

The Taxonomic History of *Tetramicra tenera* (Richard) Rolfe, *Tetramicra simplex* Ames, and Re-establishment of *Tetramicra eulophiae* Rchb. f.

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### Abstract

The taxonomic history of *Tetramicra tenera* (A. Rich.) Rolfe, *Tetramicra simplex* Ames and re-establishment of *Tetramicra eulophiae* Rchb. f. , as well as the distribution of these species at Los Indios Ecological Reserve, Cuba, is discussed.

In the spring of 2018 while studying populations of *Tetramicra* Lindl. at the west coast of Isla de la Juventud (Isla de Pinos), in the vicinity of the type locality of *Tetramicra simplex* Ames, the senior author observed and documented four different populations of *Tetramicra*. These populations demonstrated consistent morphological characters, pertaining to three species already described and an undescribed natural hybrid.

The flowers of the first population from the type locality of *Tetramicra simplex* Ames at Los Indios demonstrated reniform and emarginate labella lacking lateral lobes and large bracts at the base of the pedicel as described in the protolog of *T. simplex* by Ames (1923). This population occurs in the white sand plains, at an altitude between 4 and 19 m along a 3 km wide and 14 km long stretch parallel to the shoreline where Pine-barren vegetation occurs (Instituto de Suelos, 1973). This population is interrupted by the mangrove forest at lower elevations and by the gallery forests of several streams and rivers.

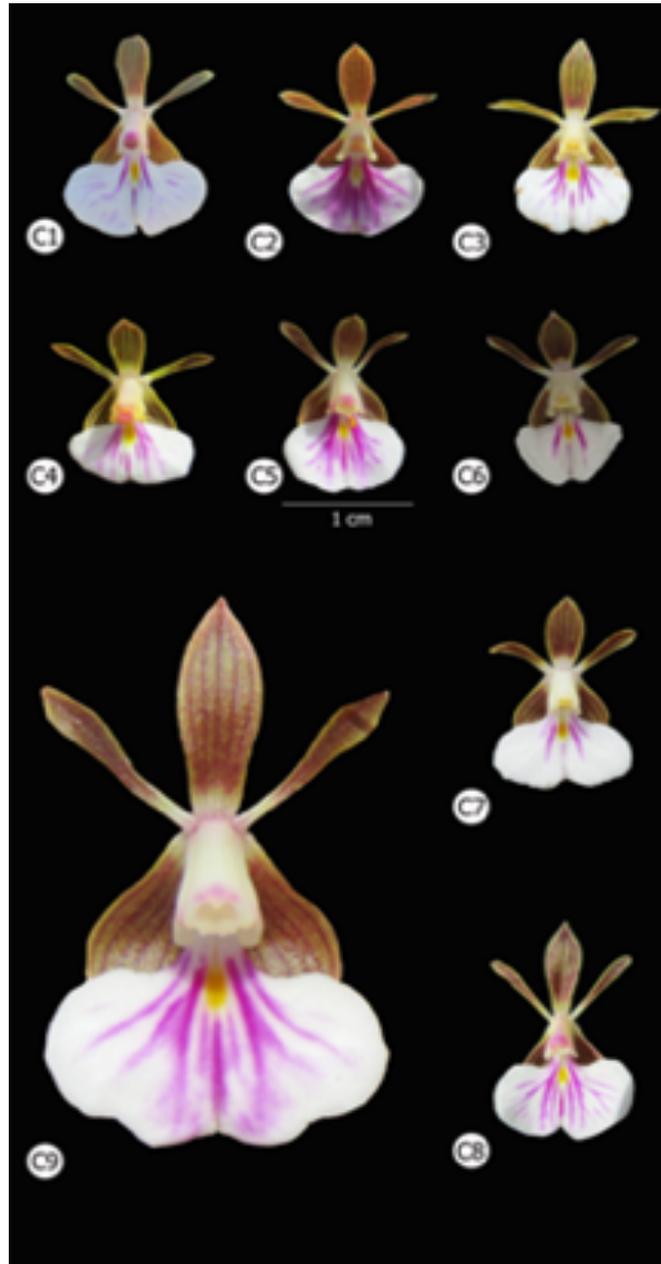
*Tetramicra simplex* Ames, Schedul. Orch. 6: 77. 1923.



*Tetramicra simplex*



*Tetramicra simplex*



Variation in *Tetramicra simplex* at type locality.

*Tetramicra Eulophina* Rehb. f.

Plants of  
Expectation of Carnegie Museum  
May 1910.  
Number 644.

Collected by Otto S. Jennings.

May 19, 1910.  
Identified from the Carnegie Museum, Pittsburgh, Pa.

These sketches from specimens in Hb. New York Botanical Garden  
sent for identification by Dr. N. L. Britton January 15, 1912.

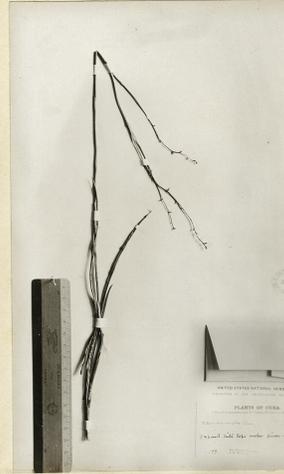
Sepals 7mm long brownish yellow.  
Petals 7mm long yellowish longed  
with maculose.  
Labellum 7mm long, 10mm wide  
whitish in dried specimens, at base  
minutely acuminate at base.  
Pollinia 6 in pairs, waxy.  
Plants about 5cm tall many fls.  
Roots stout. Leaves not seen.



HERBARIUM OF OAKES AMES

ORCHIDACEAE

*Tetramicra simplex* Ames  
Cuba, Prov. of  
Mountains near  
Exposed hill tops under pines  
March 9, 1900.  
Wm. Palmer  
COLLECTED BY J. H. Riley NO. 197



This species differs from *Tetramicra tenera* (A. Rich) Rolfe in the obtuse (not acute) petals and particularly in the lip which is apparently simple, transversely elliptic and shallowly retuse (not 3-lobed with obovate and rounded <sup>middle</sup>) and is broader than long. The flowers appear to be slightly smaller than in *T. tenera*. The lip also is furnished with a pair of short triangular fleshy keels at base.

HERBARIUM  
22113  
OAKES AMES

HERBARIUM OF OAKES AMES

ORCHIDACEAE

*Tetramicra simplex* Ames  
Cuba  
Prov. of  
May 19, 1910  
COLLECTED BY Otto S. Jennings NO. 644

Probably *T. tenera*

MICROFICHE BY MECKLER  
1979

*Tetramicra simplex* (AMES)



*Tetramicra simplex* in situ at type locality. White sand Pine-barrens.

The second morphologically stable population of a distinct species was located at Loma Sigüanea from an elevation of 29 m up to the top of these hills, where the iron hard-pan soil, a concretionary ironstone layer is exposed, apparently due to erosion (Instituto de Suelos, 1973). The plants grow on the interstices where accumulations of soils material occur. This population demonstrates the characters described in the protolog of *Tetramicra tenera* (A. Rich.) Rolfe. The acute apex of the midlobe of the labellum and the rudimentary or totally missing lateral lobes are key characters of *T. tenera*. In addition, the articulated joint of the column and labellum allows the labellum to be partially free (pendulate).

*Tetramicra tenera* (A. Rich.) Rolfe, Gardener's Chronicle, ser. 3, 6: 623. 1889.

*Bletia tenera* A. Rich., in R. de la Sagra, Hist. Phys. Cuba, Pl. Vasc.: 242. 1841, non *Bletia tenera* Griseb., Cat. Pl. Cub.: 263. 1866, nom. illeg.

Synonym: *Tetramicra erosa* Carabia, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 17: 143. 1943.

*Tetramicra tenera* (A. Rich.) Griseb. ex Benth., J. Linn. Soc., Bot. 18: 314. 1881.

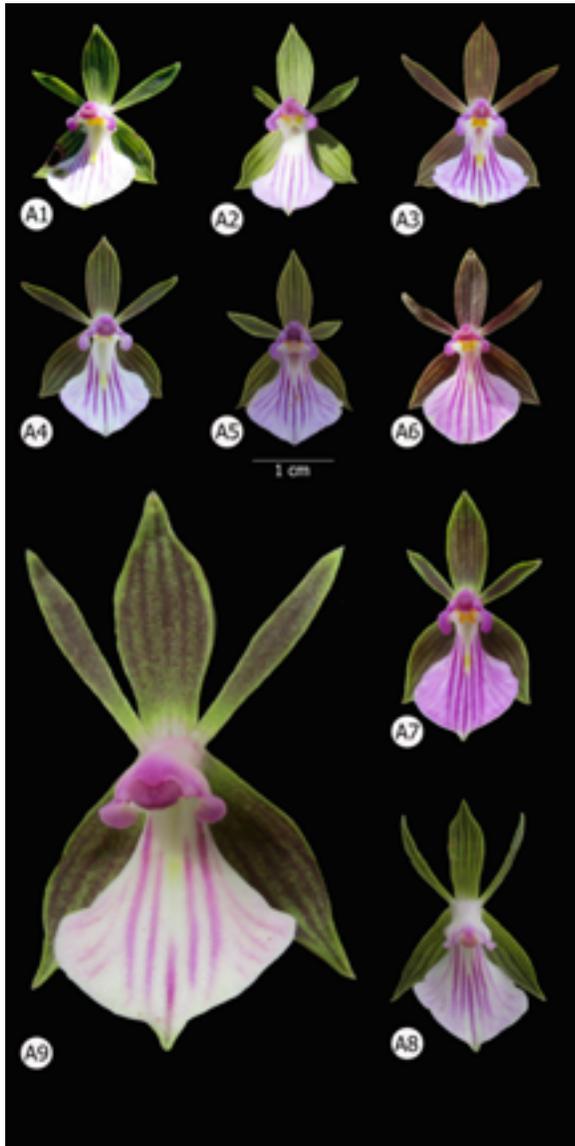
Grisebach's *Bletia tenera* (1866) is a nom. illeg. making Bentham's transfer (1881) of Grisebach's *Bletia tenera* to *Tetramicra* not legitimate. This allows the legal transfer of A. Richard's *Bletia tenera* to *Tetramicra* by Rolfe (1889). Carabia published *T. erosa* to replace A. Richard's *T. tenera* due to the erroneous conclusion that *T. tenera* (A. Rich.) Rolfe was not a legitimate name. Several authors continue to use *T. erosa* as a valid species replacing A. Richard's *T. tenera* (Withner, 1996; Nir, 2000; Llamacho and Larramendi, 2005; Valle et al, 2012). Greuter and Rodriguez (2017) list *T. eulophiae* and *T. erosa* as synonyms of *T. tenera*.



*Tetramicra tenera*



*Tetramicra tenera*



Variation in *Tetramicra tenera*.



*Tetramicra tenera* holotype (P).

The third morphologically stable population occurs between 5.5 and 35 m of elevation, overlapping the boundary of the populations of *T. tenera* and sympatric to the populations of *T. simplex* previously mentioned, but it is more abundant in gravel soils (Instituto de Suelos, 1973). This population shows characters described in the description of *Tetramicra eulophiae* Rchb. f. The most distinctive being, the small but well-developed semi-ovate lateral lobes that look like two auricles at the base of the labellum. In addition, the labellum is basally adnate to the column resulting in a rigid structure where in *T. tenera* the labellum is free.

*Tetramicra eulophiae* Rchb. f., Ann. Bot. Syst. (Walpers) 6(3): 439. 1862.

*Tetramicra eulophiae* Rchb. f. ex Griseb., Cat. Pl. Cub. (Grisebach) 264. 1866.

*Tetramicra eulophiae* (Rchb. f.) Rchb. f. ex Griseb., Cat. Pl. Cub. 264. 1866.

Ackerman (2014) questions the validity of *T. eulophiae* agreeing with the nomenclatural doubts of Carabia and in addition, considers *T. eulophiae* a synonym of *T. tenera*. Reichenbach's reference to the collector is confusing. He lists W. J. Maclay as the collector in the protolog. This collector is not known for visiting Cuba. However, W. S. Maclay, lived in Cuba from 1825 to 1836, made several collections, which he sent to London and cultivated orchids in Guanabacoa (Fletcher, 1920). It is possible that Reichenbach saw a specimen W. S. Maclay made and sent to London.

Reichenbach states that he saw a specimen in the Lindley herbarium. No specimen of *T. eulophiae* collected by Macleary is extant in the Lindley herbarium. There is a specimen in the Lindley herbarium with the signature of Reichenbach next to a note where the generic names *Bletia* and *Tetramicra* are written next to *eulophiae*. The specimen is from Charles Wright and it was collected in the period from 1860 to 1864, which agrees with the publication date of *T. eulophiae*. The determination if this is the holotype is impossible to make. However, the fact that Reichenbach's handwriting is on the specimen, clearly demonstrates that Reichenbach considered the plant on the sheet to represent *Tetramicra eulophiae*.

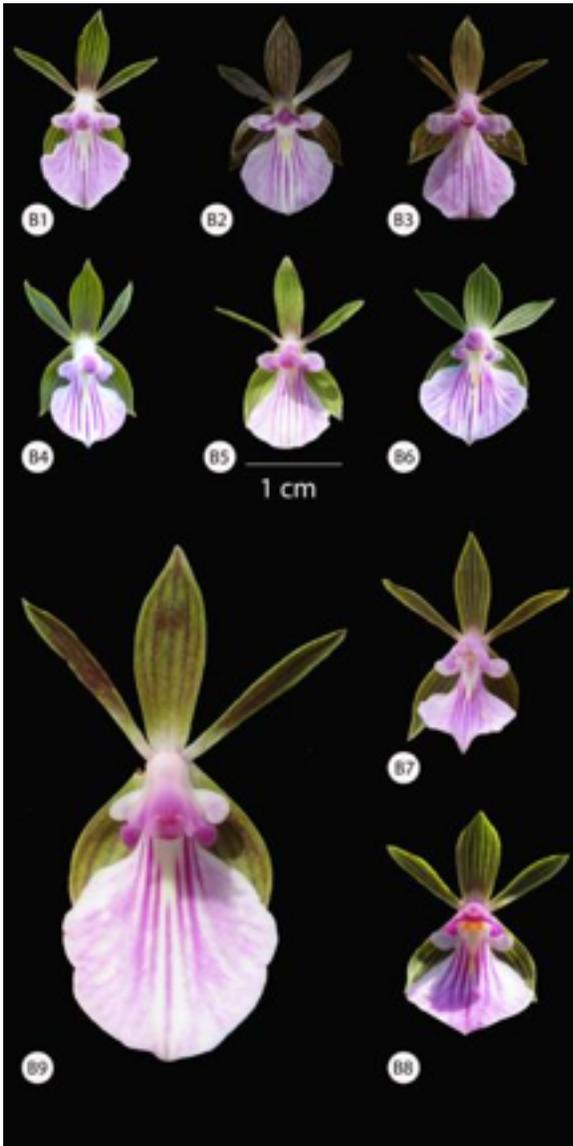
Reichenbach refers to this species (*eulophiae*) by two names in the protolog, *Bletia eulophiae* is in the heading and *Tetramicra eulophiae* is in the protolog. According to the International Code of Nomenclature, Article 36-3 "if two or more different names based on the same type are accepted simultaneously for the same taxon by the same author .... none of them, if new, is validly published. This rule does not apply in those cases where the same combination is simultaneously used at different ranks" (Turland et al, 2018). This implies that in Reichenbach's original publication both *B. eulophiae* and *T. eulophiae* are valid names and Grisebach's publication validating *T. eulophiae* Rchb. f. is a superfluous name.



*Tetramicra eulophiae*



*Tetramicra eulophiae*

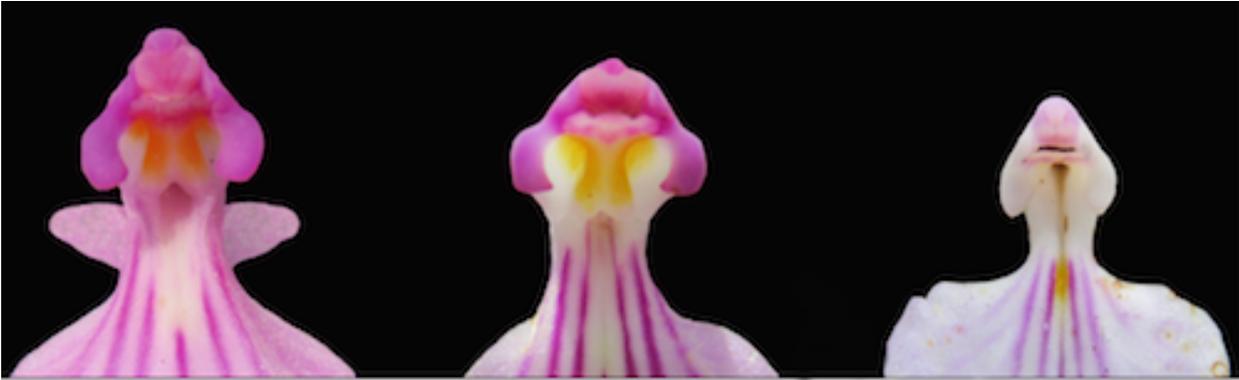


*Tetramicra eulophiae*



Type of *Tetramicra eulophiae* (K-L).

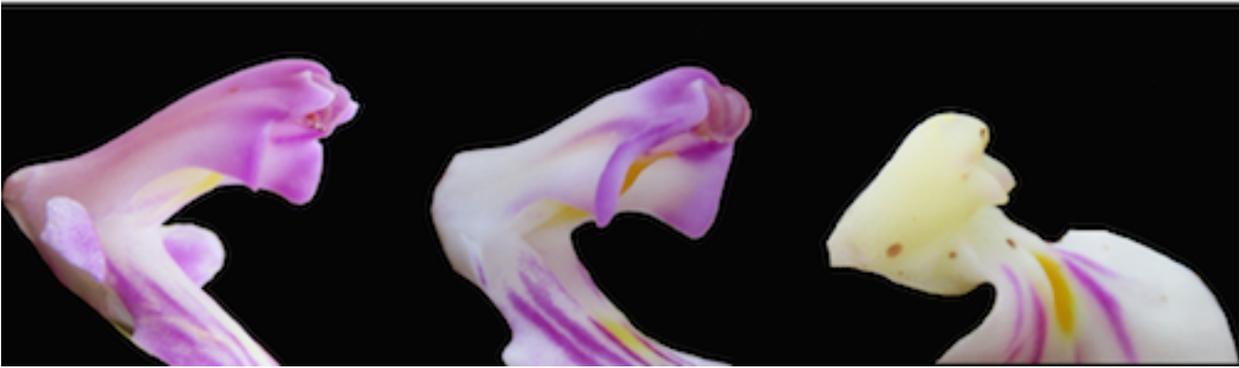
Acuña (1938) published a species key for *Tetramicra*, specifying the differences between the 3 species based on their original descriptions. However, based on his field observations, he states that he has not seen *T. tenera* in situ and that there are “extreme morphs” of *T. simplex* indistinguishable from *T. eulophiae*. Field observations by the senior author corroborates the “extreme morphs” that Acuña reported from his field observations and is the basis for a publication in preparation describing the occurrence of a natural hybrid between the two species with possible introgression.



*T. euphoniae*

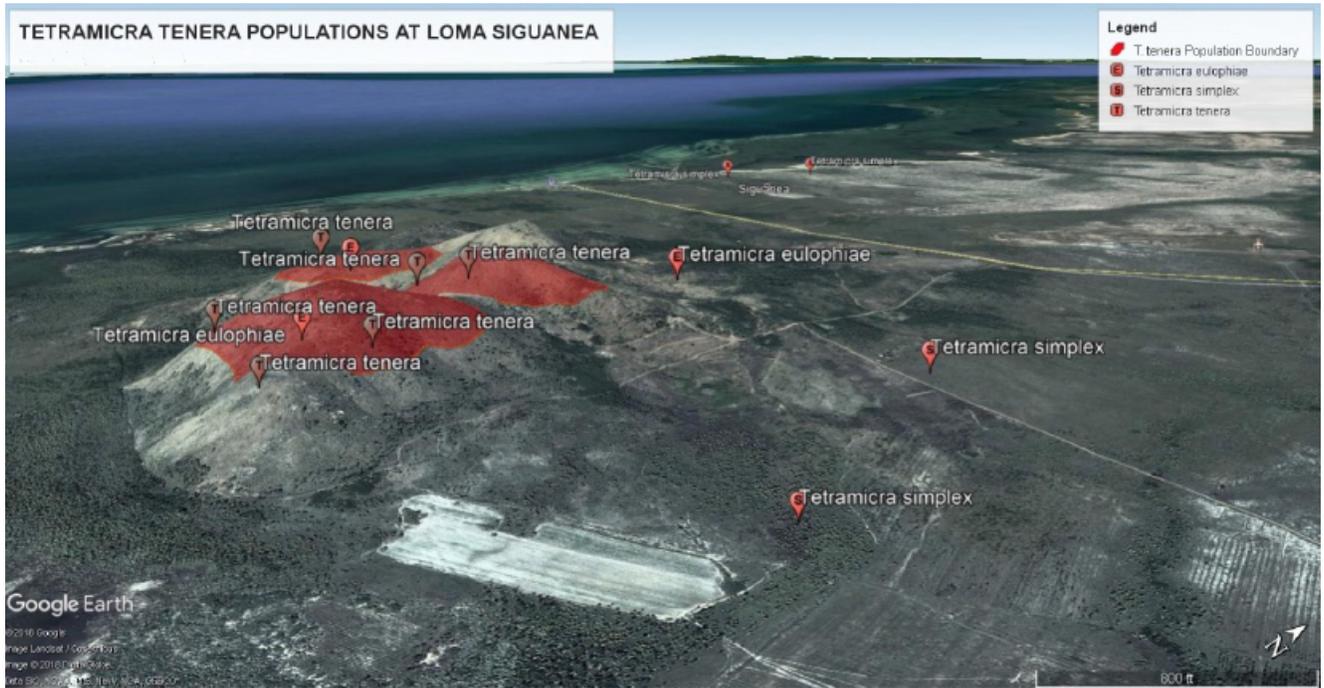
*T. tenera*

*T. simplex*



# POPULATIONS OF TETRAMICRA BY SOILS AT LOS INDIOS, ISLA DE LA JUVENTUD





*Tetramicra tenera* in situ, growing on the superficial concretionary ironstone layer known as iron hard-pan soil or Mocarrero.



*Tetramicra simplex* in situ, growing in the Pine-barren white sand soil.

## Acknowledgements

We give thanks to Caroline Loup, Herbar – Museum National d’Histoire Naturelle, Collection Manager for permission to publish the type specimen of *Tetramicra tenera* (*Bletia tenera*), the AMES specimen of *Tetramicra simplex* is published courtesy of the Orchid Herbarium of Oakes Ames, Harvard University Herbaria. The specimen of *Tetramicra eulophiae* is published with the kind permission of Alan Patton, Head of Science Collections, Herbarium, Library, Art & Archives and with communication with Marie-Helene Weech, Digital Collections Assistant, Royal Botanic Gardens, KEW. (<http://specimens.kew.org/herbarium/K000583933>).

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