THE CARMINE TRICHOPILIAS OF CENTRAL AMERICA: FEW BUT BADLY CONFUSED

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ABSTRACT: There has been widespread taxonomic confusion as to the Central American red-lipped Trichopilias going all the way back to the original descriptions of *Trichopilia marginata* Henfrey and *Trichopilia coccinea* Lindl. which differ in nothing other than name. This confusion has been exacerbated by the use of the name *Trichopilia coccinea* in reference to a distinct Costa Rican species and the presence of at least one hybrid swarm resulting from interbreeding between *Trichopilia marginata* and *Trichopilia suavis*. A new species, *Trichopilia punicea* Dressler & Pupulin, is herein described to recognize this distinctive Costa Rican species formally. The taxonomic priority of the name *Trichopilia* ×*crispa* Lindl. for the natural hybrid between *Trichopilia marginata* and *Trichopilia suavis* is also discussed.

THE FIRST RED-LIPPED *Trichopilia* was somewhat confused even before it was properly baptized. In his correspondence, Warszewicz used the name *Trichopilia coccinea* in 1849 for plants he had collected on the slopes of Volcán Chiriquí in western Panama. Although not yet formally published as a new species, the name soon became known among orchid growers, and Lindley expressly states that under that name Warszewicz's plants from Central America were publicly sold in English auctions in 1849 and 1850 (Lindley, 1851).

In 1851, Henfrey described this species as *Trichopilia marginata* (Henfrey, 1851). A few weeks later, Lindley described the same species as *Trichopilia coccinea* (Fig. 2, page 214) and reprimanded Henfrey for trying to replace the already familiar name *coccinea* with *marginata* and for saying that the plant was Colombian and imported by Linden. Lindley was well acquainted with Linden's collections from South America, having published a large account on the plants discovered by the Belgian horticulturist and explorer in his *Orchidaceae Lindenianae* (Lindley, 1846). The only species of *Trichopilia* included in this catalog is *Trichopilia fragrans*, described by Lindley in 1844 as a member of the genus *Pilumna* (Lindley, 1844). Anyway, in 1851, neither author considered *T. marginata* and *T. coccinea* to be different species. Henfrey cited "*Trichopilia coccinea*, of gardens," and Lindley cited *T. marginata* as an "alias." The International Rules of Botanical Nomenclature frown upon any name that is published with an older, valid name listed in synonymy (art. 52, Greuter et al., 2000). Thus, under the Rules, Lindley's name is automatically illegitimate because it was superfluous at the time of its publication. Although both names have been used occasionally, we find nothing in the original descriptions or illustrations to show that Lindley's *T. coccinea* differs from Henfrey's *T. marginata* in anything but name.

Nonetheless, the name "*T. coccinea*," has been applied to another rather distinctive *Trichopilia* from the Pacific slope of Costa Rica (Bockemühl and Senghas, 1979). The "*T. coccinea*" of Costa Rica is characterized by very long, narrow pseudobulbs, large flowers, darker reddish-brown sepals and petals, shorter tubular base of the lip, lip much wider across the lateral lobes than across the midlobe, and slightly twisted column apex.

The third element in this confusion is the natural hybrid between *T. marginata* and *T. suavis* (Figs. 3A–C; page 215). This was first recognized as a natural hybrid by Mora-Retana and ×*ramonensis* was used for several years before being

Fig. 1 (opposite). *Trichopilia marginata*. A. A "pure" form of *T. marginata* from southern Costa Rica, close to the Panamanian border. This flower pretty well matches the original illustration of *T. marginata*. Photograph by F. Pupulin. B. *Trichopilia marginata* from Alberto M. Brenes Biological Reserve near San Ramón. Grower: G. Pozzi. Photograph by F. Pupulin. C. (5056). This spectacular specimen of *T. marginata* was originally collected in the high basin of Sarapiquí River, along the Caribbean watershed of Costa Rican Central Volcanic range. Photograph by F. Pupulin. D. (2944). *Trichopilia marginata* is widespread in Costa Rica. This plant, grown at Jardín Botánico Lankester without locality data. Photograph by F. Pupulin. E. (1832). A plant of *T. marginata* without locality data, flowered at Jardín Botánico Lankester in May, 1998. Photograph by F. Pupulin. F. *Trichopilia marginata*, illustrated in Cogniaux and Gossens' *Dictionnaire Iconographique des Orchideés* with the name of *T. coccinea*.

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A


B


C


D


E

F

formally published by Morales (2002). However, *Trichopilia crispa* Lindley (Fig. 3B, page 215; Figs. 4B– D, page 216), one of the early "synonyms of *T. marginata*," is a much earlier name for this same natural hybrid, which occurs in both Costa Rica and Panama and is similar to the manmade hybrid *Trichopilia* ×Charles, of the same parentage (Fig. 5, page 217). Much of the confusion in recent years has involved the "*coccinea*" of Costa Rica and the natural hybrid *T.* ×*crispa*. Both the natural hybrid and the plant known as *T.* "*coccinea*" have large showy flowers as compared with *T. marginata*, and plants of *T. "coccinea"* have been misidentified as *T.* ×*ramonensis* (= *T.* ×*crispa)*. One would expect a selfed interspecific hybrid to show much variation, with many of the seedlings resembling one or the other parent species in some features. Thus, a uniform progeny was quite unexpected when one of these misidentified plants was selfed at Jardín Botánico Lankester some years ago. When the seedlings matured, everyone was surprised to find them all much like the parent plant. A similar thing happened in Germany (Lücke, 2000). We are not sure if the same error was made independently in Germany, or if another of the "*T. coccinea*" was taken or sent from Costa Rica as "*T.* ×*ramonensis*." Lücke's Figure 1 is clearly *T.* ×*ramonensis* (or, rather, *T.* ×*crispa*), while Figures 3 and 4 both represent "*T. coccinea*."

As one might expect, the features in which *T.* ×*crispa* differs from either *T. marginata* or "*T. coccinea*" are the features inherited from *T. suavis*. In Table 1 (below), we compare the features of *T.* ×*crispa* with those of the plant known as "*T. coccinea*" in Costa Rica. There is a great deal of variation in *T. marginata*, especially where the natural hybrids occur (Figs. 1B–F, page 213). The variation suggests that there are not only F_1 hybrids but crosses between the hybrids and back-crosses to one or both parent species (Fig 4E, page 216). While *T.* ×*crispa* seems close to the F_1 hybrid, others, such as *T. lepida* (Fig. 4A, page 216) may represent a back-cross to *T. marginata*, and it is thus probably a synonym of *T.* ×*crispa*, rather than of *T. marginata*. Note that under the Rules of Nomenclature, "nothospecies" or hybrid names cover the offspring of back-crosses as well as the F_1 hybrid, in contrast to the hybrid registry of cultivated hybrids. So, while the name *T.* ×*crispa* must be used for the natural hybrid swarm of *T. marginata* and *T. suavis*, including all the naturally occurring back-crosses to the parents, we strongly suggest that one should use the name *T.* ×Charles for the artificially produced F_1 hybrid.

Fig. 2. The original illustration of *Trichopilia coccinea*, published in Paxton's *Flower Garden* in 1851.

The original illustration of *T. marginata* of Henfrey suggests that the plant he described was from southwestern Costa Rica or adjacent Panama, where the flowers are of moderate size and the red-purple may be limited to the throat or spread over much of the lip (Fig. 1A, page 213). Thus, the original *T. marginata* appears to have been relatively "pure."

There remains the problem of the *"T. coccinea"* of Costa Rica. It is a distinctive plant, clearly related to typical *T. marginata*, but it differs in the narrow pseudobulbs and especially in the lip, which is very wide across the lateral lobes (when flattened), with the margin straight (not strongly crisped), and in the slightly twisted apex of the column. Clearly, we cannot call the distinctive Costa Rican plant *T. coccinea*. It is not at all the same plant described by Lindley, and because an earlier valid name was cited in the original description, as we have noted, Lindley's name is illegitimate

TABLE 1. Comparison of some characters of *Trichopilia punicea* and *T.* ×*crispa.*

Characteristic	***Trichopilia punicea***	***Trichopilia* ×*crispa***
Pseudobulbs	9–12 × 0.7–1 cm	5–7, 5 × 2–4 cm
Inflorescence	1-flowered	often 2(–3) –flowered
Median Band of Sepals and Petals	dark red-brown	pink
Margins of Median Band of Sepals and Petal	sclearly defined	irregular, breaking up in spots
Ventral Groove of Lip	prominent	variable, may include small keel
Lip Broadest Across	lateral lobes	midlobe

Fig. 3. *Trichopilia ×crispa*. A. *Trichopilia ×crispa* illustrated in *Curtis' Botanical Magazine* as *T. coccinea*. B. *Trichopilia ×crispa* painted by John Day in 1877, based on a plant he bought in 1874 from William Rollisson & Son. C. *Trichopilia ×crispa* from the vicinity of San Ramón in Costa Rica, the home of "*T. ×ramonensis*." Note the wavy margins of the lip. Photograph by Kerry Dressler. D. An unpublished watercolor of *T. ×crispa* by Professor Rafael Lucas Rodríguez, from the photographic archives of Jardín Botánico Lankester.

Fig. 4. *Trichopilia ×crispa*. A. *Trichopilia lepida* from the *Orchid Album*, a later synonym of *T. ×crispa*. Photograph by Wojciech Klikunas. B. *Trichopilia ×crispa* in a fine watercolor by Gossens. C. *Trichopilia crispa marginata*, a showy form of *T. ×crispa*, from *Select Orchidaceous Plants*. D. A colorful and wavy *Trichopilia ×crispa*, illustrated as var. *marginata* in Cogniaux and Gossens' *Dictionnaire Iconographique des Orchideés*. E. A wild specimen of *Trichopilia ×crispa*, probably of F_2 generation, showing introgression with *T. suavis*. Photograph by Kerry Dressler.

and cannot be used at all. The name *Trichopilia gloxiniaeflora* is simply a *nomen nudum*, without description or other information, and Cogniaux (1894–1898, 1902) considered it, perhaps with good reason, a synonym of *T.* ×*crispa*.

Learning about natural distribution can be difficult, especially with showy and much sought-after species. Many growers have no idea where their plants were originally collected, and those who do know are often reluctant to tell. We know the "*T. coccinea*" from four different localities, all in San José Province: Sabanilla de Acosta, Cerro Nara (Fig. 7B, page 219), vicinity of San Marcos de Tarrazú, and Alto de San Juan (Figs 7A, 7C, page 219), not far from San Isidro de Pérez Zeledón. *Trichopilia marginata*, as we know it from areas farther south, is quite typical of the species, and does not resemble the new species here described, though we cannot be sure that intermediate populations will not be found in the future. In the absence of such intermediates, we are less uncomfortable describing the distinctive Costa Rican plant as a new species:

Trichopilia punicea* Dressler & Pupulin, *sp. nov.

TYPE: Costa Rica. San José: Acosta, Sabanilla, collected by H. Alpízar, 2001, flowered in cultivation at Acosta, March 1, 2003, *F. Pupulin 4366* (holotype: CR; isotype: JBL-Spirit) (Figs. 6, page 218, and 7C, page 219).

Syn: *Trichopilia coccinea* of authors and hort., *non* Lindl.

Species Trichopiliae marginatae Henfr. similis, pseudobulbis linearis angustioribus, labello inter lobulos laterales multo latiore, marginibus planis non valde crispis, columnae apice leviter torto recedit.

Roots 1–2 mm in diameter; pseudobulbs 8–12 × 0.5–1 cm, linear, ancipitous, tapering slightly; leaves 12–25 × 2–3.7 cm, narrowly elliptic, acute or acuminate, narrowed basally for 1–2 cm; inflorescence lateral, pendent or subpendent, virtually always 1-flowered, peduncle to 3 cm; floral bract 1.6–2.2 × 0.7–0.8 cm, appressed to pedicel, ovary and pedicel 4.5–5 cm; dorsal sepal 6–7.3 × 0.8 cm, short-unguiculate basally, narrowly elliptic, acute, somewhat undulate; lateral sepals similar, 6–7.3 × 1.1 mm, united basally for ca. 8 mm, acuminate; petals 5.9–7.2 × 1.5 cm, elliptic, acute; lip 3-lobed, basally narrow and tubular for 1.6–2.2 cm, 6–8.1 cm long, 4.5–6 cm across lateral lobes, midlobe 1.2–2.5 × 2.5–4.5 cm, transversely oblong, deeply emarginate; column 3-3,5 cm, basally adnate to column ca. 8 mm, clinandrium fimbriate, ca. 7 mm long.

ETYMOLOGY: The specific epithet *punicea* is the Latin word for phoenician purple, or crimson, and has the same meaning as the word *coccinea*, in allusion to the showy, carmine-red color of the lip.

We would also propose the following taxonomy for the carmine Trichopilias of Central America, in the hope of helping growers to use correct names on the labels of their parent plants.

***Trichopilia* ×*crispa* Lindl., *Gard. Chron*. 1857: 342.** 1857, *pro sp.*; Bateman, *Sec. Cent. Orch. Pl.*, pl. 115. 1867, *pro sp.*; Day, Scrapbook 21: 71. 1877, *pro. sp.*; Cogniaux and Goossens, *Dict. Icon. Orch*. 8: *Trichopilia* pl. 2. 1902, *pro sp*.

Fig. 5. The artificial hybrid *Trichopilia* ×Charles. This specimen was obtained by C.A. Bonilla in Costa Rica.

Syn: *Trichopilia coccinea* Hook., Bot. Mag. 81: pl. 4857, 1855, *non* Lindl., *syn. nov.*

Trichopilia coccinea var. *crispa* Morren, *Belg. Hort* 24:92. 1874, *syn. nov.*

Trichopilia crispa var. *marginata* Warner, *Select. Orch*. Pl. 1: sub pl. 5. 1862; Cogniaux, *Lindenia* 4:pl. 527. 1894–1898; Cogniaux and Goossens, *Dict. Icon*. Orch. 8: *Trichopilia* pl. 2A. 1902, *syn. nov.*

Trichopilia lepida hort. Ex *Fl. Mag.* N.s.: t. 98. 1874, *syn. nov.*

Trichopilia ×*ramonensis* J. García and Mora-Ret. ex C.O. Morales, *Lankesteriana* 5:18. 2002, *syn. nov.*

(?)*Trichopilia gloxiniaeflora* Klotsch. *ex* Rchb.f., Orch. Centr.-Amer. 13. 1866, *nom. nud*.

Trichopilia marginata Henfr., *Gard. Mag. Bot*. 3: 185. 1851.

Syn: *Trichopilia coccinea* Warsz. *ex* Lindl., *Paxton Fl. Gard.* 2: 80, pl. 54. 1851; Cogniaux and Goossens, *Dict. Icon. Orch*. 8: *Trichopilia* pl. 1. 1902.

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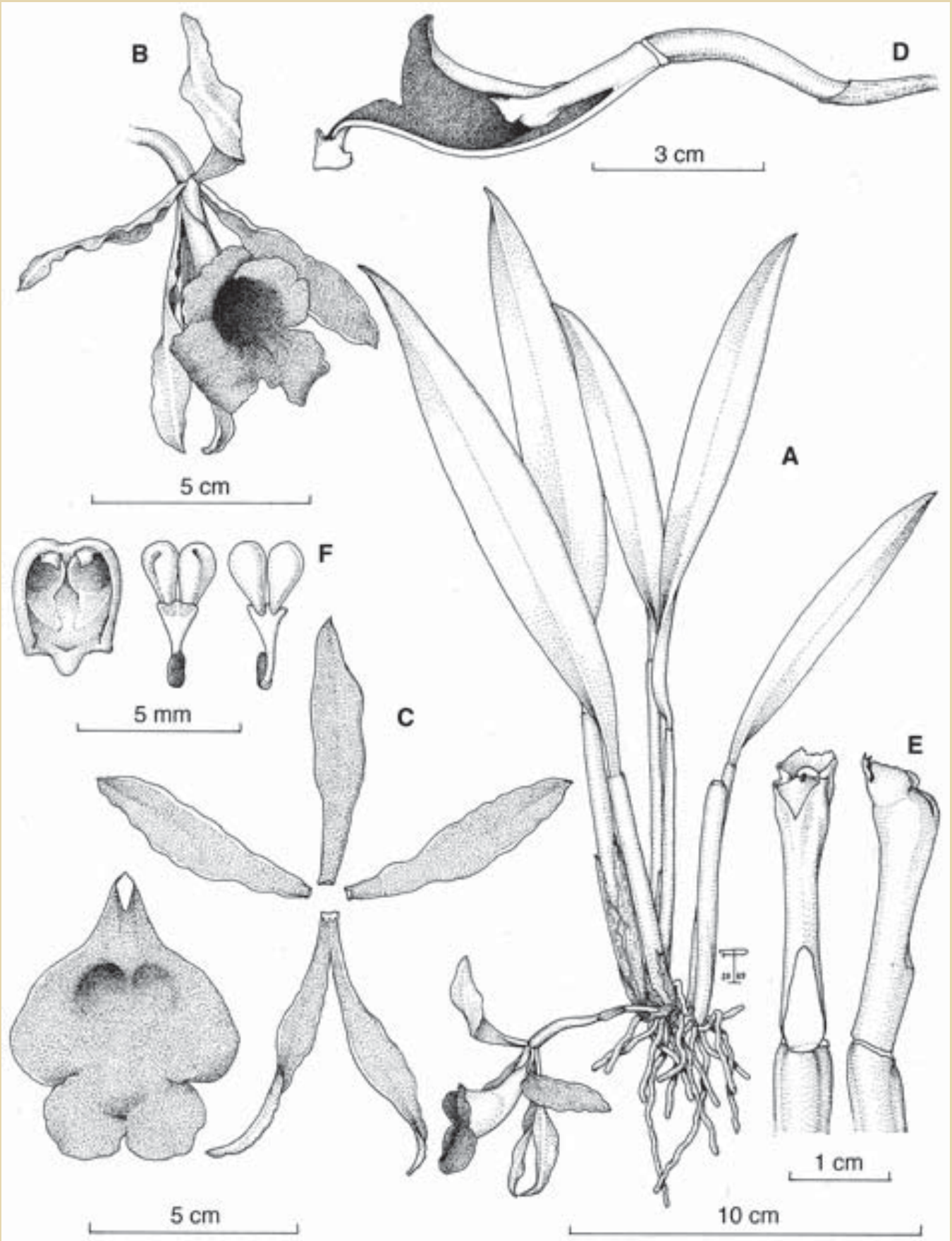

Fig. 6. *Trichopilia punicea* Dressler & Pupulin. A. Habit. B. Flower. C. Dissected perianth. D. Column and lip, lateral view (the lip in longitudianl section). E. Column, ventral and lateral views. F. Anther cap and pollinarium (two views). Drawn by F. Pupulin from the holotype.

Fig. 7. *Trichopilia punicea*. A. A plant from El Alto de San Juan in southern Costa Rica, flowered in cultivation at Jardín Botánico Lankester in 1998. Photograph by F. Pupulin. B. *Trichopilia punicea* from the summit of Cerro Nara in central Pacific Costa Rica, flowered at Gaia Botanical Garden, Quepos, Costa Rica. Photograph by F. Pupulin. C. Three views of a flower from the type specimen of *Trichopilia punicea*.

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