

Lindleyana 6: 129. 1991. Figure 2–C1, C2, and 3.

*Lophiaris mosquitensis* Dressler, TROPICOS (Missouri Botanical Garden, accessed 26 Jul 2011), based on Honduras: Mosquitia, Rio Platano, 23 May 1973, A. Gentry et al. 7548 (MEXU, MO), *nom. nud.*

**Distribution and Ecology.** *Lophiaris crispiflora* is distributed from eastern Honduras and central-northeastern Nicaragua to northwest of Panama. In Honduras it is apparently restricted to the eastern portion of the Gracias a Dios Department (border with Nicaragua), growing in tropical evergreen forest. In Nicaragua it is restricted to the Atlantic side to the central-northwest portion and on the southern portion was recorded by Díaz-Santos (2008: 185) to the west of Río San Juan Department in the Wildlife Refuge Guatuzos at border with Costa Rica, growing in wet forests and least rainy areas of wetlands or vegetation secondary. In Costa Rica, on the Atlantic side, it has been found in the Northern Plains (border with the Río San Juan department of Nicaragua) and margins along the Guanacaste Cordillera. On the Pacific side, it is located at the margins along of the Guanacaste and Talamanca Cordilleras and extending toward the south by the lowlands to the Canal Zone in Panama in tropical dry forest and subtropical wet forest at elevations of 0–1100 meters. Finally in Panama, the collections are mainly concentrated in the vicinity of the Canal Zone and we found two collections from the northeastern portion of the country in Punta Bruja and San Blas, growing in deciduous forest (Fig. 1).

*Lophiaris crispiflora* shows a disjunct distribution pattern in relation to other members of the genus.

**Diagnostic Features.** *Lophiaris crispiflora* is morphologically similar to *L. carthagenensis* and *L. oerstedii* (Fig. 2, Table 2), but can be distinguished by the white sepals and sepals with red brown, magenta or pale pink spots; these spots are confluent and show a continuous and homogeneous pattern that can cover almost the whole surface (Fig. 2-B1, 3-C–F), except in one specimen of Panama (*G. Silvera* & *B. Rodríguez s.n.*, PMA) where the spots are irregular and scattered across the surface (Fig. 3-F), this specimen is also distinctive by the yellow flowers. Yellow morphs are rare but

***Lophiaris crispiflora*** (Schltr.) Balam & Cetzal, *stat. nov.* *Oncidium oerstedii* var. *crispiflorum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 85. 1922. Type: Panama. An der Küste des Pacifischen Ozeans bei Panama-City – no. 1. (protologue). Lectotype: Panama, Margin of Pacific Ocean, C. W. Powell 1 (AMES-23920) designated by Christenson,

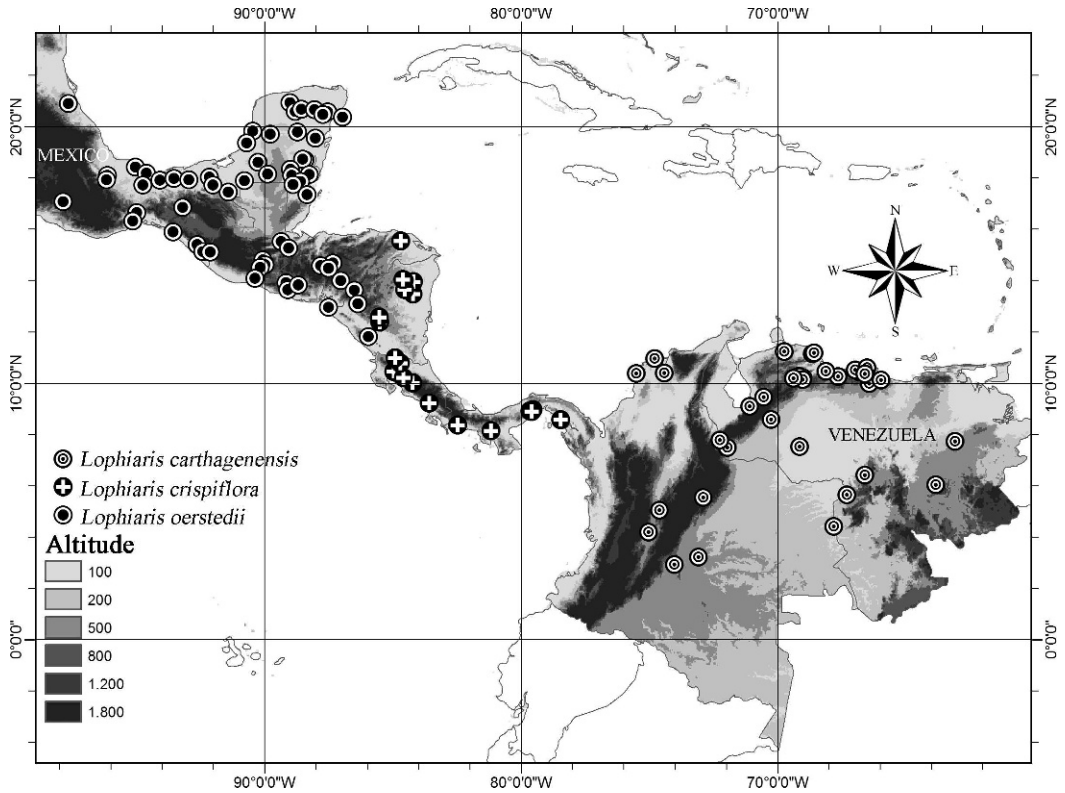


FIG. 1. Distribution of *Lophiaris carthagenensis* and related species.

have been found in other species (discussed below).

*Lophiaris crispiflora* is characterized by a callus of the labellum consisting of a proximal portion with two divergent and ovoid teeth (vs. cerebroid and conical; Fig. 2–A2, C2, 3–G, H) that point sideways (Fig. 2–B1, B2), and a distal portion with two globose teeth; about half the length of these teeth are found over 1/4 of the isthmus, while the width across the distal teeth is usually the same or much larger than the width of the isthmus the labellum (Fig. 2–B1, 3–C–F; the opposite is the case in *L. oerstedii* and *L. carthagenensis*, which is discussed when each species is treated herein). The central tooth or keel can be composed of one or two small, obtuse teeth; when there are two teeth, the top is smaller than the lower (Fig. 3–C, H).

**Variation Range.** *Lophiaris crispiflora* does not have much intraspecific variation compared to *L. oerstedii* and *L. carthagenensis*: the lateral lobes of the labellum range from subtriangular with rounded apex (populations

of Costa Rica) to oblong with subquadrate apex (populations of Costa Rica and Panama). The flowers are usually red brown, magenta or pale pink, although we did cited above a rare specimen, *G. Silvera & B. Rodríguez s.n.* (PMA) with yellow flowers from the Pacific coast of Panama. This yellow color is also observed in cultivated plants of *L. carthagenensis* from Apure state in Venezuela (G. Carnevali 2010, pers. comm.) and a specimen of *L. oerstedii* from El Salvador (*F. Hamer 85*, AMES), this could be interpreted as rare phenotypes that are expressed within the variation of these three species.

**Taxonomic Commentary.** *Lophiaris crispiflora* was described by Schlechter (1992: 85) as a variety of *Oncidium oerstedii* (*O. oerstedii* var. *crispiflorum*), apparently based on the undulate margins of the sepals and petals. When Schlechter described this variety he did not cite the name of the collector, but he cited a specimen from the Pacific coast of Panama and mentioned a “collection number 1”, presumably deposited at B. Christenson (1991), during

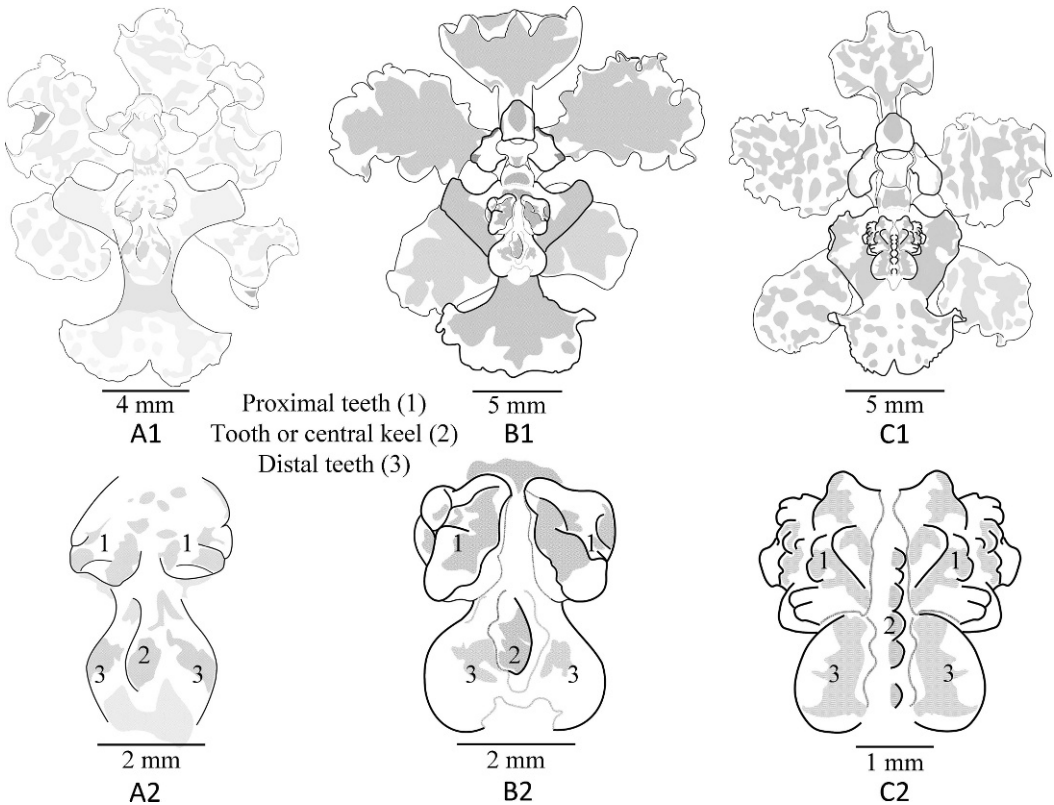


FIG. 2. Morphological comparison of *Lophiaris carthagenensis* and related species. **A1, B1, C1.** Whole flowers, front view. **A2, B2, C2.** Callus. **A1–A2.** *Lophiaris oerstedii* [based on R. Balam et al. 98, CICY]. **B1–B2.** *L. crispiflora*. [D. Bogarín & F. Pupulin 2228, JBL]. **C1–C2.** *L. carthagenensis* [E. Noguera-Savelli et al. 712, VENJ]. Drawn by W. Cetzal.

a review of Powell collections, found a specimen at AMES that matched the information provided in the protologue of *O. oerstedii* var. *crispiflorum* and consequently designated it as lectotype.

The name *Lophiaris mosquitensis* was applied by Dressler to a sample of Honduras (*Gentry et al.* 7548, MEXU, MO) during studies for the Orchidaceae of *Flora Mesoamericana*. In addition, Dressler designated two paratypes from Nicaragua (*A. Garnier 1902–5003*: AMES 60564, 60565), but these two specimens undoubtedly correspond to *L. oerstedii* and the presumed holotype corresponds to *L. crispiflora*. *Lophiaris mosquitensis* has been cited in some studies (e.g., Viquez-Mora and Rivera-Luther 2007) and even in TROPICOS (2011), however, is a *nomen nudum* because it was never validly published.

Until recently, several authors (Table 1) treated *O. oerstedii* var. *crispiflorum* as a synonym of *L. carthagenensis* thought to be

part of its morphological variation. However, we have presented enough evidence to indicate that it is a distinct entity and therefore it is proposed in this study as a recognized, separate species.

**Additional Specimens Examined.** **HONDURAS.** **Gracias a Dios:** Mosquitia, Río Plátano, 23 May 1973, *A. Gentry et al.* 7548 (MEXU, MO). **NICARAGUA.** **Atlántico Norte:** 8.1–12.2 km beyond (above) Kururia on road to San Jerónimo, 50–150 m, 17 Apr. 1978, *W. D. Stevens 7559* (MO); Along Río Sucio, ca. 0.5 km E of first suspension bridge E of Bonanza, 140 m, 24 Apr. 1978, *W. D. Stevens 8072-A* (MO); between 0.3 and 1.9 km N of Limbaika, swamps and dense swamp forest near Río Prinzapolka, 8–10 m, 26 Apr. 1978, *W. D. Stevens 8237* (MO); Along new road between Rosita and Puerto Cabezas, ca. 15.7 km SW of Río Kukalaya, 50–100 m, 30 Apr. 1978, *W. D. Stevens 8520* (MO); cerro

Table 2. Morphological comparison of *Lophiaris oerstedii* and related species.

Characters	<i>L. oerstedii</i>	<i>L. crispiflora</i>	<i>L. carthagenensis</i>
Flowers size (mm)	16–21	16–23	17–20
Dorsal sepal (mm)	7–9 × 4–7	8–10 × 4–6	7–8 × 4–6
Petals (mm)	5–8 × 4–5	8–10 × 5–7	6–8 × 5–6
Sepals and petals (color)	White with pink to pale pink spots	White with red brown, magenta or pale pink spots	White or greenish with red brown, wine or magenta spots
Spots on the surface of the sepals and petals	Heterogeneously dispersed over the whole surface	Confluent or with a continuous and homogeneous pattern or covering almost the whole surface	Heterogeneously dispersed over the whole surface
Labellum length (mm)	8–10	9–11	7–9
Lateral lobes of the labellum (color)	White with dark orange spots	White with red brown to pale pink or magenta spots	White or green with wine or magenta spots
Central lobe of the labellum (color and position)	White with pink to pale pink spots on almost whole its surface	white with a red brown, magenta or pale pink spots in 2/3 of its surface	White or greenish with red brown, wine or magenta spots dispersed across its surface
Central lobe of the labellum (mm)	2.5–4.0 × 3.5–8.0	3.5–5.0 × 7.5–10.0	3.5–5.0 × 6.5–8.5
Isthmus width (mm)	2–3	2.5–3.5	3–4
Proximal teeth of the callus (shape)	Conical	Ovoid	Cerebroid
Apex of the proximal teeth (surface)	Smooth	With 6 small, globose teeth	With +10 small, conical and irregular teeth
Central keel of the callus (position)	Parallel to distal teeth	Parallel to distal teeth	Parallel to proximal and distal teeth
Number of teeth on the central keel of the callus	1-tooth	1 or 2-teeth	6-teeth or more
Lateral margins of the disc	With a compressed, rugose keel	Smooth	Smooth

3 km S of cerro Bakán, 240–260 m, 10 May 1978, *D. A. Neil 3917* (MO); 0.5–1.5 km from Plantel El Salto along road to Bonanza, slope above Río Pis Pis, 140 m, 16 Dec. 1980, *W. D. Stevens 18812* (MO); Siuna, west side of town, 200 m, 7 May 1981, *W. D. Stevens 20123* (MO). **Boaco:** Camoapa, 17 Jan. 1970, *J. Atwood 3932* (AMES, MO); Along Hwy 33 from Río Quilán bridge to ca 0.5 km N of bridge, 300–310 m, 16 July 1978, *W. D. Stevens 9329* (MO). **Río San Juan:** Refugio de Vida Silvestre Los Guatuzos, *F. Díaz-Santos s.n.* (Photograph 96; Díaz-Santos 2008). **COSTA RICA.** Feb. 1907, *H. Pittier 5753* (NY). **Alajuela:** Los Chiles, El Amparo, camino entre Coyol y Gallo Pinto, Finca San Francisco, orillas del Río Purgatorio, 70 m, 15 Dec. 2005, *D. Bogarín & F. Pupulin 2228* (JBL); San Carlos, Pocosol, Santa Rosa, Barrio Jasmin [Sic], Finca Rosibel, 115 m, 14 Dec. 2005, *F. Pupulin et al. 5902* (JBL); Los Chiles, El Amparo, road between Coyol y Gallo Pinto, Finca San Francisco, shores of Río Purgatorio, 70 m, 15 Dec. 2005,

*F. Pupulin & D. Bogarín 5912, 5913, 5915* (JBL); Alajuela, 900 m, 14 July 1926, *A. Alfaro 133* (AMES, US); Alajuela, La Pax [Sic] de San Ramón, 29 June 1925, *A. M. Brenes 3313* (NY); Río Segundo, 1100 m, June 1922, creciendo en cultivo en el Jardín Brade (San José), *O. Jiménez 2038* (AMES). **San José:** San Carlos, Apr. 1923, *C. H. Lankester 497* (AMES). **PANAMA.** **Panama:** Vicinity of Fort Kope, 0 m, 13 Sep. 1941, *P. Allen 2754* (AMES). **San Blas:** Punta Bruja, June 1925, *C. W. Powell 137* (AMES); At Point Bruja, *C. W. Powell 1* (K, MO). **Veraguas:** Distrito de La Mesa, Palo Verde, Río Subí, vegetación primaria a orillas del río, Costa Pacífica, 180 m, Dec. 2005, *G. Silvera & B. Rodríguez s.n.* (PMA, CICY-spirit collection).

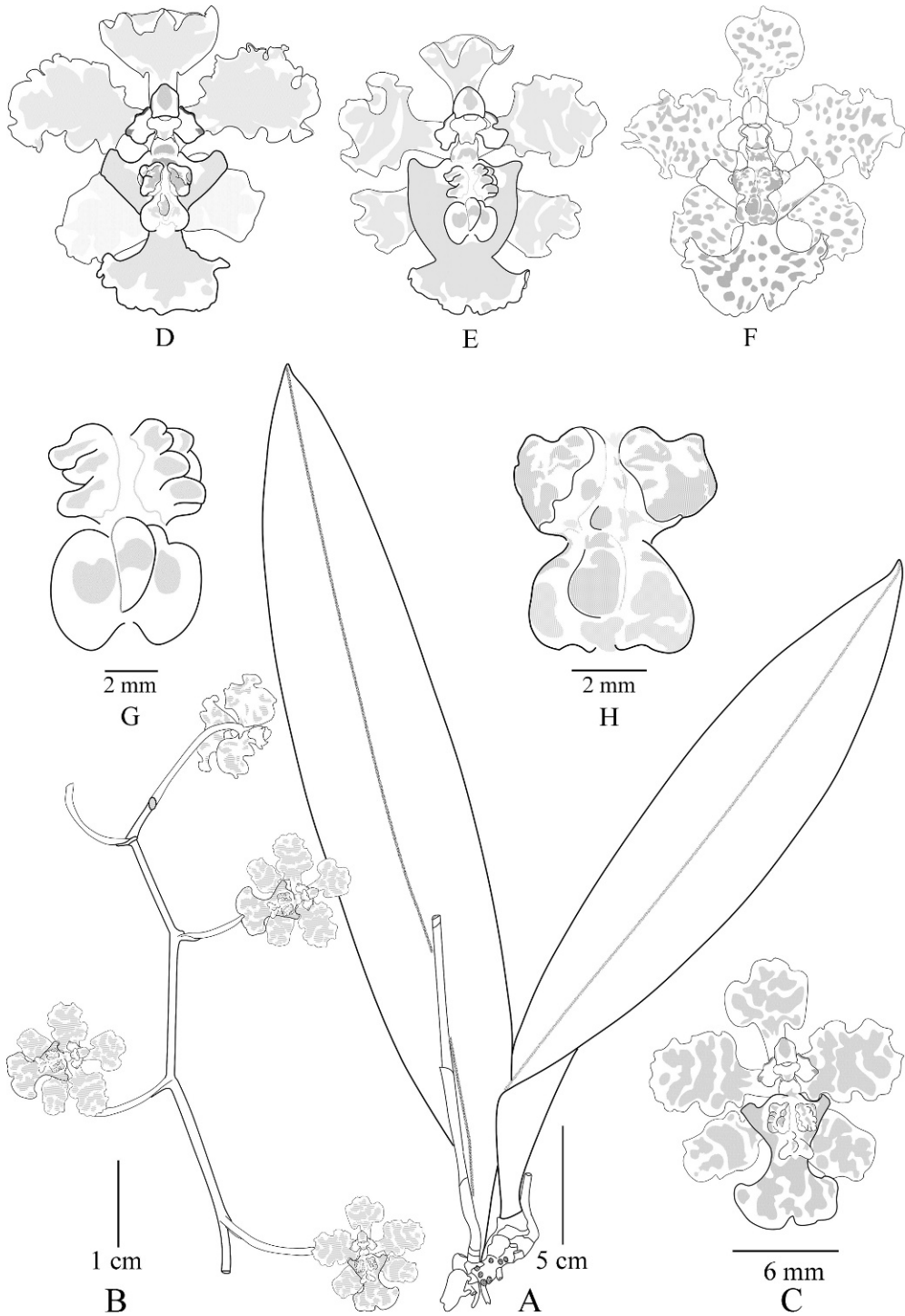


FIG. 3. *Lophiaris crispiflora* A. Habit with partial inflorescence. B. Partial inflorescence. C–F. Whole flowers, front view. G–H. Callus. A–C. [based on C. W. Powell 1, AMES-23920]. D. [F. Pupulin & D. Bogarin 5915, JBL]. E, G. [D. Bogarin & F. Pupulin 2228, JBL]. F, H. [G. Silvera & B. Rodríguez s.n., PMA]. Drawn by W. Cetzal.