



## Things are seldom what they seem: the nomenclature of *Polystachya masayensis* (Orchidaceae)

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### Abstract

We clarified the identity and nomenclature of *Polystachya masayensis*. A new combination is proposed, *Polystachya elatior*, to recognize at the species level the previously described *P. masayensis* var. *elatior*. This taxon features a central lobe of the labellum that is longer than wide, as opposed to the broader than long midlobe of *P. masayensis*. The taxonomic rearrangement includes the placement of *P. cavanayensis* into the synonymy of *P. masayensis*. Both species are sympatric in Central America and they have been confused and identified as *P. masayensis* throughout the taxonomic literature and in herbaria; however, they are easily recognized based on their labellum structure. We also included a drawing depicting labellum outlines for both species and a key for the identification of the Central American species of the genus.

### Resumen

Se clarifica la identidad y la nomenclatura de *Polystachya masayensis*. Se propone una nueva combinación, *Polystachya elatior*, para reconocer al nivel específico la anteriormente descrita *P. masayensis* var. *elatior*. Este taxón presenta un lóbulo central del labelo que es más largo que ancho, contrario a *P. cavanayensis* que tiene el lóbulo central más ancho que largo. El re-arreglo taxonómico incluye el reconocer a *P. cavanayensis* dentro de la sinonimia de *P. masayensis*. Ambas especies son simpátricas en Centro América y han sido confundidas e identificadas como *P. masayensis* en la literatura taxonómica y en los herbarios; sin embargo, son fácilmente reconocidas por la forma del labelo. Se incluyen también una figura con los dibujos de los labelos de ambas especies y una clave para la identificación de las especies centroamericanas del género.

### Introduction

*Polystachya* (Hooker 1824: t. 103) is a nomenclaturally complex genus with ca. 400 names available for ca. 200 recognized species (Davies *et al.* 2002, Govaerts *et al.* 2009, Mytnik-Ejsmont 2011). Kraenzlin (1926) presented the first taxonomic revision of the genus and, recently, Mytnik-Ejsmont (2011) updated it. Russell *et al.* (2010) challenged some of the sections erected by Kraenzlin (1926) and found some of them to be non-monophyletic; the sections proposed by Mytnik-Ejsmont (2011) in the most recent infrageneric taxonomic proposal have not been challenged. Beyond the mentioned generic revisions, American species are yet to be fully understood in both their taxonomy and phylogenetic relationships.

During the revision of the American species of *Polystachya*, we faced a nomenclatural problem associated with one of the most characteristic species of *Polystachya* in America, *P. masayensis* (Reichenbach 1855: 217). This name has been applied to all specimens bearing a hispid-puberulous, pedicellate ovary known to occur in Panama (Williams 1946), Nicaragua (Hamer 1984), and Costa Rica (Dressler 2003). However, this character is shared with the entity described as *P. cavanayensis* Garay & Dunsterville (Dunsterville & Garay 1976: 378) from Venezuela. Until now there has been an apparent clear separation between the species *P.*

*masayensis* and *P. cavanayensis*, namely, differences in labellum outline and geographical isolation. Nevertheless, the problem becomes more complex when some typification issues are considered.

Reichenbach (1855) described *Polystachya masayensis* together with a variety, *P. masayensis* var. *elator* (Reichenbach 1855: 217), both presumably from the same locality in Nicaragua. The epithet *elator*, generally meaning "taller", was most likely used to stress the apparent difference in plant size of the two varieties. The types of both taxa are placed on the same sheet, with dissected flowers glued on pieces of paper indicating the name of each one in Reichenbach f.'s handwriting. More than a century later, Garay & Dunsterville (1976) described *P. cavanayensis*, a very similar species with a distinctive lip structure (central lobe much wider than its length), from the Gran Sabana region of Venezuela. The type of *P. cavanayensis* is a specimen kept in spirit at AMES.

We have studied material of these species of *Polystachya* from across their distribution range and, during a recent visit at W, the senior author had the opportunity to examine the types of both varieties of *Polystachya masayensis*. After studying the evidence available, we concluded that the two varieties represent different species based on their different labellum morphology (central lobe of the labellum transversely elliptic-suborbicular to transversely subquadrate or transversely oblong, always broader than long, apically truncate, truncate-rounded to deeply emarginate in *P. masayensis* var. *elator* (figure 1D) vs central lobe of the labellum lanceolate to ovate, always longer than wide, apically rounded to broadly acute in *P. cavanayensis* (figure 1C)) and phenological separation (main flowering period, September–November for *P. masayensis* var. *elator* vs December–February for *P. cavanayensis*). The examination of the holotype of *P. masayensis* var. *masayensis* showed it to be an earlier name for *P. cavanayensis* (with the broad transverse midlobe) while the name *P. masayensis* var. *elator* more correctly applies to the entity that has most commonly been called *P. masayensis*. Thus, *P. masayensis* var. *elator* should be elevated to the rank of species.

Thus circumscribed, *Polystachya masayensis* (figure 1A–C) ranges from Central America to the Amazonian slopes of the Eastern Andean Cordillera, then into the Venezuelan Coastal Range, then disjunct at a single known locality in the Guayana Highlands. On the other hand, *P. elator* (figure 1D) ranges from Mexico (Chiapas), then southward into the Colombian Chocó.

Below, we provide nomenclatural entries for both species, *P. masayensis* and *P. elator*, with one new combination and a newly proposed synonym.

1. *Polystachya masayensis* Rchb.f. Type:— NICARAGUA. In summo monte Masaya, A.S. Oersted s.n. (W-46338! [plant at right, dissected lip at right], AMES [drawing!]).

*Polystachya cavanayensis* Garay & Dunst. (1976: 378). Type:— VENEZUELA. Bolívar: Cavanayén, 1200 m, P.A. Taylor s.n. (AMES). *syn. nov.*

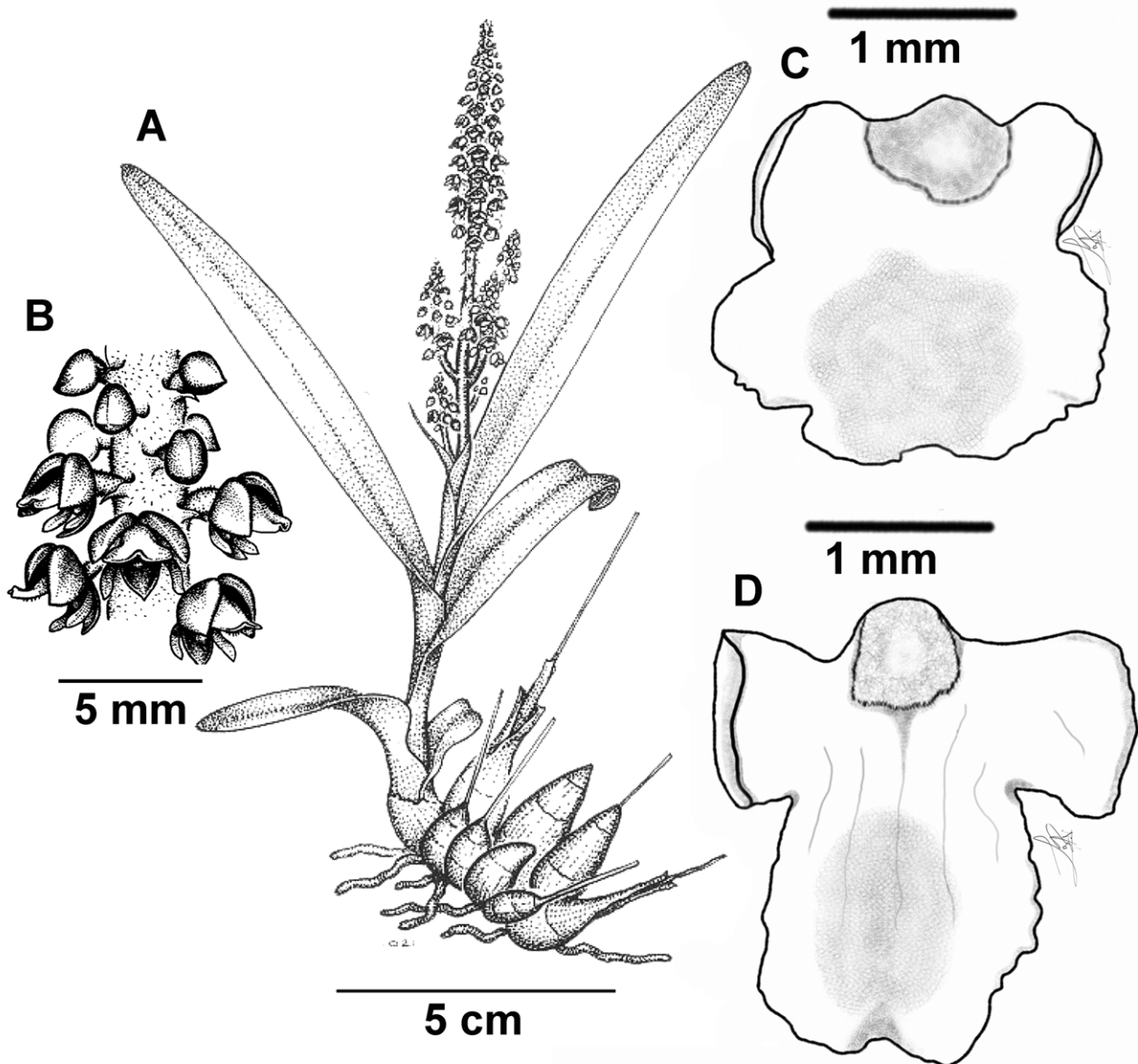
2. *Polystachya elator* (Rchb.f.) Peraza & Carnevali *comb. & stat. nov.*

*Polystachya masayensis* var. *elator* Rchb.f. Type:— NICARAGUA. In summo monte Masaya, A.S. Oersted s.n. (W-Reichenbach 46338! [plant at left, dissected lip at left], AMES [drawing!]).

### Key to distinguish Central American Species of *Polystachya* (South of the Tehuantepec Isthmus)

1. Rachis of the inflorescence and pedicellate ovary densely hispid-puberulous (figure 1B)..... 2
  - Rachis of the inflorescence and pedicellate ovary glabrous or sparsely pubescent ..... 3
2. Central lobe of the labellum transversely elliptic-suborbicular to transversely subquadrate or transversely oblong, always broader than long, apically truncate, truncate-rounded to deeply emarginate ..... *P. masayensis*
  - Central lobe of the labellum lanceolate to ovate, always longer than wide, apically rounded to broadly acute .....  
..... *P. elator*
3. Base of labellum straight or slightly cuneated. Central lobe of labellum half or more than half the length of the labellum, lateral lobes well developed ..... *P. caracasana*
  - Base of the labellum unguiculated. Central lobe of labellum less than half the length of the labellum, lateral lobes small and poorly developed ..... 4

4. Flowers small-sized (4.30–4.70 mm long), column foot small (0.30–0.40 mm long), callus of the labellum rounded and short (ca. 0.40 mm high), lateral lobes small and well-developed ..... *P. clavata*  
 - Flowers medium-sized (6.20–9.60 mm long), column foot large (0.90–1.20 mm long), callus of the labellum rounded and tall (0.80–1.10 mm high), lateral lobes small and poorly developed ..... *P. lineata*



**FIGURE 1.** A–C. *Polystachya masayensis*, A. Habit. B. Inflorescence detail. C. Labellum outline, based on C.H. Lankester 1081 (AMES). D. *Polystachya elatior*, labellum outline, based on L.O. Williams et al. 23880 (EAP-5624). A–B, Modified from Romero & Carnevali (2000) with permission of the authors. C–D. Drawn by L. Peraza.

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