certainly the smallest of the Mexican species of *Cohniella*. The species is also distinctive by the lateral and central lobes of the labellum that are about as long as wide (Fig. 8-C, D, I), and both are almost about the same shape and size, as opposed to other Mexican cohniellas (e.g. *C. leptotifolia*, Fig. 6-B, C) where the lateral lobes are at least half the size as the central lobe. Another distinctive feature of *Cohniella pendula* is the lower margin of the disc that is cartilaginose-callose due to lateral extensions of the callus. Although this condition is also present in *C. brachyphylla*, it is much more pronounced in *C. pendula*.

Variation range. *Cohniella pendula* is a species with relatively little variation in floral characters. However, the shape of the lateral lobes of the labellum ranges from subquadrate to elliptic.

Taxonomic commentary. Due to its recent description (Carnevali et al. 2010) and traditional treatment under a broad concept of *Cohniella cebolleta*, this species has not been subject to nomenclatural wrangling. However, as with most taxa in the *Cohniella cebolleta* complex, *Cohniella pendula* has been confused with that species, but is relatively easy to distinguish from any other *Cohniella* by the pendent habit and the distinctive flowers, in addition to the restricted distribution. In the herbarium labels a pendent habit is described (e.g. *Patkai & Warford W-582*, SEL), for the populations of El Colorado, NE of Puerto Vallarta ("…in this area have a pendent habit…").

Additional specimens examined. MEXICO. **Jalisco:** Mpio. Cabo Corrientes, Las Juntas de Tuito, aprox. 450 m, 16 Mar. 1984, *G. Salazar et al. 580* (AMO). El Tuito, 10 Mar. 2008, *W. Cetzal 8* (CICY). El Tuito, 10 Apr. 1978, *A. Pridgeon s.n.* (SEL). Mpio. Chiquilistan, 1300 m, Feb. 1973, *S. Rosillo de Velasco 131* (AMO). Mpio. Cocula, 1700 m, Mar. 1973, *S. Rosillo de Velasco 140*, *141* (AMO). Mpio. La Huerta, camino antiguo 200 m, Estación de investigación, Experimentación y Difusión Chamela UNAM, 2 Apr. 1984, *J. A. Magallanes 4168* (MEXU). Mpio. Tecalitlán, 1500 m, Mar. 1981, *S. Rosillo de Velasco s.n.* (AMO). Puerto Vallarta, 10 Apr. 1991, *N. Warford s.n.* (SEL). Road to Mascota out of El Colorado, NE of Puerto Vallarta, 600 ft, 12 Jan. 1989, *Patkai & Warford W-582* (SEL). **Nayarit:** Mpio. Tepic, km 35 corredor Tepic-Aguamilpa, 10 June 1992, *A. Benitez-Paredes et al. 3819* (MEXU). Mpio. San Blas, Barranca N.W. east of Tepic-Navarrete, 21°14′N, 104°32′W, 1350 m, 28 Aug. 1948, *R. L. Dressler 350* (US). Mpio. Santa María del Oro, Volcano Ceboruco near Tequepexpan, 4 May 1936, *O. Nagel et al. 5115* (US). Mpio. de Ruíz, km 56.3 del camino de la carretera México 15 (Tepic-Mazatán) a Jesús María, 6.3 km adelante del poblado de El Naranjo, 22°01′N, 104°50′W, 320 m, 25 July 1998, *M. A. Soto 86888* (AMO).

Cohniella yucatanensis Cetzal & Carnevali, **sp. nov.** Type: México. Yucatán: Municipio Mérida, Dzityá, alrededores del Cementerio del pueblo, 21°2′59.65″N, 89°40′25.54″W, collected by Gabriel Caceres Hernández, flowered in cultivation 20 Apr. 2009, *W. Cetzal 22* (Holotype: CICY; Isotypes: AMES, CICY- spirit collection). Fig. 9.

Cohniellae brachyphyllae (Lindl.) Cetzal & Carnevali affinis sed lobo centrali profunde emarginato (vs breviter emarginatum), concolori, folio proportione angustiore, basi conspicue angustiore; columna base quam apice latiore (vs angustiorem in *C. brachyphyllae*), isthmo proportione longiore angustiore, stigma minore recedit.

Epiphytic erect **herbs**, sun-loving to semi-umbrophyllous, shortly creeping to cespitose; **rhizome** short, thin, brittle; **roots** 0.6–2.0 mm thick, white; **pseudobulbs** 4–5 mm long, 4–5 mm thick, subspherical to broadly ovoid, apically 1-leaved, red-purple tinged, totally enclosed by 3 imbricate sheaths, (1.6–)3.5–5.5 cm long, 1.0–2.4 cm wide, upon spreading, eventually deciduous; **leaves** terete, thickly fleshy-coriaceous, 13–44 cm long, 2.5–4.0 (–9.0) mm thick, dark green, usually purple spotted, when fresh abruptly constricted proximally, gradually attenuated distally into a pungent apex, often somewhat falciform; **inflorescences** solitary from the base of the pseudobulbs, 11–76(–100) cm long, a 3–17 flowered raceme or panicle with 1–4 short branches 4–5 cm long, the branches 3–12(–17) flowered; peduncle and rachis dark green, purple tinged; peduncle erect, terete, with 3–13 remotely bracted internodes, peduncle bracts 5–16 mm long, 2–4 mm wide, the basalmost longest, oblanceolate, acuminate, tubular; bracts subtending the lateral branches

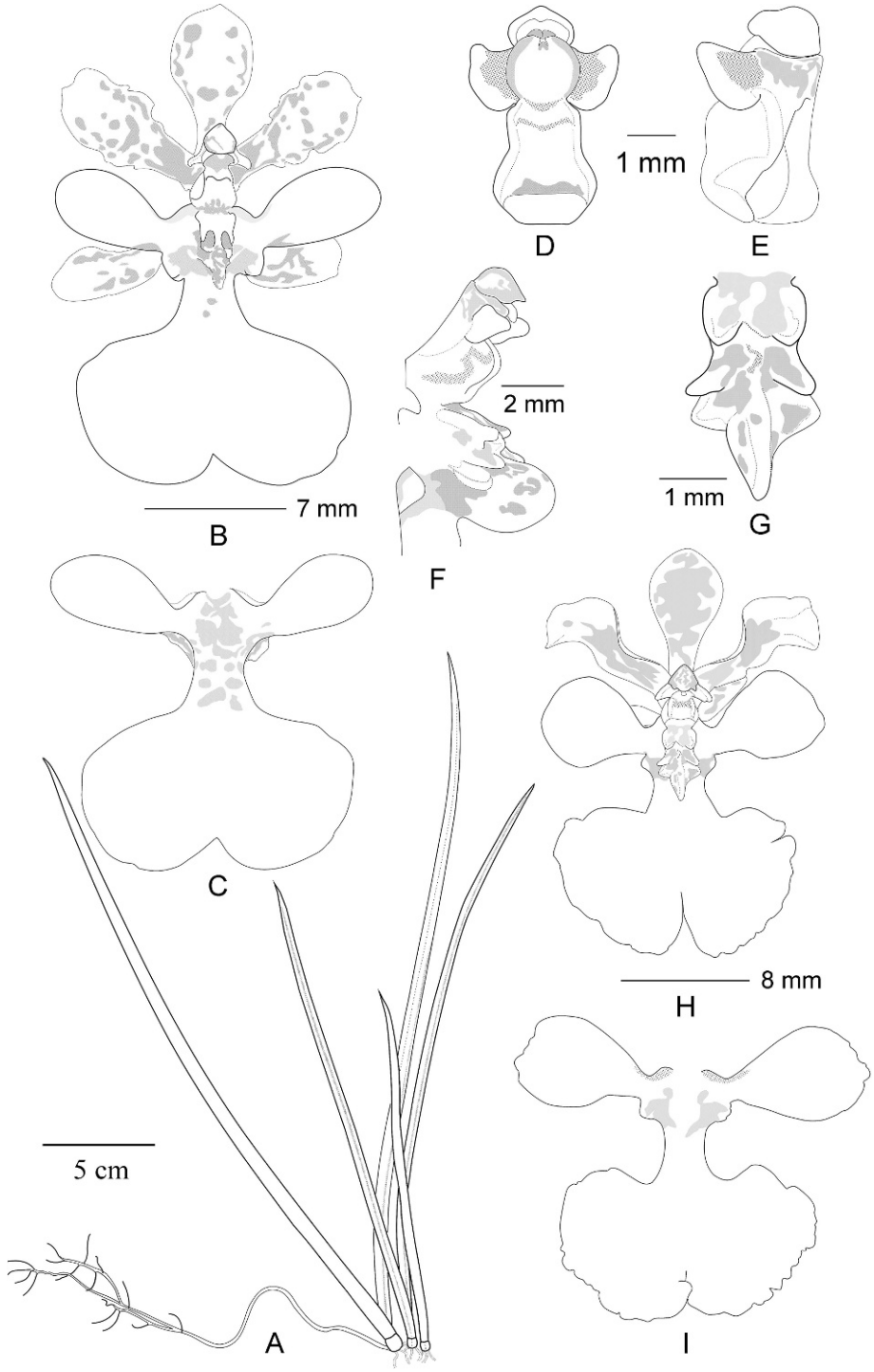

FIG. 9. *Cohniella yucatanensis*. A–G. *W. Cetzal 22* (CICY). H. *G. Carnevali 7424* (CICY). I. *G. Carnevali 7304* (CICY). A. Habit with inflorescence. B, H. Whole flower, front view. C. Labellum, back view. D. Column with anther cap, front view. E. Lateral view of the callus and column. F. Lateral view of the callus and column. G. Callus. I. Labellum, front view. Scale: A. 5 cm. B–C. 7 mm. D–E. 1 mm. F. 2 mm. G. 1 mm. H–I. 8 mm. Drawings by W. Cetzal Ix.

2–5 mm long, 2 mm wide, elliptic, acuminate; floral bracts 2–4 mm long, narrowly elliptic, acuminate; **flowers** resupinate, medium sized for the genus, with perianth parts widely spreading and the petals and sepals somewhat reflexed; ovary with pedicel 12–14 mm long, of which ca. 3–4 mm correspond to the ovary, this 2 mm thick; **sepals** basally clawed for about 1/3 of total length of the sepal, flat or somewhat reflexed, dorsal sepal (4–)6–9 mm long, (2.2–)3.3–4.5 mm wide, oblanceolate to elliptic, apically obtuse to acute and minutely apiculate, concave in the upper half, the claw 1.5–2.5 mm long, 0.5–1.5 mm wide; lateral sepals partially fused at the very base, then free, similar to dorsal, 5–8 mm long, 2.0–3.2 mm wide; **petals** 5–9 mm long, 2–5 mm wide, oblanceolate, somewhat oblique, the apex rounded to subtruncate, somewhat reflexed in natural position; **labellum** deeply 3-lobed, 8–14 mm long from the base to the apex of the central lobe, 12–17 mm wide across the apices of the lateral lobes, the lateral lobes in the same plane as the central lobe and ± perpendicular to it; central lobe (6–)8–10 mm long, 10–16 mm wide, spathulate-oblong to transversely elliptic or subquadrate in outline, apically rounded to subtruncate, inconspicuously to deeply emarginate, and with overlapping lobes, basally produced into a isthmus variable in size, 1.8–4 mm long, 1–4.0 mm wide; lateral lobes 6–8 mm long, 3–6 mm wide, obovate, oblong to broadly oblanceolate, apically truncate-rounded to sharply obliquely truncate, the upper and lower margins of the lateral lobes flat to rounded; disc relatively large, ca. 4 mm long, 4 mm wide, oblong to subsquadrate, bearing a well-developed callus, ca. 3 mm long, 1.5 mm wide, consisting of a large, elevated, ± flat, oblong platform ca. 1.2 mm long, 1.5 mm wide, margin of the apex with two small teeth on each side; proximally with two smaller, lateral, divergent teeth that are conical and pointing upward; distally with two small, lateral, divergent, broadly conical teeth; the central tooth or keel laterally compressed; the basal portion of the callus with lateral extensions, brown-reddish and conical in shape; **column** 4 mm long, 2 mm wide, the ventral face in the same plane as the labellum lobes, oblong, tabula longitudinally channelled, stigmatic cavity rounded, ca. 1.5 mm long and wide; column wings small, ca. 0.5 mm long, 1.2 mm wide, terete, conical; anther 2 mm long, 1 mm wide, apical, operculate, ellipsoid; **pollinarium** typical for the genus.

Paratypes. MEXICO. Campeche: Mpio. Calkiní, El Remate, unos 8.5 km al oeste de Tankuché, 20°32′30″N, 90°19′20″W, 31 Jan. 2000, *G. Carnevali et al. 6016* (CICY). Mpio. Campeche, 4 km al sur de la Cd. de Campeche, 19°47′30″N, 90°32′0″W, 10 m, 18 Feb. 2002, *C. Gutiérrez Báez 7322* (CICY). 2 km noroeste de Chiná, 19°47′10″N, 90°30′25″ W, 8 m, 2 Mar. 2001, *C. Gutiérrez Báez 7054* (CICY). 2 km al sur de Samulá, 19°48′N, 90°32′30″W, 20 m, 21 Jan. 2002, *C. Gutiérrez Báez 7308* (CICY). 2 km al sur de Samulá, 19°48′0″N, 90°32′30″W, 20 m, 29 Dec. 2001, *C. Gutiérrez Báez 7303* (CICY). **Quintana Roo:** Mpio. Benito Juárez, 3 km al sur del aeropuerto de Cancún, 16 Feb. 1999, *G. Carnevali et al. 5333* (CICY). **Yucatán**: A 12 km al NO de Hunucma, sobre el camino a Sisal, 26 Dec. 1985, *E. Cabrera 10378* (MEXU). A 2 km al S del Crucero las Coloradas-San Felipe, sobre la carretera Tizimín-Río Lagartos, 20 Dec. 1985, *E. Cabrera 10033* (MEXU). San Felipe, km 5 entre Río Lagartos, San Felipe, 6 Sep. 1983, *R. Orellana 1444* (CICY). Kinchil, 700 m al E de la desviación a Chunchucmil, 9 Mar. 1995, *R. Durán 2450* (CICY). Río Lagartos Camino a San Felipe yendo por la carretera Tizimín-Río Lagartos, 16 Feb. 1983, *J. Leal et al. 235* (CICY). Km 16 Carretera Colonia Yucatán-Cuyo, 20 Apr. 2009, *W. Cetzal 21* (CICY). Mpio. Chocholá, 1 km al E de la población de Chocholá, saliendo del libramiento del pueblo desde la carretera Mérida-Campeche, unos 25 km al SO de Mérida, 20°45′N, 89°49′30″W, 20–50 m, 12 Jan. 2001, *G. Carnevali et al. 6319* (CICY, SEL). Chocholá, 1 km al E de la población de Chocolá, saliendo del libramiento del pueblo desde la carretera Mérida-Campeche, unos 25 km al SO de Mérida, aprox. 20°45′N, 89°49′30″W, 20–50 m, 4 Dec. 2000, *G. Carnevali et al. 6285* (CICY). Mpio Celestún, 3 km al S del desvío hacia Chunchucmil desde la carretera Mérida-Celestún, 20°50′ N, 90°11′45″W, 5 m, *G. Carnevali et al. 4903* (CICY). Zona arqueológica de Dzibilchaltun, 3 May 1981, *J. M. Andrews 22* (CICY). Mpio. Dzemul, km 6 de la carretera Dzemul-Xtampú, 4 km al S del entronque a ruinas de Xtampú, 21°16′30″N, 89°18′30″W, 3 Dec. 2004, *J. L. Tapia-Muñoz et al. 1512* (CICY). Dzemul, carretera a San

Benito, unos 6–7 km al norte de Dzemul, aprox. 5 km al sur de Telchac Puerto, 21°17′10″N, 89°19′40″W, 27 Jan. 1997, *G. Carnevali et al. 4363* (CICY, SEL). Dzemul, Rancho San Antonio, ca. 8 km al N de Dzemul, 21°16′20″ N, 89°19′15″ W, 26 Mar. 1997, *G. Carnevali 5013* (CICY); Mpio. Progreso, carretera Mérida-Sierra Papacal-Chuburná Puerto, ca. 13 km al norte de Sierra Papacal, 21°11′15″N, 89°49′10″W, 3–10 m, 21 Jan. 2000, *G. Carnevali et al. 5990* (CICY). Hills above Ticul, 6 Jan. 1983, *S. P. Darwin 2433* (MEXU). Maxcanú, Chunchucmil, 13 Mar. 2009, *G. Carnevali 7423* (CICY). Dzitya, 13 Mar. 2009, *G. Carnevali 7424* (CICY). Dzemul-Telchac, Rancho Paso el Rondo, 28 Jan. 2010, *W. Cetzal 24*, *25* (CICY).

Etymology. The specific epithet of this species is a reference to the states of Campeche, Quintana Roo, and Yucatan that together comprise the Yucatan Peninsula, where this species is endemic.

Distribution and Ecology. Endemic to Mexico. *Cohniella yucatanensis* is restricted to the northern and western portions to the Yucatan Peninsula in Campeche, Quintana Roo, and Yucatan states. This species is locally common in tropical deciduous forests (''selva baja caducifolia'') in Campeche and Yucatán, where it is the only species of the genus known in these ecosystems. It is extremely rare in northern Quintana Roo, where it grows in low-statured inundated forests. In this forest type it is almost entirely replaced by *C. ascendens*. At the type locality, it grew in a large colony in the shafts and branches of ''dzizilché'' (*Gymnopodium floribundum* Rolfe) along with *Tillandsia yucatana* Baker.

Diagnostic features. *Cohniella yucatanensis* is distinguished from other Mexican species of *Cohniella* by the shape of its column. In this species the column is broadest the base, gradually tapering to its narrowest portion just below the tabula infrastigmatica. This pattern is reversed in the other Mexican species of the genus (Fig. 4-H, 5-E, 6-E, 8-G). Furthermore, as compared to other Mexican taxa of the genus, the stigmatic surface is proportionally smaller in *C. yucatanensis*, its diameter being at least half as long as the total column length. Furthermore, the shape of the column wings is consistently different in *C. yucatanensis* with respect to those of any other Mexican *Cohniella* in that it is unlobed and the longest portion is on the distal section.

Variation range. *Cohniella yucatanensis* is a species with a great deal of floral variation. This variation resides mostly in the shape and size of the central and lateral lobes of the labellum. The central lobe ranges from almost spathulate-oblong, elliptic, to subquadrate in outline; the apex is rounded to subtruncate and inconspicuously to deeply emarginate with overlapping lobes. The lateral lobes of the labellum are obovate, oblong to broadly oblanceolate in outline, with the apex truncate-rounded to sharply obliquely truncate. While the callus is consistent in shape and overall pale yellow background, the blotching and spotting are variable in color (almost orange-red to deep dark red-purple), arrangement and coverage. However, there is always a broad transverse orange band that covers the distal half of the callus. The petals are usually oblanceolate, but in some clones they can be oblong obovate with a rounded to subtruncate apex.

Taxonomic commentary. As with most taxa in the *Cohniella cebolleta* complex, *C. yucatanensis* has been confused with that species. However, the combination of characters pinpointed in the key, particularly the shape of its column and column-wings, is unique and affords easy identification of this species. It is also the only member of the *Cohniella cebolleta* complex naturally occurring in the Yucatan Peninsula.

IUCN Conservation assessment: VU. *Cohniella yucatanensis* meet criteria B1ab of the IUCN criteria. Its area of occupancy is of approximately 15,000 km^2 and is severely fragmented (see below). Most of the collections of *C. yucatanensis* are concentrated along the northern portion of the Yucatan Peninsula in tropical deciduous forest and tropical subdeciduous forest. The types of vegetation where this species grows are being severely affected by logging for agricultural developments, highway construction, urban, and touristic infrastructure. Thus, the species can be regarded as threatened. Most of the suitable habitat is already restricted to patches in a mosaic of variously degraded secondary veg-

etation. Since we have no hard population data, we cannot confidently assess the conservation status of this species, but it is most likely that when these kind of data become available, the species will warrant upgrading to VU.

Additional nomenclatural notes

Cohniella helicantha (Kraenzl.) Cetzal & Carnevali, **comb. nov.** *Oncidium helicanthum* Kraenzl., Pflanzenr. (Engler) 95: 281. 1922. Type: Colombia. Without any other locality or collector (holotype: B, destroyed; lectotype, designated in Carnevali et al. 2010, Das Pflanzenreich (A. Angler) heft 80, 4, 50: 282, Fig. 24C, a–d. 1922). Fig. 10.

Cohniella teres (Ames & C. Schweinf.) Christenson, Lindleyana 14: 177. 1999. *Oncidium teres* Ames & C. Schweinf., Sched. Orch. 8: 78. 1925. *Stilifolium teres* (Ames & C. Schweinf.) Königer & Pongratz, Arcula 7: 190. 1997. *Trichocentrum teres* (Ames & C. Schweinf.) M. W. Chase & N. H. Williams, Lindleyana 16: 138. 2001. Type. Panama. Veraguas: San Francisco, 1000 feet [350 m], *C. W. Powell 383* (holotype: AMES).

Distribution. Nicaragua, Costa Rica, Panama, and Colombia.

Additional specimens examined. PANAMA. **Veraguas**: Soná, 25 m, 18 Feb. 2005, *Carnevali 7027* (CICY). **Chiriqui**: ½ way between Progresso and Puerto Armuelles, 16 Feb. 1973, *T. B. Croat 21878* (SEL 2-sheets, MO). Vicinity of David, flowered in Gamboa, 75 ft, 15 Feb. 1947, *P. H. Allen 4242* (EAP).

Diagnostic features. *Cohniella helicantha* is very similar to *C. ascendens* and *C. aguirrei*. It is, however, readily diagnosed by its short lateral lobes of the labellum. These are 1.8–3.0 mm long, 0.8–1.0 mm wide, linear, perpendicular to labellar axis proximally, then retrorse on the distal half. Their apex is obliquely truncate. Since the lateral lobes are so short, the labellum is much wider across the central lobe (Fig. 10-9Aa, B) as opposed to *C. aguirrei* (Fig. 10-F) where the opposite is true. An additional character of consideration in this species complex is flowers resupination. *Cohniella helicantha* features non-resupinate flowers while they are clearly resupinate in both *C. ascendens* and *C. aguirrei*.

The original plate of *Oncidium teres* (Ames, 1925) is misleading since the lateral lobes of the labellum are depicted as longer than they actually are, while the material upon which the illustration was prepared is as described in the previous paragraph. This lack of correspondence between the actual material and the illustration in the protologue led to the erroneously referral of *Cohniella aguirrei* to the synonymy of *C. teres*.

Variation range. *Cohniella helicantha* is only known from a few specimens, each one slightly different from the others. Variable characters include flower size and length and width of the lateral lobes of the labellum. These variation patterns parallel that found in other *Cohniella* species (see above and discussions in Carnevali et al. 2010). The type of *Oncidium teres* has flowers of ca. 10 mm diameter while the original plate of *Oncidium helicanthum* (Fig. 10-Aa) depicts a flower of ca. 14 mm diameter. A specimen we have studied from Panama (Fig. 10-B, *G. Carnevali 7027*, CICY) has the largest flowers we are aware of, with a diameter of ca. 15 mm. The lateral lobes of the labellum vary from 2 × 1 mm in our Panamanian specimens to 2–2.8 × 0.7–0.8 mm in *Oncidium teres* type material. These structures are 3 × 1 mm in the original plate of *Oncidium helicanthum*.

Taxonomic commentary. *Cohniella helicantha* has previously been considered conspecific with *C. ascendens* (e.g., Garay & Stacy 1974, McLeish et al. 1995, Königer & Pongratz 1997, Carnevali et al. 2010). However, this species is unknown from Colombia. Thus, albeit *C. helicantha* was described from Colombia ("…Subäquatoriale andine Provinz. Columbien…"), until now it had never been associated with *C. teres*, which was described from Panama. However, our study of the complex of taxa around *C. ascendens*, strongly suggests that *C. helicantha* is more correctly conspecific with *Cohniella teres*, due to the morphological characters discussed above.

Cohniella helicantha (identified as *Oncidium teres* or *C. teres*) has been reported as widely distributed from Nicaragua to Colombia. This exceedingly wide distribution is mostly due to misidentifications of herbarium specimens of *C. ascendens* that are deceptively similar to those of *C. helicantha*. Thus, reports of *C. helicantha* from Honduras, Nicaragua, and