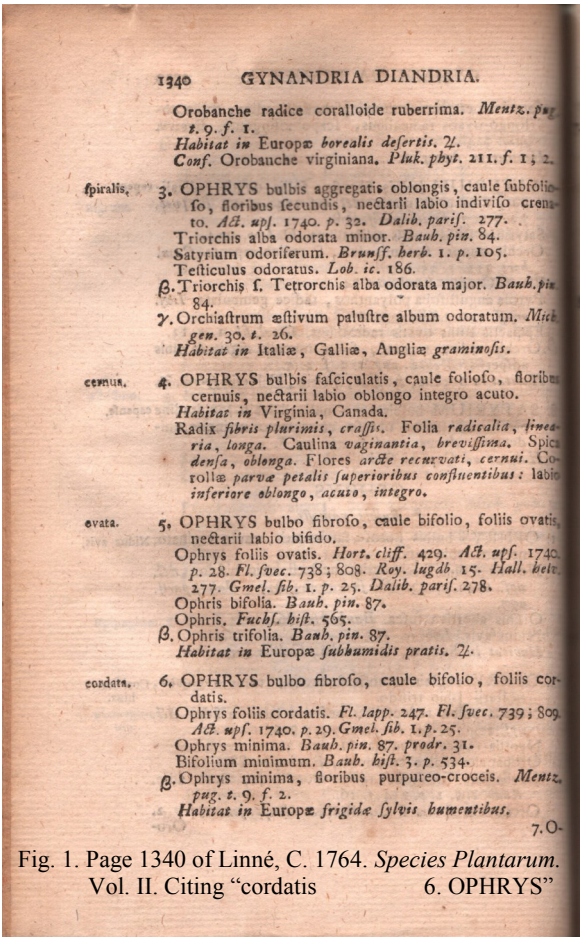
Ed. note: This species was originally published as *Ophrys cordata* by Linnaeus in 1753 and was published as *Ophrys cordatis* in his 1763-64 two-volume edition (Fig. 1). Subsequently it was removed to *Listera* and published as *Listera cordata* (Linnaeus) R. Brown in Aiton, Hort. Kew., ed. 2, **5**: 201. 1813, in which form it is cited by Luer (1975). However, the currently accepted citation by Kew for this species is written in the title of this work.



1340 GYNANDRIA DIANDRIA.

Orobanche radice coralloide ruberrima. *Mentz. pug. t. 9. f. 1.*
Habitat in Europæ *borealis defertis.* ♃.
Conf. Orobanche virginiana. *Pluk. phyt. 211. f. 1; 2.*

spiralis. 3. OPHRYS bulbis aggregatis oblongis, caule ſubfoliofo, floribus ſecundis, nectarii labio indiviſo crenato. *Act. upſ.* 1740. *p.* 32. *Dalib. pariſ.* 277.
Triorchis alba odorata minor. *Bauh. pin.* 84.
Satyrium odoriferum. *Brunſſ. herb. 1. p.* 105.
Teſticulus odoratus. *Lob. ic.* 186.
β. Triorchis ſ. Tetrorchis alba odorata major. *Bauh. pin.* 84.
γ. Orchiaſtrum æſtivum paluſtre album odoratum. *Mich. gen.* 30. *t.* 26.
Habitat in Italiæ, Galliæ, Angliæ *graminoſis.*

cernua. 4. OPHRYS bulbis faſciculatis, caule foliofo, floribus cernuis, nectarii labio oblongo integro acuto.
Habitat in Virginia, Canada.
Radix *fibris plurimis, craſſis.* Folia *radicalia, linearia, longa.* Caulina *vaginantia, breviſſima.* Spica *denſa, oblonga.* Flores *arcte recurvati, cernui.* Corollæ *parvæ petalis ſuperioribus conſtituentibus: labio inferiore oblongo, acuto, integro.*

ovata. 5. OPHRYS bulbo fibroſo, caule bifolio, foliis ovatis, nectarii labio bifido.
Ophrys foliis ovatis. *Hort. cliff.* 429. *Act. upſ.* 1740. *p.* 28. *Fl. ſuec.* 738; 808. *Roy. lugdb.* 15. *Hall. helv.* 277. *Gmel. ſib. 1. p.* 25. *Dalib. pariſ.* 278.
Ophris bifolia. *Bauh. pin.* 87.
Ophris. *Fuchſ. hiſt.* 565.
β. Ophris trifolia. *Bauh. pin.* 87.
Habitat in Europæ *ſubhumidis pratis.* ♃.

cordata. 6. OPHRYS bulbo fibroſo, caule bifolio, foliis cordatis.
Ophrys foliis cordatis. *Fl. lapp.* 247. *Fl. ſuec.* 739; 809. *Act. upſ.* 1740. *p.* 29. *Gmel. ſib. 1. p.* 25.
Ophrys minima. *Bauh. pin.* 87. *prodr.* 31.
Bifolium minimum. *Bauh. hiſt. 3. p.* 534.
β. Ophrys minima, floribus purpureo-croceis. *Mentz. pug. t. 9. f. 2.*
Habitat in Europæ *frigidæ ſylvis humentibus.*

7. O-

Fig. 1. Page 1340 of Linné, C. 1764. *Species Plantarum.* Vol. II. Citing "cordatis 6. OPHRYS"

After such a long absence, over 100 years, it was exciting to see the Heart-Leafed Twayblade, (*Neottia cordata*) make its return to Ohio.

The species was discovered serendipitously by a naturalist taking a stroll in Morgan Swamp Forest in Ashtabula County in the extreme northeastern portion of Ohio. The property belongs to the Nature Conservancy and is a portion of some 1600 acres of a larger wetland complex known as the Grand River Lowlands. These were created about 12,000 years ago due to the presence of a glacial lake which had silt and clay at its bottom which ranges from 5 to 50 feet deep. The habitat name speaks to its high water table and water holding capacity. The terrain supports shallow rooted trees happy with wet feet and is sprinkled liberally with vernal pools.

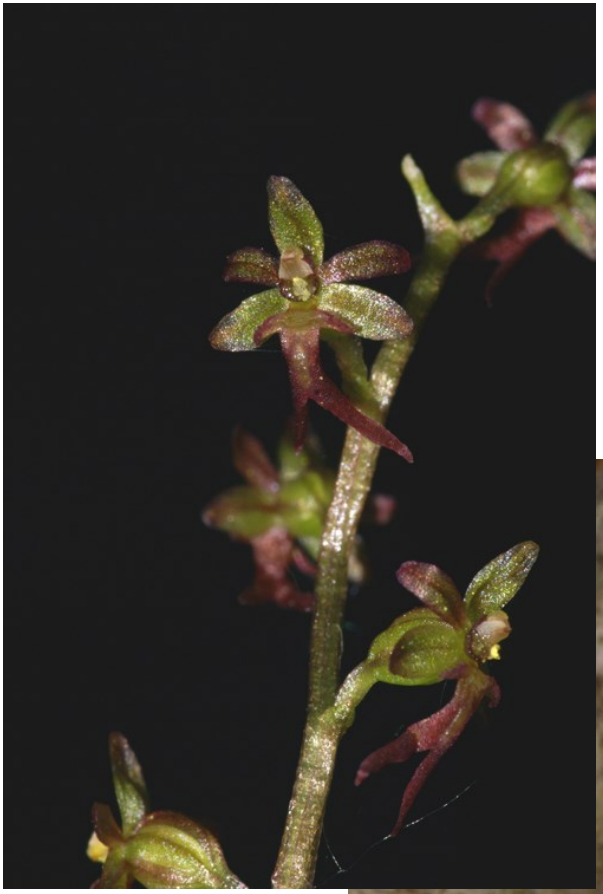
While I demur from naming all the tree species of the swamp forest, I'll name some to convey some idea of what you experience on a walk through the now

public portion of Morgan Swamp. Watch for Red and Silver Maple, Red and Black Ash, American Elm, Tupelo, Black Willow, Eastern Cottonwood, Swamp White Oak. As long as the deer don't do too much damage, the shrub layer holds Spicebush, Winterberry, Elder, and Viburnums.

The unique climatic influences of the area help explain why plants like the orchid might like it here. This portion of Ohio is in the snow belt subject to what weather folks call "Lake Effect". Our south shore of Lake Erie gets dumped on in most winters with precipitation accumulations normally exceeding 100 inches annually in this area. In summer and in winter another weather condition known as the Smudge Pot effect is due to Lake Erie. The temperatures are slightly moderated and mists and precipitation make Mother Nature a watering agent. The farther from the lake, the less is the effect.

My first image for *Neottia cordata* (the Heart-leafed Twayblade) is mostly of a freshly opened raceme (Fig. 2). These plants only reach a few inches off the substrate. Their colors blend in so well with the tawny leaf litter that it is difficult to

Fig. 2.



notice them at first. In fact, once you find one and establish your visual search image, you aren't home free. If you take a step in any direction you can easily lose track of the orchid. They tend to appear and disappear with any change in your viewing angle or the light. There were quite a few scattered emerging racemes though many were barely above the substrate. I was fearful for their safety as *any* group present could easily do some trampling damage if they are not observant and very careful where they step.

My second image is as close to examining a floret as my equipment allows me to get. This includes a good quality 105 mm Macro lens backed by a stack of 3 extension tubes (Fig. 3). With subjects this tiny, depth of field is a real problem. With just a little imagination, each floret seems to be a replica of a bow-tie.

Fig. 4

Generous populations of the Dwarf Ginseng, (*Panax trifolius*) are also residents within this forest. I attach an image of one of these residents as well (Fig. 4).

I also attach an image of another welcome denizen of the water-retaining substrate within this forest; the Swamp Beacon (Fig. 5) is a bright orange.

Fortunately, most folks are not quick to walk in a swamp forest, which should help the orchids with avoiding at least *some* trampling by curious visitors.

Fig. 5

Welcome back little orchid! Bring some more of your friends and let Ohio show you how friendly we can be.

References

Brown, R. 1813. as *Listera cordata* in Aiton, Hort. Kew., ed. 2, **5**: 201.

Linné, C. 1753. Species Plantarum. p. 946 (as *Ophrys cordata*)

_____. 1764. Species Plantarum, Vol. II. p. 1340 (as *Ophrys cordatis*)

Luer, C.A. 1975. The Native Orchids of The United States and Canada excluding Florida. New York: The New York Botanical Garden. 361pp.

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A Few Orchids in Mexico's Copper Canyon Region

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The Copper Canyon Region is a beautiful area and an amazing geological phenomenon with incredible fauna and flora, yet it is relatively unstudied when it comes to orchids.

Las Barrancas del Cobre, as it is known in Spanish, consists of six distinct canyons in the Sierra Madre Occidental in the southwestern part of the state of Chihuahua in northwestern Mexico. The Sierra Madre Occidental mountain range picks up in Mexico where the Rocky Mountains leave off in the United States. The overall canyon system is larger and portions are deeper than the Grand Canyon in Arizona (Figs. 1, 2). The canyons were formed by six rivers that drain the western side of the Sierra Tarahumara (a part of the Sierra Madre Occidental). All six rivers merge into the Rio Fuerte and empty into the Gulf of California. The walls of the canyon are a copper/green color attributed to lichens, which is what gives the region its name

Fig. 1

The Copper Canyon region boasts two dramatically different climatic zones. In the highland region, at more than 8,000 feet above sea level, the climate ranges from alpine to temperate. The canyon bottoms are considered subtropical and go from monsoon rains to drought within a single season. The Sierra Tarahumara

Occidentál region contains some twenty-three species of pine and two hundred species of oak trees. Mexican Douglas-fir (*Pseudotsuga lindleyana*) trees cover the high plateaus in altitudes over 8,000 feet (2,400m), but due to deforestation in the area, many species of wildlife are endangered. Cougars live in the remotest of regions and are rarely seen. After the summer rainy season these upper regions blossom with wildflowers until October. From 4,000–8,000 feet (1,200–2,400m), oak trees grow in the huge forests as well as the more shade-tolerant types of trees. In the fall the forests become brilliant with color from Andean alder (*Alnus acuminata*) and poplar (*Populus* spp.) trees. Brushwood and scrubby trees grow on the canyon slopes, which can accommodate the dry season. Huge fig (*Ficus* spp.) and palm trees thrive at the bottom where water is plentiful and the climate is tropical. Among the wild animals in the area are black bears, otters, mountain lions, wild boars, colorful parrots, squirrels, raccoons, snakes, foxes, eagles, and white tail deer. Over 300 species of birds have been recorded here making it a great ornithological destination.

Fig. 2

I visited the Copper Canyon in September as that is the best time to view wildflowers with a hope that I could find some orchids. In researching the flora of the area I found almost nothing for the amateur botanist and very little in terms of scientific articles for that matter. One study estimated that the Sierra may have up to 3,500 plant species with the discovery of 2,400 species in just one valley. The only available field guide is evidently The Wildflowers of the Copper Canyon, written recently by Linda Ford, but it only shows one orchid species in its coverage of about 140 different flower species. The books on the orchids of Mexico generally cover only the tropical ones and the guides to the southwestern US orchids don't cover species that occur in the Copper Canyon area.

I followed Linda Ford's suggestion of traveling by train from Chihuahua to the

town of Bahuichivo, about half way along the spectacular route of the Ferrocarril Chihuahua Al Pacifico railway, or El Chepe. The train goes from Chihuahua (about 4 hours south of El Paso, Texas) to Los Mochis close to the Pacific Ocean. It is the only passenger rail of its kind in Mexico and the entire journey takes about 16 hours. The railway covers over 400 miles, climbs 8000 feet into the Sierra Tarahumara, passes over 36 bridges and through 87 tunnels. It is considered one of the top trips by international train enthusiasts. From Bahuichivo I was picked up by my hotel owner for the 10 mile trip to Cerocahui, a sleepy little town with great places to see wildflowers and options to travel into the gorges for more amazing views. In addition to this area, my friends and I traveled back to Creel and then drove to the spectacular Basaseachi Falls.

Fig. 2

Immediately upon arrival I started seeing many of the beautiful species of wildflowers including *Cosmos, Eryngium, Erigeron, Salvia* and *Penstemon*. On my travels to the canyon rim I spotted my first orchid, *Dichromanthus aurantiacus* (Fig. 2) with its beautiful bright orange tubular flowers. This is the one orchid listed in Linda's book as *Stenorrhynchus aurantiacus* (correct spelling *Stenorrhynchos*). Perhaps my favorite flower in the canyon, the Bat-faced Monkey flower or Yaken (*Cuphea llavea*) (Fig. 3) was abundant here. I also found a beautiful Mariposa lily (*Calochortus sp.*) that Linda had never found (through correspondence afterwards). The views of the canyon and the flowers made for a perfect day but on the way back I spotted 2 small plants out of the corner of my eye while we sped along the road. I asked the driver to stop and I ran back. I found 2 species of orchids-*Habenaria*

Fig. 3

quinqueseta (Fig. 4) and *Liparis madrensis* (Fig. 5). Both of these were just a few

Fig. 4
Habenaria quinqueseta

Fig. 5
Liparis madrensis

Fig. 6

Fig. 7

inches tall, green and hidden under shrubs. Why I looked up at that moment I'll never know. It does make me wonder how many other things are out there that I missed.


Fig. 8a

An afternoon hike to the local Basaseachi waterfall allowed me to spot two examples of *Habenaria mitodes* (Fig. 6) and *Habenaria jaliscana* (Fig. 7) and the unusual *Bletia roezlii* (Fig. 8a,b) in bloom.

Wild Poinsettia, *Euphorbia colorata* (Fig. 9), was along the trail as were many other intriguing wildflowers. Basaseachi Falls (pronounced Bah-sah-say-**ah**-chi), (Fig. 10) is a sight to behold! It is the second highest waterfall in Mexico, with the water dropping 807 feet (265m).

Basaseachi Falls is rated as the *second* highest waterfall in Mexico compared with the Piedra Volada (Flying Stone) Falls a mile away, which drops more than


Fig. 8b
Bletia roezlii

fifteen hundred feet into the Candamena Canyon. However, the Piedra Volada Falls only flows during the rainy season whereas the Basaseachi flows constantly.

Basaseachi Falls in the Raramuri language means "the waterfall or coyote place" and it derives its name from the legend of King Candamena was a pre-Spanish ruler of the high Tarahuamara Sierra, who was extremely protective of his beautiful daughter Basaseachi. The king imposed on suitors a test so difficult that all died and the despondent Basaseachi jumped into the abyss.

Fig. 9. *Euphorbia colorata*

Fig. 10

A local witch transformed her fall into the beautiful waterfall, and rumor has it that Candamena still lurks around the area looking for the body of his beloved daughter.

Along my hike down to Basaseachi Falls I saw no sign of the king, but I did find a bog orchid (*Platanthera species*: possibly *P. volcanica* or *P. thurberii* - unable to identify with certainty from photographs) (Fig. 11, 12) *Ponthieva shaffneri* (Fig. 13), and *Habenari ruizii* (Fig. 14) the identifications for which I had no clue at that time.

Ed. Note: Thanks for the currently correct identifications for species in all figures here are due Rolando Jiménez of Herbario AMO, Mexico City, and Dr. Gerardo Salazar of Universidad Nacional Autonoma De Mexico.

Fig. 11

Fig. 12

One of the best finds of the day was also one of luck, Again, out of the corner of my eye as we drove on the highway, I spotted a white flower that turned out to be *Govenia capitata* (Fig. 15), a spectacular terrestrial.

As I previously mentioned, there was little published information on the orchids of this area so though I knew I had found some orchids and had some idea of the genera of a few of them, others were total mysteries to me. When I got home I started scouring my books as well as the internet for clues. I contacted members of the Native Orchid Conference but none had been to the area and could not help.

Fig. 13

Fig. 14

However, with perseverance and the assistance of one fellow enthusiast I arrived at a few tentative names for most of what I had seen.

I highly recommend a trip to the Copper Canyon and I suggest September or early October as the best time for both mild weather and peak flower season.

Finding orchids is possible, but even the locals were not

knowledgeable about these special plants so you may be on your own. Go slowly, be observant, enjoy the surroundings, and keep an eye out for a Tarahuamaran king still searching for his daughter.

Fig. 15.
Govenia capitata

Reference

Ford, L. J. 2009. A Field Guide to the Wildflowers of Mexico's Copper Canyon Region. Walsworth Publishing Company. Softcover. 160pp.

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Mirror, Mirror, but Not on the Wall

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The colors, shapes and other features of the mirror or speculum of the Bee Orchids are among the most striking features that distinguish members of the genus *Ophrys* from all other orchids. This glossy reflecting surface upon the lip of the orchid is believed to represent a portion of the abdomen of the female of the insect pollinator/partner for each species of Bee orchid.

Certainly the long distance attraction for the insect is a cocktail of molecules of odor which we refer to as pheromones produced by the orchid to convince the male insect that he is detecting the lady insect of his dreams, (perfume companies take note). However, once the orchid is within his field of vision, the pheromones are no longer the principal attraction. Now the mirror takes over. Visual combined with tactile perception must be realistic enough to convince the male insect he has indeed found the perfect mate. In keeping with the evolved mimicry of mostly female bee species, dark glossy surfaces of the mirror give the impression of the female bee body. Hairless and shiny, the mirror looks convincing enough within our visual perception that if it functions equally well for the male bee it must be love at first sight.

Fig. 1. *Ophrys Ariadne*.

Some authors use the term blazon rather than speculum or mirror. The three terms are interchangeable. The placement of the mirror on the lip varies according to bee orchid group and certainly by species. The majority of species have a mirror found closest or adjacent to the opening at the base of each flower which opening is referred to as the stigmatic cavity. Within that opening and toward the roof are the twin pollinia awaiting the insect visitor for deposition of its pollen load. Some mirrors extend from the bottom of the stigmatic opening down to near the apex of the lip. Others are rather short designs taking up only a small portion of the lip. Some are widely separated from the opening, placed more toward the lip apex. A number of species, especially those in a group of Bee Orchids under the *mammosa* name have the mirror in the shape of the letter “H”. One pattern is shown by *Ophrys ferrum-equinum*, another by *Ophrys ariadne* (Fig. 1). Some of these members have their “H” as a bright, dark colored, iridescent royal purple

color. A couple species emphasize the "H" with a lighter color border making the mirror jump right out at you. One example of this is *Ophrys spruneri* (Fig. 2).

Perhaps the most unique shaped mirror is the silhouette of what appears to be

Fig. 2

Batman's bat shape projected against the sky to summon the famous crime fighter to perform his services when trouble erupts as in *Ophrys bertoloni* (Fig. 3).

A very different and spectacular color and pattern is exemplified by a widespread species that gave rise to the name of speculum or mirror to identify the Bee Orchids as a group. This is *Ophrys speculum* which species name refers directly to the Latin for mirror or speculum. The bright dark blue glossy surface of the mirror appears to our eye as a natural expression of a tiny mirror. Growing so close to the substrate, these handsome orchids could pass as tiny grooming stations for each insect to check their appearance as they pass.

The hairs adjacent to the mirror are often important. Their length, colors, and textures all reinforce the inducement for the male insect to alight and pseudo-copulate with the flower. It is believed that this group of orchids has evolved in rather recent times and is still a radiating group. There is much controversy about how many species there are among the *Ophrys*. Current understanding regarding DNA groupings versus observations of what is visible in the field presents a hot and unsettled debate as to how many bee orchid species there are. Current extremes range from the conservative classifications that recognize less than 20 species versus the most liberal counting of at least 250 species. This controversy is complicated by *Ophrys* appearing to freely hybridize in nature so that isolation, pollinator loyalties and ranges, climatic influences and many other factors must all be further studied before we can make the best possible conclusions about this fascinating group. Certainly our curiosity is captivated by these short statured colorful little orchids that so actively employ sexual deception in such a unique form of mimicry.

Fig. 3

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