

Habenaria cardiostigmatica J. A. N. Batista & L. B. Bianchetti, *sp. nov.* Type: Brazil: Distrito Federal: Brasília, Setor de Mansões do Lago Norte, 6 Jan 1990 (fl), L. B. Bianchetti & J. A. N. Batista 836 (holotype: CEN). (Figs. 5, 6)

Habenariae cruciferae Rchb.f. & Warm. var. *cruciferae* similis, sed habitatione flora campi gramineo-herbaceo-suffruticosi (campo sujo dicti) vel campi aridi graminosi (campo limpo dicti), floribus minoribus (sepalo dorsali 3.5–4(–4.5)×3(–4) mm), stigmatibus uncinatis, apertura inter stigmata calcar ducenti cordiformi differt.

Terrestrial herbs. *Stem* erect, 57–105 cm long, including the inflorescence, 2–3.5 mm wide. *Leaves* 10–14, appressed to the stem, largest at the center of the stem, linear, narrow, 6–20×0.3–0.8 cm. *Inflorescence* (5–) 10–17(–24) cm long, few to many flowered, loose to congest; bracts ovate, 5–12(–18)×4–5.5 mm, about the same size as the ovary + pedicel. *Flowers* (8–)13–25(–32), small, greenish white; ovary + pedicel mostly parallel to the rachis, 9–11 mm long, ovary slightly arched. *Sepals* light green, discretely mucronate, margin smooth; dorsal sepal concave, when flattened ovate, 3.5–4(–4.5)×3(–4) mm; lateral sepals obliquely ovate to ovate-lanceolate, deflexed, 4–5×2–2.5(–3) mm. *Petals* discretely bipartite, base whitish, turning light green towards the segments apices; posterior segment narrowly triangular, falcate, 3–4×1 mm, acute, free from the dorsal sepal; anterior segment reduced to a tooth-like projection, inserted at the base of the posterior segment, 0.5(–1) mm long. *Lip* distinctly tripartite, base white, turn-

ing creamy white or light green towards the segments apices; undivided basal part short, 0.7–1×1–1.2 mm; lateral segments linear-filiform, 6–8 mm long, the base perpendicular with the median segment; median segment, geniculate, 4.5–6×0.5–0.7 mm. *Spur* pending, totally or partially covered by the bracts, linear, slightly flexuose, shorter than the ovary + pedicel, 7–9×0.8–1 mm, base whitish, apex green. *Column* erect, 2.5 mm high; connective emarginate, green; auricles fleshy, verrucose, whitish, 0.5×0.5 mm. *Anther* 1.3 mm high, canals short, 0.8 mm long; hemipollinarium separated; viscidia 0.1×0.1 mm, 0.7 mm apart from one another; caudicles 0.8 mm long; pollinia 1 mm long. *Stigma lobes* 1.5 mm long, green, receptive surface convex, turned forwards, closely parallel, free part 1×0.5 mm wide, apex truncate, uncinata, inner margin thickened, slightly verrucose, space between the stigma lobes heart shaped. *Rostellum* 1.8 mm long, green, midlobe triangular, fleshy, acute, completely placed between the anther loci, 1 mm long, 0.6 mm high, side-lobes parallel throughout, 0.8×0.15–0.2 mm.

Etymology.—From the Greek *cardio* (heart) and the Latin *stigma* (stigma), referring to the heart-shaped aperture between the stigma lobes that gives access to the spur.

Distribution.—The new species is known only from the Federal District and neighboring areas in the state of Goiás (Fig. 3). In Cristalina, Goiás, it was collected near the borderline with the state of Minas Gerais and it is expected that the species will be found in the *cerrado* area at the western part of that state. In a checklist of the Orchidaceae of the Federal District the species was listed as *Habenaria* aff. *aphylla* 3 (Batista & Bianchetti, 2003).

Habitat, ecology, and phenology.—The new species occurs in dry grassy field (*campo limpo*) and grass-herb-subshrub field (*campo sujo*) vegetation, over deep, clay latosols or dry gray soil associated with rock outcrops, at about 1000 m. Though superficially humid for some periods during the rainy season (October to March), these areas dry up completely during the dry season (April to September). In these same habitats several other terrestrial orchid species can be found, including *Habenaria culicina* Rchb.f. & Warm., *H. tamanduensis* Schltr., *H. trifida*

Kunth, *Cyrtopodium poecilum* Rchb.f. & Warm., *C. brandonianum* Barb. Rodr., *Cleisthes paranaensis* (Barb. Rodr.) Schltr. *Galeandra junceoides* Barb. Rodr., *Pelexia cuculligera* (Rchb.f. & Warm.) Schltr. and *Veyretia sagittata* (Rchb.f. & Warm.) Szlach. The species grows and flowers at the peak of the rainy season, from late December to February (Table I). As with most orchids and other *Habenaria* species from grasslands, blooming is associated with brushfires that occur during the dry season. All collections or field observations of the species by the authors were done in previously burned areas.

Conservation status.—*Habenaria cardiostigmatica* is an uncommon species. In each of the three collections of the species made by the authors no more than three to six blooming individuals were observed. The only site where the authors knew and collected the species, in the 'Setor de Mansões do Lago Norte', Brasília, Federal District, was occupied by irregular joint estates and

this population of the species was lost. Of the other known collections, none came from a conservation unit. Considering the geographic distribution and using the World Conservation Union Red List Categories and Criteria (IUCN, 2001) the species can be tentatively classified as Vulnerable VU (criteria B2ab(iii); D2).

Additional specimens examined. BRAZIL. Distrito Federal: Brasília, Setor de Mansões do Lago Norte, 11 Jan 1990 (fl), *Batista & Bianchetti s.n.* (CEN), 6 Feb 1990 (fl), *Bianchetti 832* (CEN); Bacia do Rio São Bartolomeu, 2 Feb 1981 (fl), *Heringer et al. 6121* (AMES, IBGE, MG); 25 km E of Brasília, 28 Jan 1966 (fl), *Irwin 12086* (HB, NY); E. of Lago Paranoá, 25 Feb 1970 (fl), *Irwin et al. 26600* (UB). **Goiás:** Cocalzinho, Vale do Rio Areias, 18 Jan 1993 (fl), *Chagas s.n.* (HEPH 7768-2); Cristalina, km 3.3 in highway BR-251 from the Goiás-Minas Gerais state-line, 16°02'S, 47°22'W, 950 m, 8 Feb 1988 (fl), *Valls 11577* (CEN).

As far as we could determine, this species was first collected in 1966 by H. S. Irwin et al. in Brasília and identified as *H. aphylla* by Pabst. In the general morphology and position

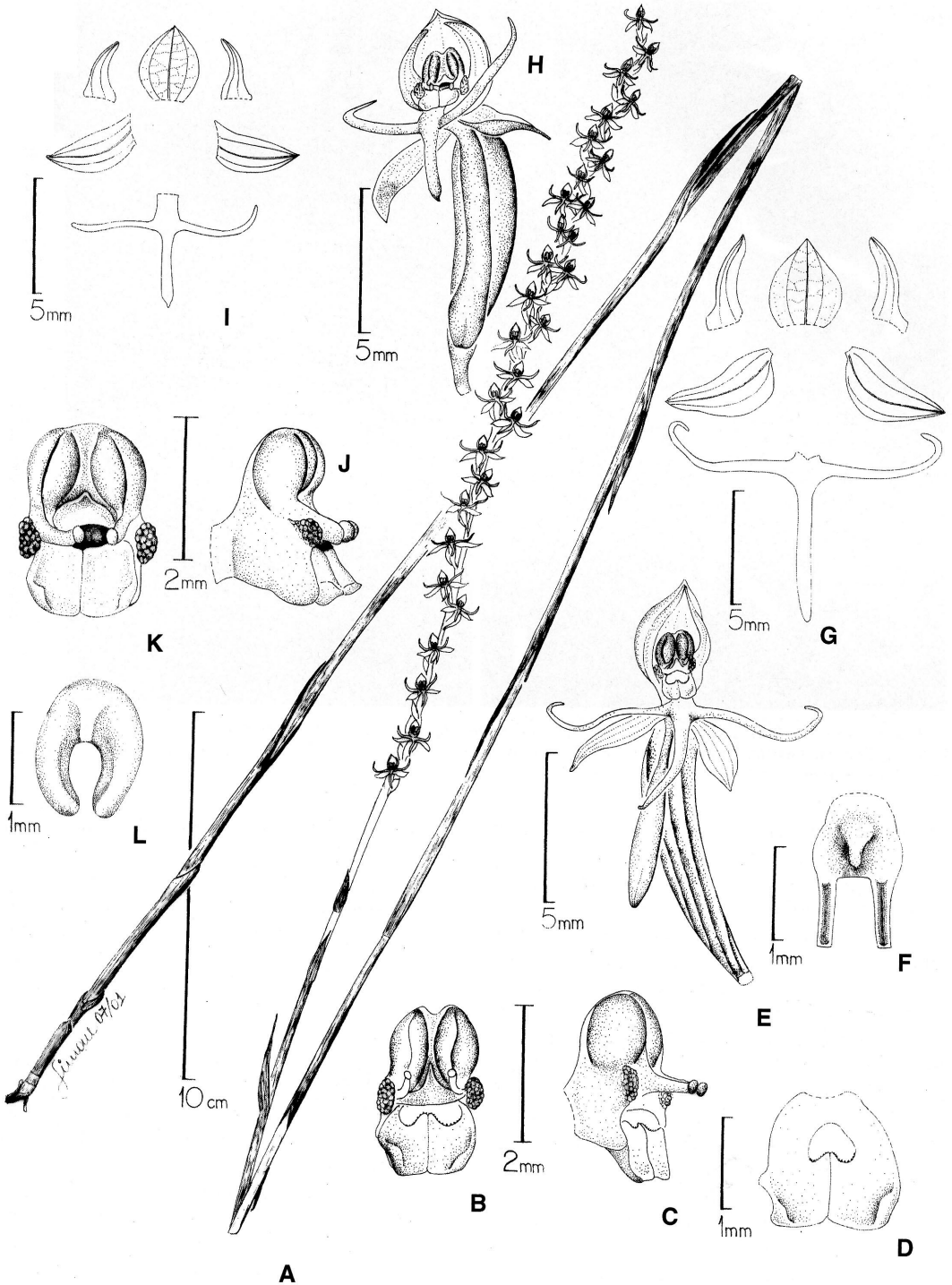


FIG. 5. *Habenaria cardiostigmatica* and *H. spanophytica*. A–G. *Habenaria cardiostigmatica*. A. Habit (Irwin et al. 26600, UB). B. Column, front view. C. Column, lateral view. D. Stigma lobes, upper view. E. Flower, front view. F. Rostellum, upper view. G. Perianth (B–G, Bianchetti & Batista 836, CEN). H–L. *Habenaria spanophytica* (Batista et al. 730, CEN). H. Flower, $\frac{3}{4}$ view. I. Perianth. J. Column, lateral view. K. Column, front view. L. Rostellum, upper view.

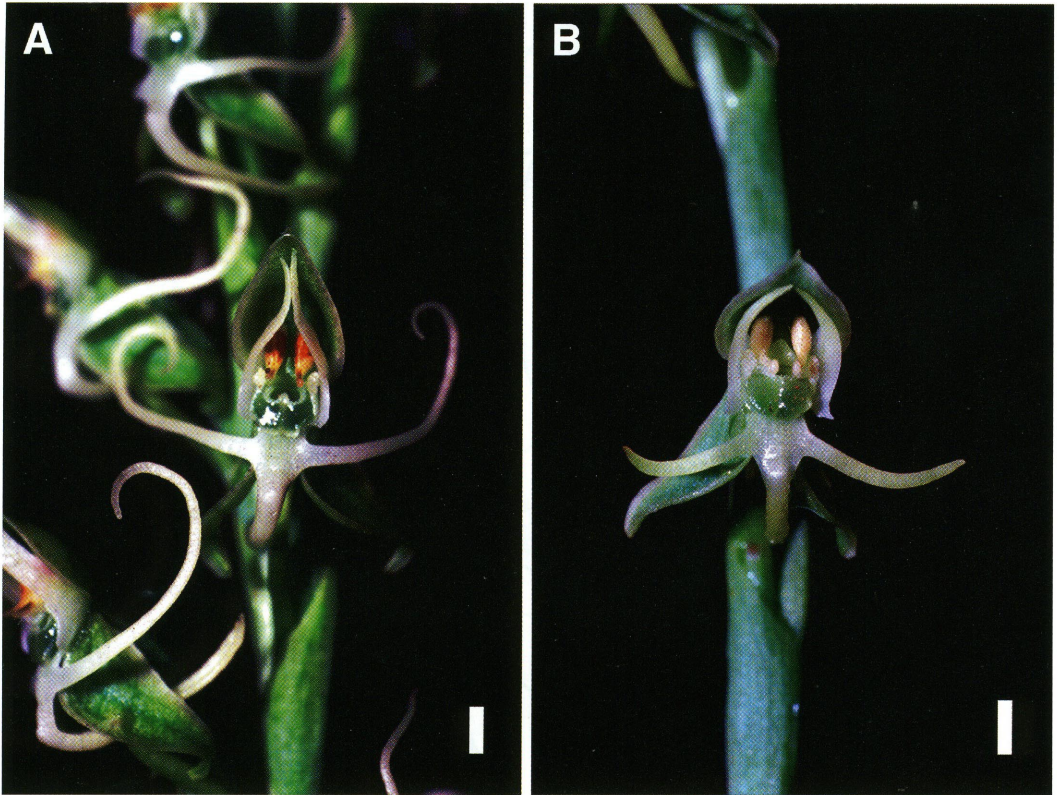


FIG. 6. Flowers from live specimens. *Habenaria cardiostigmatica*. **A.** From 'Setor de Mansões do Lago Norte', Brasília, Federal District. *Habenaria spanophytica*. **B.** From Sucupira farm, Núcleo Bandeirante, Federal District. Scale bars=1 mm.

of the flower segments, the new species is similar to *H. crucifera* var. *crucifera*, but *H. cardiostigmatica* has smaller flowers (dorsal sepal 3.5–4(–4.5) × 3(–4) mm vs. 5–6(–7) × 4–5.5 mm in *H. crucifera* var. *crucifera*), a linear spur (vs. clavate), and a distinct column structure with the space between the stigma lobes heart-shaped (vs. circular) and the stigma lobes uncinata (vs. straight, not uncinata). These and additional differences are shown in Table II. In column morphology *H. cardiostigmatica* is similar to *H. mystacina* Lindl., also from section *Nudae*. In both species the rostellum midlobe is slender, with an acute apex, the rostellum arms are slender, narrow, the two functional stigma lobes are uncinata and the space between them, which gives access to the spur, is heart-shaped. However, *H. mystacina* has deeply bipartite petals, the lateral segments of the petals and lip are densely pubescent and the species seems to be related to other taxa with hairy segments such as *H.*

pubidactyla J.A.N. Batista & Bianchetti (Batista & Bianchetti, 2006).