

FIGURE 5. Graphic of the phenology of *Warczewiczella discolor* and *Cochleanthes aromatica*, showing distinct overlap in the months of June–July. Front row (green): *W. discolor*. Back row (blue): *C. aromatica*. Red columns: overlapping flowering period.

As the plants of *Cochleanthes* and *Warczewiczella* are almost indistinguishable in habit, and with no cues about the flowering time of the hybrid plants, the possibility of being in the right place at the right time to observe the flowering of a hybrid individual is virtually nonexistent.

I eventually had a chance to find a cultivated plant of wild origin at an orchid show recently held in Cartago, the ancient capital city of Costa Rica, which I describe herein.

× *Cochlezella costaricensis* Pupulin, *nothosp. nov.*

TYPE: Costa Rica. Cartago: Turrialba, collected by Marcos Brenes, probably in the region of Bajo Chirripó (*fide* collector), cultivated by Gerardo Viquez at Tierra Blanca, flowered 30 April 2015, *F. Pupulin* 8809 (holotype, JBL; isotype, JBL). Fig. 6–8.

*Herba epiphytica caule abbreviato foliis conduplicatis petiolatis anguste oblanceolatis acutis vel subacuminatis ad 30 cm longis, floribus intermediis inter Cochleanthem aromaticam Reichenbachii filii et Warczewiczellam discolorum Reichenbachii filii, floris amplitudine, sepalis lateralibus valde involutis, petalis anguste lineari-ellipticis acutis patentibus, labello trilobato-pandurato angustiore inter lobulos laterales quam ad lobum medium, columna alis stigmaticis prominentis instructa (atque *C. aromaticam*), labello atroviolaceo lobulis lateralibus erectis ad columna pervenientis, callo albescente multiseriato apice digitato munito, columnae facie abaxialis pubescenti-lanuginosa in basi, odore capsico vel cedrinolignaceo (atque *W. discolorum*).*

Epiphytic, caespitose herbs without pseudobulbs, the leaves arranged like a fan. Roots terete, produced from

the rhizome at the base of the new vegetative shoots, ca 2 mm in diameter. *Stem* abbreviated, enclosed by six or seven imbricating sheaths, provided with hyaline margins, the upper ones foliaceous. *Leaves* conduplicate, articulate, membranaceous, oblanceolate-oblong, acute to subacuminate, abaxially carinate, 16–27 × 2.0–3.3 cm, strongly conduplicate at the base, grass green. *Inflorescences* 1–3, lateral, single-flowered, produced from the axils of lower sheaths, 7–10 cm long; peduncle terete, stout, spreading to suberect, provided with a conduplicate, papyraceous bract near the base; floral bract double, conduplicate, glumaceous-papyraceous, shorter than to subequal to the ovary, the external widely ovate, with hyaline-chartaceous margins, 20 × 14 mm, the subopposite internal bractlet narrowly lanceolate to ligulate, 17 × 6 mm. *Flowers* resupinate, large, spreading, with pale greenish white sepals and petals, the petals apically lightly flushed with purple, and solid violet lip, provided with a cream-coloured callus, boldly scented in the morning, the scent spicy. *Dorsal sepal* free, narrowly elliptic, acute, the apical portion gently reflexed-outrolled, 4.0 × 1.3 cm. *Lateral sepals* basally adnate to column foot, narrowly elliptic-lanceolate, acute, 4.3 × 1.2 cm, inrolled-folded toward base, strongly carinate abaxially, the keel somewhat protruding at the apex. *Petals* elliptic-oblanceolate, acute, the apex slightly reflexed, the apical margins wavy, 3.9 × 1.2 cm. *Lip* with a short claw, articulate with column foot, trilobed, obovate-flabellate in natural position, pandurate when spread, the base cordiform, 3.9 × 3.4 cm, the basal lobes erect, transversely elliptic, rounded, ca. 1.2 × 0.8 cm, the midlobe transversely elliptic, notched-bilobed at apex, 2.4 × 3.4 cm, the apical margins undulate; disc with a high ovate, multiseriate callus, 1.1 × 1.1 cm, composed of many low, rounded ridges, the upper margins angular, protruding apically into linear teeth, the central ones longer. *Column* straight, stout, hemiterete, 10 × 4.5 mm, dilated at apex into rounded stigmatic wings that converge toward the rostellum, the stigma transverse, slit-like, the base of the column extending into a velutine to sparsely hirsute foot, the apex of the foot with a low, conic-rounded callus. Anther cap shallowly cucullate, trapezoidal, two-celled. *Pollinia* 4, ovate-complanate, in two subequal pairs dorso-ventrally superposed, on a triangular stipe curling after removal, scarcely distinct from the ventral, elliptic, hyaline viscidium.

**Etymology:** The specific epithet is chosen in reference to Costa Rica, the country where the hybrid, as well as both the putative parents, are found.

A single plant of *Cochlezella* appeared within a mixed collection of *Warczewiczella* plants from the Caribbean watershed of the Talamanca mountain range, in central Costa Rica. The plant, believed to be a specimen of *Warczewiczella discolor*, was exhibited under that name at the Orchid Show of Cartago, on 30 April 2015. Its habit is indistinguishable from a plant of the true *W. discolor*, even though tending toward the largest size samples of that species. The flowers, however, are unmistakably different from those of *W. discolor*, and show several intermediate characters tending toward those of *C. aromatica* instead. Compared with typical flowers of *W. discolor*, the putative hybrid has larger flowers, with mostly spreading parts (vs. the lateral

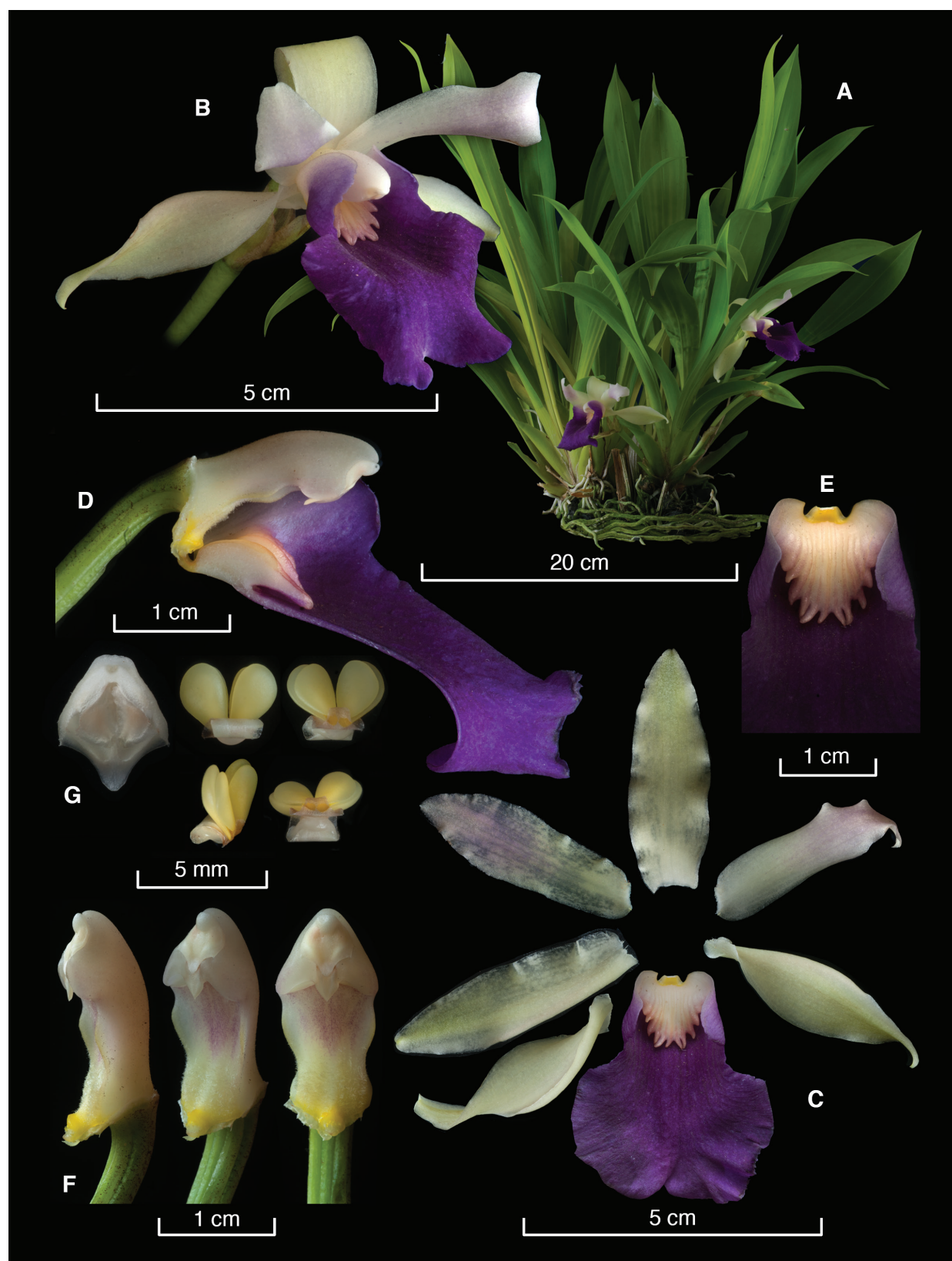


FIGURE 6. Lankester Digital Composite Plate of × *Cochlezella costaricensis*. **A**, habit; **B**, flower; **C**, dissected perianth; **D**, column and lip in lateral view (the lip longitudinally sectioned); **E**, callus; **F**, three views of the column; **G**, anther cap and pollinarium (four views). Prepared by the author.





FIGURE 7. The flower of  $\times$  *Cochlezella costaricensis* that served as the holotype. Photo by the author.



FIGURE 8. The flower of  $\times$  *Cochlezella costaricensis*. Three-quarter and frontal views of the flower that served as the holotype. Photos by the author.

sepals swept back and the petals almost porrect), the lateral sepals just slightly enrolled in the basal labellar portion (vs. with involute margins almost to the apex), narrowly linear-elliptic, acute petals (vs. broadly elliptic, obtuse-rounded), a lip that is wider across the midlobe than across the lateral lobes (vs. broadest at the base), and the column provided with prominent stigmatic wings, reminiscent of the column of *C. aromatica* (the column has no wings in *W. discolor*). On the other side, the flower of the hybrid also differs from those of *C. aromatica* by the completely deep violet lip (vs. white with a central lilac to violet blotch), with the lateral lobes erect to flank the column (vs. flat), the callus of the lip made up of several ridges ending in distinct teeth, and the pubescent-lanuginose ventral base of the column (vs. glabrous).

The flowers of × *C. costaricensis* emit a strong, spicy scent in the morning. The perfume also seems to show

intermediate characteristics between the powerful, sweet, lilac-hyacinth smell with notes of chocolate of *C. aromatica*, and the faint, camphoraceous, spicy, cedar-wood and black peppery fragrance of *W. discolor*.

To my knowledge, both the artificial (a few photographs of which are available through the Internet) and the natural hybrid presented here have a deep violet lip, a clear genetic legacy of the dark violet lip of *W. discolor*. Even though the form with deep violet labellum is the most frequent among populations of *W. discolor*, several individual variations occur in lip color (see Fig. 1), which may perhaps account for the unusual reddish coloration of the hybrid flower photographed by Horich. On the other side, whilst *C. aromatica* usually presents a white lip, longitudinally blotched and flecked with violet, individuals of this species with almost solid violet lip have also been documented (Fig. 9).

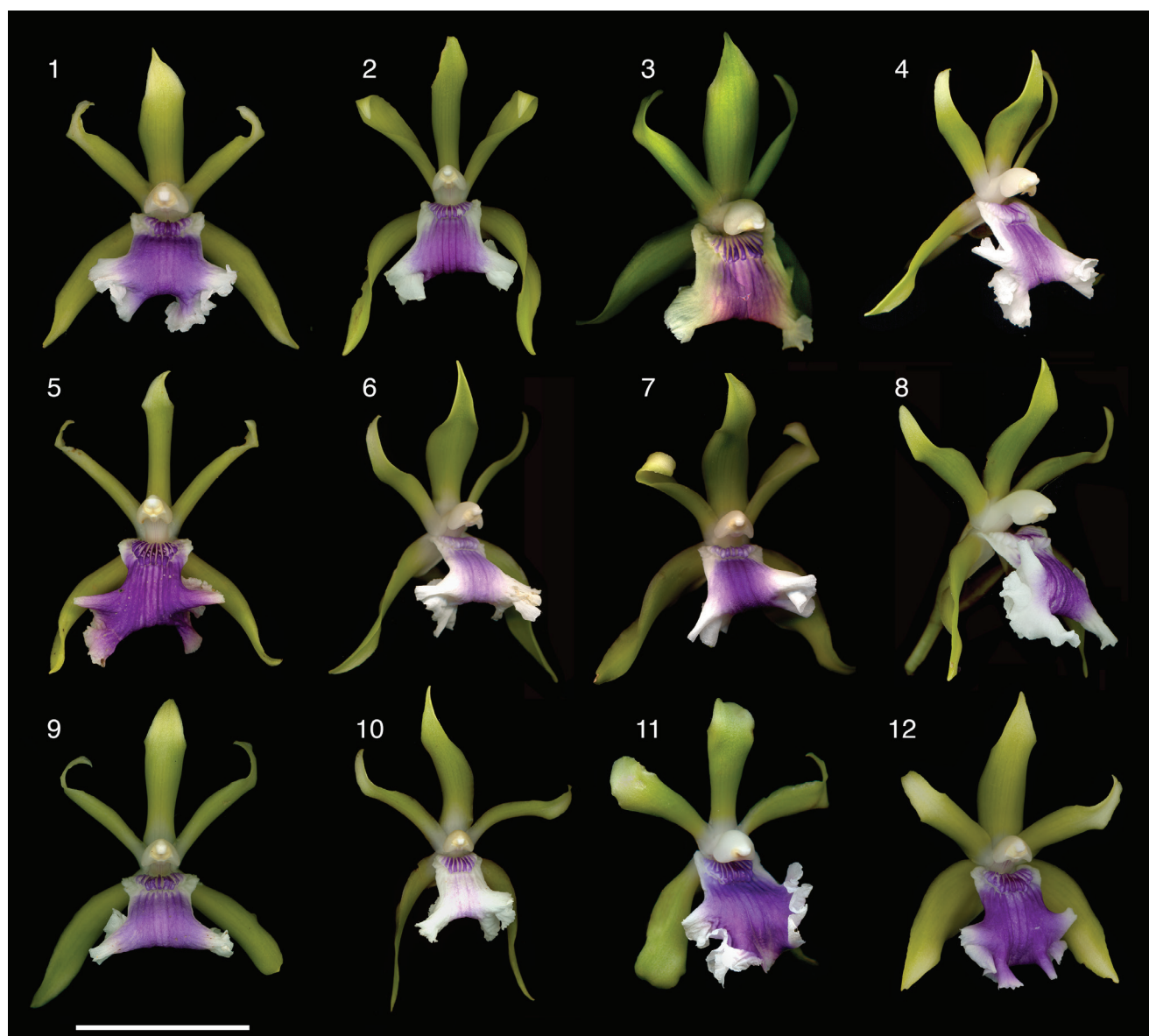


FIGURE 9. Variations in flower color among individuals of *Cochleanthes aromatica*. 1, Blanco 1904; 2, Pupulin 6363; 3, Bogarín 9258; 4, JBL-03932; 5, JBL-s.n.; 6, JBL-03932; 7, Gómez 59; 8, Pupulin 3058; 9, Blanco 1904; 10, JBL-01987; 11, Bogarín 1635; 12, Pupulin 6383. Scale bar = 5 cm. All the vouchers at JBL. Composite illustration by the author from images by F. Pupulin & D. Bogarín.