

The Golden *Cyrtochilum* Text and Photographs by Stig Dalström

A Study of *Cyrtochilum aureum* (Orchidaceae: Oncidiinae) and Its Allies and New Taxonomic Combinations



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THE *CYRTOCHILUM AUREUM* COMPLEX consists of several similar and rather confusing species that often have been lumped together in the past, but are here identified and presented with photographs, under their valid names and with a brief taxonomic history, and with two new taxonomic combinations.



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While trying to identify and classify large groups of little-known plants, it usually helps to first organize them in smaller groups based on some obvious features. This is what we call “lumping.” As time and experience permit, you can return to each of the groups and sort them out one by one on a more specific level. As you dig deeper and deeper into the species groups, and the rather confusing world of orchid taxonomy, it is tempting to believe that you actually begin to understand what

they really are. The morphological details of the flowers in particular sometime create patterns that you think mean something and all of a sudden you see “species” that you had no idea existed before. This can result in a plethora of new names. You have now become a “splitter.”

Unless you have a lot of experience with the species (and genera) that a “splitter” describes, the taxa can be difficult to recognize. This in turn can make you wonder whether the “splitters” in question really know what they are doing, or if they just create something that the ego wants to see? Then of course we have the “splimpers” who have a tendency to split the plant group they work on, but consider other “splitters” as fools, and easily lump their plant groups into large “wastebasket” taxa. I personally believe that every plant taxonomist, whether a pure beginner or the most experienced PhD, wobbles among these three categories from time to time in their work. It is just the nature of the procedure, and also how I have approached working with the Oncidiinae.



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- [1] Steven Beckendorf, president of The Odontoglossum Alliance and an American Orchid Society accredited judge, photographing *Cyrt. aureum*, Puno, Peru.
- [2] *Cyrtochilum aureum*, Puno, Peru.

One of the major taxonomic challenges in Oncidiinae is how to deal with plants in the *Odontoglossum* alliance. When I began working with this troublesome but fascinating group some 30 years ago, I followed the procedure that I mention above. I lumped similar species into groups in order to get at least a superficial grip on the situation. With time, studies and field experience, combined with taxonomic training provided by some of the most distinguished professionals in the field, I eventually began to “understand” more about the speciation dynamics. Natural variation and distribution patterns of the species slowly became familiar. The more I learned, the deeper I sank into the wonders of nature until, finally, things began to make sense. Or as much sense as an ever-changing and evolving mass of living organisms can provide. At this time, I realized that many “*Odontoglossum*” species really represented something else entirely. With the help of molecular guidelines, these deviating species could be transferred to a “wastebasket” of *Cyrtorchilum*. Or rather, groups of similar and confusing species were lumped together and transferred to *Cyrtorchilum*, in order to be dealt with later, once *Odontoglossum* was straightened out.

At least that was the plan. But for some odd personality trait in my own gene pool, I do not like to leave problems unresolved and got stuck with *Cyrtorchilum*. I still have a couple of species complexes to straighten out before the work with *Odontoglossum* can be carried on, but I am getting close.

Returning to *Cyrtorchilum*, one of the remaining wastebaskets is the *Cyrtorchilum aureum* (Lindl.) Senghas complex. About nine different names have been described by five authors for this group. Unfortunately, the type specimens are difficult to analyze for various reasons. They all look alike in a dried state, and frequently even after rehydration with ammonia. One species is based on a drawing only (*Odontoglossum bicolor* Lindl.), a couple of species are based on single flowers (*Oncidium aureum* Lindl. and *Odontoglossum crocatum* Linden & Rchb. f.). When Robert Allen Rolfe transferred *Odm. bicolor* to *Oncidium* (Rolfe 1895b) the specific epithet “*bicolor*” was already occupied so he called it “*dichromum*” instead, which means bicolored.

So what do we do? The answer is fieldwork. It is actually easier and a lot more fun to study the plants in nature and figure out how many species exist out there. Then you can return to the herbaria to see if the different natural entities have been described or not. Do not trust anybody but yourself. Study the types and real populations, and



draw independent conclusions. Then compare your conclusions with other people’s work and see if you have reached the same result. If not, which is often the case, do it all over again in order to decide who is right and who is wrong.

In the *Cyr. aureum* complex, I have been able to identify four (possibly five) different taxa. One (possibly two) of these have bicolored flowers (sepals and petals brown to reddish purple, and a yellow lip), and three taxa have pure yellow flowers. The oldest name in this group is actually *Oncidium cochleatum* Lindl., which we will return to shortly, but the most well-known name is *Onc. aureum* Lindl., which refers to a bicolored species collected by Andrew Mathews (no. 1068) in the “high mountains of Andimarcha” (or Andimarca), which probably is located somewhere near Chachapoyas, where he lived for a while. The type specimen in the John Lindley Herbarium at the Royal Botanic Gardens, Kew consists of a drawing and a single dried flower. A better specimen with some dried inflorescences is deposited in the general herbarium at the Royal Botanic Gardens, Kew. There is no reference to the color of the flower in the original description (Lindley 1838a), but later (Lindley 1855), he describes the flower as “apparently with a golden yellow lip, and olive coloured sepals.” Lindley has two forms of this species listed:

(A) *Onc. aureum* (with *Odontoglossum festatum* Rchb.f., listed as a synonym), about which he says “Lip as broad as long. Crest of two vertical plates, emarginate in the middle, with five slender intermediate equidistant teeth” and (B) (*Onc. stenochilum*, with *Odm. hemichrysum* Rchb.f., listed as a synonym), “Lip longer than broad. Crest of two vertical plates, emarginate in the middle, with an intermediate tooth.”

Lindley described *Odm. bicolor* in



[3] *Cyrtorchilum aureum*, Quillabamba, Peru.

[4] *Cyrtorchilum aureum*, Canaris, Peru.

[5] *Cyrtorchilum aureum*, Puno, Peru.

Edward’s Botanical Register (Lindley 1845a), based on a drawing by Mathews, who in turn had copied another drawing, which was based on a Hipólito Ruíz and José Pavón collection (no. 112), a plant from Palca in central Peru. The color of the flower is described by Lindley as “*Flores violacei, labello magno luteo.*” A specimen



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GRANT



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ALEJANDRO HIRTZ

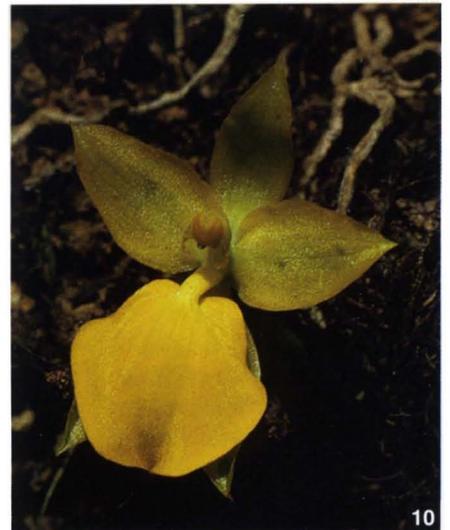


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MANFRED LINDSTRÖM



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[6] *Cyrtorchilum cochleatum*.

[7] *Cyrtorchilum cochleatum*, Saraguro, Ecuador.

[8] The author and *Cyrtorchilum rigidum* as a geophyte. Gualaceo, Ecuador. 1979.

[9] *Cyrtorchilum rigidum*, as a lithophyte, Gualaceo, Ecuador.

[10] *Cyrtorchilum rigidum*, Saraguro, Ecuador.

of this particular *H. Ruiz* and *J.A. Pavón* collection later turned up as the type of *Odm. festatum* Rchb.f. (Reichenbach 1854), which Lindley listed as a synonym of his *Onc. aureum* in *Folia Orchidacea* (Lindley 1855). Reichenbach describes the color of *Odm. festatum* as having red-brown sepals and petals and a golden yellow lip (“Hüllblätter roth-braun, Lippe goldgelb”).

Julius von Warscewicz had also collected this orchid somewhere in Peru with the locality “Sources of the Marañón” (Lindley 1855) noted on the herbarium sheet, which, incidentally, covers a huge area on the eastern slopes of the Andes. His bicolored specimen became the basis for Lindley’s *Onc. aureum stenochilum*, and also for the synonymized *Odm. hemichrysum* Rchb.f. & Warsz., for which the color of the flower was described exactly as for *Odm. festatum* (“Hüllblätter roth-braun. Lippe goldgelb”).

If anybody is still with me here, we can summarize that the first collection of this bicolored species was done by Ruiz and Pavón, but the name “*Odontoglossum bicolor*” was not scientifically described until later. Mathews copied a drawing of the Ruiz and Pavón specimen number 112 and the drawing was later seen by Lindley, who described the depicted flower as *Odm. bicolor* (1845a). After the death of Hippólito Ruiz López in 1816, poor Pavón apparently struggled to survive by selling herbarium specimens from his and Ruiz’s famous Peruvian expedition. Reichenbach eventually received a specimen of the number 112 collection, which he thought was a new species and described as *Odm. festatum* (Reichenbach 1854). The following year Lindley “sank” *Odm. festatum* into synonymy of his *Onc. aureum* (Lindley 1855), which represents the oldest scientific description of this bicolored species. Lindley also, unknowingly, sank his own *Odm. bicolor* into synonymy of *Onc. aureum* in the process.

Now, to complicate the situation slightly, none of the here-mentioned collectors bothered to include the pseudobulbs and leaves in their dried specimens. It is understandable because vegetative features are awkward to deal with, but regrettable because they sometimes tell us how to separate floristically similar taxa. By visiting the areas where these plants grow, however, it is possible to get a better understanding of what you are working with. After having spent some time in the Huasahuasi forests near Palca (what is left of it), my conclusion is that we have two vegetative forms of *Cyrtorchilum* (“*Oncidium*”) *aureum* that may indicate separate species, or not. The typical form of *Cyr. aureum* has a caes-



pitose habit where the pseudobulbs are clumped together. In the Palca area, above the village of Huasahuasi where Ruiz and Pavón evidently collected orchids, we find a smaller plant with a creeping rhizome. It would be easy to assume that this is the same thing as the Ruiz and Pavón no. 112 specimen, but it is not certain since they did not preserve any vegetative parts (at least not as seen by me). The flower morphology is similar though, albeit slightly smaller for the creeping plant. Keeping in mind that some *Cyrtorchilum* species alter their growth habit depending on where they grow, from caespitose under brighter conditions to creeping in shadier locations, my conclusion is that the creeping plant also represents *Cyr. aureum*. A revisit to the area is planned for the near future.

Rolfe originally came to the same conclusion, that *Odm. bicolor* really was a synonym of *Onc. aureum* (Rolfe 1895a), but later changed his mind when he saw some large-flowered plants introduced from Peru by Sander & Co. Rolfe then concluded that *Odm. bicolor* really was a good species, superior and different from *Onc. aureum*. When he intended to transfer it to *Oncidium*, however, he realized that the name “*Onc. bicolor* Lindl.” already was occupied. He therefore named it *Oncidium dichromum*. (I erroneously included this epithet as “*Odontoglossum dichromum* Rolfe” in my synopsis of *Cyrtorchilum* [Dalström 2001], and unfortunately the World Checklist of Selected Plant Families [2013] accepted that name. It is also listed as being described in 1865, which is wrong. The correct year is 1895.)

Let us return to the complex of yellow-flowered species, which we often call “*aureum*” due to the lovely yellow color. The first name for this group, however, is *Oncidium cochleatum* Lindl., and refers to

[11] *Cyrtorchilum mystacinum*, Monte Punko, Bolivia.

[12] *Cyrtorchilum mystacinum*, Chapare, Bolivia.

a plant collected by William Jameson on the páramo near Saraguro in Ecuador (Lindley described and listed it as the number before *Onc. aureum*, in *Sertum Orchidaceum* [Lindley 1838a]). When visiting this area, it is possible to find two yellow-colored species of this complex growing together: one has a small but distinct callus on the lip, and one lacks a callus, or has just a low hump at the base of the lamina. Lindley used a specimen of the first category as the type for *Onc. cochleatum*, but almost simultaneously described the similar *Cyrtorchilum mystacinum* in *Edward’s Botanical Register* (Lindley 1838b), based on a plant from “Peru” that flowered in the collection of a Richard Harrison, Esq. of Aighburgh, in 1837. This latter species is also featured with an illustration (Lindley 1839).

Lindley described the species without a callus on the lip as *Odontoglossum rigidum* in Bentham’s *Plantas Hartwegianas* (Lindley 1845b), based on a collection by Theodore Hartweg from the Loja area. In *Folia Orchidacea* (Lindley 1852), Lindley also mentions a collection from the “heights of Chachapoyas” by Mathews (a drawing is in the Lindley herbarium), which he incidentally lists before the Hartweg collection. Unfortunately, I have not been able to locate any specimen that corresponds with this drawing. Theodore Hartweg’s excellent dried type specimen, on the other hand, is well preserved in the Lindley herbarium. A drawing of a flower on the same sheet, presumably by Lindley, displays the lack of callus on the lip very clearly. I conclude therefore that Mathews’ specimen (if it exists) probably is the same species since

his drawing also shows a lack of callus other than as low humps, or angles, at the base of the lamina. It really does not matter since the type specimen is very clear, but I will keep searching for plants in the Chachapoyas area next time I pass by.

Jean Linden and Heinrich Gustav Reichenbach described *Odm. crocatum* in *Gardener's Chronicle* (Linden and Reichenbach 1867), probably based on a collection from the Loja area by Hermann Krause and Gustave Wallis. The single dried flower in the Reichenbach herbarium, which most likely represents the type, displays the same morphological features as *Onc. cochleatum*. The Reichenbach Herbarium, by the way, is today inserted in the general herbarium of the Museum of Natural History in Vienna.

Finally, we have the yellow-flowered species from southern Peru and Bolivia, *Cyrtochilum mystacinum*, which has a distinct callus at the base of the lip lamina, but differs from "*Onc.*" *cochleatum* in having a very long "stalk," or lip-base, a longer column with differently shaped wings and a different-looking callus on the lip. Plants of what appear to be this species were collected by Gilbert Mandon in 1859, near the town of Sorata, northeast of La Paz. There are dried specimens both at the Royal

Botanic Gardens, Kew, and in Vienna, all labeled "*Odm. rigidum*," probably due to the long-stalked lip. There is no color description on the herbarium sheets, unfortunately, and since the flowers are rather dark in a dried state, it is difficult to decide whether they are bicolored or yellow.

Cyrtochilum aureum occurs in southern Peru at higher elevations, almost 13,120 feet (4,000 m), and has also been found in Bolivia. A plant was collected near the town of Coroico at an elevation of 9,500 feet (2,900 m) in 1999 by Roberto Vasquez (no. 1745) and labeled "*Odm. bicolor*" by him. *Cyrtochilum mystacinum* appears to be sympatric, judging from older collections, but I have only seen it to the east and southeast of Cochabamba, also at a high elevation, approximately 9,180–9,840 feet (2,800–3,000 m), where plants grow terrestrially along road cuts or epiphytically on mossy branches, which is unusual for this group of plants.

TAXONOMIC TREATMENT In summary, we have the following taxonomic treatment (maintaining *Odm. bicolor* as a synonym of *Cyr. aureum*):

Cyrtochilum aureum (Lindl.) Senghas

Synonyms: *Odontoglossum bicolor* Lindl., *Odontoglossum festatum* Rchb.

f., *Odontoglossum hemichrysum* Rchb.f., *Oncidium dichromum* Rolfe

Cyrtochilum cochleatum (Lindl.) Dalström, comb. nov.

Basionym: *Oncidium cochleatum* Lindl., *Sert. Orch.* sub t. 25. 1838.

Synonyms: *Odontoglossum crocatum* Linden & Rchb.f.

Cyrtochilum mystacinum Lindl.
Cyrtochilum rigidum (Lindl.) Dalström, comb. nov.

Basionym: *Odontoglossum rigidum* Lindl., in *Benth. Pl. Hartw.* 152 (848). 1845.

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