

PLATE 3. *D. JALISCANUM* S. Wats.: [FIGS. 1-8, all figs. from *Hinton*, no. 2528] FIG. 1, portion of plant showing trifoliolate leaves (upper and lower surfaces of leaflets) and portion of inflorescence, $\times \frac{1}{2}$; FIG. 2, mature loment, $\times 2$; FIG. 3, calyx, $\times 2$; FIG. 4, standard, $\times 2$; FIG. 5, wing, $\times 2$; FIG. 6, keel-petals, $\times 2$; FIG. 7, diadelphous stamens (tube cut open), $\times 2$; FIG. 8, ovary, $\times 2$.

D. BELLUM (Blake) Schubert: [FIGS. 9-17, all figs. from *Pringle*, no. 6206 (TYPE)] FIG. 9, mature trifoliolate leaf, $\times \frac{1}{2}$; FIG. 10, portion of mature inflorescence, $\times \frac{1}{2}$; FIG. 11, mature loment, $\times 1\frac{1}{2}$; FIG. 12, calyx, $\times 1\frac{1}{2}$; FIG. 13, standard, $\times 1\frac{1}{2}$; FIG. 14, wing, $\times 1\frac{1}{2}$; FIG. 15, keel-petals, $\times 1\frac{1}{2}$; FIG. 16, diadelphous stamens (tube cut open), $\times 1\frac{1}{2}$; FIG. 17, ovary, $\times 1\frac{1}{2}$.

D. ALAMANI (HBK.) DC.: [FIGS. 18-27] FIG. 18, portion of plant showing trifoliolate leaf and immature fruit, $\times \frac{1}{2}$, from *Pringle*, no. 6551; FIG. 19, portion of inflorescence, $\times \frac{1}{2}$, from *Hinton*, no. 8297; FIG. 20, mature loment, $\times 1\frac{1}{2}$, from *Pringle*, no. 6551; FIG. 21, bract, $\times 5$, from *Hinton*, no. 8297; FIG. 22, calyx, $\times 2$, from same specimen; FIG. 23, standard, $\times 2$, from same specimen; FIG. 24, wing, $\times 2$, from same specimen; FIG. 25, keel-petals, $\times 2$, from same specimen; FIG. 26, diadelphous stamens (tube cut open), $\times 2$, from same specimen; FIG. 27, ovary, $\times 2$, from same specimen.

D. MAXONII Standl.: [FIGS. 28-35, all figs. from *Maxon*, no. 5370 (US, TYPE)] FIG. 28, portion of specimen, showing mature trifoliolate leaf and axillary inflorescence, $\times \frac{1}{2}$; FIG. 29, mature loment, $\times 1\frac{1}{2}$; FIG. 30, calyx, $\times 1\frac{1}{2}$; FIG. 31, standard, $\times 1\frac{1}{2}$; FIG. 32, wing, $\times 1\frac{1}{2}$; FIG. 33, keel-petals, $\times 1\frac{1}{2}$; FIG. 34, diadelphous stamens (tube cut open), $\times 1\frac{1}{2}$; FIG. 35, ovary, $\times 1\frac{1}{2}$.

3. THE GENUS CHARIANTHUS

W. H. HODGE

(Plates 4-6)

Charianthus is a very small genus of the family *Melastomaceae*. It is composed of eleven species and varieties of much-branched shrubs or small trees with showy crimson-purple flowers borne in corymbose or paniculate cymes. The genus is probably endemic in the mountains of the West Indies, one species being found in Jamaica and the remainder segregated on the volcanic peaks of the highest islands in the Lesser Antilles.

According to Cogniaux twenty-five genera are included in the tribe *Miconieae*, to which *Charianthus* belongs. The tribe as a whole possesses stamens of equal length with connectives generally non-appendaged and seldom prolonged at their bases; its fruits are baccate. *Charianthus* is most closely related to *Tetrazygia* and *Miconia*, the latter possibly being the progenitor. There are no sharp distinctive characters but rather an accumulative group of characters which set off the three genera. The pseudo-campanulate corolla is most commonly used in keys to separate *Charianthus* from the other two, which possess spreading or reflexed petals. Both *Miconia* and *Tetrazygia*

possess corymbs or panicles of varying white to yellowish flowers; *Charianthus* has inflorescences which are cymose with flowers invariably bright red to crimson-purple. The long-exserted anthers in *Charianthus* open by longitudinal slits (*C. Fadyeni* excepted) while in the related genera pollen is generally shed through a varying number of terminal pores. Finally, *Charianthus* has 4-parted flowers, whereas those of *Miconia* and *Tetrazygia* (at times in fours) commonly follow a plan of 5.

Miconia is distributed throughout all the West Indies and tropical America; *Tetrazygia* is a widespread West Indian genus, but *Charianthus* is localized in Jamaica and the southern Caribbees. Such a limited distribution suggests that *Charianthus* has evolved as a high-altitude off-shoot directly from *Miconia* or indirectly through *Tetrazygia*.

The first two species of this genus were described in 1792 by Richard as *Melastoma corymbosa* and *M. coccinea*. Four years later, in 1796, Vahl described quite a different species under the name *M. coccinea* and in the same year there appeared Desrousseaux's *M. nodosa*. *Charianthus* was set up as a new genus by D. Don in 1823 at which time Richard's original *Melastoma coccinea* was transferred to the genus and the name *C. purpureus* was given by Don to the second *M. coccinea*, of Vahl. In the same treatment there was first described *C. tinifolius* which is probably the small-leaved variety of true *C. coccineus*. Don overlooked both *M. corymbosa* Richard and *M. nodosa* Desr., the proper combinations finally being made by Cogniaux in 1891 and Triana in 1871. *Charianthus*, as defined by Don, has been successfully upheld by the three great students of the *Melastomaceae*, Naudin, Triana, and Cogniaux. Baillon (*Hist. des Pl.* vii. 18 and 54, 1881) alone included the genus under *Miconia*.

After Don, "additions" to the genus were first made by DeCandolle, who in 1828 described *C. glaberrimus*, which is identical with *Melastoma corymbosa* Richard, not Vahl (as stated by DC). DeCandolle had no knowledge of *Melastoma nodosa* Desr. and so published as a synonym *C. ciliatus* from typical material of *C. nodosus*. Naudin, in 1852, also overlooking Desrousseaux's *M. nodosa*, described the ciliate-leaved form as *C. ciliatus*; and at the same time he described *C. crinitus*, without having examined material of *C. purpureus* Don. In 1864, in his flora, Grisebach called attention to the fact that a *Charianthus* had been described from Jamaica by Hooker in 1849 as *Tetrazygia Fadyeni*. With apical monoporous anthers, it opposed the concept of *Charianthus*, as proposed by Don from Lesser Antillean

material, which possessed longitudinal anther-slits. Although divergent in certain characters, *Tetrazygia Fadyeni* was closer to *Charianthus* than to any other genus of melastomes, and so was included by Grisebach as a monotype in a new section *Eccharianthus* as opposed to his other section, *Eucharianthus*. Grisebach as well as Triana also perpetuated DeCandolle's *C. glaberrimus*, a synonym of *C. corymbosus*. The most recent and most thorough treatment of the genus is that of Cogniaux in his Monograph of the *Melastomaceae* (1891). Of his eight species the present paper, on the basis of much new material and actual field observation, upholds five, reducing the others either to synonymy or to the status of varieties.

The species of *Charianthus* are generally well marked and separable by several sets of morphological characters, while within a few of the species the amount of variation is enough to justify recognizing geographical varieties.

The leaves within the genus vary sufficiently to be used as accessory characters in separating species and as strong characters in the delimitation of varieties. The 3-5-nerved leathery blades vary in shape from lanceolate to broadly elliptical, from long-acuminate to bluntly cuspidate or obtuse at the apex, from long-attenuate to subcordate at the base. Good taxonomic characters are to be found in the nature of the vestiture and all types found in the genus occur on the leaves.

The cymose inflorescence is essentially stable but minor differences between the species exist, for instance, in the size and the relative compactness of the individual flowers. *C. nodosus* is, however, separable from the other species in the genus by its axillary, as opposed to terminal, cymes. The flower-parts are mostly uniform and offer little of diagnostic value other than in size of corolla, stamens, and style to distinguish between species. Flower-size is important in the separation of *C. corymbosus* and *C. coccineus*.

Sepals are small, of firm texture, and persistent. In all species except *C. Fadyeni* (where the limb is erect and obscurely undulate) the calyx-limb is broadly 4-lobed with apiculate exterior teeth and is slightly spreading in fruit. Scales when present are similar to those found on the pedicels and hypanthia but are seldom in such abundance. The quickly deciduous petals are always glabrous; their shape is ovate in the Lesser Antillean series, oblong-spatulate in the Jamaican species.

Aside from variations in size the stamens have a similar pattern; *C. Fadyeni* is alone in lacking longitudinally chinked anthers and non-pruinose filaments. The style varies in length alone. The berry-fruits in all species are black at maturity; those of the Lesser Antillean

species are identically subglobose, those of the Jamaican, urceolate. The pyramidal seeds are similar throughout the genus.

Indument is valuable in the delimitation of varieties and forms. The most widely spread type is the stellate-fimbriate scale which is universal in the genus and commonly found as a close, brown covering on the youngest, unfolding leaves, on the inflorescence-branches, and on the pedicels, hypanthia, and calyces of the flowers. These scales vary in persistence but are rarely found on the upper leaf-surfaces at maturity. On some species they are found below, at maturity, as scattered dots, almost glandular in appearance, sunken in tiny pits on the leaf-tissue. The same scale-type can frequently be found persisting on maturing fruits. Another form of the scale is whitish in color and is more loosely furfuraceous in nature; it occurs principally on the veins and veinlets (below) of *C. purpureus* var. *rugosus*.

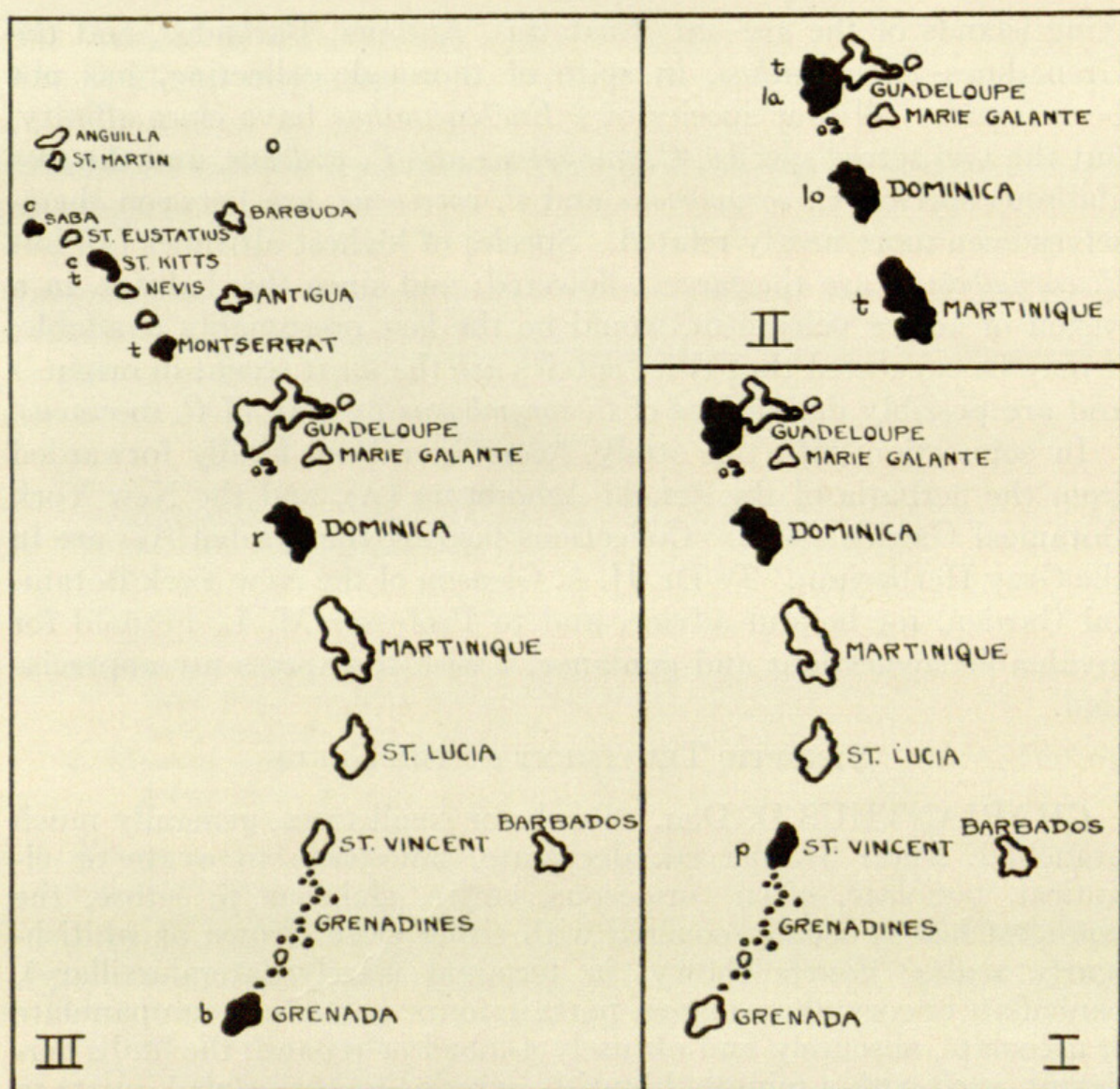
In *C. purpureus* and *C. nodosus* setae are found in addition to the scales. In certain varieties or forms of these species the hairs are found either all over the twigs or in nodal rings, at the joints of inflorescence-branches; on the margins of the slightly sulcate petioles, sparingly below on the principal veins, and rarely on leaf-tissue above. The brownish setae may be crinite or villose, dense or sparse, short or long (from less than 1 mm. to 5 mm. in length).

The dividing of *Charianthus* into two sections may be directly correlated with the distribution of the genus, for the two divisions are widely separate in the Antilles. The divergence of their morphological characters, resulting in general dissimilarity, suggests that § *Eucharianthus* and § *Eccharianthus* have no direct relation but rather represent parallel evolution. The geological evidence as shown in the history of the Antillean arc supports this viewpoint.

Jamaica lies about 900 miles from Saba, the nearest station of § *Eucharianthus*; and the present distance to the central Lesser Antilles, the focal point of the section, is practically 1000 miles. Geologists,¹ as well as biogeographers in general, believe that Jamaica and the main islands of the Greater Antilles represent continental fragments—all that are left of an easterly extension of Central America which existed intermittently from pre-Eocene to Lower Pliocene and which terminated in the southeast with the American Virgin Islands. At this time the Caribbee islands to the south were non-existent. Subsequent submergence separated the larger islands, and in its separation Jamaica claims the longest period of isolation.

The volcanic Lesser Antilles are much younger (late Cenozoic) and

¹ Schuchert, Historical Geology of the Antillean-Caribbean Region. 106 (1935).



MAP I. Distribution of *CHARIANTHUS COCCINEUS*, and its var. *PARVIFOLIUS* (p).

MAP II. Distribution of *C. CORYMBOSUS* and its varieties: var. *TYPICUS* (t); var. *LATIFOLIUS* (la); var. *LONGIFOLIUS* (lo).

MAP III. Distribution of *C. PURPUREUS* and its varieties: var. *TYPICUS* (t); var. *CRINITUS* (c); var. *RUGOSUS* (r); var. *BREVISETOSUS* (b).

show no proof of ever having been connected in the north with the Greater Antilles or in the south with the continent. Therefore, their biota, in the opinion of most Antillean biogeographers, is probably of waif-origin. The geological evidence thus suggests that the endemism of *Charianthus* in the West Indies is not relict but recent.

§ *Eccharianthus* in Jamaica is found at middle elevations, whereas, with the exception of *C. corymbosus*, var. *typicus*, the four species of § *Eucharianthus* in the Lesser Antilles are limited to the summits of the highest volcanic islands. Altitude with its concomitant factors is apparently decisive in the distribution of the genus, for on the low-

lying islands of the arc—St. Eustatius, Antigua, Barbados, and the Grenadines—*Charianthus*, in spite of thorough collecting, has not been found. All four species of § *Eucharianthus* have close affinity, but the two setose species, *C. purpureus* and *C. nodosus*, and the two glabrous species, *C. corymbosus* and *C. coccineus*, are between themselves even more nearly related. Species of highest altitudes (all but *C. corymbosus*) are the largest flowered; and since this habitat, in a region of active vulcanism, would be the last presumably available, it may be suggested that these species are the most recent in origin—and are possibly derivatives of *C. corymbosus* by way of *C. coccineus*.

In connection with this study, loans have been kindly forwarded from the herbaria of the Arnold Arboretum (A), and the New York Botanical Garden (NY). Collections bearing the symbol (G) are in the Gray Herbarium. To Dr. H. A. Gleason of the New York Botanical Garden, for helpful advice, and to Professor M. L. Fernald for invaluable suggestions and guidance, I wish to express my appreciation.

SYNOPTIC TREATMENT OF THE GENUS

CHARIANTHUS D. Don. Shrubs or small trees, generally much branched: *leaves* 3–5-nerved, decussate, lanceolate to ovate or elliptical, petiolate, often coriaceous, entire, glabrous to setose, the youngest leaves usually covered with either close, brown or whitish-scurfy scales: *flowers* showy, in terminal (rarely lateral-axillary), paniculate or corymbose cymes, parts in fours: *calyx*-tube campanulate or urceolate, obscurely and obtusely 4-lobed or repand; the limbs persistent, each with a minute, bluntish, exterior tooth: *petals* 4, ovate to obovate or narrowly oblong-spatulate, glabrous, free, erect, usually forming an imbricate, bell-shaped corolla, bright red to crimson-purple, sometimes with creamy margins: *stamens* 8, in two equal series, inflexed in bud, much longer than the petals; anthers with longitudinal slits or rarely a terminal pore; connective not elongate and without any appendage: *ovary* completely fused to hypanthium, glabrous at apex, 2–4-locular; style very long, filiform, with simple, rounded stigma: *fruit* baccate, crowned by the persistent calyx, sub-globose or urceolate, juicy and black at maturity; seeds pyramidal.—Mem. Wern. Soc. iv. 327 (1823); DeCandolle, Prod. iii. 196 (1828) and Mém. Melast. 81 (1828); Endlicher, Gen. no. 6263 (1836–1840); Naudin in Ann. Sci. Nat. sér. 3, xviii. 111 (1852); Grisebach, Fl. Br. W. I. Isl. 263 (1864); Bentham & Hooker, Gen. Pl. i. 762 (1862–1867); Triana, Melast. 99 (1871); Urban, Symb. Ant. viii. 492 (1921); Cogniaux in DC. Monogr. Phan. vii. 713 (1891); Mazé, Contr. Fl. Guadel. 50 (1892); Duss. Fl. Phan. Ant. Fran. 285 (1897); Boldingh, Fl. Dutch W. I. i. 149 (1909); Fawcett & Rendle, Fl. Jam. v. 365 (1926); Williams & Cheesman,

Fl. Trinid. & Tob. i. 366 (1934). TYPE SPECIES: *C. corymbosus* (L. C. Rich.) Cogniaux.

The sections *Eucharianthus* and *Eccharianthus* are retained in this treatment and are separable by the characters under the two primary headings in the key.

Sect. I. EUCHARIANTHUS Grisebach, Fl. Br. W. I. Isl. 263 (1864); Cogniaux in DC. Monogr. Phan. vii. 714 (1891).

Sect. II. ECCHARIANTHUS Grisebach, Fl. Br. W. I. Isl. 264 (1864); Cogniaux in DC. Monogr. Phan. vii. 717 (1891).

KEY TO SPECIES

- a. Petals broadly ovate; filaments not pruinose; anthers with longitudinal slits; ovary 4-loculed; fruit subglobose with a spreading, persistent calyx-limb. Sect. EUCHARIANTHUS Grisebach....b.
- b. Young growth, i. e. twigs, leaves and petioles, essentially glabrous, lacking setae....c.
- c. Flowers large, petals 10–12 mm. long; filaments 15–18 mm. long; style 15–30 mm. long; leaves usually punctate beneath with persistent, appressed scales.....1. *C. coccineus*.
- c. Flowers small, petals 5–7 mm. long; filaments 5–6 mm. long; style 10 mm. long; leaves mostly glabrous beneath, usually lacking persistent appressed scales...2. *C. corymbosus*.
- b. Young growth, i. e., twigs, leaves or petioles, setose....d.
- d. Cymes terminal, erect; leaves not punctate beneath with closely appressed scales.....3. *C. purpureus*.
- d. Cymes lateral, axillary, pendulous; leaves punctate beneath, with closely appressed scales.....4. *C. nodosus*.
- a. Petals narrowly-oblong to spatulate; filaments pruinose, anthers with a single apical pore; ovary 2-loculed; fruit urceolate, with an erect persistent calyx-limb. Sect. ECCHARIANTHUS Grisebach.....5. *C. Fadyeni*.

1. CHARIANTHUS COCCINEUS (L. C. Richard) D. Don, var. **typicus**. Shrub, up to 3 m. tall; twigs stout, terete to obscurely tetragonal, glabrous: *leaves* 5-nerved, ovate-elliptical, entire, abruptly short-acuminate, subacute to broadly rounded at base; blades 5–11 cm. long, 3–6 cm. broad, youngest leaves closely and densely brown-lepidote beneath, at length glabrescent with scattered, punctiform appressed scales, upper surface glabrous, coriaceous; petiole 0.5–3 cm. long, glabrous: *cymes* many-flowered, loosely-corymbose or -paniculate, 2–5 cm. long, the basal peduncles 1–3 cm. long; the inflorescence-branches, pedicels, hypanthia and calyx-tubes lightly lepidote: *pedicels* 1–5 mm. long; hypanthia 3–4 mm. long: *calyx*-tube 2–2.5 mm. long, with a minute, blunt, exterior tooth just below the retuse tip of each lobe: *corolla* red; petals 10–12 mm. long, ovate, obtuse: *stamens* inflexed in bud; filaments red, 15–18 mm. long; anthers arcuate, 2 mm. long: *style* red, 1.5–3 cm. long, the tip rounded: *berry* subglobose, 4–7 mm. in diameter, juicy-black at maturity.—Mem. Wern. Soc. iv. 328

(1823); DeCandolle, Prodr. iii. 196 (1828); Naudin, Monogr. Melast. in Ann. Sc. Nat. sér. 3, xviii. 111 (1852); Grisebach, Fl. Br. W. I. I., 263 (1864); Triana, Melast. 99 (1871); Cogniaux in DC. Monogr. vii. 714 (1891). *Melastoma coccinea* L. C. Richard in Act. Soc. Hist. Nat. Paris. 109 (1792). *M. alpina* Swartz, Prodr. 71 (1788); Swartz, Fl. Ind. Occ. ii. 800 (1797); Willdenow, Sp. Pl. 2, 597 (1800). *C. tinifolius* D. Don in Mem. Wern. Soc. iv. 329 (1823); DeCandolle, Prodr. iii. 197 (1828); Cogniaux in DC. Monogr. Phan. vii. 715 (1891); Fawcett & Rendle, Fl. Jam. v. 367 (1926). *C. "coriaceus* DC." Duss, Fl. Phan. Ant. Fran. 285 (1897), an error, presumably for *C. coccineus* (L. C. Rich.) D. Don.—In mossy forests on the highest volcanic peaks, Lesser Antilles. I have seen the following specimens. GUADELOUPE: *Madiana* s. n. (NY); Savane a Mulets, chemin de la grande-Citerne, 1000–1200 m., July 15, 1892, Duss, no. 2259 (G, NY); sphagnetum de la Soufrière, chemin de la Soufrière, 1100–1480 m., Feb. 16, 1936, Stehlé, no. 318 (NY); cones et savanes volcaniques, savane aux Ananas, 1100 m., April 25, 1936, Stehlé, no. 878 (NY); forêt, sommets, volcaniques, Lac Flammarion, 1100 m., Oct. 11, 10, 1936, Stehlé, no. 1154, no. 1255 (NY); mountains above Bain Jaunes, Oct. 31, 1938, L. H. & E. Z. Bailey, no. 161 (NY). DOMINICA: middle rainforest-clad slopes, 800 m., Morne Anglais, Aug. 3, 1938, Hodge, no. 516, (G). PLATE 6, FIG. 1; MAP I.

C. coccineus is recorded by Cogniaux from Porto Rico (Stahl), Santa Domingo (Bertero; Eggers, no. 6916b), and from British Guiana (LeBlond, TYPE). Eggers no. 6916b has been shown by Urban to be a misidentification; while the Bertero specimen, which DeCandolle described from fruiting material as *Conostegia discolor*, is very questionable. The other extra-limital (outside the Lesser Antilles) citations are doubtful, particularly the LeBlond specimen which is discussed under *C. corymbosus*.

Var. *PARVIFOLIUS* Cogniaux. This variety differs from var. *typicus* in its smaller leaves, with petioles 5–10 mm. long; blades ovate-lanceolate to ovate-elliptical, 4–6 cm. long, 1.5–3 cm. broad.—Cogn. in DC. Monogr. vii. 1190 (1891).—ST. VINCENT; known only from this island: *Guilding* s. n. (NY); Soufrière, 2000 ft., Jan. 1890, Eggers, no. 6916 (p. p.) (A); Mt. St. Andrews, 2200 ft., Jan. 1890, Eggers, no. 6916 (p. p.), (ISOTYPE, in herb. Arnold Arboretum.) PLATE 6, FIG. 2; MAP I.

Charianthus coccineus and *C. corymbosus* are the only two glabrous (lacking long setae) species of the genus in the Lesser Antilles. They are apparently of very close affinity, and unless specimens are collected in full flower are difficult to separate in the herbarium. Richard's descriptions are poor, and the only good clue (aside from an examina-

tion of his types) to the identity of the species is the statement that *C. coccineus* is laxly flowered and "racemous", while *C. corymbosus* has many flowers in terminal, subcymose corymbs. The leaves of *C. coccineus* are always coriaceous but the variable *C. corymbosus* frequently approaches *C. coccineus* in this character as well as in leaf-shape. Grisebach, referring to the closely appressed scales as "black dots beneath", states that *C. coccineus* always possesses them, whereas *C. corymbosus* (*C. glaberrimus* DC.) does not. This generalization is not infallible, for, although the scales on the leaves of *C. coccineus* generally persist for a very long time, nevertheless nearly all the species possess this type of scale for a time, at least, in their youth. *C. coccineus* always has much larger flowers; this difference, coupled with its distribution at the highest elevations, is sufficient to distinguish it specifically from *C. corymbosus*.

Since the original description by Don in 1823, the identity of *Charianthus tinifolius* has been very questionable. The type is an Anderson specimen ("Hab. in India Occidentali"), in Don's time in the Lambert herbarium but cited by Cogniaux as in the herbarium of Delessert. It was not seen by DeCandolle, Naudin, Grisebach or Triana, the majority of whom placed the name in their lists of species dubious or unknown. Cogniaux, in his monograph, elaborated the description of the species for the first time, and cited an additional specimen of MacNab from Jamaica. In their Jamaica Flora, Fawcett & Rendle take up Cogniaux's description and citations, but question the MacNab specimen, referring it to St. Vincent (?) rather than to Jamaica. This seems more logical, for section *Eucharianthus* is not known from Jamaica, and Anderson made his chief collections in the Lesser Antilles. In the absence of type material, I am unable to separate, from Cogniaux's description, *C. tinifolius* from *C. coccineus*. If St. Vincent is the actual locality for the Anderson and MacNab specimens, it is probable that they both represent *C. coccineus* var. *parvifolius*.

In his flora of the French Antilles, Duss published the name *C. coriaceus* DC., and this epithet also appears on many of his herbarium labels. Several specimens so named (Duss, no. 2259, G, NY), which I have seen, represent material of *C. coccineus*. Since the published description also applies to *C. coccineus*, it is safe to assume that *C. coriaceus* was published in error for *C. coccineus*. *Coriaceus*, as a specific or varietal epithet, has never been more formally applied in the genus *Charianthus*, and certainly not by DeCandolle. Duss, working alone, in Guadeloupe, apparently had to rely on his memory

for a great many of his names, for errors of this type also appear under *C. corymbosus* and *C. nodosus*.

2. *CHARIANTHUS CORYMBOSUS* (L. C. Rich.) Cogniaux. Large shrub or small tree, up to 8 m. tall; crown spreading, much branched; bole fluted, bark finely furrowed; wood medium-hard, close-grained; twigs terete to subtetragonal, glabrous: *leaves* 5-nerved, lanceolate to broadly ovate-elliptical, entire to minutely-crenulate or serrulate, abruptly short-acuminate or gradually long-attenuate, cuneate-attenuate to obtuse or subcordate at base; blades 7–16 cm. long, 2.5–9 cm. broad, the lower surfaces of youngest leaves minutely brown-lepidote, at length glabrous, upper surfaces glabrous, membranaceous to subcoriaceous; petioles 1.5–6.5 cm. long, glabrous: *cymes* generally closely corymbose, many-flowered, 5–10 cm. long, the branches often reddish: *pedicels* 2–4 mm. long; hypanthia 2–3 mm. long: *calyx* 1–2 mm. long, minutely but sparingly lepidote, each calyx-lobe bearing a blunt exterior tooth near its obtuse apex: *corolla* red, often with buff-colored margins, petals 5–7 mm. long, ovate: *stamens* inflexed in bud; filaments 5–6 mm. long; anthers 2 mm. long, arcuate: *style* 10 mm. long, the tip rounded: *berry* globose, 5 mm. in diameter, black.

- a. Leaf-apices abruptly short-acuminate; leaf-bases rounded to subcordate, never attenuate. b.
- b. Cymes small, short-peduncled, closely corymbose; leaves ovate, the blades averaging 8 cm. long, 5 cm. wide. Var. *typicus*.
- b. Cymes large, long-peduncled, loosely corymbose; leaves broadly elliptical, the blades averaging 13 cm. long, 8 cm. wide. Var. *latifolius*.
- a. Leaf-apices gradually long-attenuate-acuminate; leaf-bases attenuate to narrowly rounded. Var. *longifolius*.

Var. *typicus*. *Leaves* 5-nerved, ovate to ovate-lanceolate, entire to minutely-crenulate or serrulate, apex abruptly short-acuminate, base narrowly-obtuse to subcordate, blades 7–13 cm. long, 2.5–6 cm. broad, membranaceous to subcoriaceous; petioles 1.5–3 cm. long: *cymes* closely corymbose, 5–8 cm. long.—*C. corymbosus* (L. C. Rich.) Cogniaux, in DC. Monogr. vii. 714 (1891); Duss, Fl. Phan. Ant. Fr. 286 (1897); Williams & Cheesman, Fl. Trin. & Tob. i. pt. 6, 367 (1934). *Melastoma corymbosa* L. C. Richard, Act. Soc. Hist. Nat. Paris 109 (1792). *M. splendens* Sieber, Fl. Mart. no. 120 (exsiccatae). *M. Berterianum* Spreng. ex DC. Prod. iii. 197 (1828), in synonym. *C. Berterianus* Ser. ex DC. loc. cit., in synonym. *Chaenanthera mucronata* L. C. Rich. ex DC. loc. cit., in synonym. *C. glaberrimus* DeCandolle, op. cit. 196; DeCandolle, Mém. Melast. 82 (1828); Grisebach, Fl. Br. W. I. I. 264 (1864). *C. corymbosus* (L. C. Rich.) Cogn., "var. *glaberrimus* DC." Duss, loc. cit., nomen nudum.—Woodlands and cleared slopes at lower and middle elevations, Lesser Antilles. I have seen the following specimens. GUADELOUPE: savanes ferugineuses, Lamentin, 100–400 m.,

Nov. 18, 1934, *H. Stehlé*, no. 38 (NY); plaines lateritiques, Capesterre, 100 m., Nov. 8, 1934, *H. Stehlé*, no. 43 (NY). DOMINICA: woodland borders at village of Laudat, 665 m., March 8 & 9, 1940, *W. H. & B. T. Hodge*, no. 1752 (G). MARTINIQUE: *Sieber*, Fl. Mart. no. 120 (G); Bois du Cocoyer, Dec. 1867, *Hahn*, no. 457 (G); dans les endroits ventes de la Calebasse versant du Morne Rouge, 1878, 1880, *Duss*, no. 1166 (NY); above L'Alma, Nov. 14, 1938, *L. H. & E. Z. Bailey*, no. 275 (NY). PLATE 4, FIG. 1; MAP II.

Var. **latifolius**, var. nov., foliis 5-nervatis, ovatis vel late ellipticis, integris, apice abrupte vel breve acuminatis, basi obtusis vel late rotundatis; laminis 6–16 cm. longis, 4–9 cm. latis, juventute squamis, fuscis, lepidotis, tandem glabrescentibus; petiolis 2–6 cm. longis, setis perpaucibus rare et inaequale; cymis grandis, 6–12 cm. longis, saepe laxae corymbiformibus, pedunculis longis.—*C. corymbosus* Cogn., var. "*grandiflorus* Cogn." *Duss*, Fl. Phan. Ant. Fran., 286 (1897), nomen nudum. *C. corymbosus* Cogn. "*var. diffusus* Cogn." *Duss*, loc. cit. nomen nudum. GUADELOUPE: known only from this island at lower to middle elevations. Abondant a la Calebasse, des hauteurs du Prêcheur, des Fonds St. Denis, 1879, 1881, *Duss*, no. 664 (NY); hauteurs du Matouba, alt. 810 m., 1892, 1893, *Duss*, no. 2250 (TYPE in Gray Herb.; NY, ISOTYPE); hauteurs des Trois Rivières et Trouaux-Chiens, alt. 320 m., March 1, 1892, 1893, *Duss*, no. 2267 (NY); Camp Jacob, Cascade de Vauchelet, alt. 460–500 m., 1894, *Duss*, no. 3204b, (G); same locality, 1896, *Duss*, no. 3204c (NY); forêts humides a chemin Soufrière, 500–900 m., Jan. 20, 1935, *H. Stehlé*, no. 34 (NY). PLATE 4, FIG. 3; MAP II.

Var. **longifolius** (Cogniaux) stat. nov. Leaves 5-nerved, ovate to ovate-lanceolate, entire, with apex gradually long-acuminate and base narrowly-obtuse to cuneate-attenuate; blades 10–16 cm. long, 4–8 cm. broad; youngest leaves closely brown-lepidote beneath, at length glabrescent, waxy-subcoriaceous and glabrous above; petioles 1.5–7 cm. long, glabrous: cymes many-flowered, generally closely corymbose. *C. longifolius* Cogniaux in DC. Monogr. vii. 713 (1891). DOMINICA: known only from this island at middle to higher elevations. In silvis prope Lagunam Roseau, 1000 m., December 1882, *Eggers*, no. 654, (ISOTYPE in Gray Herbarium); Laudat, 1903, *Lloyd*, no. 331 (NY); Sylvania estate, 1500–1800 ft., June 21, 1933, *Cooper*, no. 31 (G, NY); same locality, Jan. 27, 1933, *Cooper*, no. 79 (G, NY); rain-forest on the precipitous slopes of Morne Colla-Anglais, 610–732 m., Sylvania, Aug. 10–23, 1938, *Hodge*, no. 515, (G, NY); cleared forest-land, Sylvania, 549 m., Feb. 16, 1940, *W. H. & B. T. Hodge*, no. 1310, (G, NY); woodlands about Lisdara estate, 457 m., March 28, 1940, *W. H. & B. T. Hodge*, no. 2451 (G); woodlands near base of Morne Anglais, 700 m., March 21, 1940, *W. H. & B. T. Hodge*, no. 2256 (G); moist forests bordering Pegoua River in vicinity of Deux Branches, Concorde Valley, May 6 & 7, 1940, *W. H. & B. T. Hodge*, no. 3436 (G);

moosy forest at the summit of Morne Nichols, 990 m., March 10, 1940, *W. H. & B. T. Hodge*, no. 1931 (G, NY); shrubby summit of Morne Megre Maron, near headwaters of Layou River, 700 m., Feb. 11, 1940, *W. H. & B. T. Hodge*, no. 1066 (G, NY); steep, wet, north valley-walls near base of Roseau Valley Waterfalls, below Laudat, 500 m., March 12, 1940, *W. H. & B. T. Hodge*, no. 2021 (G). PLATE 4, FIG. 2; MAP II.

Charianthus corymbosus and *C. coccineus* were described by L. C. Richard at Paris from material sent him by LeBlond from Cayenne (French Guiana). Remarking on the LeBlond collection, Richard,² in his "OBS.I" on p. 114, says, "*Pleraeque plantae Gallo-guyannenses: NONNULLAE MARTINICENSIS.*" (Capitals are the author's.) The LeBlond *Charianthus* types apparently represent some of this Martinique material, yet all monographers of the genus have cited LeBlond's collections as originating either in Cayenne or British Guiana. There are two citations of *C. corymbosus* and *C. nodosus* from Trinidad based solely on Sieber specimens; but, despite the thoroughness of recent Trinidad collectors, no additional material has been accumulated from that island. Much of Sieber's collecting, also, was done on Martinique and it seems likely that this is a case of mixed labels. Grenada, the southernmost island in the true Lesser Antillean chain, is then the nearest station to South America from which *Charianthus* has been authentically recorded.

Charianthus corymbosus, a close relative of *C. coccineus*, differs from it in its flowers which are about one half as large; and in its mature leaves which are generally glabrous on both surfaces. *C. coccineus* is a small shrub of the highest volcanic peaks, whereas the taller *C. corymbosus* is often a small tree, most abundant at lower and middle elevations.

C. corymbosus is a variable species but the variants show a pronounced segregation by islands, and thus lend themselves well to treatment as geographical varieties. Richard's original description states that the leaves are "subcordato-ovatis." I have not seen the type-material, but all Martinique specimens examined are ovate with slightly subcordate or emarginate bases. Until an examination of the type proves otherwise, *C. corymbosus*, as it is represented by all Martinique material, is here considered as typical. Var. *typicus* is apparently a plant of lower elevations, for all Guadeloupe and Martinique specimens are from such altitudes.

Duss, who collected chiefly in Guadeloupe, noted the variability of *C. corymbosus*. On some of his labels, as well as in his published

² Richard, Act. Soc. Hist. Nat. Paris. (1792).

flora, there appear three varietal names without descriptions which are incorrectly attributed to Cogniaux and DeCandolle. Since this Guadeloupe material is sufficiently distinct to warrant its separation, var. *latifolius* is presented as a substitute for the illegitimate varietal names of Duss. Var. *latifolius* is easily distinguished from var. *typicus* by its long-petioled, broadly elliptical leaves with obtusely rounded, rather than subcordate bases. The cymes of var. *latifolius* are also longer and more loosely corymbose, with flowers which tend to be slightly larger.

Examination of the isotype material of *Charianthus longifolius* Cogn. in the Gray Herbarium shows that it has insufficient characters to separate it as a species, and so I have reduced it to varietal rank. Its flower-characters are identical with those of *C. corymbosus* varieties *typicus* and *latifolius*. From var. *typicus* it can be separated only by its leaves, which are long-petioled and ovate-lanceolate, with long, gradually acuminate apices, and bases obtuse to attenuate. Base- and apex-characters are together sufficient to distinguish it from var. *latifolius*, with its broadly rounded bases and abruptly short-acuminate apices.

Var. *longifolius* varies considerably: plants of open situations possess the narrowly lanceolate leaf-type while specimens from shaded habitats approach var. *latifolius* in size but not in shape. The stems of plants from higher elevations are frequently more nearly tetragonal than terete, but this morphological condition can apparently be correlated with high altitude and exposed mountain summits, for other mossy-forest species of *Charianthus*, as well as of *Miconia*, invariably possess strongly angled twigs. The slow growth in such regions of species with a decussate phyllotaxy shortens the internodes, with the result that the quadrangular nodes strongly influence the shape of the internodal surfaces.

Certain duplicate specimens of *C. corymbosus*, cited above and collected by Duss, possess herbarium-labels on which the field data varies considerably. Some of his numbers have two collection-dates on the same label; other numbers may show a certain date on one sheet, another date on the duplicate sheet. In all cases I have included in the citation of specimens all the collection-dates that appear on each label.

3. *CHARIANTHUS PURPUREUS* D. Don. Shrub, 1–10 m. tall; twigs slender to stout, obtusely tetragonal, the youngest often densely or lightly covered with brown, stiffish hairs or glabrate except for a setose ring at the nodes, the persistent hair-bases often remaining on

the older twigs as tubercles: *leaves* 5-nerved, broadly ovate to ovate-elliptical or subrotund, with entire or slightly undulate or crenulate margin, at times inrolled, and in young leaves of certain forms sparsely setose-ciliate, very shortly cuspidate, or often abruptly blunt-acuminate, with base rounded to subcordate; blades 7–16 cm. long, 3–11 cm. broad; the youngest leaves remotely scurfy-lepidote above, at length glabrous, below closely brown-lepidote or white-furfuraceous on veins and leaf-tissue, at length glabrescent, the main longitudinal and lateral veins at times sparsely-setose beneath with lax hairs 1–2 mm. long; petioles obscurely sulcate, 1–5 cm. long, the margins densely to sparingly-setose: *cymes* corymbose, few- to many-flowered, terminal, sessile, 3–8 cm. long; the branches, pedicels, hypanthia and calyx-tubes with scattered close or furfuraceous scales: *pedicels* 1–3 mm. long; hypanthia ca. 3 mm. long: *calyx* 1.5–2 mm. long, each lobe bearing a blunt often obscure exterior tooth near its middle: *corolla* bright to deep crimson-purple; petals oval, 7–12 mm. long, 6–7 mm. broad at their middle: *stamens* inflexed in bud; filaments 12–14 mm. long; anthers arcuate, 2–3 mm. long: *style* red, 1.5–2.5 cm. long, rounded and yellowish at the tip: *berry* subglobose, 5–7 mm. in diam., maroon, turning black at maturity.

- a. Youngest leaves not rugose, the main vein-system beneath, as well as the leaf-tissue, often thickly covered with close, brownish, early deciduous scales; veins often setose beneath, especially on the youngest leaves; petioles of young leaves setose on channel-margins above, not white-scurfy below; setae on the young twigs both nodal and internodal. b.
- b. Leaves large (averaging 8 cm. or more long), ovate; longest setae of petioles or twigs well over 2 mm. long; cymes over 5 cm. long, many-flowered. c.
- c. Petioles and young twigs lightly setose, the hairs frequently limited to an adaxial ring and to the upper third of the petiole; veins of the lower surface of young leaves usually devoid of setae; leaf-blades large, up to 16 cm. long by 11 cm. broad, the apex short-acuminate and never recurved, margins not revolute. Var. *typicus*.
- c. Petioles and young twigs densely setose, the setae thick on the internodes and petioles; veins of the lower surfaces of young leaves generally setose; leaf-blades smaller, up to 10 cm. long, to 8 cm. broad, the apex acute to bluntly cuspidate and often recurved, the margins setose-ciliate, frequently revolute. Var. *crinitus*.
- b. Leaves small (averaging 6 cm. long), subrotund; longest setae of petioles or twigs scarcely over 1 mm. long; cymes ca. 3 cm. long, few-flowered. Var. *brevisetosus*.
- a. Youngest leaves strongly rugose, the main vein-system beneath thickly covered with loose, whitish, stellate, scurfy, persistent scales; veins beneath entirely devoid of setae; petioles setose on the channel-margins above, copiously white-scurfy beneath; setae on the young twigs nodose, i. e., limited to a narrow ring surrounding the stem. Var. *rugosus*.

Var. typicus. Twigs sparingly setose to glabrous, the hairs long-persistent at the adaxial region just above the nodes: *leaves* ovate to broadly elliptical, entire to slightly undulate, short-acuminate, rounded to emarginate or subcordate at base; blades 8–16 cm. long, 6–11 cm. broad, subcoriaceous; the young leaves often with scattered scales above, at length glabrous, often with closely appressed, brown scales on the veins and leaf-tissue below, at length glabrescent; petioles 2.5–5 cm. long, sparsely setose on the channel-margins above.—*Charianthus purpureus* D. Don, Mem. Wern. Soc. iv. 329 (1823); DeCandolle, Prodr. iii. 197 (1828); Grisebach, Fl. Br. W. I. I. 264 (1864); Triana, Melast. 99 (1871); Cogniaux in DC. Monogr. vii. 715 (1891). *Melastoma coccinea* Vahl, Eclog. i. 48 (1796); Vahl, Icon. Am. tab. 16 (1799), not Rich.; Willdenow, Sp. Pl. ii. 599 (1800); Poiret in Lam. Encycl. Meth. Bot., Suppl. iii. 640 (1813). *Melastoma Dodandiana* Hamilton, Prodr. Fl. Ind. Occ. 37 (1825).—In forests on the highest volcanic peaks of the northern Lesser Antilles. I have seen the following specimens. ST. KITTS: edges of mountain pasture, Molyneux estate, Sept. 8–Oct. 5, 1901, *Britton & Cowell*, no. 310 (NY), p. p. MONTSERRAT: Gages, near the Soufrière, Jan. 23, 1907, *Shafer*, no. 193 (NY); Feb. 12, 1907, *Shafer*, no. 675 (NY); borders of Chaners Pond, 2800 ft., Jan. 26, 1907, *Shafer*, no. 676 (NY). MAP III.

Var. crinitus (Naudin), stat. nov. Twigs densely setose; the hairs 3–5 mm. long, especially abundant on the internodal areas: *leaves* ovate to obovate, entire to minutely undulate, with recurved margin and subacute to bluntly-cuspidate, often recurved apex; base emarginate to subcordate; blades 6–12 cm. long, 5–9 cm. broad, subcoriaceous above, in youth with scattered, closely appressed, brown scales, at length glabrous above, glabrescent below; the main veins of younger leaves setose below, at length glabrescent; petioles 1.5–5 cm. long, setose on the channel-margins above.—*Charianthus crinitus* Naudin in Ann. Sc. Nat. sér. 3, xviii. 112 (1852); Triana, Melast. 99 (1871); Cogniaux in DC. Monogr. vii. 716 (1891); Boldingh, Fl. Dutch W. I. I. i. 149 (1909).—In mossy forests on the highest peaks of the northern Lesser Antilles. I have seen the following specimens. SABA: mountain, 600–800 m., (1906), *Boldingh*, no. 1784b (NY). ST. KITTS: Mt. Misery, Sept. 8–Oct. 5, 1901, *Britton & Cowell*, no. 310 (NY), p. p. PLATE 5, FIGS. 1 & 2; MAP III.

Var. brevisetosus, var. nov. Ramulis leviter setosis; setis brevibus, ca. 1 mm. longis; foliis late ovatis vel subrotundis, integris vel minute crenulatis, apice obtuse cuspidatis, basi emarginatis vel subcordatis; laminis 4–6.5 cm. longis, 2.5–5.5 cm. latis, coriaceis, utrinque leviter stellato-lepidotis juventute, tandem glabrescentibus, subtus venis principibus saepe setis paucibus-brevibus; petiolis 1–2.5 cm. longis, supra sulcatis marginibus setosis; cymis brevibus, 3 cm. longis, sessilibus, floribus paucibus. GRENADA: known only from this island.

Morne au camp, 2400 ft. alt., Dec. 1889, *Eggers*, no. 6221 (TYPE in Herb. Arnold Arboretum). PLATE 5, FIGS. 5 & 6; MAP III.

Var. **rugosus**, var. nov. Ramulis ad nodos villosis, villis 2–3 mm. longis; foliis ovatis vel ellipticis, integris vel apicem versus crenulatis, marginibus firmis revolutis, apice reflexis cuspidatis vel abrupte obtuseque acuminatis, basi rotundatis vel emarginatis vel subcordatis; laminis 6–12 cm. longis, 4–8 cm. latis, rigido-coriaceis, juventute valde rugosis; venis subtus squamis copiosis laxis albis stellato-furfuraceis persistentibus, petiolis 1–3 cm. longis, supra sulcatis marginibus setosis, subtus albo-furfuraceis. DOMINICA: endemic, in mossy forests at the summits of the highest peaks. In mossy forest at the summit of Morne Trois Pitons, alt. 1400 m., rainfall 762 cm., Feb. 23, 1940, *W. H. & B. T. Hodge*, no. 1421 (TYPE in Gray Herb., ISOTYPE NY); same locality, Aug. 15, 1938, *Hodge*, no. 509 (G, NY); rain-forest borders between Laudat and Freshwater Lake, alt. 665 m., rainfall 902 cm., March 8 & 9, 1940, *W. H. & B. T. Hodge*, no. 1751 (G), a low altitude form; mossy forest on summit of Morne Plat Pays, 981 m., March 3, 1940, *W. H. & B. T. Hodge*, no. 1685 (G); rain-forest borders, Freshwater Lake, 665 m., March 8 & 9, 1940, *W. H. & B. T. Hodge*, no. 1850, (G). PLATE 5, FIGS. 3 & 4; MAP III.

Charianthus in the Lesser Antilles is represented principally by two species, one of which, *C. corymbosus*, is glabrous, while the other, *C. purpureus*, is distinctly setose. The varieties of the latter species, like those of *C. corymbosus*, are indistinguishable from each other in floral characters, but show well marked differences in size and shape of leaves, as well as in type and disposition of vestiture. Such differences, I believe to be varietal rather than specific.

Charianthus purpureus was first described and illustrated by Vahl from material collected by Ryan on the island of Montserrat. His description follows fairly well the specimens examined by me from that island, and on these I have based var. *typicus*. Naudin, from a plant (locality unknown) in the Bonpland herbarium, described *C. crinitus*—apparently without having seen material of *C. purpureus*, for he places the latter in a list of species “non omnino certae.” That the degree of villosity is variable was recorded by Ryan on the labels which Vahl later examined. It appears that specimens from the higher more exposed peaks generally possess heavily setose twigs and petioles; leaf-size is also reduced in such situations. These characters apparently can be correlated with habitat—altitude, exposure to constant wind-action, and high precipitation. For the present it seems proper to separate this crinite, mossy-forest form, not as a species, but as var. *crinitus*, while the broad-bladed, sparingly setose, lower-altitude form may be considered var. *typicus*. Future collections may indicate, however, that these two varieties should be merged.

The remaining varieties of *C. purpureus* show a definite geographical segregation; var. *brevisetosus* is at present known only from Grenada—the most southern of the Lesser Antilles, while var. *rugosus* is represented only by Dominica collections. I have seen but a single specimen of var. *brevisetosus*, namely the type, *Eggers*, no. 6221, which has well marked differences warranting its varietal separation. Because of its very short (1 mm. long) sparse setae, the short, few-flowered cymes, and its small, distinctly subrotund leaves, it does not resemble any of its more northern relatives.

Var. *rugosus* was first collected by the writer while prosecuting field-work in Dominica in 1938. In 1940, further, more abundant collections were made, showing that this variety is very distinct from its relatives in several vegetative characters. It is, therefore, recognized as a geographical segregant. Var. *rugosus* possesses the leaf-size and habit of var. *crinitus*, but the presence of abundant white scurf on the veins beneath, and the total lack of laminal setae on the strongly rugose leaves easily distinguish var. *rugosus* from its closest relatives.

4. CHARIANTHUS NODOSUS (Desr.) Triana. Shrub, up to 2 m. tall; branches thick, tortuous, terete, nodose; the youngest twigs villose with rusty-colored setae, 2–4 mm. long: leaves borne at the ends of the branches, 5-nerved, coriaceous, obovate to subrotund, with margins strigose-serrulate with setae curved towards the apex, obtuse to rounded, with base obtuse to rounded or subcordate; blades 3–7 cm. long, 2–5.5 cm. broad, glabrous above, punctate below with sunken, appressed scales; petiole 2–10 mm. long, glabrous: cymes pendulous, axillary on the old, leafless twigs, 2–4 cm. long, on slender peduncles, many-flowered; pedicels slender, 6–8 mm. long: hypanthium plus calyx-tube 7–8 mm. long, the tube short-lobed; the minute, exterior tooth near the tip of each triangular lobe extended into a seta ca. 1 mm. long: corolla red to purple, with petals 12–14 mm. long: anthers ca. 2 mm. long: style 2 cm. long: berries 4 mm. long, rosy at maturity.—Triana, *Melast.* 99 (1871); Cogniaux in *DC. Monogr.* vii. 716 (1891), in part; Duss in *Fl. Phan. Ant. Fran.* 285 (1897); Williams & Cheesman, *Fl. Trin. & Tob.* i. pt. 6, 367 (1934). *Melastoma nodosa* Desrousseaux in *Lam. Encycl. Méth. Bot.* iv. 55 (1796); DeCandolle, *Prodr.* iii. 202 (1828); *Melastoma aculeata* Presl. in *Isis* xvi. 272 (1828). *Charianthus ciliatus* DeCandolle, *Prodr.* iii. 197 (1828), and *Mém. Melast.* 83 (1828). *Tetrazygos ciliatus* Richard ex. DC. *Prodr.* iii. 197 (1828), in synonym.—MARTINIQUE: region supérieure de la Montagne Pelée, August 1899, Duss,³ no. 666 & 4044 (NY); Duss, no. 4044 (NY).
PLATE 6, FIG. 3.

³ Duss' herbarium labels frequently possess, as in this case, two collection-numbers, and often two different dates; since he often collected during the same year on both Guadeloupe and Martinique, it is a problem to know which number and which date is correct.

Forma **crinitus**, (Duss) stat. nov., differs from the preceding in the abundant, dense, villose setae on the young growth, i. e., stems, leaves, peduncles; setae rusty-brown, 2–5 mm. long, crowded on stems and petioles, loosely scattered on leaf-surfaces, borne on the leaf-tissue above, limited to the principal longitudinal and lateral veins beneath. *Charianthus nodosus* (Desr.) Triana, var. *crinitus*, incorrectly attributed by Duss to Naudin in Fl. Phan. Ant. Fran. 286 (1897). *Melastoma crinita* Vahl, Eclog. iii. 28 (1807); DeCandolle, Prodr. iii. 199 (1828); *Charianthus ciliatus* Naudin in Ann. Sc. Nat. sér. 3, xviii. 112 (1852). I have seen the following specimens. MARTINIQUE: Montagne Pelée, 900–1000 m., Duss, no. 665 (TYPE in Herb. N. Y. Bot. Gard.); sylve rabougrie d'altitude 1300 m., Piton du Carbet, Morne Nert, Sept. 5, 1937, H. Stehlé, no. 2205 (NY). PLATE 6, FIG. 4.

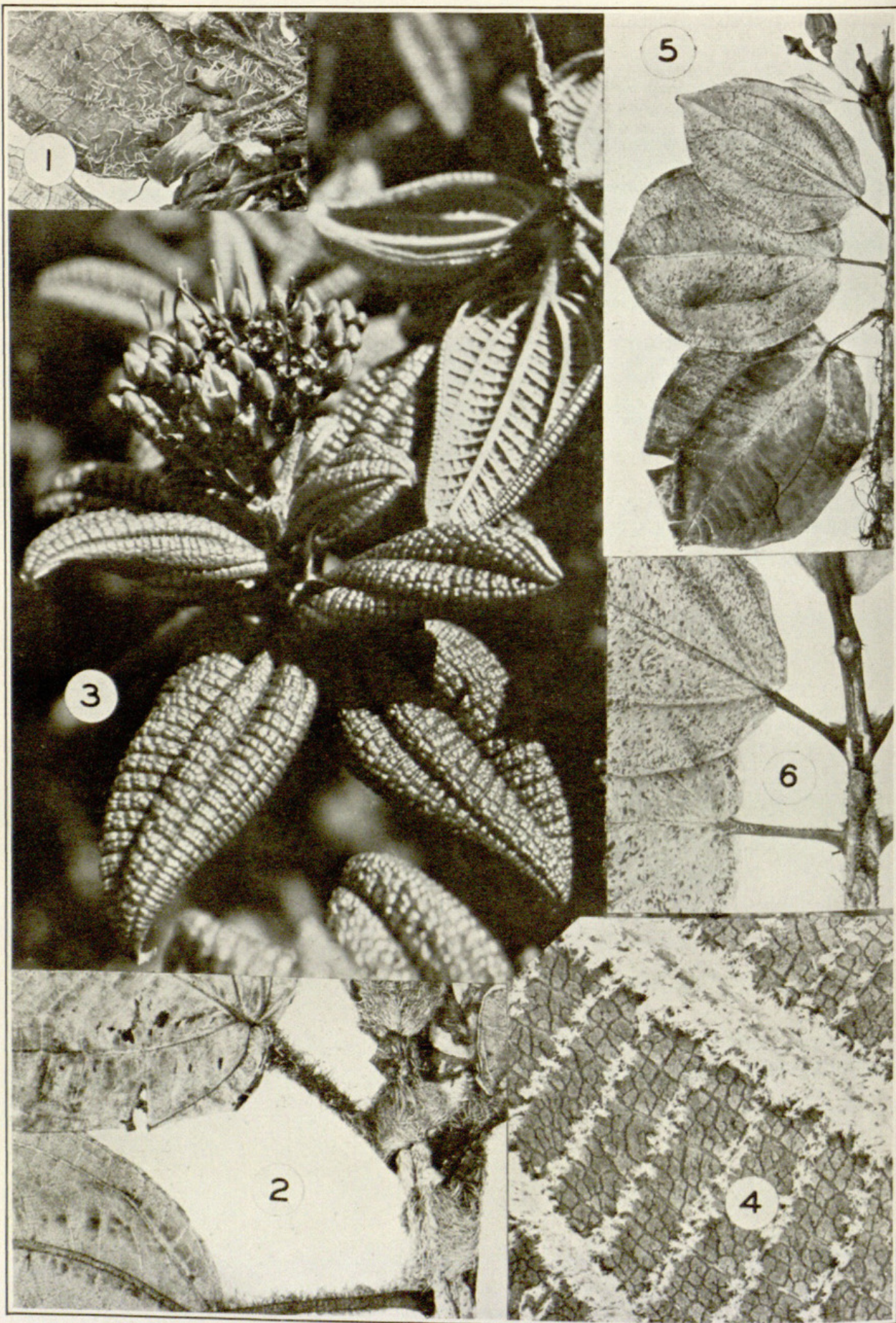
This is another species of the genus the distribution of which, as cited in the Cogniaux monograph, is probably incorrect. I have seen only Martinique material, but according to Cogniaux this species also occurs on Guadeloupe (*Purdie*), Montserrat (*Ryan*), St. Christopher (*Masson*), Trinidad (*Sieber*) and British Guiana (*LeBlond*). It is possible that some of the Lesser Antillean citations are based on misidentifications of *C. purpureus*. Vahl, for instance, records only *Charianthus purpureus* from Ryan's collections on Montserrat; and Duss, who spent many resident-years collecting both in Guadeloupe and Martinique, writes concerning *C. nodosus*, "Cette belle espèce avec sa variété n'existent pas à la Guadeloupe." *Sieber* nos. 113 and 279, on which the Trinidad citation is based, are probably specimens from Martinique (see discussion under *C. corymbosus*).

Desrousseaux, describing the type of *C. nodosus* in Lamarck's Encyclopedie, states, "cette plante est originaire des Antilles, et se trouve au no. 93 de l'herbier de Surian." Triana, apparently citing the same specimen, lists it in error as no. 733. Cogniaux refers to the Surian herbarium-specimen, but gives no number; and, in addition, he cites, for the first time, *LeBlond* no. 93 from British Guiana. Desrousseaux probably did not realize that his type represented one of the three species of *Charianthus* (*C. coccineus*, *C. corymbosus*, and *C. nodosus*) collected by *LeBlond* on Martinique and that it was sent, mixed with British Guiana collections, to Richard at Paris. Apparently the material of *C. nodosus* was overlooked by Richard and so was described later by Desrousseaux as "originaire des Antilles." It is apparent, from Desrousseaux's original description, that the type-specimen of *Charianthus nodosus* (not seen) represents the glabrous-leaved form.

Forma *crinitus*, growing intermixed with material of typical *C.*



CHARIANTHUS CORYMBOSUS, var. TYPICUS: FIG. 1, leafy twig, $\times \frac{1}{2}$.
C. CORYMBOSUS, var. LONGIFOLIUS: FIG. 2, flowering twig, $\times \frac{1}{2}$.
C. CORYMBOSUS, var. LATIFOLIUS: FIG. 3, leafy twig, $\times \frac{1}{2}$.



CHARIANTHUS PURPUREUS, var. CRINITUS: FIG. 1, lower surface of young leaf and flowers, $\times 1\frac{3}{16}$. FIG. 2, twig and petioles showing long crinite hairs, $\times 1\frac{1}{8}$.
 C. PURPUREUS, var. RUGOSUS: FIG. 3, flowering twig of plant growing at type locality. FIG. 4, lower surface of young leaf, $\times 5$, from ISOTYPE.
 C. PURPUREUS, var. BREVISETOSUS: FIG. 5, flowering twig, $\times \frac{1}{2}$, from TYPE. FIG. 6, twig and petioles showing short stiff setae, $\times 1\frac{1}{8}$, from TYPE.



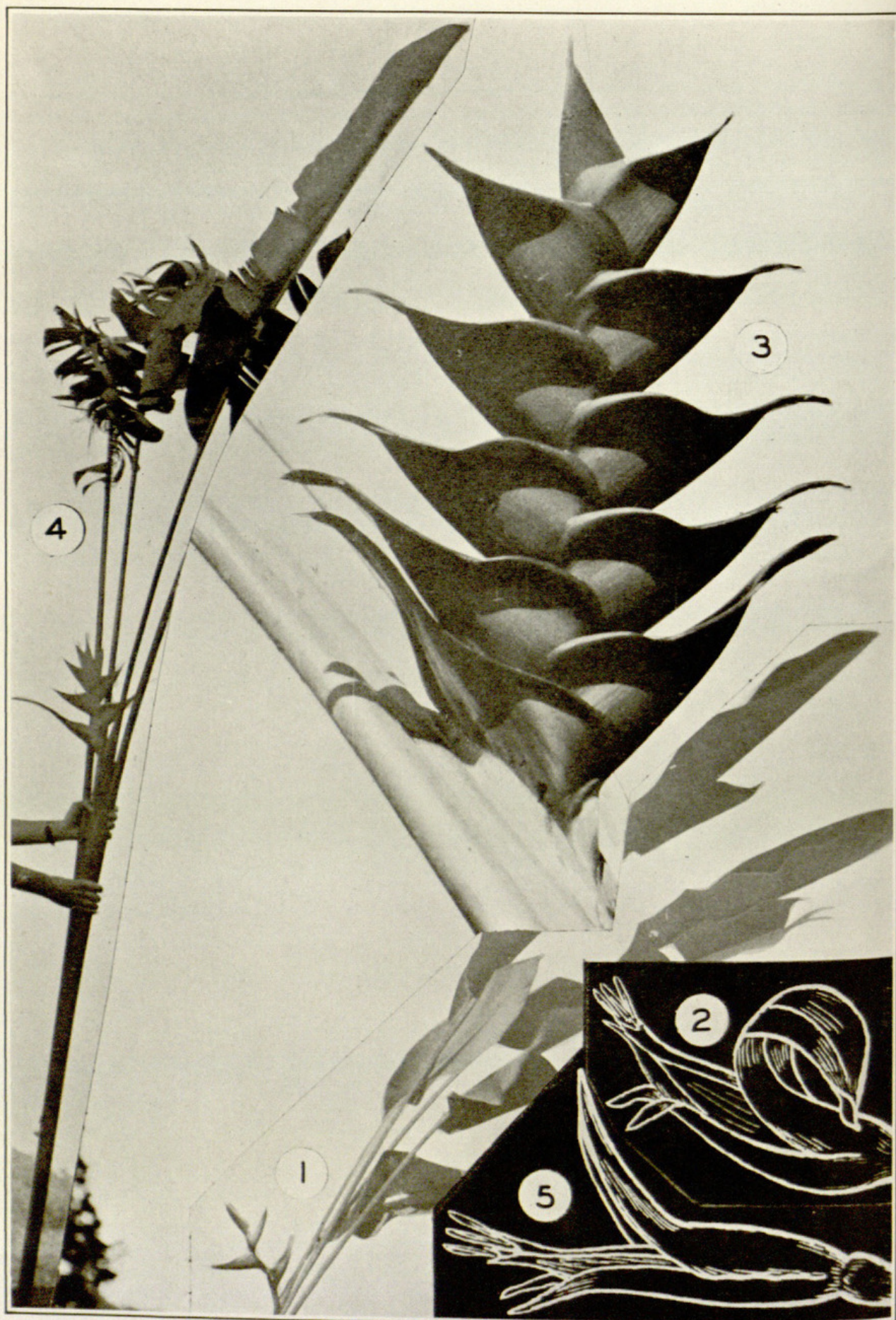
CHARIANTHUS COCCINEUS: FIG. 1, flowering twig, $\times \frac{1}{2}$.

C. COCCINEUS, var. PARVIFOLIUS: FIG. 2, flowering twig, $\times \frac{1}{2}$, from ISOTYPE.

C. NODOSUS: FIG. 3, leafy twig, $\times \frac{1}{2}$.

C. NODOSUS, forma CRINITUS: FIG. 4, leaves, $\times \frac{1}{2}$.

C. FADYENI: FIG. 5, flowering twig, $\times \frac{1}{2}$. FIG. 6, fruits, $\times \frac{1}{2}$.



HELICONIA BIHAI: FIG. 1, plant showing short-peduncled inflorescence W. H. & B. T. Hodge, no. 1086. FIG. 2, single flower, ca. $\times 1$ (drawn from Bot. Reg. t. 374).
 H. CARIBAEA: FIG. 3, crimson-bracted form showing sessile inflorescence, W. H. & B. T. Hodge, no. 2632. FIG. 4, yellow-bracted form showing habit, W. H. & B. T. Hodge, no. 1442. FIG. 5, single flower, ca. $\times 1$.

nodosus, possesses dense, villous setae on both leaves and stems, and is thus readily distinguished. This epithet, validly published by Duss as var. *crinitus*, was incorrectly attributed by him to Naudin, who had previously published a *C. crinitus* (*C. purpureus*, var. *crinitus*). Duss probably had Naudin's name in mind but misapplied it to *C. nodosus*.

5. *CHARIANTHUS FADYENI* (Hook.) Grisebach. Tall shrub or slender tree 2–9 m. tall; twigs slender and terete (stout, thickly-corticate on plants from exposed summits); young growth with scattered stellate scales, at length glabrous: *leaves* rigid, coriaceous, yellow-green (when dry), darker above, 3-nerved, the laterals not prominent, ovate, obovate, or narrowly elliptical; margin entire; apex bluntly acute, rounded, or infrequently emarginate; base acute to rounded; blades 3–7 cm. long, 1.5–4 cm. broad; budding leaves densely covered with stellate scales, at length glabrous above, but punctate below with dark, sunken, appressed scales; petioles 5–16 mm. long, remotely stellate-lepidote in youth, at length glabrous: *panicles* terminal, 3–9 cm. long, with basal peduncle 1–3.5 cm. long, the branches, pedicels, buds, and fruits remotely stellato-lepidote: *pedicels* 1–3 mm. long; hypanthia 2–3 mm. long: *calyx*-tube 1.5–3 mm. long, cup-like, indistinctly lobate with a minute, obscure, exterior tooth near the top of each lobe: *corolla* bright to dark crimson; petals narrowly oblong to spatulate, 10–15 mm. long, 4–5 mm. broad: *stamens* inflexed in bud; filaments pruinose, 10–15 mm. long, narrowly linear to subcapillary at their summit; anthers 4–5 mm. long, slightly arcuate, with a single apical pore: *style* 2–2.5 cm. long, rounded at the tip: *berry* urceolate, 2-loculed, 5–6 mm. in diameter.—Grisebach, Fl. Br. W. I. I. 264 (1864); Triana, Melast. 99 (1871); Cogniaux in DC. Monogr. vii. 713 (1891); Fawcett & Rendle, Fl. Jam. v. 366, t. 135 (1926). *Tetrazygia Fadyeni* Hooker in Journ. Bot. i. 379, t. 12 (1849); MacFadyen, Jam. ii. 57, fide Fawc. & Rendle., loc. cit., an unpublished manuscript in the British Museum. JAMAICA: endemic on this island. *Alexander* s. n. (G, NY); Holly Mount near Ewarton, 2600 ft. alt., Aug. 11, 1896, *Harris*, no. 6512 (NY); same locality, Feb. 15, 1905, *Harris* no. 8883, (NY); Holly Mount, Mt. Diablo, Aug. 29, 1905, *Harris*, no. 8994 (NY); Dolphin Head, 1500 ft., May 18, 1906, *Harris*, no. 9234 (A, NY); Peckham Woods, Upper Clarendon, 2500 ft. alt., July 7, 1911, *Harris*, no. 10997 (NY); Sept. 27, 1912, *Harris*, nos. 11181 & 11190, (NY); Mulgrave, St. Elizabeth, 1300 ft. alt., June 14, 1916, *Harris*, no. 12373 (NY). PLATE 6, FIG. 5.

Charianthus Fadyeni is perhaps the most distinctive species of the genus. Endemic to Jamaica, it stands alone in a section unrelated to the species of the Lesser Antilles. Its slender petals, single, apical-pored anthers with pruinose filaments, and a 2-loculed ovary, at once set it off from its congeners.



Hodge, W. H. 1941. "The genus *Charianthus*." *Contributions from the Gray Herbarium of Harvard University* (135), 115–133.

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