

## **A Locality for *Maxillaria aureoglobula* Christenson in Colombia.**

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### **ABSTRACT**

*Maxillaria aureoglobula* Christenson was described from a cultivated plant without locality. A locality is given for this species. The transfer of *M. aureoglobula* to an “expanded” version of the genus *Mormolyca* Fenzl based on molecular analysis is questioned.

Calima Lake is the largest artificial lake in Colombia with an area of 70 km<sup>2</sup>. It is located in the municipality of Darién in the Valle del Cauca Department. The lake is part of a hydroelectric project for generating power for the department. Along the road that leads from the lake to the hydroelectric plant, at an elevation of 1480 m, a small flowered *Maxillaria* Ruiz & Pavon in the section *Rufescens* Christenson (Proc. 16 World Orchid Conf. 285-286. 2002) was discovered. The plant was *Maxillaria aureoglobula* Christenson (Orchids, Mag. Amer. Orchid. Soc. 71(2): 125-126. 2002). The species was described from a cultivated plant. No specific locality was given, only Colombia. This paper establishes a locality for Colombia.

*Maxillaria aureoglobula* is also recorded from Venezuela by a color photograph (opposite page 161) in Dunsterville & Garay (1961) as *Maxillaria rufescens* Lindl. That plant was said to come from the cloud forests near Maracay. Dunsterville & Garay comment “This *Maxillaria* belongs to a species that is extremely variable both as to the size and appearance of its leaves as well as to the size and appearance of its flowers.” Subsequently several new species previously considered *M. rufescens*, have been published in the genus *Maxillaria* section *Rufescens* (Carnevali & Atwood, 1996, Carnevali *et al.*, 2001) and in the “expanded” genus *Mormolyca* (Bogarín & Pupulin, 2012).

*Maxillaria aureoglobula* was transferred by Blanco *et al.* (2007) to an “expanded circumscription” of the genus *Mormolyca*. This transfer was made based on molecular phylogenetic analysis (Whitten *et al.*, 2007). Blanco *et al.* (2007) state that based on the molecular analysis of Whitten “the species of *Chrysocynis* Linden & Rehb. f. and *Maxillaria* section *Rufescens* are firmly nested within *Mormolyca*” and they transferred the species of the former two groups into a broad concept of *Mormolyca*. However, they also state, “based on comparative morphology, especially of the labella, *Mormolyca* and *Maxillaria* section *rufescens* can be easily distinguished” an apparent contradiction.

The genus *Mormolyca* is differentiated from *Maxillaria* based on several morphological characters, which include a long inflorescence, the absence of a column foot and a moon-shaped viscidium (Garay & Wirth, 1959). Species of the *Maxillaria* section *Rufescens* are vegetatively similar to *Mormolyca* in their shortly creeping rhizomes, unifoliate pseudobulbs subtended by papery bracts and sessile, acute leaves. Since the vegetative structures of plants are evolutionary more conservative, because genes specifically expressed in reproductive organs evolve more quickly than those specifically expressed in vegetative organs (Yang, R. and Xiangfeng Wang, 2013) there is no doubt that *Mormolyca* and the *Maxillaria* section *Rufescens* are closely related as suggested by Atwood and Retana (1999).

*Mormolyca* have flat open flowers with a tomentose, insect-like labella and arcuate column. Flowers of *Mormolyca ringens* (Lindl.) Schltr. are known to be pollinated by male bees by a syndrome of deceit, pseudocopulation (Singer *et al.*, 2004). Arevalo and Cameron (2013) expect many or all species of *Mormolyca* with insectiform flowers are pollinated by pseudocopulation. In contrast, the *Maxillaria* species in the sect. *Rufescens* have semi-open flowers with a labellum pad of short, glandular trichomes and exhibit a conspicuous diversity of pleasant floral scents (Christenson, 2002; Flach *et al.*, 2004). Species in the sect. *Rufescens* are not pollinated by pseudocopulation. Most species offer a reward to their pollinators in the form of specialized, nutrient-rich trichomes (Davies *et al.*, 2000; Davies & Turner, 2004; Davies & Stpiczyńska, 2012). The rest of the species in the sect. *Rufescens* have either resin-secreting or resin-mimic flowers (Davies *et al.*, 2000) with glossy labella. These highly specialized pollination syndromes indicate an early separation of *Mormolyca* and *Maxillaria* sect. *Rufescens*. In *Maxillaria* sect. *rufescens*, the inflorescences are produced from the rhizome between the second, third, and fourth oldest pseudobulbs rather than from the terminal growth. In *Mormolyca*, inflorescences are produced from the rhizome between the terminal mature pseudobulb and the emerging vegetative shoot (Whitten *et al.*, 2007).

The concept of the genus *Mormolyca* was “expanded” by Whitten *et al.* (2007) to accommodate the molecular data. There are two other major groups where the same technique of expanding the original concept, irrespective of what the original author intended, to accommodate the molecular data. Lumping of the genera *Sophranitis*

Lindl. and *Laelia* Lindl. into the genus *Cattleya* Lindl. (Van Den Berg, 2008) and the lumping of the species that belong in the genera *Anacheilium* Hoffmanns, *Pollardia* Withner & Harding, *Euchile* Withner and *Panarica* Withner & Harding into *Prosthechea* Knowles & Westc. (Higgins, 1997) based on molecular analysis and ignoring the morphological data are prime examples.

The section *Rufescens* could be considered a different genus or maintained as a section of *Maxillaria*, but not transferred into a genus that was expanded to accommodate the molecular data ignoring the differences in both the morphology and the pollination syndrome.

*Maxillaria aureoglobula* Christenson, Orchids, Mag. Amer. Orchid Soc. 71(2): 125-126. 2002.

TYPE: Colombia. *Hort. Orquídeas del Valle s.n.* (Holotype: CUVC; photo of the flower from the plant that served as the holotype).

**Synonym:**

*Mormolyca aureoglobula* (Christenson) M.A. Blanco, Lankesteriana 7(3): 531. 2007.

This paper has been peer reviewed.

**LITERATURE CITED**

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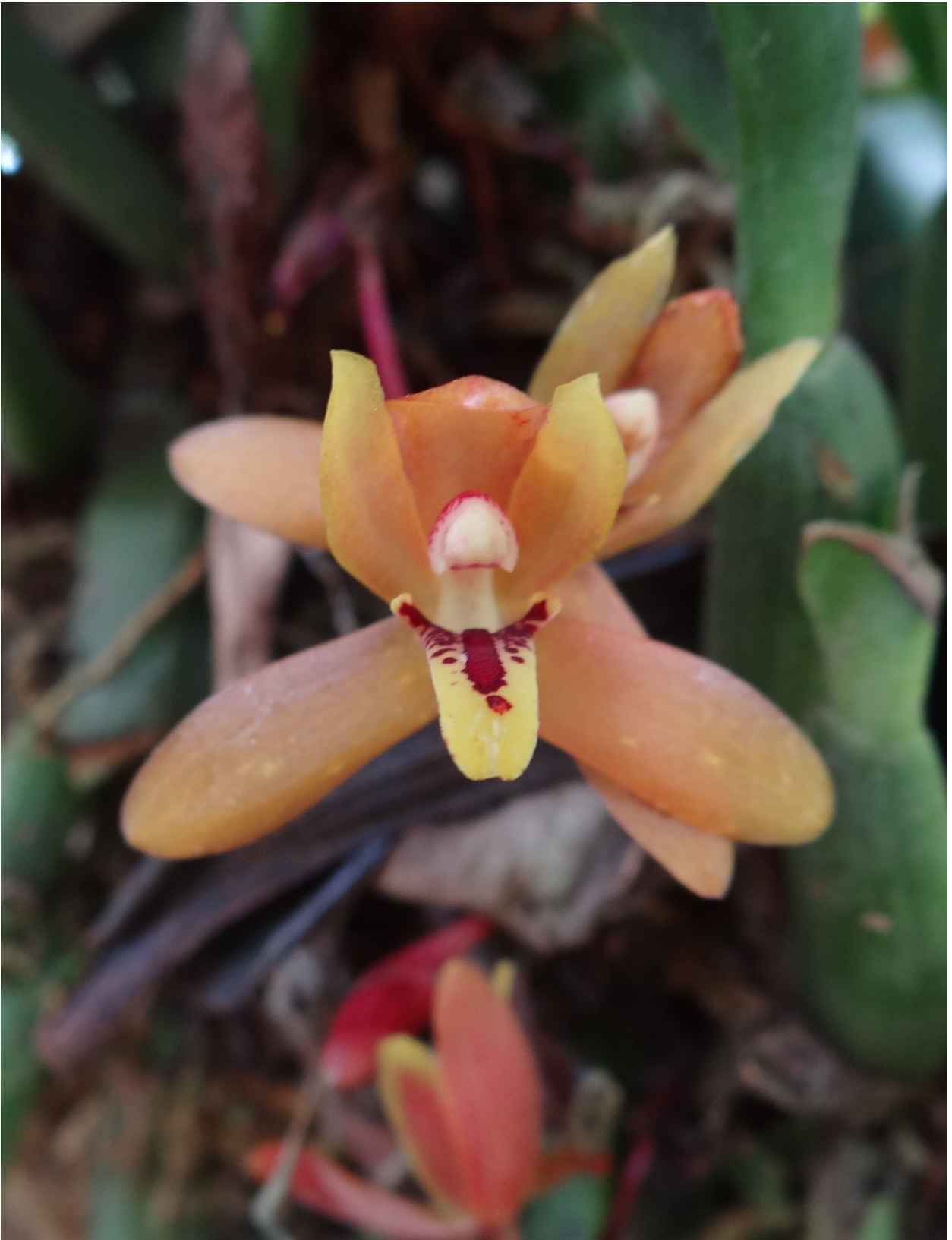
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Habitat of *Maxillaria aureoglobula* Christenson





*Maxillaria aureoglobula* Christenson



*Maxillaria aureoglobula* Christenson