

ACRORCHIS, A NEW GENUS FROM THE MOUNTAINS OF PANAMA AND COSTA RICA

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ABSTRACT

Acrorchis roseola is described as a new genus and species in the subtribe Laeliinae. This species is frequent on some high mountains in Costa Rica and Panama, but was rarely collected in flower until recent years. It may be related to *Jacquiella*.

RESUMEN

Se describe *Acrorchis roseola* como nuevo género y especie dentro de la subtribu Laeliinae. Esta especie es frecuente en algunas de las altas montañas de Costa Rica y Panamá, pero fue raramente colectada con flores sino hasta años recientes. Puede estar relacionada con *Jacquiella*.

Some plants seem to haunt one, rather like the proverbial bad penny. I first saw this orchid in early 1970, on a visit to Monte de la Cruz, Costa Rica, with Drs. William Burger and Luis Diego Gómez. There, in a chilly, wet, cloud forest I found a nondescript plant looked "different". It had no flowers, so I brought it back to Panama and kept it at a convenient "high elevation" site, Cerro Jefe, which is very low elevation as compared to Monte de la Cruz. The plant produced one flower before dying. I looked at that one flower and decided that the plant might be a very strange, unnamed *Isochilus*. Since then, I have found this same species to be common on high ridges at Cerro Colorado, and on the peak of Cerro Arizona, both in Panama. However, I did not find the plants in flower until October of 1980, when Paul Maas and I climbed Cerro Horqueta, north of Boquete, in Chiriquí. There we found a few fallen plants of this species, but we found only three or four flowers (though there may be hundreds somewhere in the tree tops). Since the plants were in flower on Cerro Horqueta, we went directly to Cerro Arizona (we mistakenly called it Cerro Tute then) on the way back to Panama City. There were some fruits on the Cerro Arizona plants, but no hint of flowers.

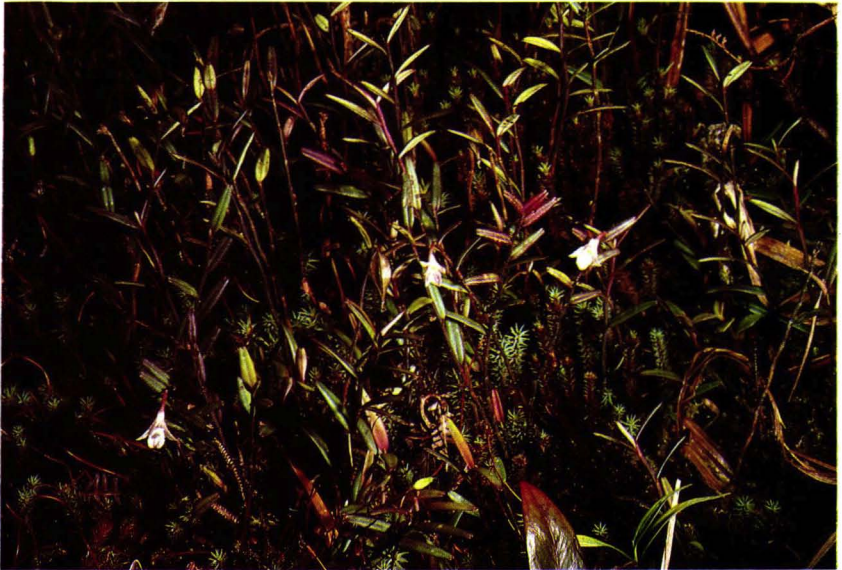
Finally, in June of 1982, we found a number of plants in flower in Cerro Arizona. With more abundant material, it was clear that the elusive little plant is not an *Isochilus*, and we had enough material from Dr. Lynn S. Kimsey to make drawings of the flower. It was in February of 1985 when, with the Luers, we found plenty of this plant in flower in Cerro Colorado. This time, my wife, Kerry, was along with the camera, and we were able to get good photographs.

Now it is clear that this plant does not fit in any of the known genera of the Laeliinae, and it is described here as *Acrorchis*. This name is derived from the greek *acros*, meaning peak or mountain top, and *orchis*, and thus refers to the plant's normal habitat. The specific epithet, *roseola*, refers to the apple-blossom pink blush of the flowers.

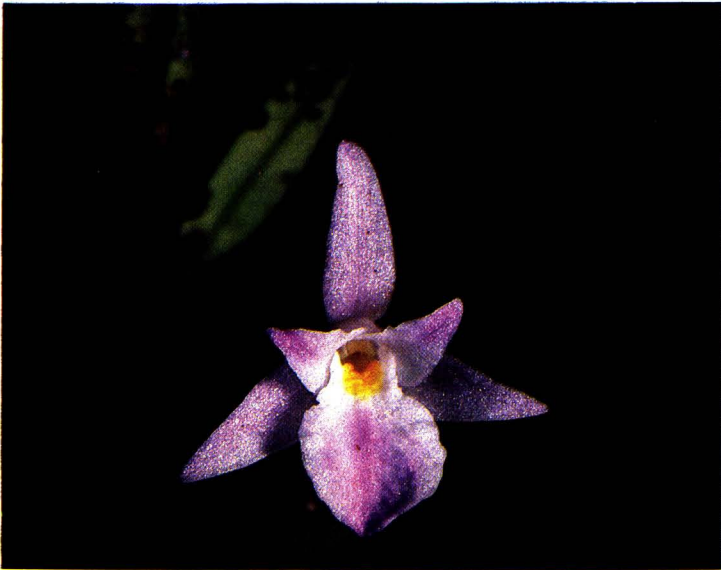
At one time botanists separated the *Ponera* complex, in which the flower has a prominent column foot, from the Laeliinae, in which the flower supposedly has no such structure. The distinction breaks down in those plants that have only a slight column foot, and the plant under consideration falls right on the border line. It might have a hint of a column foot, or, then again, it might be just a slightly



The Luers in the habitat of *Acrorchis*.



Plants of *Acrorchis roseola*, Cerro Colorado, Panama.



Flower of *Acrorchis roseola*, Cerro Colorado, Panama.

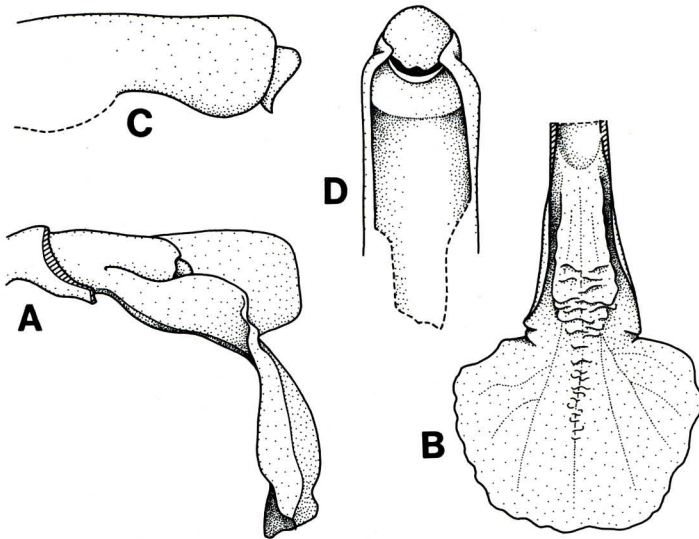


Figure 1. *Acrorchis roseola*; **A**, column and lip from side, sepals and one petal removed; **B**, lip, from above, lateral lobes not flattened; **C**, side view of column; **D**, column, from beneath.

saccate lip base, rather than a column foot. This seems to be the only feature to distinguish *Briegeria* from *Jacquiella*, and in practice I can see no real difference between the "column foot" of *Jacquiella* and the saccate nectary of *Briegeria* *. In any case, the genera *Ponera*, *Platoglottis* and *Helleriella*, though they have slender stems, are clearly quite different from *Acrorchis* in that they have a prominent column foot. In addition, these genera usually have a distinctly racemose inflorescence. *Isochilus* also has a racemose inflorescence, but the column foot is smaller, and the base of the lip is distinctly saccate. The shape of the lip in *Acrorchis* is similar to that of *Isochilus*, but the rostellum of *Isochilus* is quite different, with a definite viscidium that forms a sheath around a slender rostellar beak. *Acrorchis*, on the other hand, has a thin partition-like rostellum with a thickened margin, but no viscidium, like many members of the *Ponera/Scaphyglottis* complex. Our elusive little plant from the mountain tops of Costa Rica and Panama thus seems quite distinct from *Isochilus*.

Acrorchis is most closely allied, I think, with *Jacquiella*, which it resembles in the fascicled inflorescence, in column shape, in rugose leaf sheaths and in the nature of the rostellum. On the other hand, the leaves of *Acrorchis* are dorsiventrally flattened, the flower is thin rather than very fleshy, and the rostellum is not accompanied by a stigmatic flap on each side, as is typical of *Jacquiella*. In the form of its leaves, *Acrorchis* seems the perfect intermediate between *Jacquiella* and other genera, such as *Isochilus*. The leaves are very fleshy, but they are flattened in the usual way, rather than being cylindrical or laterally flattened. The flowers of *Acrorchis* are also reminiscent of *Dimerandra*, especially in the form of the callus, but the stems of *Dimerandra* are thick and fleshy, and the column has termi-

nal wings of an unusual type.

Considering the relationships of *Acrorchis* brings up again the question of the relationship between *Isochilus* and *Jacquiella*. In 1966 (Taxon 15: 242) I was quite skeptical of a close relationship between these genera, yet *Acrorchis* does resemble *Isochilus* a bit and might well be somewhat intermediate between the two genera. At one time I thought that *Isochilus* should be placed in the Sobraliinae, but data from anatomy caused me to change my mind. Now more recent data from seed structure (yet unpublished) suggest that the Sobraliinae and the Laeliinae may not be as sharply distinct as we had thought and that *Isochilus* may, indeed, be somewhat intermediate between the two subtribes.

***Acrorchis roseola* Dressler, gen. et sp. nov.**

Herba epiphytica vel sphagnicola, rhizomatosa; caulibus tenuibus; foliis distichis, conduplicatis, carnosius; floribus fasciculatis, successivis, membranaceis; sepalis ellipticis vel lanceolato-ellipticis, acutis; petalis oblanceolatis, acutis; labello cuneato, obovato, leviter 3-lobato, basi leviter saccato, basaliter columnam adnato; columna recta, aptera; anthera 4-cellulari; pollinibus 4, caudiculatis; rostellum membranaceo, margine leviter concavo, sine viscidio.

Epiphytic or terrestrial herb, loosely caespitose; young roots and rhizome pink; stem slender 9-13 cm long; leaf sheaths carinate, dark, dull red, verrucose; leaves 6-10, distichous, blades fleshy, elliptic or elliptic-ovate, retuse, gray-green with dark vein beneath, dark green above; flowers fasciculate, 1 or 2 open at a time; bracts several, carinate, acute, the outermost verruculose, 4-5 mm long; ovary and pedicel 7-8 mm long; perianth thin and membranous, white flushed or marked with pale pink; sepals elliptic or elliptic-lanceolate, acute, basally connate for about 1 mm, 9.5-10 mm long, 2.6-3 mm wide; petals oblanceolate, acute, 7.5-8.5 mm long, 2.5-2.7 mm wide; lip basally adnate to the column for about 1.7 mm, obovate, cuneate, weakly 3-lobed, about 10 mm long, 5-6 mm wide, mid-lobe suborbicular, broadly acute, lip basally shallowly saccate, with a rectangular callus about 3 mm long and 1.6 mm wide, this orange-yellow and trans-

* Note: Brieger published the name *Dressleriella* for the "*Epidendrum teretifolium* complex in 1976. The new name was not validly published, and Dr. Luer had published *Dressleriella* earlier in the same year (and validly) for a pleurothallid. Since I consider "*Epidendrum teretifolium*" and its close allies to be members of *Jacquiella*, my feelings were not at all hurt that Brieger's new name could not be used for them. Senghas later published *Briegeria* as a new name for *Dressleriella* Brieger.

versely ridged in front, with a line of smaller transverse ridges running onto the mid-lobe; **column** straight, about 3 mm long, without wings; **anther** 1 mm wide, 4-celled, with small beak; **pollinia** 4, with **caudicles**; **rostellum** thin, with thickened margin; **capsule** ellipsoid, with 6 ribs, about 10 mm long, 6 mm wide.

HOLOTYPE: PANAMA: CHIRIQUI: Cerro Colorado, approx. 1650 m elev., 15 February 1985; on open, rocky slope; roots pink; leaves pale beneath; sepals pale pink, petals and lip white with pale pink streak or blotch apically, yellow in throat; *Robert L. Dressler 6103*, MO. **ISOTYPES**: AMO, F, FLAS, PMA, US.

OTHER MATERIAL SEEN: PANAMA: border of CHIRIQUI-BOCAS DEL TORO: 11.2 km along ridgeroad from main road to Escopeta; 1700 m alt.; 16 Aug 1977; epiphytic herb; flower pink and white; *J.P. Folsom 4867* (MO). Cerro Horqueta, N of Boquete, elev. ca. 1900 m; 20 Oct 1980; epiphyte; flower white, petals and lip marked with rose-purple; *R.L. Dressler 5950* (FLAS). VERAGUAS: summit of Cerro Arizona, above Escuela Alto Piedra, W of Santa Fé elev. ca. 1300 m; 23 Oct 1980; *R.L. Dressler 5955* (FLAS). Cerro Arizona; 5 June 1982; in sphagnum; leaf sheaths dark dull red, leaves pale with dark mid-vein beneath, dark green above, flowers white or very faintly flushed with pink, callus orange-yellow; *R.L. Dressler 6065* (FLAS, MO, PMA, SEL). COSTA RICA: ALAJUELA: Monteverde Reserve, El Valle trail, near continental divide with Atlantic exposure, lower montane rainforest 10° 20' N, 84° 50' W, 1600 m; 26 Oct 1985; epiphyte on trunk in forest, flower white with purple section; *W.A. Haber ex Eric Bello 3165* (MO). - epiphyte in forest trunk; *W.A. Haber ex Eric Bello 3194* (MO) 27 Oct 1985; montane rain forest; on continental divide; epiphyte at base of trunk; *W.A. Haber ex Eric Bello 3217* (MO). -epiphyte on trunk in understory; *W.A. Haber ex Eric Bello 3243* (MO). HEREDIA: above Monte de la Cruz (Rio Patria); flowered in cult. 25 February 1970; flower white, petals tipped with rose-purple; lamina of lip basally yellow, with large median streak of rose-purple on terminal half; *R.L. Dressler s.n.* (FLAS). La Palma de San Ramón, alt. 1300 m; 26 Oct 1927; *A.M. Brenes 350* (CR). PUNTARENAS: Cordillera

de Tilarán, Reserva Monteverde, El Brillante, cumbre de división continental; epífita en tronco viejo caído, en vegetación baja; flores violáceo-blancuzcas, con mancha naranja en el labio; elev. 1550-1580 m; 30 Oct 1976; *V.J. Dryer 921* (CR).

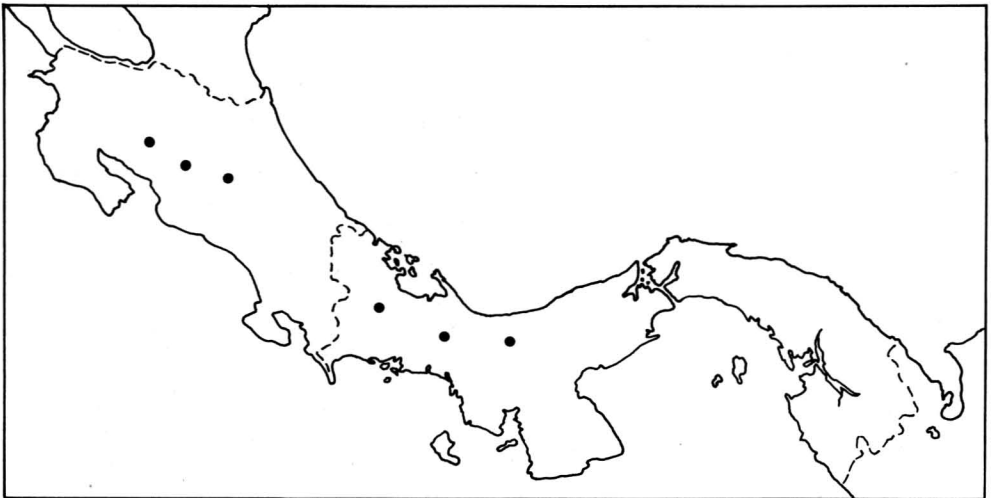
Had *Acrorchis* been described fifty years ago, it could easily have been named as an *Epidendrum*, though it certainly would not fit in that genus as we now understand it. As far as I can determine, though, this attractive little plant never has been named, even as an *Epidendrum*. One may wonder how a plant can range from western Costa Rica to central Panama and remain nameless in the 1980's. One factor, of course, is its habitat on high mountains, and often on the highest ridges and peaks. Some of these peaks are accessible, but usually only by a long and tiring hike, so the home of *Acrorchis* is not visited every day by botanists or orchid collectors. The other factor, I am sure, is the delicate and short-lived nature of its flowers. I imagine that several other botanists have walked on *Acrorchis* as they climbed to the top of a windy mountain peak, but as the plants were without flowers, they remained uncollected.

Though *Acrorchis roseola* is characteristic of mountain tops, it may be found in rather different habitats. At Monteverde and Monte de la Cruz, on Cerro Horqueta and above Guadalupe I found *Acrorchis* as an epiphyte in very wet forests. In such a habitat, the plants are in the tree tops, and one may find only an occasional fallen branch with a few plants of *Acrorchis*. The plants are much more obvious in places like Cerro Colorado and Cerro Arizona, where the mountain top has no large trees, and *Acrorchis* grows in sphagnum moss or on rock faces. I once placed a clump of *Acrorchis* from Cerro Arizona in the Smithsonian garden in Ancón (near sea level) in a wet spot with sphagnum around its roots. The plant remained in suprisingly good condition for several months, but then declined suddenly when eaten by a rat. Thus, though *Acrorchis* has been found only at high elevations, it may adapt to cultivation in warmer climates if planted in sphagnum and kept moist and rodent-free. Though the flowers are delicate and probably short-lived, they are pretty, and a

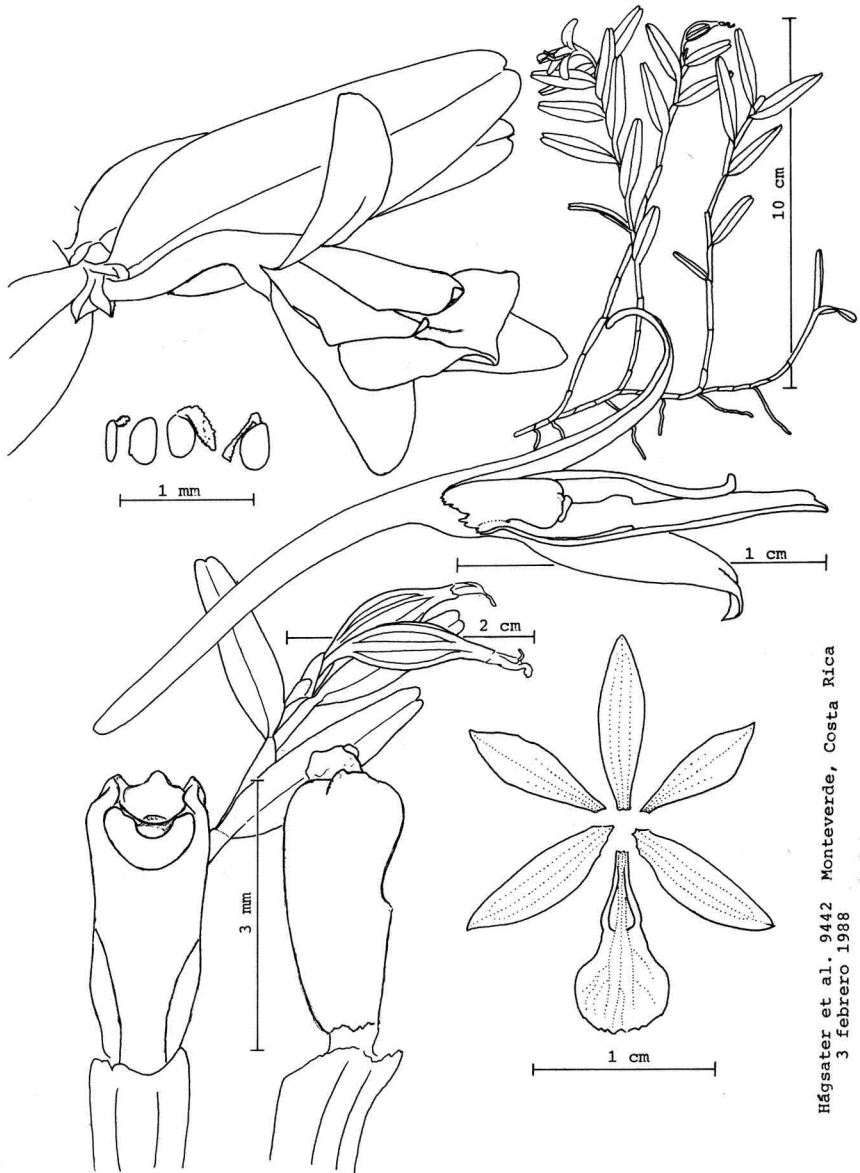
well-flowered plant is quite attractive. *Acrorchis* would probably form viable hybrids with other genera of the Laeliinae, but because of its small size, its potential for hybridization may not cause great excitement.

REFERENCES

- Luer, C.L. 1976. *Dresslerella*, a new genus in the Pleurothallidinae. *Selbyana* 3(1-2): 1-9.



The known distribution of *Acrorchis roseola* in Panama and Costa Rica.



Hågsäter et al. 9442 Monteverde, Costa Rica
3 febrero 1988

***ACRORCHIS ROSEOLA* Dressler.**

Hågsäter et al. 9442, Monteverde, Costa Rica. Dibujo: E. Hågsäter