

MINISTRY OF AGRICULTURE, LANDS AND
FOOD PRODUCTION

Vol. III]

[Part III

FLORA

OF

TRINIDAD AND TOBAGO

EPIGYNAE (*cont'd*)

HAEMADORACEAE	(BY D. PHILCOX)
IRIDACEAE	(BY D. PHILCOX)
AMARYLLIDACEAE	(BY D. PHILCOX)
HYPOXIDACEAE	(BY D. PHILCOX)
AGAVACEAE	(BY D. PHILCOX)
DIOSCOREACEAE	(BY D. PHILCOX)

CORONARIEAE

LILIACEAE	(BY D. PHILCOX)
SMILACACEAE	(BY D. PHILCOX)
PONTEDERIACEAE	(BY D. PHILCOX)
XYRIDACEAE	(BY D. PHILCOX)
MAYACACEAE	(BY D. PHILCOX)
COMMELINACEAE	(BY D. R. HUNT)
RAPATEACEAE	(BY D. PHILCOX)



Price — — \$1.00

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SERIES II. EPIGYNAE (Contd.)

FAMILY 6 — HAEMADORACEAE

By D. PHILCOX

Perennial rhizomatous herbs; leaves alternate, distichous with narrow blades; inflorescence simple or compound paniculate, racemose, spicate or capituliform; flowers hermaphrodite, regular or subirregular; perianth of 6 tepals in two rows, with or without short tube; stamens 3, opposite and inserted at bases of 3 inner tepals; anthers introrse, dehiscent longitudinally; ovary inferior or superior, 3-celled, with few to many ovules in each cell; style slender; stigma capitate; fruit capsular with few to many discoid or globose seeds.

XYPHIDIUM Aublet

Xiphidium Aubl., *Pl. Guian.* 1: 33 (1775)

Short, creeping, stoloniferous herbs; stems erect; leaves broad-linear; perianth lacking tube; filaments short; anthers erect; ovary superior with numerous ovules in each cell; capsule globose; seeds small, numerous.

Xiphidium caeruleum Aubl., *Pl. Guian.* 1: 33, t. 11 (1775); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 1: 165 (1924); Lanjouw in Pulle, *Fl. Surin.* 1: 256 (1938); Hodge in *Lloydia* 17: 173 (1954); Adams, *Fl. Pl. Jam.*: 83 (1972)

X. floribundum Sw., *Prodr.*: 17 (1788); Griseb., *Fl. Brit. W. Ind.*: 589 (1864)

Plants erect, up to 45 cm tall; stem up to 65 cm tall in flower, somewhat compressed; leaves (10-)18-45 cm long, up to 5 cm wide, linear-lanceolate, acute at apex, narrowed at base into short sheath, glabrous, spinulose-serrate at least towards apex; inflorescence on peduncle up to about 30 cm tall, subtended by leaf up to 10 cm long, ca 1 cm or slightly more wide, sparsely villous to subglabrous, branches 1-6 cm long, spreading, subtended by ovate-lanceolate

bracts about 5 mm long, 2 mm wide; flowers secund, pedicels 2-3(-6) mm long, shortly villous, subtended by small bracts similar to but smaller than those subtending branches; perianth-lobes white, outer row 5-6.5 mm long, 1.5-2.5 mm wide, inner 7-7.5 mm long, up to 3 mm wide, oblong-lanceolate, obtuse or acute, glabrescent; filaments about 2 mm long, flat; ovary subglobose; capsule 8-10 mm diameter, subglobose, many seeded; seeds subglobose, black verrucose.

Trinidad: without locality, Fendler 854 (BM, E, K, P); Richard s.n. (P); Ryan s.n. (BM); St Ann's, Dannouse (TRIN); St Ann's Hill, 8.9.1906, Tredholm s.n. (TRIN); St Ann's Cascade, 24.10.1924, Broadway 5453 (BM); Botanic Garden, Hart (TRIN 4626); valley, back of Lookout, 11.9.1889, Broadway (TRIN 3886); Diego Martin, 1864, Grossourdy s.n. (P), 2.12.1912, Freeman (TRIN 7977); Cascade, Diego Martin, August 1918, Williams s.n. (TRIN); San Rafael, Tunapuna, ca 30 m, 4.9.1947, Simmonds 170 (TRIN 13812); Maracas Valley, ca 45 m, September 1961, Richardson 989 (TRIN 16436); Maracas Waterfall, 24.2.1962, Kalloo 160 (TRIN 21964); near milepost 1, Blanchisseuse Road, 28.11.1933, Broadway 9337 (BM); Heights of Aripo, 10-26.1.1922, Broadway (TRIN 9921); Arena Forest, 3.12.1926, Broadway 6502 (BM); Siparia, Southern Watershed Reserve, 3.11.1949, Simmonds 417 (K, TRIN 14471), 12.3.1915, Broadway (TRIN 7851); Irois Forest, 28.8.1928, Williams (TRIN 12050); Catshill and Saunder's Trace, 18.6.1963, Chalmers (TRIN 18871).

Tobago: Caledonia, 11.10.1937, Sandwith 1727 (K); Hillsborough Estate, Greg s.n. (BM); Craig Hall, near river, 10.10.1911, Broadway s.n. (E); Northside Road, King's Bay to Charlotteville, 24.10.1925, Freeman & Williams (K, TRIN 11396).

West Indies and tropical South America.

Note: *Sansevieria* appears under *Haemadoraceae* at p. 3 of Part II of Volume III, but is now treated under *Liliaceae* (q.v.).

FAMILY 7 - IRIDACEAE

By D. PHILCOX

Perennial herbs, with rhizomes, bulbs or corms; leaves mostly linear, flat, 2-ranked; inflorescence axillary, scapose, racemose, cymose or paniculate, bracteate at base; flowers perfect, regular or irregular, solitary or in spathe-like bracteate clusters; perianth of 6 petaloid segments in 2 series, withering persistent; stamens 3, inserted on perianth opposite outer series of segments; anthers 2-locular, opening lengthwise; filaments distinct or partially connate; ovary inferior, 3-celled, with numerous ovules on axile placenta; styles distinct, entire or divided, sometimes petaloid; fruit a 3-valved capsule; seeds numerous, globose, angular or discoid.

KEY TO THE GENERA

- 1 Plant from corms; leaves flat; capsules exserted
on elongated pedicels; flowers yellow 1. *Trimezia*
- 1 Plant from bulbs; leaves flat or plicate; cap-
sules included in or only slightly exceeding
bracts; flowers white 2
- 2 Leaves plicate; capsule enclosed by bracts..... 2. *Eleutherine*
- 2 Leaves flat; capsule exceeding bracts, or bracts
spreading enclosing capsule 3. *Cipura*

1. *TRIMEZIA* *Salisbury ex Herbert*

Trimezia Salisb. ex Herbert in Edw., *Bot. Reg.* 30 Misc.: 88(1844)

Plants arising from corms, fibrous without; leaves flat, linear, midrib prominent; flowers pedicelled, with more than one to each spathe; perianth segments in two dissimilar whorls, outer obovate, broadly clawed, inner smaller, blade deflexed; stamens erect, short; filaments free; ovary clavate; style 3-branched, subulate at base, branches tubercle-tipped; capsule oblong, exserted beyond bracts.

Trimezia martinicensis (Jacq.) Herb. in Edw., *Bot. Reg.* 30 Misc.: 88 (1844); Hodge in *Lloydia* 17:173 (1954); Adams, *Fl. Pl. Jam.*: 85 (1972); Howard, *Fl. Less. Antill.* 3: 517 (1979)

Iris martinicensis Jacq., *Enum.*: 12 (1760), Select 7, tab. 7 (1763)

Cipura martinicensis (Jacq.) Kunth in Griseb., *Fl. Brit. W. Ind.*: 589 (1864)

Corms squat, up to 2 cm diam, 1.5 cm deep, fibres dark brown; leaves up to 70 cm long, 1.2 cm wide, linear; inflorescence up to 50 cm long, simple or branched, glabrous, branches subtended by linear bract; spathes long-peduncled with 2-several flowers; flowers up to 2.5 cm diameter; perianth yellow to pale orange, tinged brown at base of segments; capsule up to 2.5 cm long, oblong on fruiting pedicel up to 2.5 cm long; seeds many, ca 2 mm diam., irregular, shallowly ridged and pitted, blackish-brown.

Trinidad: St Ann's, 7.3.1933, Broadway s.n. (GH); Botanic Garden, wild, 7.2.1920, Broadway s.n. (TRIN); Laventille, October 1894, Carr s.n. (TRIN); San José Cascades, 4.4.1874, Kuntze 872 (NY); Maracas Falls, 11.6.1903, Johnston 61 (GH,NY); Caura Road, 6.7.1963, Jermy 2108 (BM), 2109 (BM); Mt. Tucuche, 13.8.1947, Friend 215 (NY), summit, 29.8.1939, Friend 24 (NY), 2.8.1976, Barnard, Jones & Crane 494 (RNG); Morne Bleu—Arima, 27.1.1921, Freeman (TRIN 9563); Arima, 4.3.1921, Britton & Britton 2088 (GN,NY,TRIN 10508); Aripo Valley, May 1928, Smart in Rogers 37017 (K); milepost 2 $\frac{3}{4}$ along Aripo Heights road from Eastern Main Road, 6.7.1973, Philcox, Kalloo & Jurawan 7391 (K,P,TRIN); Piarco Savanna, 27.2.1920, Britton, Britton & Hazen 73 (GH,K,NY), 24.8.1977, Philcox & Philcox 8207 (K,P,TRIN), 8213 (K,P,TRIN); O'Meara Savanna, 16.11.1976, Ramcharan 33 (TRIN 22360), 25.11.1976, Ramcharan 46 (TRIN 22359); 9 km N of Eastern Main Road, Guanapo Road, 22.7.1976, Barnard, Jones & Crane 230 (RNG); milepost 12, Valancia to Toco road, 21.3.1979, Philcox & Gillies 8271 (K,NY,P,TRIN); near Salybia Bay, Toco, 2.1.1947, Simmonds 41 (TRIN 13814); marsh bordering Valencia Forest Reserve, Long Stretch Road, 15.4.1975, Philcox 7673 (K); Toco road beyond Sangre Grande, 9-23.2.1950, Howard 10369 (BM,NY); Aripo Savanna, Cumuto, 26.11.1926, Broadway 6420 (BM,K).

Tobago: without locality, November 1889, Eggers 5503 (K); Bacolet, 21.10.1937, Sandwith 1877 (K).

Central America, Greater Antilles and South America. Lesser Antilles and Trinidad and Tobago. Java.

2. ELEUTHERINE *Herbert*

Eleutherine Herb. in Edw., *Bot. Reg.* 29: pl. 57 (1843) *nom. cons.*

Perennial acaulescent herbs with tunicate bulbs; leaves radical, long, lanceolate-acuminate, strongly plicate; inflorescence long scapose, laxly branched, many-flowered; spathes oblong, leaf-like, subacuminate, with several stalked, bracteate flower clusters; flowers shortly pedicellate, perianth tube lacking, segments subequal, spreading, oblong, free, narrowed at base; stamens inserted at base of perianth segments; filaments short, free; ovary oblate with many ovules; style short with 3 entire, subulate branches; capsule 3-valved, enclosed by bracts; seeds small, angled.

Eleutherine bulbosa (Mill.) Urb. in Fedde, *Rep. Sp. Nov.* 15: 305 (1918); Urb., *Symb. Ant.* 8: 109 (1920); Boterenbrood in Pulle, *Fl. Surin.* 1: 456 (1948); Hodge in *Lloydia* 17: 173 (1954); Adams, *Fl. Pl. Jam.*: 86 (1972); Howard, *Fl. Less. Antill.* 3: 515 (1979)

Sisyrinchium bulbosum Mill., *Gard. Dict.*: nr. 3 (1768)

Cipura plicata (Sw.) Griseb., *Fl. Brit. W. Ind.*: 589 (1864)

Galatea bulbosa (Mill.) Britton in *Mem. Brooklyn Bot. Gard.* 1: 37 (1918)

Bulbs up to 3 cm or more diam., tunica dark reddish-brown; leaves 30-60 (-100) cm long, up to 4 cm wide, linear-lanceolate, 5-8 major-nerved, totally glabrous, narrowed markedly at base; scape to about 45 cm long, slightly striate; spathes 15-25 cm long, similar to leaves; inflorescence unequally-laxly branched; branches bracteate; bracts 3.5-4 cm long, ovate; pedicels smaller to larger than bracts having 2 bracteoles forming involucre round base of flower;

flowers erect, segments obovate, spreading, white, outer 4-8 mm long, 2-8 mm wide, inner 3-6 mm long, 1-4 mm wide; stamens 3, rarely 6; style branches 2 mm long, subulate; ovary subovoid, trigonous; capsule 1 cm diam., globose; seeds black.

Trinidad: St Ann's Hill, 1.9.1906, Tredholm (K, TRIN 6989 *pro parte*); Botanic Garden, various collectors (TRIN 6989 *pro parte*); Toco, 21.8.1925, Freeman & Williams (TRIN 11767); cultivated at St Augustine from bulbs purchased in Port-of-Spain Market, flowered 9.5.1979, Seaforth s.n. (K, TRIN).

Central and South America, West Indies. Tropics of Asia.

3. *CIPURA Aublet*

Cipura Aubl., *Pl. Guian.* 1: 38, tab. 13 (1775)

Perennial herbs with tunicate bulbs; leaves radical, few, narrow; inflorescence flattened; flowers pedicellate; perianth shortly tubed, segments wide, outer spreading, inner suberect; stamens inserted on base of inner segments; filaments free, equalling anthers; style filiform with petaloid branches; capsule ovoid to broadly cylindric, exceeding bracts.

Cipura paludosa Aubl., *Pl. Guian.* 1: 38, tab. 13 (1775); Griseb., *Fl. Brit. W. Ind.*: 589 (1864); Boterenbrood in Pulle, *Fl. Surin.* 1: 458 (1948).

Bulbs 1-3 cm diam., ovoid or globose, tunica dark blackish-brown; leaves 20-40 cm long, up to 1.5 cm wide, linear to linear-lanceolate, striate, acuminate, narrowed markedly at base; scape 7-20 cm long, terete; spathe leaf-like but smaller; inflorescence much shorter than spathe, 1-3-flowered; bracts 20-35 mm long, forming involucre around pedicels; flowers white with outer segments obovate, 12-20 mm long, 6-10 mm wide, mucronate, concave, reflexed or converging at apex, yellow spot at base; stamens 4 mm long, yellow; style thick, 4 mm long, white, branches 6 mm long, petaloid, concave, obtuse; capsule barrel-shaped, up to 2 cm long, 5 mm diam.; seeds angular, black.

Trinidad: without locality, Fendler 847 (BM,E,K,NY,P), Lockhart s.n. (K); St James, 24.2.1925, Broadway 5557 (BM); Laventille, 12.8.1846, Crueger (TRIN 821); St Joseph Savanna, on 40° slope, 4.8.1977, Philcox 8104 (K,P,TRIN); Waller Field, 27.5.1976, Adams & Kalloo 13959 (TRIN 21590); Cumuto, 19.8.1908, Broadway 2828 (E); O'Meara Savanna, 22.3.1921, Britton 2512 (NY), 25.11.1976, Ramcharan 50 (TRIN 22333), 7.9.1947, Simmonds 171 (TRIN 13813), 3.8.1973, Adams & Bhorai 13398 (TRIN 21036); mile post 1½ on Aripo Heights road from Eastern Main Road, ca 120 m, 6.7.1973, Philcox, Kalloo & Jurawan 7386 (K,P,TRIN); between 9 and 11 miles on Arima-Blanchisseuse Road, W of Morne Bleu, 11.6.1975, A. Raynal & Philcox 15656 (K,P); Galera Point, 2.1.1977, Adams 14187 (TRIN 22076); Erin Savanna, 28.8.1959, Richardson 714 (K, TRIN 16062), 26.8.1962, Purselove P 6486 (K, TRIN 18151); St Ann's, Cedros, 29.9.1915, Broadway (TRIN 7169); Irois, Cedros, 30.9.1915, Broadway (TRIN 7249).

Tobago: Government House grounds, 30.10.1912, Broadway 4258 (BM,E,GH,NY,P); Bacolet, ca 200 m, October 1889, Eggers 5511 (P).

West Indies and tropical South America.

FAMILY 8 - AMARYLLIDACEAE

By D. PHILCOX

Perennial herbs with tunicated bulbs, erect, suberect or climbing; leaves entire, sessile or petiolate, soft or fleshy; inflorescence scapose; flowers solitary to umbellate, sessile or pedicellate, bracteate with one or more spathaceous bracts; perianth usually petaloid of 6 segments in two similar or dissimilar series, often united below into short or long tube; stamens 6, hypogynous or epipetalous, filaments free or connate at base into cup, or flanged; anthers usually versatile; ovary inferior, 3-locular, commonly 3-lobed, ovules few to many; style slender; stigma lobed or capitate; fruit fleshy or dry capsule or berry; seeds few to many, spherical or flattened.

KEY TO GENERA

- | | |
|---|------------------------|
| 1 Scapes or stems leafy; plants twining | 5. Bomarea |
| 1 Scapes or stems leafless; plants erect, not twining | 2 |
| 2 Filaments distinct | 3 |
| 2 Filaments connate below into cup-like or funnel-form crown | 1. Hymenocallis |
| 3 Perianth-tube with scales or corona at throat | 2. Hippeastrum |
| 3 Perianth-tube without scales or corona at throat | 4 |
| 4 Flowers umbellate; stigma capitate, small; seeds large, fleshy, angular, greenish | 3. Crinum |
| 4 Flowers solitary or paired; stigma lobed; seeds flat, black | 4. Zephyranthes |

NOTE: As here treated, the family Amaryllidaceae is defined more narrowly than was originally conceived in the preparation of p. 3 of Part II of Volume III. The two following families — Hypoxidaceae and Agavaceae — have been separated from the Amaryllidaceae.

1. HYMENOCALLIS *Salisbury*

Hymenocallis Salisb. in *Trans. Hort. Soc.* 1: 338 (1812)

Plant erect; leaves radical, sessile or petiolate, blades linear or lanceolate to elliptic; scape solid; inflorescence umbellate, many-flowered, subtended by spathe-like, membranous bract; flowers sessile or subsessile, with two narrow bracts, usually white, fragrant; perianth connate below into long cylindrical tube, lobes equal, linear, spreading or recurved; filaments free above, united below into corona often with processes between filaments; anthers linear, versatile; ovules 2 or more in each loculus; stigma capitate; capsule large, fleshy; seeds 1 or 2 in each loculus, green, fleshy.

Hymenocallis tubiflora Salisb. in *Trans. Hort. Soc.* 1: 341 (1812); Boterenbrood in Pulle, *Fl. Surin.* 1: 448 (1948); Adams, *Fl. Pl. Jam.*: 79 (1972)

Fountain lily, Spider lily

Bulb ovoid, 3.5–10 cm diam.; leaves petiolate, lamina 18–36 cm long, 6–12.5 cm wide, broadly elliptic to elliptic-oblong, petiole 23–32 cm long, up to 10 mm thick; scape 25–40(–52) cm long, 6–10 mm thick, subflattened, 2-edged; spathe up to 15 cm long; inflorescence 5–10-flowered, bracts 4–6 cm long, membranous; flowers sessile, white; perianth-tube 10.5–20 cm long, very slender, lobes 5.5–10 cm long, 3–6 mm wide, linear spreading; corona funnel-shaped, 2–2.5 cm tall, margin entire; filaments 5–6 cm beyond corona; anthers up to 15 mm long; ovary 10–12 mm long; ovules 4–5 in each loculus; style 7–10 cm beyond tube, filiform.

Trinidad: without locality, Fendler 812 (E, K, NY, P); Botanic Gardens, wild, 28.1.1922, Broadway (TRIN 10155); road to Maracas Bay, 10.7.1924, Williams, Freeman & Cheesman (TRIN 11247); 3½ miles N of St Joseph on Maracas Road, 26.5.1973, Philcox 7002 (K, TRIN 21136); Orinola Estate, 4.3.1920, Britton & Hazen 256 (GH, NY), 23.2.1947, Simmonds 73 (TRIN 13810); near waterworks towards Maracas Falls, 11.6.1903, Johnston 28 (GH, NY); Aripo Road at bathing pool, 11.4.1933, Broadway 9187 (GH); 1 mile from Blanchisseuse on road to Las Cuevas, 1.4.1979, Philcox & Phillips 8317 (K, TRIN); Arima, 2.2.1905, Dannouse s.n. (TRIN); Cumuto Main Road, N of Hasnali, 30.4.1975, Philcox & Andrews 7723 (K); Ortoire River, Guayaguayare Road, 25.3.1921, Britton, Freeman & Nowell 2525 (NY); Moruga, 28.1.1916, Broadway (TRIN 7601).

Tobago: cultivated, Scarborough, 18.5.1913, Broadway s.n. (E);
cultivated, Botanic Station, 8.6.1912, Broadway 4242 (K).

Trinidad, Guiana and northern South America.

It is quite possible that many, if not most, of the above records from Trinidad are from long established populations of introduced plants. In the Herbarium of the New York Botanical Garden there is a specimen of *Hymenocallis caribaea* (L. emend. Gawl.) Herb. collected by Kuntze, no. 665 purportedly from Trinidad. As this species is unknown from our islands it is more likely that Kuntze made his collection from the Venezuelan island of Margarita, which at a much earlier date was included, along with Patos, under Trinidad.

2. HIPPEASTRUM *Herbert* nom. cons.

Hippeastrum Herb. in Edw., *Bot. Reg.* 7(App.): 31 (1821)

Plant erect; leaves radical, linear or strap-shaped; scape hollow, stout; inflorescence umbellate, few- to many-flowered, subtended by spathe-like, membranous, lanceolate bracts; flowers pedicellate, bracteate; perianth tube usually short, often with scales or corona in throat, segments subequal, spreading; stamens inserted in mouth of tube; filaments filiform; anthers linear-oblong, versatile; ovary 3-locular with many ovules in each loculus; style filiform, stigma capitate or trifid; capsule globose; seeds flattened, black.

Hippeastrum puniceum (Lam.) Urb., *Symb. Ant.* 4: 151 (1903); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, 2: 159 (1924); Boterenbrood in Pulle, *Fl. Surin.* 1: 450 (1948); Proctor in Gooding *et al.*, *Fl. Barb.*: 104 (1965); Adams, *Fl. Pl. Jam.*: 79 (1972); Fournet, *Fl. Guadel. & Martin.*: 235 (1978); Howard, *Fl. Less. Antill.* 3: 476, fig. 105 (1979).

Amaryllis punicea Lam., *Encycl.* 1: 122 (1783)

A. equestris Ait., *Hort. Kew.* 1: 417 (1789)

Hippeastrum equestre (Ait.) Herb., *App. Bot. Reg.*: 31 (1821)

Easter Lily

Bulb 3.5–6 cm diam., globose to globose-ovoid; leaves 12–35 (–50) cm long, 1–3.5 cm wide, strap-shaped, entire, subobtusate; scape 30–35 cm long or more, glaucous, terete; inflorescence 2–3(–4)-flowered, bracts 2.5–4.5 cm long, lanceolate, acute; flowers declinate; pedicels 2.5–5.5 cm long; perianth tube 2.5–3.5 cm long, greenish, lobes 6–8 cm long in two whorls, outer 2.5–3.5 cm wide, inner 1.4–1.7 cm wide, bright red to orange-red above to greenish at base, spreading; filaments 4.5–5(–6.5) cm long, declinate; anthers 3–4 mm long, oblong; ovary oblong; style filiform 10–12 cm long, declinate; capsule globose.

Trinidad: without locality, Fendler 853 (K), Sieber 253 (E, P); River Estate, Diego Martin Valley, 12.5.1947, Simmonds 101 (TRIN 13811); Cascade Road, 9.6.1903, Johnston 18 (K); Caura Valley, 7.5.1949, Simmonds 352 (TRIN 14365); between Four Roads and Talparo, ca 100 m, 30.4.1975, Philcox & Andrews 7736 (K); San Fernando Promenade, 18.6.1865, Finlay (TRIN 1957).

Tobago: mile post 4 $\frac{3}{4}$ between Les Coteaux and Mt Thomas, ca 80 m, 5.6.1973, Philcox 7048 (K).

Central America, northern South America and the West Indies.

3. CRINUM *Linnaeus*

Crinum L., *Sp. Pl.*: 291 (1753)

Plant erect; leaves radical, linear or strap-shaped, usually broad, succulent; scapesolid; inflorescence umbellate, few- to many-flowered, subtended by 2 membranous spathe-like bracts; flowers sessile or pedicellate, subtended by narrow bracts, perianth with long, slender tube, segments linear to oblong, subequal; stamens inserted on throat; filaments filiform; anthers linear, versatile; ovary 3-locular, usually with 2 ovules in each loculus; style slender, filiform; stigma capitate; fruit subglobose; seeds few, large, green.

Crinum erubescens L. fil. ex Aiton, *Hort. Kew.* 1: 413 (1789); Griseb., *Fl. Brit. W. Ind.*: 583 (1864); Boterenbrood in Pulle, *Fl. Surin.* 1: 446 (1948); Howard, *Fl. Less. Antill.* 3: 473 (1979).

Bulb 7-12 cm tall; leaves 15-75 (-100) cm or more long, 2.5-4.5(-6.5) cm wide, linear-lanceolate, obtuse, scabrous-denticulate or subentire; scape 40-60 cm long, 5-15 mm thick; spathe of 2 bracts 5.5-9 cm long, 2-4.5 cm wide, at base lanceolate-deltoid, obtuse-acuminate, usually reflexed; inflorescence up to 10-flowered, umbellate, bracteoles filiform, up to 6 cm long, membranous; flowers subsessile, white, fragrant; perianth-tube erect, 12-19.5 cm long, slender, lobes 7.5-10(-12) cm long, 8-13 mm wide, linear-lanceolate, equal, red or rose without; filaments 6 cm long, inserted in mouth of tube, filiform; anthers 12-15 mm long, linear, medifixed; style 5.5-8.5 cm longer than perianth tube; seeds globose.

Trinidad: cultivated, Botanic Gardens (TRIN 4072); Balandra Bay, 19.1.1924, Freeman (TRIN 10710); Mahault (Saline) Bay beyond Balandra, 10.4.1921, Britton & Nowell 2828 (NY, TRIN 9729), cultivated material from last, flowered 8.12.1921, Freeman (K, NY, TRIN 9776); Nariva Swamp, W of milepost 46, Manzanilla to Mayaro road, 6.4.1961, Aitken (K, TRIN 15984), 12.8.1977, Philcox & Ramcharan 8178 (K).

This plant is known to be indigenous to tropical continental Central and South America. As it is commonly cultivated throughout the tropics its true status here is in doubt.

4. ZEPHYRANTHES *Herbert* nom. cons.

Zephyranthes Herb. in Edw., *Bot. Reg.* 7(App.): 36 (1821)

Plant erect; leaves narrowly linear, flat or channelled, appearing at or after flowering; inflorescence 1-flowered, long pedicellate; spathe tubular, bifid; pedicel longer or shorter than spathe; perianth funnel-form, erect, white, yellow or pink, segments subequal; stamens subequal; filaments glabrous, adnate to perianth tube, filiform; anthers versatile; style filiform often 3-fid; capsule 3-locular, globose; seeds many, compressed, black.

KEY TO THE SPECIES

- | | |
|----------------------------|-----------------------------|
| 1 Flowers yellow..... | 1. <i>Z. citrina</i> |
| 1 Flowers not yellow | ... |
| 2 Flowers white | 2. <i>Z. puertoricensis</i> |
| 2 Flowers pink..... | 3. <i>Z. rosea</i> |

1. *Zephyranthes citrina* Baker in *Curtis Bot. Mag.*: tab. 6605 (1882); Proctor in Gooding *et al.*, *Fl. Barb.*: 106, fig. 2 (1965); Adams, *Fl. Pl. Jam.*: 79 (1972); Howard, *Fl. Less. Antill.* 3: 482, fig. 107 (1979)

Crocus, Wind flower

Bulbs 2-2.5 cm diam., neck narrowly elongate; leaves 3-5, 10-35 cm long, 1.5-2 mm wide, narrowly linear, obtuse; scape 15-20 cm long; spathe bracts up to 2 cm long; flowers erect on pedicels 2-3.5 cm long, exceeding bracts; perianth 3-4 cm long, yellow, fragrant; style shorter than stamens; stigma capitate, 3-lobed.

Trinidad: well established in drainage ditches, eastern end of Warren Street, St Augustine, 8.7.1977, Philcox 8022 (K).

Tobago: cultivated, Government House Grounds, 2.6.1910, Broadway 4167 (K).

Central America, West Indies and northern South America. Widely cultivated and escaping.

2. *Zephyranthes puertoricensis* Traub, *Plant Life* 7: 37, 38 (1951), *et in Taxon* 7: 109-113 (1958); Fournet, *Fl. Guadel. & Martin.*: 233 (1979); Howard, *Fl. Less. Antill.* 3: 484 (1979)

Amaryllis tubispatha Ker-Gawl. in *Curtis Bot. Mag.* 38: tab. 1586 (1813) *non* L'Hérit.

Zephyranthes tubispatha (Ker-Gawl.) Herb. in Edw., *Bot. Reg.* 7 (App.): 36 (1821); Boterenbrood in Pulle, *Fl. Surin.* 1: 445 (1948); Proctor in Gooding *et al.*, *Fl. Barb.*: 106 (1965); Adams, *Fl. Pl. Jam.*: 79 (1972)

Bulbs 2-2.5 cm diam.; leaves 10-45 cm long, 2-6 mm wide, narrowly linear, obtuse; scape 10-14(-28) cm long, 1-2 mm wide; spathe bracts 2.5 cm long, bifid at apex; flowers erect to ascending on pedicels 2.5-4 cm long, exceeding bracts; perianth 3-4.5 cm long, white above, greenish below; stamens shorter than perianth; style 3-fid; fruit capsular, 11 mm diam.

Trinidad: St Augustine, Dean Street, 20.6.1947, Simmonds 113 (TRIN 13816).

Tobago: Montgomery, in pasture land, 14.6.1846, Meyer 6 (K); Rockley Vale, 6.5.1909, Broadway 2976 (BM, NY).

West Indies, Colombia and Venezuela, Suriname. Again a widely cultivated species.

3. *Zephyranthes rosea* Lindl. in Edw., *Bot. Reg.* 10: tab. 821 (1824); Fournet, *Fl. Guadel. & Martin.*: 234 (1978); Howard, *Fl. Less. Antill.* 3: 485 (1979)

Crocus, Wind flower

Bulb 1-2 cm diam., neck short; leaves 4-15 cm long, 3-4 mm wide, linear, obtuse; scape 10-25 cm long; spathe bracts 1.5-2 cm long, bifid; flowers erect on slender pedicels 2.5 cm long, exceeding bracts; perianth 2.5-3.5 cm long, rose-pink, greenish at base; stigma 3-lobed.

Trinidad: Carenage, at edges of woodland, 15.6.1947, Bullock 34 (K); St Ann's, 11.9.1939, Friend 106 (NY).

Central America and the West Indies. Doubtfully native in our islands.

5. BOMAREA *Mirbel*

Bomarea Mirb. in *Hist. Nat. Pl.* 9: 71 (1804)

Vines, often high-climbing or rarely erect or suberect herbs; roots fibrous sometimes with tubers; leaves alternate, short-petiolate or sometimes reduced to scales; inflorescence umbellate, rarely 1-flowered, simple or compound, usually bracteate: perianth tubeless, funnel-shaped; sepals oblong, firm; petals spatulate, rarely obovate, thinner than and equalling or exceeding sepals; stamens attached to base of perianth-lobes; filaments filiform; anthers oblong, basifixed; fruit turbinate or subglobose, 3-locular, dehiscent to indehiscent; seeds subglobose.

Bomarea edulis Herb., *Amaryll.*: 111 (1835); Baker, *Handb. Amaryll.*: 154 (1888); Williams & Williams, *Useful and Ornament. Pl. Trin. & Tobago*, ed. 4: 88 (1969)

Salsilla, Climbing lily

Twining herb; stems elongated, slender, glabrous; root producing tubers; leaves 7.5–11 cm long, 2.5–3.5 cm wide, oblong or oblong-lanceolate, acute, lax, glabrous, petiolate; umbels 4–20-rayed, bracts large, foliaceous, branches 7–15 cm long, 1–4-flowered; bracteoles small, lanceolate; perianth ca 2.5 cm long, segments subequal, outer oblanceolate-oblong, pink with green apex, inner obovate, subemarginate, greenish with purple-brown marking; filaments reddish; capsule ca 2.5 cm diam.; seeds yellowish.

Trinidad: Staubles to Teteron Bay, 12.7.1927, Williams (TRIN 11666); Point Gourde, 28.8.1916, Collens (TRIN 8356); Morne Catherine Road, Chaguaramas Naval Base, 27.8.1959, Webster & Miller 9949 (A, TRIN 19707); road to North Post, Diego Martin, 12.8.1912, Freeman (TRIN 7970); Botanic Gardens, originally from North Post, 9.8.1916, Freeman (TRIN 8349).

Throughout tropical America, from Cuba and Mexico to Peru and Southern Brazil.

FAMILY—HYPOXIDACEAE*

By D. PHILCOX

Perennial herbs with rhizomes or corms; leaves usually radical, glabrous or hairy; flowers bisexual, regular; perianth tube either formed into long beak below perianth or very short to absent, segments 6, spreading; stamens 3 or 6, inserted at bases of segments; anthers bilocular, opening lengthwise by slits; ovary inferior, 3-locular; ovules numerous; styles 1-3; fruit capsular or fleshy and indehiscent; seeds small, numerous.

KEY TO THE GENERA

- Flowers solitary, subtended by sheathing bract; perianth at top of long tube rising from top of ovary; fruit indehiscent 1. *Curculigo*
- Flowers on slender few-flowered scapes; perianth sessile at top of ovary; fruit capsular, circumscissile 2. *Hypoxis*

1. *CURCULIGO* Gaertner

Curculigo Gaertn., *Fruct.* 1:63, tab. 16 (1788)

Annual or perennial acaulescent herbs; leaves sessile, basal; flowers solitary, yellow, subtended by sheathing bract; perianth with tube much elongated above ovary, persistent or slowly withering; filaments short; ovary with numerous ovules in two rows in each cell; style columnar, short; stigmas 3, erect; fruit somewhat fleshy, more or less beaked; seeds black, beaked.

Curculigo scorzonnerifolia (Lam.) Benth. ex Baker in *Journ. Linn. Soc. Bot.* 17: 124 (1878); Urb., *Symb. Ant.* 8: 104 (1920); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 1: 155 (1923); Hodge in *Lloydia* 17: 170 (1954); Adams, *Fl. Pl. Jam.*: 82 (1972)

Hypoxis scorzonnerifolia Lam., *Encycl.* 3: 183 (1789); Griseb., *Fl. Brit. W. Ind.*: 585 (1864)

*See Note under Amaryllidaceae

Corm 2-5.5 cm long, oblong-cylindric; leaves 6-40 cm long, 4.5-15 mm wide, linear to lanceolate, acuminate at apex, tapering markedly at base, glabrous to long pilose; scape very short, 1-flowered; bract lanceolate, membranous; perianth tube (1-)2.5-4.5 cm long, 1-1.5 mm wide, long pilose, lobes (7-)10-13 mm long, (2-)2.5-3.5 mm wide, lanceolate to oblong-lanceolate, glabrous to long pilose without, yellow; ovary oblong-ellipsoid; style filiform; capsule ellipsoid; seeds ellipsoid, up to 2.5 mm long, glossy black with small white aril.

Trinidad: St Joseph Savanna, on slope about 40°, 4.8.1977, Philcox 8101 (K, TRIN); Piarcó Savanna, in 1895, Lunt (TRIN 6024), 4.4.1940, Baker 307 (TRIN 13485), 27.2.1920, Britton, Britton & Hazen 70 (GH, NY), 24.8.1977, Philcox & Philcox 8206 (K, TRIN); O'Meara Savanna, Crueger 235 (TRIN 1509), 19.8.1940, Cheesman & Baker 352 (TRIN 13801), 7.9.1947, Simmonds 168 (TRIN 13807), 23.3.1959, Cowan & Richardson 1128 (GH, P, TRIN 16266), 3.8.1973, Adams & Bhorai 13396 (TRIN 20964); Aripo Savanna, 19.8.1959, Richardson 689 (TRIN 17636), 23.5.1975, Philcox 7783 (K); Erin Savanna, 10.3.1970, Kalloo 1035 (TRIN 21971).

Tobago: Bacolet, 21.10.1937, Sandwith 1876 (K).

West Indies, Central and tropical South America.

2. HYPOXIS *Linnaeus*

Hypoxis L., *Syst. Nat.* ed. 10: 986 (1759)

Low perennial herbs, often pubescent, from corms or short, tuberous rootstocks; leaves linear, grass-like, usually pilose; flowers corymbose or racemose on slender, few-flowered scapes; perianth sessile at top of ovary, persistent or slow-withering; filaments short; anthers sagittate or entire; ovules numerous in two rows in each cell; style short; stigmas 3, erect; fruit thin-walled capsule, circumscissile below apex; seeds globose, black.

Hypoxis decumbens L., *Syst. Nat.* ed. 10: 986 (1759); Griseb., *Fl. Brit. W. Ind.*: 585 (1864); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 1: 155 (1923); Hodge in *Lloydia* 17: 170 (1954); Adams, *Fl. Pl. Jam.*: 82 (1972)

Corm 1-3.5 cm long, up to 1.5 cm thick; leaves (3-)6-35(-60) cm long, up to 1.2 cm wide, linear, glabrous to sparsely long-pilose especially towards base, outer leaves small, scarious; peduncle 3-20 cm long, slender, suberect, glabrous to long-pilose with 1-4 flowers; bracts in 3-4-flowered inflorescence, small, setaceous, pedicels short, densely pilose; perianth segments 3-5(-8) mm long, 1.5-2.5 mm wide, lanceolate to oblong, greenish without, yellow within, sparsely to densely pilose; filaments filiform; anthers sagittate; ovary narrowly cylindric, 6-10 mm long, densely pilose; style subulate; capsule 10-18(-22) mm long, clavate; seed ca 1 mm diam.

Trinidad: without locality, 16.10.1914, Broadway s.n. (E), Fendler 846 (E,K,NY); Lookout Hill, Broadway s.n. in 1919 (GH,K,NY,TRIN), 3.6.1889, Broadway (TRIN 3915); on ridge, North Post, 10.8.1977, Philcox & Cope 8137 (K); Ortinola Trace, by cocoa house, El Tucuche, ca 600 m, 2.2.1947, Simmonds 57 (TRIN 13815); Maracas Falls, outside spray zone, ca 300 m, 2.5.1975, Philcox & Andrews 7747 (K); 11.6.1903, Johnston 36 (GH, K); St Augustine, well established in drainage ditch, Warner Street, 8.7.1977, Philcox 8033 (K); I.C.T.A. ricefield, 20.6.1950, Hosein (TRIN 14602); O'Meara Savanna, 3.8.1973, Adams & Bhorai 13397 (TRIN 20966), 16.11.1976, Ramcharan 30 (TRIN 22362); Piarco Savanna, 22.2.1971, Kalloo 1000 (TRIN 22237); savanna before milepost 20 on Antigua Road towards Valencia, 31.3.1979, Philcox & Phillips 8303 (K); on rocks above Oropouche River, Matura Forest Reserve north of Valencia-Toco Road, 26.7.1977, Philcox, Andrews & Kelly 8068 (K,NY,P,TRIN); below rockface, milepost 8½, Arima-Blanchisseuse Road, 7.5.1979, Philcox & Stoelzel 8400 (GH,K,NY,P,TRIN), near milepost 10, 16.8.1959, Webster, Ellis & Miller 9709 (TRIN 19229); milepost 1½, Heights of Guanapo Road, ca 150 m, 29.5.1975, Philcox 7805 (K); Valencia Forest Reserve, Long Stretch Road, 15.4.1975, Philcox 7674 (K); San Fernando, 15.4.1874, Kuntze 959 (NY); Cocorite, 26.2.1920, Britton & Hazen 24 (GH,NY); Erin Savanna, 11.8.1977, Philcox & Ramcharan 8158 (K).

Tobago: Englishman's Bay, 15.11.1912, Broadway 4269 (E); between Castara and Englishman's Bay, 22.10.1937, Sandwith 1880 (K, NY); Mason Hall, near river, 4.8.1913, Broadway 4724

FAMILY—AGAVACEAE*

By D. PHILCOX

Shrubby plants, large with short stems; leaves thick, fleshy, fibrous, crowded, linear to lanceolate, margins entire or prickly; flowers racemose or paniculate, bisexual, regular; perianth segments 6, petaloid; stamens 6, free; anthers 2-locular; ovary inferior, 3-locular; ovules in 2 rows on each axile placenta.

KEY TO THE GENERA

- Stamens exserted, filaments slender; flowers
 erect 1. *Agave*
 Stamens included, filaments thickened;
 flowers pendulous 2. *Furcraea*

1. *AGAVE* Linnaeus

Agave L., *Sp. Pl.*: 323 (1753)

Plants rosetted, acaulescent or with short thick stems, perennial; leaves large, spine-tipped, margin slightly to densely armed; inflorescence paniculate, frequently to several metres tall, rachis with spine-tipped bracts, often bulbiferous within inflorescence; flowers large, erect, yellow or green; perianth tubular at base; stamens exserted, filaments slender; style elongate; stigma 3-lobed; fruit a dehiscent, loculicidal capsule; seeds flattened, black.

Agave evadens Trel. in *Mem. Nat. Acad. Sci.* 11: 20, pl. 9, 10, 116 (1913)

American aloe, Century plant

Plant shortly caulescent; leaves (from herbarium specimens) up to 1 m or more long, 6 cm wide, narrowly oblanceolate, apical spine up to 2 cm long, marginal prickles short, submammiform, not especially sharp, somewhat closely spaced; inflorescence up to

* See Note under Amaryllidaceae

6 m tall (TRIN 14707), laxly paniculate at end of axis only, with few ascending, few-flowered branches; bulbils present (TRIN 14707); pedicels to 10 mm long, more or less slender; flowers up to 4.5 cm long; perianth segments 2–2.5 cm long, 4 mm wide, oblong; ovary up to 2.5 cm long, oblong-fusiform; filaments 3.5 cm long, slender; anthers 10–12 mm long; style 3.5 cm long; stigma shortly 3-lobed; capsule 3.5–4 cm long, 2 cm broad.

Trinidad: Bocas Islands, without further information (K, TRIN 600); Chacachacare, February, 1890, Hart (TRIN 4741), 13.2.1911, Broadway s.n. (TRIN), 1.1.1922, Broadway (TRIN 10573); Huevos, 27.5.1951, Simmonds (TRIN 14707); St Clair, Botanic Garden, cultivated, Crueger (K, TRIN 1333, *isotypes*)

Endemic to Trinidad.

A further collection from Chacachacare not cited above was made in 1920 by Britton (519). This plant, which is in the Kew Herbarium, shows separate flowers which are a good match with the type material, but the leaf prickles differ in appearing more sharply spinose. Perhaps this should be included above as there seems to be no other difference.

2. *FURCRAEA Ventenat*

Furcraea Vent. in *Bull. Soc. Philom. Paris* 1: 28, 65 (1793)

Plants rosetted, with short stems, perennial; leaves large, thick, spine-tipped, margins spiny or minutely toothed; inflorescence paniculate, stout, to several metres tall; often bulbiferous within inflorescence; flowers clustered or solitary, pendulous when mature, white or greenish-white; perianth segments spreading; stamens included; filaments swollen at base; capsule oblong, more or less 3-angled; seeds numerous, flat.

Furcraea hexapetala (Jacq.) Urb., *Symb. Ant.* 4: 152 (1903);

Adams, *Fl. Pl. Jam.*: 81 (1972)

Agave hexapetala Jacq., *Enum.*: 18 (1760)

- A. cubensis* Jacq., *Select. Amer.*: 100 (1763)
Furcraea cubensis (Jacq.) Vent. in *Bull. Soc. Philom. Paris*
 1: 66 (1793); Adams, *Fl. Pl. Jam.*: 81 (1972)

Plant shortly caulescent; leaves (from herbarium specimens) up to 1 m or more long, 18–20 cm wide, marginal prickles straight or upwardly directed, pungent; inflorescence up to 7(–10) m tall, with branches up to 2 m long, drooping; flowers solitary or clustered, pendulous, about 5 cm long; perianth segments *ca* 2.6 cm long, 1.8 cm wide, broadly ovate-elliptic, free; ovary *ca* 2 cm long, oblong-fusiform; ovoid bulbils usually present within inflorescence from which new plant develops after falling.

Trinidad: without locality, Fendler 852 (K); Woodbrook, planted, 22.8.1934, Broadway 9407 (K); Knaggs Hill, St Clair, 10.9.1910, Broadway (TRIN 9732); Cotton Hill, 19.5.1921, Nooni (TRIN 9731); Manzanilla, coastal hill, 9.3.1921, Britton & Britton 2196 (GH, TRIN 10510).

Tobago: Scarborough, November 1889, Eggers 5706 (K); Arnos Vale Road, 28.10.1925, Freeman & Williams (TRIN 11460).

Greater Antilles.

The identity of several of the above collections is still open to question while the taxonomy of the whole genus remains confused. Drummond (in *Rep. Mo. Bot. Gard.* 18: 25 (1907)) suggested that Fendler 852 possibly represented *Furcraea gigantea* Vent. and Eggers 5706 possibly *F. elegans* Todaro. Subsequently various authors have tried to interpret the true identity of these collections but as with most of the other collections the material is totally inadequate.

As probably all of the above collections are from cultivated or established alien plants, I have taken the course of considering them as representing one species only.

FAMILY 9—DIOSCOREACEAE

By D. PHILCOX

Perennial herbaceous or often woody vines, arising from tuberous or woody subterranean, entire, branched or otherwise divided bases; leaves alternate or opposite, petiolate, cordate, entire or occasionally lobed or divided, palmately nerved; dioecious; inflorescence axillary, spicate, branched or clustered; flowers unisexual, rarely bisexual, actinomorphic, perianth bi-seriate or 6-lobed; male flowers: perianth 6-lobed, lobes equal, linear to rounded; stamens 6 or 3, epipetalous, occasionally 3 staminodes present with latter, anthers 2-locular, rudimentary ovary sometimes present; female flowers: perianth bi-seriate, often with staminodia present; ovary inferior, linear or oblong, 3-locular, ovules usually 2 in each loculus, rarely more; fruit capsular, 3-valved or berry, capsule frequently 3-winged; seeds winged or not.

KEY TO THE GENERA

Fruit a 3-celled, 3-winged or 3-angled

dehiscent capsule..... 1. *Dioscorea*

Fruit a 1-seeded indehiscent samara..... 2. *Rajania*

(as *R. cordata*)

1. DIOSCOREA *Linnaeus*

Dioscorea L. *Sp. Pl.*: 1032 (1753)

Vines, usually herbaceous, twining; stems winged, angled or terete, smooth or armed with straight or curved prickles; leaves alternate or opposite, often bearing bulbils in axils; flowers small, regular, unisexual, dioecious; male flowers with 6 stamens all fertile or 3 fertile with 3 staminodes; female flowers with staminodes present; fruit capsular, deciduous, usually 3-winged; seeds flat with membranous wing.

It is widely accepted that most of the species of *Dioscorea* found in our area are either cultivated or are escapes from cultivation. Unfortunately, although the genus is reasonably well represented in herbaria by material collected in our islands, such material is usually very inadequate, either sterile or fruiting and rarely in flower, and poorly documented. The author does not pretend that this is a polished treatment of the genus, but instead he aims to set out those species known to occur here along with a simple key to help in their determination.

There have been many pitfalls in previously published keys and in this work the author has avoided using such characters as rootstock (yam) size, shape and colour as very few herbarium specimens bear such relevant information. Also he has not used the direction of stem twist, another confusing feature not easy to determine either in the field or from dried material. The following key, however, should be adequate for the correct identification of the greater proportion of specimens to be met with.

KEY TO THE SPECIES

- | | | | | | |
|--|-------|----------------------------|-----|-----|---|
| 1 Leaves lobate or 3-foliolate | ... | ... | ... | ... | 2 |
| 1 Leaves entire | ... | ... | ... | ... | 3 |
| 2 Leaves deeply 3-5-lobed | | 1. <i>D. trifida</i> | | | |
| 2 Leaves motly 3-parted to base | | 2. <i>D. trifoliata</i> | | | |
| 3 Leaves glabrous beneath | ... | ... | ... | ... | 4 |
| 3 Leaves pilose beneath, at least on major nerves | ... | ... | ... | ... | 5 |
| 4 Stems conspicuously winged | | 4. <i>D. alata</i> | | | |
| 4 Stems not conspicuously winged | ... | ... | ... | ... | 7 |
| 5 Plants usually with large, brown, axillary bulbils | | 5. <i>D. bulbifera</i> | | | |
| 5 Plants without axillary bulbils | ... | ... | ... | ... | 6 |
| 6 Leaves mostly opposite; stems conspicuously armed with short prickles; perfect stamens 6 | | 6. <i>D. cayenensis</i> | | | |
| 6 Leaves alternate; stems unarmed; perfect stamens 3 | | 7. <i>D. polygonoides</i> | | | |
| 7 Flowers externally villous; perfect stamens 6 | | 3. <i>D. pilosiuscula</i> | | | |
| 7 Flowers glabrous; perfect stamens 3 | | 8. <i>D. convolvulacea</i> | | | |

1. *Dioscorea trifida* L. fil., *Suppl. Pl.*: 427 (1781); Griseb; *Fl. Brit. W. Ind.*: 587 (1864); Urb., *Symb. Ant.* 4: 153 (1903); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt 2: 164 (1924); Williams & Williams, *Useful & Orn. Pl. Trin. & Tobago*, ed. 4: 151 (1969); Adams, *Fl. Pl. Jam.*: 66 (1972); Purseglove, *Tropical Crops* 1: 108, fig. 15 (1972); Fournet, *Fl. Guadel. & Martin.*: 250 (1978); Howard, *Fl. Less. Antill.* 3: 510 (1979)

Cush-cush

Pubescent herbaceous vine; stems 4-angled or shallowly winged, unarmed; leaves alternate, 3-5-lobed, petiolate; lamina 5-17 cm long, 5-21 cm wide, broadly ovate in outline, lobes ovate-lanceolate acuminate, sinus generally broad and shallow, shortly pilose beneath, sparsely on major nerves above; petiole 3-12 cm long; male flowers in long, slender spicate, spikes sometimes whorled or paniced, 4-15 cm long, branches and rhachises pilose, bracts about 2 mm long, narrowly lanceolate, perianth-segments 2.5-3 mm long, oblong, greenish-yellow, pilose without; stamens 6, all perfect; female flowers in simple racemes 8-40 (-50) cm long, rhachis usually pilose, perianth segments oblong to oblong-lanceolate; ovary pilose; capsule 2.5-3.35 cm long, 1.5-2.25 cm broad, oblong-ellipsoid, coriaceous.

Trinidad: Botanic Garden, 12.12.1894 (TRIN 5786); St Augustine, valley E of Monastery, Mt St Benedict, ca 500 ft 14.12.1947, male plant, Simmonds 215A (TRIN 13987A), female plant, Simmonds 215B (TRIN 13987B); Caparo, 15.12.1921, Williams (TRIN 10511); Arima, 15.11.1861, Crueger (TRIN 765), 1904, Dannouse s.n. (NY, TRIN); Mayaro, 25.11.1932, Broadway s.n. (BM).

Tobago: 12.12.1928, Williams (K, NY, TRIN 12105); Botanical Station, 6.12.1909, Broadway 3374 (BM, E, K, NY).

Native of South America but widely introduced into the West Indies. All of the above records are for cultivated material except for the St Augustine plants which had apparently become established in the wild after escaping.

This species is widely accepted as being the most palatable of the yams grown in the West Indies and is the only edible yam of New World origin.

2. *Dioscorea trifoliata* H.B.K., *Nov. Gen. & Sp.* 1: 275 (1816);
McBride in *Field Mus. Nat. Hist.*, Bot. 13: 706 (1936)

Herbaceous vine; stems terete, somewhat channelled when dry, glabrous, unarmed; leaves alternate, trifoliate, overall 3–9 cm long, 3–12 cm wide, median lobe broadly elliptic-oblong, lateral lobes inwardly subarcuate-rhombic, glabrous to minutely pubescent; petiole 2.5–5 cm long, glabrous; male flowers shortly pedicellate in long simple or branched racemes up to 15 cm long (on our material), rachis shortly pubescent to subglabrous, perianth dull green, 2.5 mm broad, lobes ovate-oblong, spreading, glabrous; stamens 3; female flowers simply racemose, perianth segments short; ovary glabrous; capsule 1.3–2.3 cm long, 0.6–0.9 cm broad, obovoid to oblong-ellipsoid, glabrous, coriaceous.

Trinidad: Chacachacare, 4.10.1864, Finlay (TRIN 1993) September, 1887, Hart (NY, TRIN 768), 9.9.1927, Williams (TRIN 11842), 5.4.1921, Britton, Freeman & Brown 2765 (K, NY); Monos, Williams s.n. (TRIN); Gasparee Island, 7.10.1934, Broadway 9427 (K).

Peru and Venezuela. Trinidad.

3. *Dioscorea pilosiuscula* Bertero ex Spreng. in L., *Syst. Veg.* ed. 16, 2: 152 (1825); Griseb., *Fl. Brit. W. Ind.*: 588 (1864); Urb., *Symb. Ant.* 4: 153 (1903) et 8: 105 (1920); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 2: 162 (1924); Adams, *Fl. Pl. Jam.*: 67 (1972); Fournet, *Fl. Guadel. & Martin.*: 248 (1978); Howard, *Fl. Less. Antill.* 3: 509 (1979)

Slender herbaceous vine; stems terete, obscurely angled, glabrous except at nodes where occasionally shortly pilose, unarmed; leaves alternate, lamina 3.5–8 cm long, 1.5–4.5 cm wide, ovate to ovate-oblong, apex shortly abruptly acuminate, very shallowly cordate to subtruncate at base, glabrous above, long pilose beneath especially on major nerves, 5–7-nerved; petiole 1–2 cm long, hispid.

pilose, frequently bearing bulbils in axils; male flowers spicate, inflorescences up to 30 cm long; stamens 6; female flowers spicate, inflorescences 10–25 cm long, rhachis, bracts and ovary pilose; capsule 2.5 cm long, 1 cm broad, oblong-ellipsoid.

Tobago: Frenchfield, ca 200 m, October, 1889, Eggers 5639 (K); Bacolet, November, 1889, Eggers 5873 (K); Rockley Vale, 26.8.1910, Broadway 4082 (E, GH, P).

Greater and Lesser Antilles, South America (Guyana) and Tobago.

4. *Dioscorea alata* L., *Sp. Pl.*: 1033 (1753); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 2: 163 (1924); Standl. & Steyerl. in *Fieldiana Bot.* 24: 148 (1952); Hodge in *Lloydia* 17: 172 (1954); Williams & Williams, *Useful & Orn. Pl. Trin. & Tobago*, ed. 4: 150 (1969); Purseglove, *Tropical Crops* 1: 100, fig. 12 (1972); Adams, *Fl. Pl. Jam.*: 67 (1972); Fournet, *Fl. Guadel. & Martin.*: 249 (1978); Howard, *Fl. Less. Antill.* 3: 506 (1979)

White yam, Greater Asiatic yam

Herbaceous vine, glabrous throughout; stems 4-winged or 4-angled, unarmed; leaves opposite, lamina (4–)8–18(–23) cm long, (2.5–)5.5–11(–15) cm wide, hastate-ovate to suborbicular, shortly acuminate with acumen up to 2 cm long, often deeply cordate at base; petiole (1.5–)3–15 cm long, slender, often winged; infrequently bearing axillary tubers or bulbils; male flowers in axillary panicle of whorled, flexuous, spikelets, inflorescence up to 20 cm long, spikelets up to 3 cm long, perianth segments ca 1 mm long, ovate, orbicular to obovate; stamens 6; female flowers in simple, solitary, spikes up to 25 cm long, perianth-lobes 1.5–2 mm long, suborbicular; capsule ca 2.5 cm long, 3 cm broad, coriaceous.

Trinidad: Botanic Garden (TRIN 5660); St Ann's, 5.11.1931, Broadway 7890 (BM, K, NY); North Coast road near Maraval-Santa Cruz divide, 15.11.1947, Simmons 195 (TRIN 13984); Centeno, 24.11.1947, Simmons 199 (TRIN 13985); Mafeking Road, N

of Mayaro Village, 14.11.1977, Ramcharan 309 (TRIN 22112); Tamana, 2.12.1947, Simmonds 201 (TRIN); Four Roads, Government School, 24.11.1924, Williams 10967 (TRIN).

Tobago: without locality, February 1923, Williams (K, TRIN 10201); Botanic Station, 3.11.1912, Broadway 3149 (BM, E, GH, K, NY); French Hill, 9.10.1937, Sandwith 1688 (K); Rockley Vale, in McDougal's garden, 13.11.1909, Broadway 3164 (BM, E, K, NY).

Native of South East Asia and generally cultivated throughout the tropics and subtropics.

5. *Dioscorea bulbifera* L., *Sp. Pl.*: 1033 (1753); Griseb., *Fl. Brit. W. Ind.*: 587 (1864); Urb., *Symb. Ant.* 4: 153 (1903) et 8: 105 (1920); Standl. & Steyerl. in *Fieldiana*, Bot. 24, 3: 150 (1952); Purseglove, *Tropical Crops* 1:102, fig. 13 (1978); Adams, *Fl. Pl. Jam.*: 67 (1972); Fournet, *Fl. Guadel. & Martin.*: 250 (1978); Howard, *Fl. Less. Antill.* 3: 507 (1979)

Aerial yam, potato yam

Herbaceous vine, glabrous throughout; stems terete, unarmed; leaves alternate, lamina 7–20 cm or more long, 4.5–14 cm wide, broadly ovate, abruptly acuminate apex, widely cordate base, (7–)9(–11)-nerved; petiole 6–15 cm long, terete; axillary bulbils up to 10 cm broad frequently present; male flowers in slender, simple spikes up to 10 cm long or sometimes paniculate, perianth segments lanceolate, spreading; stamens 6; female flowers appressed to rhachis, in simple, solitary spikes 10–25 cm long; capsule 2.5 cm long, 1.5 cm broad, oblong-ellipsoid.

Trinidad: cultivated in Botanic Garden (TRIN 5951), 22.10.1894 (TRIN 5776).

Native of the Old World, probably Asia and perhaps Africa. Spasmodically cultivated in tropical America.

6. *Dioscorea cayenensis* Lam., *Encycl. Meth. Bot.* 3: 233 (1789); Griseb., *Fl. Brit. W. Ind.*: 587 (1864); Urb., *Symb. Ant.* 4: 154 (1903); Britton & Wilson, *Bot. Porto*

Rico & Virg. Isl., Pt. 2: 163 (1924); Hodge in *Lloydia* 17: 172 (1954); Williams & Williams, *Useful & Orn. Pl. Trin. & Tobago*, ed. 4: 150 (1969); Pursglove, *Tropical Crops* 1: 104, fig. 14 (1972); Adams, *Fl. Pl. Jam.*: 67 (1972); Fournet, *Fl. Guadel. & Martin.*: 249 (1978); Howard, *Fl. Less. Antill.* 3: 507 (1979)

D. rotundata Poir. in Lam., *Encycl. Meth. Bot. Suppl.* 3: 139 (1813)

D. berteriana Kunth, *Enum. Pl.* 5: 381 (1850)

D. occidentalis Kunth in *Pflanzenreich* 4, 43: 299 (1924)

Yellow Guinea yam

Herbaceous vine, glabrous throughout; stems terete or subterete, armed with small sharp prickles, especially below; leaves opposite or occasionally alternate, lamina (4-)6.5-14(-17.5) cm long, (2.5-)4.5-8(-8.5) cm wide, subrotund to ovate to lanceolate-oblong, abruptly acuminate, cordate-hastate at base, 7-9-nerved; petiole 2-9.5 cm long, terete; male flowers spicate, spikes 3.5-11 cm long, bracts ca 1 mm long, triangular-ovate, acuminate, outer perianth segments 2-2.5 mm long, ca 1.5 mm wide, oval, inner smaller; stamens 6; female flowers in simple spikes; capsule oblong-ellipsoid, ca 1.5 cm long.

Trinidad: cultivated in the Botanic Garden, 1896, Hart (K, TRIN 6097), TRIN 6098 (K); Upper Carapichaima, 21.11.1932, Broadway s.n. (BM).

Tobago: without locality, cultivated February, 1923, Williams, TRIN 10200 (K), TRIN 10202 (K), TRIN 10203 (K), February, 1922, Williams (TRIN 10512); Scarborough, Botanic Station, 3.11.1909, Broadway 3150 (GH, K); 18.8.1910, Broadway 4159 (K, NY), 19.9.1910, Broadway s.n. (BM, GH, K, P, TRIN), 21.9.1912, Broadway 4246 (E, K, NY); The Whin, cultivated, 31.8.1916, Meaden (TRIN 8364).

Native of tropical Africa. Widely introduced and cultivated.

As stated above, the key to *Dioscorea* does not take into account rootstock colour, nor does it consider starch-grain shape or size. Because of this the author does not follow Williams & Williams (ed. 4, 1969) or Adams (1972) in distinguishing *D. cayenensis* Lam. from *D. rotundata* Poir., although he accepts that there may be some fine reason for separation. He unites them here under the earlier epithet, *D. cayenensis*.

7. *Dioscorea polygonoides* Humb. & Bonpl. ex Willd., *Sp. Pl.* 4: 795 (1805); Urb., *Symb. Ant.* 4: 154 (1903) & 8: 105 (1920); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, Pt. 2: 163 (1924); Standl. & Steyerl. in *Fieldiana Bot.* 4, 3: 157 (1952); Hodge in *Lloydia* 17: 172 (1954); Adams, *Fl. Pl. Jam.*: 66 (1972); Fournet, *Fl. Guadel. & Martin.*: 249 (1978); Howard, *Fl. Less. Antill.* 3: 509, fig. 114A (1979)

D. lutea G.F.W. Meyer, *Prim. Fl. Esseq.*: 282 (1818); Griseb., *Fl. Brit. W. Ind.*: 588 *pro parte* (1864)

D. martinicensis Spreng., *Neue Entdeck.* 3: 17 (1822)

D. polygonoides Humb. & Bonpl. ex Willd. var. *aperta* Kunth in *Notizbl. Bot. Gart. u. Mus. Berl.* 7: 208 (1917)

Herbaceous vine, glabrous throughout; stems slender, subangular, striate, unarmed; leaves alternate, lamina 4–12 cm long, 2–10.5 cm wide, broadly ovate to ovate-lanceolate, cuspidate-acuminate, deeply or shallowly cordate at base, 7–9-nerved; petiole (0.75–)1.5–4 cm long; male flowers sessile in 3–5-flowered clusters, laxly arranged in simple or few-branched spikes up to 25 cm long, perianth lobes shortly ovate, membranous; stamens 3 fertile, 3 sterile shorter than fertile; female flowers in simple or branched racemes up to ca 20 cm long, 6 sterile stamens present, 3 being antheriferous; capsule 1.75–3 cm long, 1.75–2 cm broad, obconic to broadly oblong-ellipsoid.

Trinidad: without locality, Fendler 844 (BM, E, K, NY); Chacachacare, 5.4.1921, Britton, Freeman & Brown 2765 (GH); Blue Basin, Diego Martin, 17.4.1920, Britton, Britton & Hazen

1907 (K, NY); Caroni, 27.6.1925, Williams (TRIN 10929); Maracas, 2.5.1904, Dannouse s.n. (TRIN); Maracas, road to the bay, 13.3.1927, Broadway 7347 (BM); Tucuche trail, near the cocoa-house, ca 400 m, 18.4.1948, Simmonds 306 (TRIN 14221); El Tucuche, 10.1.1922, Freeman & Williams (TRIN 10089); St Augustine, 8.11.1933, Butlin (K, TRIN 13053); Tunapuna, Broadway (TRIN 3986); Caura, March 1899, Hart (TRIN 6725); Mt Aripo, the Caves trail, ca 600 m, 24.12.1947, Simmonds 228 (TRIN 14019); Heights of Aripo, 10-26.1.1920, Broadway 9919 (GH, K, NY, TRIN), 9920 (GH, K, NY, TRIN); Manzanilla, coastal woods, 9.3.1921, Britton & Britton 2181 (K, NY, TRIN 9715); San Fernando, Kuntze 956 (NY); Southern Watershed Reserve, 6.11.1949, Simmonds 440 (TRIN 14487); Point Coco, near Irois, 25.11.1916, Broadway (TRIN 8546); Moruga, sea beach, 9.2.1916, Broadway (TRIN 7911), (TRIN 7912); Carmichael Road, 18.4.1920, Britton & Hazen 1925 (K).

Tobago: Lot 42, 21.4.1913, Broadway 4448 (BM, E, GH, K, NY, P); Menna, 23.3.1914, Broadway 4759 (BM, E, GH, K, NY, P); Adelphi, 26.1.1910, Broadway 3415 (BM, E, K, NY); Easterfield, 9.12.1910, Broadway 4008 (BM, E, GH, K, NY, P); Campbelton, 13.11.1912, Broadway 4278 (BM, E, K, type of *D. polygonoides* var. *aperta*); King's Bay Estate, near Lambeau, 2.5.1912, Broadway 3875 (K); Mount St George-Castara Road, milepost 5, 31.3.1940, Cheesman 271 (TRIN 13517); Forest Reserve on S side of summit on main ridge, 250 m, 10.4.1959, Cowan 1527 (GH, NY, P, TRIN 16372).

Central and southern tropical America, West Indies.

This is by far the commonest wild species of *Dioscorea* in our islands.

8. *Dioscorea convolvulacea* Cham. & Schlechtend. in *Linnaea* 6: 49 (1831); Standl. & Steyerl. in *Fieldiana*, Bot. 24, 3: 151 (1952)

Herbaceous vine; stems subterete, striate, variously hirsute or glabrous; leaves alternate, 4.5-17.5 cm long, 2-15.5 cm wide, broadly ovate to suborbicular, apex shortly acuminate, shallowly

or deeply cordate at base, 7-11(-13)-nerved, glabrous above, sparsely to subdensely hispid-hirsute beneath; petiole 2.5-7 cm long, pubescent or occasionally subglabrous; male flowers solitary on pedicels 2-3 mm long, subtended by linear-lanceolate, chartaceous bracts *ca* 2 mm long, on long slender, simple or branched inflorescences up to 20 cm long, rhachis pubescent, perianth 3-4 mm broad, lobes oblong, obtuse, spreading, becoming reflexed; fertile stamens 3, spreading; anthers minute; capsule 1.4-2.7 cm long, 0.7-1.2 cm broad, ellipsoid, coriaceous.

Trinidad: without locality, Fendler 845 (BM, E, K, P); Botanic Garden, January, 1891, Broadway (TRIN 4468); St Ann's, 2.2.1845, Finlay (TRIN 767); Maraval, 1.12.1861, Crueger 229 (TRIN 766), 7.12.1845, Crueger s.n. (K); Laventille, 4.1.1892, Alexander (TRIN 5090); Maracas, Hart (TRIN 6570); Santa Cruz, Cyril Bay Trail, 14.2.1948, Simmonds 279 (TRIN 14177).

Southern Mexico to Costa Rica; Trinidad.

2. *RAJANIA* Linnaeus

Rajania L., *Sp. Pl.* 2: 1032 (1753)

Authors such as Urban (1903), Britton & Wilson (1924) and Howard (1979) have considered *Rajania* to be represented in our islands by *Rajania cordata* L. (= *R. pleioneura* Griseb.). This is presumably by reason of one specimen, Sieber 172, deposited at Kew and purporting to come from Trinidad. However, as has been seen frequently before, it is far more likely that this is another example of Sieber's collections mistakenly cited as coming from Trinidad, when really coming from Martinique from where other collections of this species are known.

SERIES III. CORONARIEAE

FAMILY I — LILIACEAE

By D. PHILCOX

Herbs with bulbs, corms or rhizomes, or shrubs or trees; flowers usually perfect, regular, bisexual; perianth usually of 6 segments, free or connate, petaloid in two distinct but similar series; stamens usually 6, free or adnate to perianth segments; anthers 2-locular; ovary superior, usually 3-locular, ovules numerous or few, in 2 series or solitary in each loculus; fruit a capsule or berry.

Most, if not all, of the members of this family met with in our islands are either presently cultivated or of a cultivated origin. Some plants such as *Gloriosa superba* L., *Asparagus officinalis* L., *A. plumosus* Baker and *A. sprengeri* Regel and various *Lilium* and *Allium* species are only rarely seen, but others from genera such as *Cordyline* and *Dracaena* are used as land marker plants or living hedges and much more widely known. Also well known and naturalised especially in Trinidad are various species of *Sansevieria*. Because of this it has been decided to include here the last three genera.

KEY TO THE GENERA

- 1 Plant herbaceous, rhizomatous or stem short; leaves basal, leathery..... 1. *Sansevieria*
- 1 Plant shrubby with leaves spread along upright stem 2
- 2 Leaves sessile, linear to lanceolate; ovules solitary 2. *Dracaena*
- 2 Leaves petiolate, elliptic; ovules numerous 3. *Cordyline*

1. SANSEVIERIA *Thunberg* nom. cons.

Sansevieria Thunb., *Prodr. Pl. Cap.* 5: 65 (1794)

Perennial herbs, stemless with creeping rhizomes; leaves often rosetted, rigid, erect, leathery, flattened or terete, entire; inflorescence racemose; flowers greenish-white, usually fragrant, perianth

tubular at base, lobes spreading or recurved; stamens 6, exserted; filaments slender, filiform; anthers oblong or linear; ovary 3-locular, with one ovule in each loculus; fruit a berry with 1-3 hard seeds.

KEY TO THE SPECIES

- Leaves cylindrical, concolorous..... 1. *S. cylindrica*
 Leaves flat, often variegated or with paler markings; leaf margin orange to reddish-brown 2. *S. hyacinthoides*

1. *Sansevieria cylindrica* Bojer ex Hook. in *Curtis Bot. Mag.* 85: tab. 5093 (1859); Adams, *Fl. Pl. Jam.*: 63 (1972); Fournet, *Fl. Guadel. & Martin.*: 231 (1978); Howard, *Fl. Less. Antill.* 3: 500 (1979)

Leaves 60 cm-1 m long, dark green, cylindric or subcompressed; inflorescence to 1 m long; flowers 5-6 in cluster; perianth lobes 2-3 cm long, linear, revolute, white tinged pink; fruit orange.

Trinidad: known at present only from collections made from cultivated material in the Botanic Garden.

Tobago: naturalised, Scarborough, 7.4.1913, Broadway s.n. (E).

Native of Mauritius, widely cultivated.

2. *Sansevieria hyacinthoides* (L.) Druce in *Rep. Bot. Exch. Cl. Brit. Isles* 1913, 3: 423 (1914); Howard, *Fl. Less Antill.* 3: 500, fig. 112 (1979)

Aloe hyacinthoides L., *guineensis* L., *Sp. Pl.*: 321 (1753)

Sansevieria thyrsiflora Thunb., *Prodr. Pl. Cap.*: 65 (1794) *nom. illegit.*

S. guineensis (L.) Willd., *Sp. Pl.* 2: 159 (1799)

S. metallica Gérôme & Labroy in *Bull. Mus. Hist. Nat. Paris* 2: 170, 173, fig. 2 (1903); Proctor in Gooding *et al.*, *Fl. Barb.*: 102 (1965); Adams, *Fl. Pl. Jam.*: 62 (1972); Fournet, *Fl. Guadel. & Martin.*: 231 (1978)

Leaves 30–120 cm long, 3.5–7 cm wide, oblong-lanceolate, apex acute or obtuse, pale dull green mottled with transverse paler bands, margins orange to brownish-red; rhizomes markedly orange; inflorescence up to 80 cm or more long, scape bracteate with bracts *ca* 3.5 cm long, perianth lobes *ca* 1.5 cm long, revolute, white with pale green tips; fruit orange-red.

Trinidad: without locality, Fendler 851 (K); cultivated in Botanic Gardens, St Clair, various collectors (TRIN); Chacachacare, *ca* 90 m, 15.3.1953, Simmonds (K, TRIN 14933); Point Gourde, 28.7.1977, Philcox 8083 (K); milepost 39, west of Oropouche Lagoon 27.3.1979, Philcox & Gillies 8287 (K).

Native of southern Africa but now widely cultivated and naturalised throughout the tropics.

A further species, *Sansevieria longiflora* Sims, a native of tropical Africa, is represented in the National Herbarium from collections made in the Botanic Garden, while Williams & Williams [*Useful & Ornamental Pl. Trin. & Tobago* ed. 4: 278 (1969)] include a reference to *S. laurentii* Wilden. being a suitable house plant.

2. DRACAENA *Vandelli* ex Linnaeus

Dracaena Vandelli ex L., *Syst. Nat.* ed. 12, 2: 246 (1767)

This Old World genus, with plants in some species attaining heights in excess of 5 metres and with stems of 10 cm or more thick, is well represented in our islands. Several African species are cultivated with such as *D. fragrans* (L.) Ker-Gawl. being widely used as windbreaks around cocoa plantations throughout Trinidad while others such as *D. godseffiana* Hort., *D. sanderiana* Hort. and *D. goldieana* Hort. are cultivated as ornamentals. Specimens in the National Herbarium show that at one time the Asiatic *D. sanderiana* Roxb. was cultivated in the Botanic Garden.

3. CORDYLINE *Commerson ex A.L. Jussieu* nom. cons.

Cordylina Commerson ex A.L. Jussieu, *Gen.* 41 (1789)

This comparatively small genus is represented here mainly by one species albeit in several forms or varieties. Our plant, *Cordylina fruticosa* (L.) A. Chev., is a native of tropical Asia and can grow to about 3-4 metres tall, although it is more commonly seen to be much smaller. As compared with the taller and commoner varieties grown as boundary markers, those cultivated as ornamentals tend to be much smaller with the usually long leaves varying from bright or dark red, through green to white. It is not naturalised.

FAMILY 2—SMILACACEAE

By D. PHILCOX

Vines, woody or herbaceous; stems unarmed or armed with prickles on old or new wood or both; leaves alternate, petiolate, with longitudinal nerves arising from or near base, reticulate veined, coriaceous or membranous, articulate with petiole; petioles sheathing usually with pair of tendrils at base; dioecious; flowers in axillary, peduncled umbels, perianth segments 6; stamens 6, free with filaments inserted at base of perianth segments; anthers 2-celled, basifixed; ovary 3-celled with 1 or 2 ovules in each cell; styles short or 0; stigmas 3 or rarely 1; fruit a small, orange red or black berry; seeds 1-6.

SMILAX *Linnaeus*

Smilax L., *Sp. Pl.*: 1028 (1753)

Vine with annual or perennial stems, arising from woody or fleshy tubers or long creeping rhizomes; leaf-blades usually entire, sometimes lobed; flowers regular with pedicels borne on globose or conic receptacle, inserted in small pits among minute bracteoles; male flowers with or without abortive ovary; female flowers usually smaller than male with ovary and usually several abortive stamens.

The complexity of this genus is already well known and it is even evident here in our islands. Fortunately the bulk of our material appears to fit into *Smilax cumanensis*—a very variable species.

Unfortunately this is not the only taxon to be found here and collections exist which, in the author's view, represent at least three if not more distinct species. From the extensive studies made in other herbaria, no named specimens appear to exist matching these. It is felt that it would be unwise at this time to describe any new species in this genus, but a key has been produced by which at least taxonomic separation of the local elements can be made.

KEY TO THE SPECIES

- 1 Leaves membranous; all veins prominent on both surfaces; intermediate nerves strongly reticulated; angle of origin of secondary nerves with midrib 20° - 40° (50°) 2

- 1 Leaves subcoriaceous; only major nerves clearly prominent, less so above; reticulations present but unclear; angle of origin of secondary nerves with midrib (40°)- 50° - 70° 3

- 2 Petiole articulate at middle or below; all secondary nerves arising from base of lamina..... 1. *S. cumanensis*

- 2 Petiole articulate above and immediately below lamina; inner pair of secondary nerves arising (0.5)-0.8-1.5 cm above base of lamina 4. *S. sp. beta*

- 3 Stem with moderate to dense covering of short, black prickles 0.5-1.5 mm long, intermixed with occasional larger prickles 2-5 mm long, fawn with black tips; major nerves very prominent beneath; leaves not especially shiny above..... 2. *S. solanifolia*

- 3 Stem apparently glabrous and unarmed; major nerves prominent beneath but not markedly so; leaves somewhat shiny above..... 3. *S. sp. alpha*

1. *Smilax cumanensis* Humb. & Bonpl. ex Willd., *Sp. Pl.* ed. 4, 4: 783 (1806); O. Schulz in Urb., *Symb. Ant.* 5: 34 (1904); Macbride in *Field Mus. Nat. Hist.*, Bot. 13, 1: 626 (1936); Proctor in Gooding et al., *Fl. Barbado.*: 103 (1965)

S. surinamensis Miq. in *Linnaea* 17: 63 (1843); Griseb., *Fl. Brit. W. Ind.*: 586 (1864)

S. papyracea Griseb., *Fl. Brit. W. Ind.*: 585 (1864) excl. synonym., non Duham. (1801)

Stems unarmed, smooth, subterete or armed with sharp, flattened, recurved, fawn or olivaceous prickles; leaves (5-)7-13(-17.5) cm long, (0.75-)2-7.5(-10) cm wide, entire, ovate-lanceolate to ovate-oblong, glabrous, membranous or chartaceous, 5-nerved with nerves clearly prominent on both surfaces, densely reticulate, occasionally midrib and inner pair of nerves bearing occasional prickle; petiole up to 1 cm long, sheathed in lower $\frac{1}{4}$ to $\frac{1}{3}$, articulate at or below middle; male peduncles 2-3 mm long, pedicels 0.3-1 cm long, filamentous, up to 25 flowers in umbel; female peduncles (0.2-)0.5-1.5 cm long, pedicels 0.3-1 cm long, to 1.5 cm in fruit, 6-10 flowers in umbel; fruits black, 5-10 mm diam. when dry, 1-3-seeded.

Trinidad: without locality, Aublet s.n. (BM), De Schack s.n. (K), Fendler 849 (BM, E, K, NY), Grisebach s.n. (K); Chacachacare, 1895, Lunt (TRIN 6001); Mucurapo, St James, 9.7.1928, Broadway 6993 (BM, K); St Ann's, 25.6.1889, Broadway (TRIN 3841), 9.5.1930, Broadway 7554 (BM), April, 1874, Kuntze 751 (K, NY); Botanic Garden, Broadway (TRIN 4991); El Tucuche, 10.1.1922, Freeman & Williams (TRIN 10090); St Augustine, I.C.T.A., 9.6.1947, Simmonds 107 (TRIN 13803); Piareo Savanna, 21.2.1971, Kalloo B990 (TRIN 22747); Caura road, ca 3 miles N of Tacarigua, 11.7.1976, Adams 13998 (K, TRIN 21586); W of Arima, 25.3.1920, Britton 994 (GH); $2\frac{3}{4}$ miles on Lopinot road, 16.7.1973, Philcox, Wood & Kalloo 7485 (K, TRIN 21151); between Mora forest and Sangre Grande, 7.4.1979, Philcox & Phillips 8351 (K, NY, P, TRIN); in Nariva Swamp ca 1.5 km SE of Brigand Hill, 19.7.1977, Philcox 8025 (K, NY, P, TRIN); milepost 38, Manzanilla road, 16.11.1977, Ramcharan 325 (TRIN 22155); San Fernando, 3.11.1873, Finlay (TRIN 417); Moruga, 19.3.1921, Britton & Broadway 2458 (GH, NY, TRIN), 2.12.1932, Broadway 9117 (BM, K), sea beach, 9.2.1916, Broadway (TRIN 7910); Matchepoorie, 11.3.1921, Britton & Britton 2215 (GH, K, NY, TRIN 10513); near mouth of Godineau River, 12.4.1921, Britton 2918 (GH, NY, TRIN 10514).

Tobago: Rockley Vale, 21.4.1910, Broadway 3539 (BM, E, NY); Menna Road, Mason Hall, 6.6.1925, Williams (TRIN 11132); Bacolet, 8.8.1958, Pursglove P 6227 (K, TRIN 17291), October 1889, Eggers 5472 (K); milepost 5, Mount St George-Castara road, 31.3.1940, Cheesman (TRIN 13519); French Hill, 9.10.1937, Sandwith 1698 (K).

Lesser Antilles, northern South America. Trinidad and Tobago.

2. *Smilax solanifolia* A. DC., *Monogr. Phan.* 1: 161 (1878); Schulz in Urb., *Symb. Ant.* 5: 30 (1904)

Stems generally armed with moderate to dense covering of short, black prickles 0.5–1.5 mm long, intermixed with larger prickles 2–5 mm long, fawn with black tips, rarely totally unarmed; leaves (8–)18–22 cm long, (2.5–)7–12 cm wide, entire, ovate to oblong-ovate, rounded to subcordate at base, subcoriaceous, 3–5-nerved, major nerves especially prominent beneath, never bearing prickles; petiole (0.8–)2–2.5 cm long, sheathed in lower $\frac{1}{5}$ to $\frac{1}{4}$, articulate about middle; male peduncles 2–3 cm long (*vide* Schulz), pedicels 1.2 cm long, 15–20-flowers in umbel; female peduncles 2–4.5 cm long in fruit, pedicels up to 1.5 cm long, up to 35 flowers in umbel; fruits bright orange, drying black, 0.8–1 cm diam, 1–2-seeded.

Trinidad: without locality, Anderson s.n. (K, syntype), Crueger s.n. (K), Fendler 848 (BM, K, NY); Arima, 2.2.1902, Dannouse s.n. (TRIN); Arima Valley to La Laja Road, 12.6.1973, Philcox & Wood 7084 (K, TRIN 21134); Long Stretch, 15.1.1949, Simmonds 330 (TRIN 14254); Matura Forest Reserve, end of trace leading to R. Oropouche from ca milepost 5 $\frac{1}{2}$ on Valencia to Matura Road, 3.7.1973, Philcox *et al.* 7350 (K, TRIN 21131); Mora forest via Sangre Grande, 9.4.1926, Broadway 6092 (BM, K); La Brea, 11.3.1902, Dannouse s.n. (TRIN).

Lesser Antilles and Trinidad.

3. *Smilax* sp. alpha

Stems glabrous, unarmed to sparsely bearing prickles; leaves (6-)10-18 cm long, (1.5-)4-8.5 cm wide, entire, ovate to broadly lanceolate-ovate, base rounded, subcoriaceous, 3(-5)-nerved with only midrib clearly prominent beneath, somewhat shiny above; petiole 2-2.5 cm long, sheathed in lower $\frac{1}{4}$, articulate at middle or below; fruiting peduncles 2-4 cm long.

Trinidad: without locality (TRIN 797); Chaguanas, 16.2.1866, Finlay (TRIN 1961).

Tobago: Mount St George-Castara Trace, 10.4.1959, Cowan 1517 (TRIN 16358).

4. *Smilax* sp. beta

This is represented by a specimen purportedly collected by Dannouse at La Brea and bears the same information as the collection of *S. solanifolia*. It is closest to *S. cumanensis* but differs quite clearly in having leaves with the inner pairs of nerves arising well above the base of the midrib. Also the petiole is clearly articulate just below the lamina. On the evidence of just this single specimen, I have no hesitation in considering it as distinct.

FAMILY 3—PONTEDERIACEAE

By D. PHILCOX

Perennial marsh or aquatic herbs of freshwater; aerial leaves entire, long-petiolate, sheathed or stipulate at base, submerged leaves, where present, grass-like; inflorescence axillary or pseudo-terminal, spicate, racemose or paniculate, with basal spathe; flowers perfect, regular or zygomorphic, hermaphrodite, lobes 6, free or connate at base; stamens 3-6, inserted on perianth, filaments free; ovary superior, style slender, stigma 3-6-lobed; fruit capsular, 3-valved or achene.

This family is represented in our area by the genus *Eichhornia* and the author here takes the view that there are at least two species represented in our islands viz. *E. crassipes* (Mart.) Solms and *E. azurea* (Sw.) Kunth. Other botanists consider that a third species, *E. heterosperma* Alexander, occurs here, being close to *E. azurea* and distinguished from it by characters which are hard, if not impossible, to discern in dried herbarium material. However, to satisfy those who subscribe to this idea, a key and the following taxonomic treatment, based on Jonker-Verhoef [in Pulle, *Fl. Surin.* 1,2: 83 (1953)] is provided to cover all three species which can be used to identify living or spirit-preserved material.

EICHHORNIA Kunth nom. cons.

Eichhornia Kunth, *Enum.* Pl. 4: 129 (1843)

Floating or rooted aquatic; aerial leaves usually with inflated petioles, blades broad, submerged leaves when present, linear; inflorescence pseudoterminal, spicate or paniculate; flowers slightly bilabiate, showy, outer lobes narrower than inner; stamens 6, anterior exserted, inner included; ovary 3-locular, ovules numerous; stigma small, hairy; fruit capsular, included in remains of perianth.

KEY TO SPECIES

- 1 Plant with short stem; leaves rosetted;
petioles more or less inflated..... 1. *E. crassipes*
- 1 Plant with elongate stem; leaves not roset-
ted; petioles not inflated 2

- 2 Spike up to 10-flowered, base enclosed by spathe; perianth tube 2-3 times length of lobes; lobes all entire at margin..... 3. *E. heterosperma*
- 2 Spike more than 10-flowered, base protruding from spathe; perianth tube as long as lobes, inner lobes ciliate..... 2. *E. azurea*

1. *Eichhornia crassipes* (Mart.) Solms in DC., *Monogr. Phan.* 4: 527 (1883); Urb., *Symb. Ant.* 4: 148 (1903); Woodson & Schery, *Fl. Panama* 2, 3: 558 (1944); Jonker-Verhoef in Pulle, *Fl. Surin.* 1, 2: 85 (1953); Proctor in Gooding *et al.*, *Fl. Barbadoes*: 100 (1965); Adams, *Fl. Pl. Jam.*: 64 (1972); Fournet, *Fl. Guadel. & Martin.*: 77 (1978); Howard, *Fl. Less. Antill.* 3: 449 (1979)

Pontederia crassipes Mart., *Nov. Gen.* 1: 9 (1824)

Piaropus crassipes (Mart.) Britton in *Ann. N.Y. Acad. Sci.* 7: 241 (1893); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.* 1: 149 (1923)

Water hyacinth

Plants floating or rooted in mud; stems short with many long, plumose roots inserted at base; new plants raised from branches with long internodes arising from leaf axils; leaf blades 5-9(-12) cm long, 5-9 cm wide, orbicular to rhombic to broadly ovate, apex short-cuspidate, base rounded or acuminate; petioles up to 30(-42) cm long, inflated or spongy, especially when short or floating; inflorescence 10-30 cm long; flowers showy in loose, pubescent spike; perianth tube curved, *ca* 1.5 cm long, lobes 3-3.5 cm long, 1.5-2.5 cm wide, lilac, upper lobe with deep-violet blotch with yellow centre; filaments 2.25-2.5 cm long, arcuate at top, densely glandular; ovary 4-5 mm long; stigma 3-lobed; style 2.75 cm long, glandular above, glabrous below; capsule *ca* 1.5 cm long.

Trinidad: St Clair, cultivated, 27.8.1918, cultivated ex Cedros, Williams s.n. (TRIN); *ca* 1 mile S of D  b  , 4.5.1979, Philcox & Stoelzel 8379 (K, P, TRIN); stream bordering Nariva Swamp, 20.12.1976, Ramcharan 92 (TRIN 22275); Windbelt Reserve, 3.1.

1954, Baker & Simmonds (K, TRIN 15056); in stream between mile-posts 45 $\frac{1}{2}$ and 45 $\frac{3}{4}$, San Fernando to La Brea Road, 2.4.1979, Philcox & Phillips 8332 (K, P, TRIN); near Siparia, 29.2.1948, Simmonds 292 (TRIN 14194); Cedros, 20.9.1915, Caroline King (TRIN 7228), 19.12.1914, Broadway (TRIN 8953).

Southern United States, Central America and West Indies. Probably a native of Brazil, but established or cultivated elsewhere.

2. *Eichhornia azurea* (Sw.) Kunth, *Enum. Pl.* 4: 129 (1843); Griseb., *Fl. Brit. W. Ind.*: 590 (1864); Woodson & Schery, *Fl. Panama* 2, 3: 558 (1944); Jonker-Verhoef in Pulle, *Fl. Surin.* 1, 2: 87 (1953)

Pontederia azurea Sw., *Prodr.*: 57 (1788)

Plants rooted in mud, sometimes floating; stems elongate with plumose roots arising at nodes; leaf blades 7.5–12.5 cm long, 3–7(–9.5) cm wide, obovate, orbicular to ovate-elliptic, base acuminate or rounded; petioles up to 20 cm or more, slender, not inflated; inflorescence up to 15 cm long, glandular-pubescent; flowers violet–blue, dark blue at base; perianth tube *ca* 2 cm long when mature, glandular-pubescent; lobes 1.5–3.5 cm long, inner obovate, ciliate, 3–4 times broader than oblong to oblanceolate outer; filaments glandular-pubescent; ovary *ca* 4 cm long; stigma slightly 3-lobed, pubescent; capsule *ca* 1 cm long.

Trinidad: without data, TRIN 826; Oropouche Lagoon, 5.4.1865, Finlay (TRIN 1960); Los Bajos, 24.6.1925, Williams (TRIN 11181); Penal, 7.7.1970, Rankin EJ 297 (TRIN).

Central and tropical South America. West Indies.

3. *Eichhornia heterosperma* Alexander in *Lloydia* 2, 3: 170 (1939); Jonker-Verhoef in Pulle, *Fl. Surin.* 1, 2: 87 (1953)

Plants floating or rooted in mud; leaf blades 8–14.5 cm long, 4.5–7(–9.5) cm wide, broadly elliptic to subrhombic, base rounded to acuminate, apex obtuse; petioles up to 20 cm long, slender, not inflated; inflorescence 5–6 cm long, glabrous; flowers pale blue; perianth tube 1.5–1.8 cm long.

Trinidad: without locality, Fendler 750 (BM, E, K, NY);
1 mile S of St Joseph, 3.5.1920, Hazen 2078 (GH, NY); Caroni,
30.4.1925, Freeman, Williams & Cheesman (K, NY, TRIN 11024).

Cuba, Costa Rica, Guiana, Brazil and Uruguay. Trinidad.

In 1977 a sterile specimen of a plant which appears to be *Eichhornia* was collected in the Nariva Swamp by D. L. Kelly. This unnumbered collection is of floating material bearing linear, submerged leaves up to 16 cm long and almost 1 cm wide, sheathed at the base, while at the upper end is one emerged leaf 7 cm long and about 3.5 cm wide. This emerged leaf is shortly petiolate, the petiole being about 2.5 cm long and largely enclosed by a bract. If this is an *Eichhornia*, and it almost certainly is, then it must by reason of its habit, represent either *E. azurea* or *E. heterosperma* neither of which has hitherto been recorded from the locality.

FAMILY 4—XYRIDACEAE

By D. PHILCOX

Annual or perennial tufted herbs; leaves radical, often distichous, linear, terete or filiform, sheathing at base; peduncles simple, erect, with one or more pairs of sheaths, or leafless, at base one or more leafless or leafy sheaths; spikes globose, ovoid or fusiform with flowers in axils of glumaceous bracts with two or more smaller bracts without flowers at base, sometimes forming an involucre; bracts scale-like, coriaceous, imbricate, concave, often cochleate; flowers hermaphrodite, solitary, sessile, usually flowering one at a time early in day; sepals 3 (or 2), lateral 2 exterior, keeled, glumaceous, persistent, third interior, membranous, hood-like over corolla in bud, or small, scale-like or absent; corolla 3-lobed, regular or subzygomorphic, yellow, white or blue, with long, narrow tube, lobes spreading, cuneate-obovate; stamens 3, inserted near base of and opposite lobes; filaments short, flattened; anthers basifixed, 2-celled, dehiscent by slits, staminodes 3 or 0, alternating with stamens, simple, entire or bifid; ovary superior, 1-celled with basal or three parietal placentas or 3-celled with central, axile placentas; ovules numerous or few; style terminal, filiform; stigmas terminal, dilated or subcapitate; capsule 3-valved surrounded by dried corolla and lateral sepals; seeds ellipsoid, ovoid or globose, apiculate.

KEY TO THE GENERA

- Corolla yellow; 3 staminodia present; style lacking appendages; ovary 1-locular, basal or parietal placentation..... 1. *Xyris*
 Corolla blue; staminodia lacking; style appendaged below; ovary 3-locular, perhaps imperfectly, central axile placentation 2. *Abolboda*

1. *XYRIS* *Linnaeus*

Xyris, L., *Sp. Pl.*: 42 (1753)

Perennial, or rarely annual, herbs; leaves terete or flattened, filiform, linear or ensiform, often ligulate; peduncles basally sheathed; sepals 3, lateral pair exterior, boat-shaped, keeled,

glumaceous, persistent, third interior membranous, hood-like over corolla in bud, soon dehiscent as corolla develops; corolla 3-lobed, regular, spreading, usually yellow; staminodia 3, bifid; style filiform, lacking appendages, 3-branched; ovary 1-celled with basal or 3 parietal placentas; seeds ovoid, ellipsoid or fusiform.

KEY TO THE SPECIES

- 1 Plant small, rarely exceeding 12 cm tall;
leaves 0.5-2 cm long, ca 0.5 mm wide..... 3. *X. grisebachii*
- 1 Plant much larger, not as above 2
- 2 Scape markedly 5-9-costate, not obviously
flattened below spike 1. *X. fallax*
- 2 Scape 1-2(-3)-costate, somewhat flattened
below spike 3
- 3 Leaves usually 4-8 mm wide, basal sheaths
4-12 cm long, margin membranous 2. *X. caroliniana*
- 3 Leaves 1-1.5 mm wide, basal sheaths
2-3.5 cm long, margin long, brown
ciliate 4. *X. glabrata*

1. *Xyris fallax* Malme in *Bih. K. Svensk. Akad. Handl.* 22, Afd. 3, 2: 12, pl. 1, fig. 5 (1896); Maguire & Smith in *Mem. N.Y. Bot. Gard.* 10, 5: 12 (1963)

X. dolichosperma Lanjouw in *Rec. Trav. Bot. Neerl.* 34: 488, fig. 5 (1937)

Plant somewhat tufted; leaves 20-30(-40) cm long, 2.5-6 mm wide, flat, linear, margin of basal sheath hyaline, glabrous above, ciliate towards base; peduncle up to 1 m tall, 2.5 mm diam., terete with 5-9 prominent, subglabrous ribs; peduncular sheath 4-10 cm long, acute; spike 5-12(-16) mm long, 4-7(-11) mm broad, broadly ellipsoid; lower bracts broadly ovate, others broadly oval or obovate, very narrow hyaline margin, dorsal area lanceolate or narrowly ovate; lateral sepals much shorter than bracts, carina narrowly winged, shortly villous; staminodia bifid, branches penicillate; stamens larger than staminodia; anthers linear, twice as long as filaments; capsule narrowly obovoid, equalling sepals or little shorter; seeds numerous, fusiform or oblong, often curved or arcuate.

Trinidad: without locality, Lockhart (K); Piarco Savanna, 1904, Dannouse (TRIN 8256); Aripo Savanna, 5.3.1920, Britton, Broadway & Hazen 296 (GH), 1.12.1912, Williams & Freeman (TRIN 10671), Cumuto, 30.9.1934, Broadway s.n. (K).

Eastern Colombia, Venezuela, Guyana, Suriname and south to Mato Grosso, Brazil. Trinidad.

2. *Xyris caroliniana* Walter, *Fl. Carol.*: 69 (1788); Maguire & Smith in *Mem. N.Y. Bot. Gard.* 10, 5: 10 (1963); Adams, *Fl. Pl. Jam.*: 40 (1972)

X. jupicai L. C. Rich. in *Act. Soc. Nat. Hist. Paris* 1: 106 (1792); Urb., *Symb. Ant.* 8: 84 (1920); Britton & Wilson, *Bot. Porto Rico & Virg. Isl.*, pt. 1: 132 (1923); Lanjouw in Pulle, *Fl. Surin.* 1: 241 (1938)

X. communis Kunth, *Enum. Pl.* 4: 12 (1843); Griseb., *Fl. Brit. W. Ind.*: 525 (1864)

Plant tufted; leaves (8-)25-45(-60) cm long, (2-)4-8(-12) mm wide, linear, flat, glabrous, sometimes subscabrous below, basal sheath 4-12 cm long, margin membranous; peduncle 24-75(-85) cm long, 2.5 mm diam., terete, flattened below inflorescence, with 1-2 prominent ribs, glabrous; peduncular sheath 10-18 cm long with leafy apex up to 2 cm long, subobtuse; spike 8-20(-32) mm long, 5-15 mm broad, ovoid or ellipsoid to globose or pyramidal; lower bracts ovate-oblong, obtuse, others broader to obovate-truncate, subhyaline margin wider, dorsal area broadly ovate to suborbicular; lateral sepals *ca* 5 mm long, 1 mm wide, thin, keel with serrate or lacerate wing broad above; corolla tube *ca* 6 mm long, lobes *ca* 3 mm long, *ca* 2 mm wide, obovate-oblong, sublacerate at apex; staminodia bifid, branches penicillate; anthers subsagittate, three times as long as filaments; capsule ellipsoid; seeds *ca* 0.5 mm long, ellipsoid, indistinctly longitudinally ribbed, glossy yellow, dark purplish-brown at each end.

Trinidad: without locality, Fendler 869 (BM, E, K, P), 16.4.1874, Kuntze 975 (NY); Piarco Savanna, February, 1892 (TRIN 4664), 18.1.1893, Alexander (TRIN 5164), 28.12.1912, Freeman (TRIN 7561), 28.1.1920, Freeman (TRIN 9381), South of d'Abadie, 18.3.1920,

Britton & Hazen 701 (GH, NY); O'Meara Savanna, 7.4.1920, Britton & Hazen 1574 (GH, NY), 8.4.1920, Broadway & Britton (TRIN 9327), May 1848, Purdie 14 (K), 23.10.1976, Ramcharan 7 (TRIN 22364), 16.11.1976, Ramcharan 20 (TRIN 22363); Arima, 9.4.1848,? Finlay (TRIN 1807); near W entrance to Fort Road on Churchill-Roosevelt Road, 11.10.1947, Simmonds 185 (K, TRIN 13806); Waller Field, 27.5.1976, Adams & Kalloo 13946 (K, TRIN), 9-23.2.1950, Howard 10321 (A, BM); Aripo Savanna, 16.5.1868, Finlay (TRIN 599), 20.4.1874, Kuntze 1105 (NY), March, 1893, Broadway (TRIN 5310), 5.3.1920, Britton, Broadway & Hazen 296 (NY), 4.2.1959, Richardson 505 (K, TRIN 17926), 23.3.1959, Cowan & Richardson 1153 (GH, NY, TRIN), 9.5.1961, Richardson 917 (TRIN 17927), 15.7.1963, Jermy 2324 (BM), 27.8.1963, Jermy 2999 (BM), 17.4.1975, Philcox & Andrews 7677 (K, P, TRIN), 24.8.1977, Philcox & Philcox 8224 (K), 23.3.1979, Philcox & Gillies 8281 (K, NY, P, TRIN); Cumuto, 29.4.1913, Thaxter s.n. (GH), 26.11.1926, Broadway 6490 (BM, K), 30.9.1934, Broadway s.n. (P), 11.8.1959, Webster, Ellis & Miller 9625 (TRIN); Toco Road, Valencia, 16.4.1920, Britton, Hazen & Mendelson 1810 (GH, NY); near milepost 1, Valencia Road, 30.3.1930, Broadway 7647 (BM); Melajo Forest Reserve, ca 1.5 km N of Oropouche Village, 20.7.1976, Barnard, Jones & Crane 582 (RNG); Long Stretch Savanna, 15.4.1975, Philcox 7671 (K, NY, P, TRIN), 11.11.1938, Alston 5171 (BM), 20.9.1947, Simmonds & Baker 181 (TRIN 13820); Sangre Grande, 21.10.1927, Williams (TRIN 11857); ricefield, Guaico-Tamana Road, Baker & Simmonds (K, TRIN 14988); Tabaquite, 25.8.1899, Dannouse s.n. (TRIN); La Brea, 20.12.1846, Crueger (TRIN 1804).

Southern United States of America, Central America, Colombia, Venezuela, Peru, Brazil and Guiana. West Indies and Trinidad.

3. *Xyris grisebachii* Malme in *Arkiv. Bot.* 13, 3: 50 (1913)

X. americana Griseb., *Fl. Brit. W. Ind.*: 526 (1864), excl. syn. non Aublet (1775)

Plant tufted, rarely exceeding 12 cm tall; leaves 0.5-2.5(-3.5) cm long, ca 0.25 cm wide, slender, terete, filiform, subglabrous, frequently purple-violet, apex obtuse, subclavate, basal sheath

up to 5 mm long, membranous; peduncle 4–12 cm long, ca 0.25 mm diam., filiform, terete, glabrous, not markedly flattened below inflorescence, striate when dry, basally long-sheathed; peduncular sheath 1.5–2.5 cm long, apex 1–2 mm long, obtuse; spike 2–3.5 mm long, 1–1.5 mm broad, ellipsoid or fusiform, usually 2–3-flowered; lower bracts ovate-elliptic to ovate-lanceolate, acute, others oblong-elliptic to obovate-elliptic, narrow margin whitish-hyaline, dorsal area linear-lanceolate to ovate-lanceolate; lateral sepals 2.5–3 mm long, 0.4 mm wide, narrowly lanceolate, acute, wing of keel very narrow or lacking, eciliate, entire; capsule unilocular; seeds numerous.

Trinidad: Piarco, 1905, Dannouse s.n. (NY, TRIN); Waller Field, 9–23.2.1950, Howard 10483 (A, BM, NY); Aripo Savanna, March, 1851, Purdie s.n. (K, type of *X. grisebachii*), 9.4.1912, Freeman (TRIN 7932), 13.2.1915, Freeman (GH, K, NY, TRIN 8031), 25.3.1953, Baker (K, TRIN 14910), 23.12.1959, Richardson 783 (K, TRIN), 11.4.1978, Adams 14373 (TRIN 22497), 23.3.1979, Philcox & Gillies 8284 (K, TRIN); Cumuto, 1.4.1928, Broadway s.n. (BM, K).

Endemic to Trinidad.

4. *Xyris glabrata* Griseb., *Fl. Brit. W. Ind.*: 525 (1864), excl. syn.; Lanjouw in Pulle, *Fl. Surin.* 1: 239 (1938)

X. malmeana L. B. Smith in *Bol. Inspe. Fed. Obras Contra Secas*, Rio de Jan., 10: 126 (1939)

Plants tufted, up to 65 cm tall; leaves 3.5–16(–30) cm long, 1–1.5 mm wide, linear, longitudinally sulcate, somewhat scabrous especially on margin, apex acute, broadening towards base, sheaths 2–3.5 cm long, long brown ciliate at base, glabrous above; peduncle 12–30(–60) cm long, 1–1.5 mm diam., terete or subterete, slightly compressed below inflorescence; peduncular sheath 4–12 cm long, apex 5 mm long, acute; spike 5–8 mm long, 3–5 mm broad, ovoid or ellipsoid, lower bracts ovate, others elliptic to obovate, obtuse or subacute at apex, dorsal areas lanceolate; lateral sepals 4–6 mm long, 1 mm wide, lanceolate-oblong, keel winged almost to apex, wing denticulate above; capsule unilocular, ellipsoid to ovoid; seeds numerous, ferrugineous, longitudinally finely ribbed.

Trinidad: Aripo Savanna, February 1851, Crueger s.n. (K, type of *X. glabrata*), 13.2.1959, Richardson 573 (TRIN 17924); Long Stretch Savanna, 17.2.1954, Baker & Simmonds (TRIN 15101).

Trinidad. Suriname and Guyana.

2. ABOLBODA Humboldt & Bonpland

Abolboda Humb. & Bonpl., *Pl. Aequin.* 2: 109, tab. 114 (1809)

Perennial, tufted herbs; leaves linear, sheathing at base; peduncles erect, simple, leafless or with one or more pairs of sheaths, surrounded at base by 1 or more bractlike sheaths; spikes globose, ovoid or ellipsoid; flowers solitary; sepals 2-3, lateral pair exterior, boat-shaped, often keeled, third one interior, membranous, smaller than lateral, or lacking; corolla-lobes 3, bluish, connate into narrow tube, lobes more or less spreading, stamens attached near mouth of corolla tube; staminodia 0; ovary 3-locular, with axile placentas; ovules many in each loculus; style long, filiform, usually with 3 appendages near or shortly above base, apex developed into 3 stigmas, many times divided; seeds oblate or ovoid, subapiculate.

Abolboda americana (Aubl.) Lanjouw in *Rec. Trav. Bot. Neerl.* 34: 492 (1937); Lanjouw in Pulle, *Fl. Surin.* 1: 246 (1938)

Xyris americana Aubl., *Pl. Guian.* 1: 40, 3: tab. 14 (1775)

Leaves 1.5-8 cm long, ca 0.5 mm wide, densely rosetted, linear, membranous or subcoriaceous, acute, subulate apex, broadening towards base, glabrous; peduncle 1.8-9.5 cm long, leafless, subtended at base by 5 semi-transparent, ovate-oblong, acuminate bracts 2-5 mm long, 2-3 mm wide; spikes 4-7 mm long, subturbinately-obconic, 3-5-flowered; lower pair of bracts ca 3.5 mm long, up to 1 mm wide at base, lanceolate-acuminate, margin membranous; flowering bracts up to 6 mm long, imbricate, keeled, subulate-acuminate; sepals 2, keeled, 5-6 mm long, 1.5 mm wide, ovate-oblong, obtuse, broadly margined; corolla tube ca 5 mm long, lobes obovate-elliptic, 5 mm long, 3 mm broad; stamens 3, anthers

linear; ovary truncate-obovate, apex shortly 3-lobed, glabrous; style 6-7 mm long with subclavate appendages just above base, 3-many times divided branches at apex; capsule 3-valved; seeds costate.

Trinidad: Waller Field, 9-23.2.1950, Howard 10515 (A); Aripo Savanna, 23.12.1959, Richardson 778 (K, TRIN 17922), 4.10.1961, Richardson 992 (TRIN); Long Stretch, 4 miles S of Valencia, 20.9.1947, Simmonds 182 (TRIN 13821); Long Stretch Savanna, 2.4.1953, Baker & Simmonds (K, TRIN 14931), 13.7.1976, Adams & Kalloo 14012, 14013 (K, TRIN), 26.7.1977, Philcox, Andrews & Kelly 8056 (K, TRIN), 26.8.1977, Philcox & Maas 8228 (K, P, TRIN).

Guiana and Amazonian tropical South America. Trinidad.

In 1873, Otto Kuntze collected a plant from the Aripo Savanna, Kuntze 1103 (K, TRIN), which he later described as *Xyris triquetra* [Rev. Gen.: 719 (1891)]. This has since been correctly named as *Rhynchospora globosa* Roem. & Schult.

FAMILY 5—MAYACACEAE

By D. PHILCOX

Aquatic or terrestrial herb with little- to much-branched stems, rooting by means of thin filiform rootlets; leaves dense, spirally arranged, linear or filiform, thin, usually emarginate at apex; flowers solitary in leaf axils or clustered at stem apex with short or long pedicels, bibracteolate at base, trimerous, actinomorphic, hermaphrodite; sepals lanceolate, imbricate; petals obovate or suborbicular, free, imbricate; stamens 3, free, episepalous; anthers erect, basifixed, opening by lateral apical cleft, terminal pore or short apical tube; ovary superior, sessile, 1-celled with 3 parietal placentas; style filiform; stigma entire or shortly 3-fid; ovules numerous; capsule 3-valved; seeds few or numerous.

MAYACA Aublet

Mayaca Aubl., *Hist. Pl. Guian.* 1: 42 (1775)

As this is the only genus in the family, the above description is so formed as to act for both.

Mayaca fluviatilis Aubl., *Hist. Pl. Guian.* 1: 42, t. 15 (1775);
 Griseb., *Fl. Brit. W. Ind.*: 526 (1864); Fawc., *List Jam. Pl.*:
 43 (1893); Lanjouw in Pulle, *Fl. Surin.* 1: 250 (1938);
 Adams, *Fl. Pl. Jam.*: 40 (1972)

Aquatic or amphibious, moss-like herb; stems few- to many-branched, densely covered with linear-leaves 3-5(-7) mm long, up to 0.5 mm wide, 1-nerved, obtuse to emarginate at apex or very rarely bidentate; pedicels 2-5(-7) mm long, slender; bracteoles 2 mm long, 1-1.3 mm wide, posteriorly connate at base, subtransparent, membranous; sepals 3.5-4(-4.5) mm long, about 1.2 mm wide at base, lanceolate, obtuse at apex, glabrous to minutely ciliate, 3-nerved, median nerve prominent; petals ca 3.5 mm long, 2 mm wide, obovate-spathulate, white; filaments about 1 mm long; anthers ca 0.7 mm long, 0.4 mm broad, ellipsoid, opening with apical clefts; ovary ovoid; style 1 mm long; capsule up to 5 mm long, 2 mm broad, pale brown; seeds few, subglobose, reticulate, pale brown.

Trinidad: without locality, Cruieger s.n. (K), 1.3.1853, Finlay (TRIN 1805); near W entrance to Fort Road, Churchill-Roosevelt Highway, 11.10.1947, Simmonds 186 (TRIN 13808); O'Meara Savanna, May 1848, Purdie 52 (K), 22.3.1921, Britton & Britton 2490 (GH, NY); Piarco Savanna, July 1848, Purdie 51 (K), S of D'Abadie, 18.3.1920, Britton & Hazen 740 (GH, K, NY); Aripo Savanna, 14.4.1921, Britton & Britton 2939 (NY, TRIN), February 1976, Kalloo 1050 (TRIN 22045), 28.7.1976, Barnard, Jones & Crane (TRIN 21598), 18.7.1977, Adams 14294 (TRIN 22036), 24.8.1977, Philcox & Philcox 8225 (K), 1.5.1979, Philcox & Stoelzel 8360 (K, TRIN), 8362 (K, TRIN); about $\frac{1}{2}$ mile W of milepost 23 $\frac{1}{2}$, Long Stretch road, 31.3.1979, Philcox & Phillips 8310 (K); Madras Settlement road, Baker & Simmonds (K, TRIN 15100).

Southern United States, West Indies, Central America, Guiana and Brazil.

FAMILY 6—COMMELINACEAE

By D. R. HUNT

Annual or perennial herbs, often tuberous-rooted or rooting adventitiously and frequently subsucculent, creeping, decumbent or erect, rarely scandent, bromeliiform or acaulous; leaves simple, entire, with basal membranous often nervose tubular sheath, margins of young leaves involute, sheath sometimes perforated by the axillary shoot or inflorescence; flowers actinomorphic or zygomorphic, bisexual or rarely polygamous, in 1-several-flowered bracteolate cymes or cincinni often aggregated into panicles, abbreviated into clusters or fused in pairs, sometimes subtended by 1 or 2(-3) folded boat-shaped bracts similar to or differentiated from the leaves; sepals 3, usually free, imbricate, equal or sub-equal, rarely united, often boat-shaped, hyaline, rarely accrescent and fleshy in fruit; petals marcescent, 3, rarely 1, much reduced or absent, free, imbricate, sometimes clawed at base, rarely connivent or connate into a slender tube, blue, pink or white, rarely yellow, orange or brown; stamens 6 or fewer, hypogynous or epipetalous, all similar and equal or subequal or variously differentiated; filaments usually free, rarely some united, glabrous or clothed with moniliform hairs; anthers basifixed, loculi 2, opening by longitudinal slits or rarely by an apical pore, contiguous or separated by a broad connective; ovary superior, 3- or rarely 2-locular; style terminal, simple; stigma terminal, capitellate, or 3-lobulate and papillose, or penicillate; ovules (1-)2-several in each loculus, axile, orthotropous to anatropous; fruit a loculicidally dehiscent capsule or sometimes indehiscent, dry or fleshy; seeds endospermous with rugose, ridged or muricate testa, exarillate or rarely arillate; hilum punctiform to linear, position of embryo marked by a callosity (embryotega).

The family is mainly native to tropical, subtropical and warm temperate regions and has numerous species of value in horticulture, especially in the genus *Tradescantia* sens. lat., but is otherwise of minor economic value.

- 1 Inflorescences subtended and largely enclosed by 1-2 boat-shaped bracts 2

- | | |
|---|-------------------|
| 1 Bracts none or inconspicuous or numerous,
not sheathing | 3 |
| 2 Bracts paired, divaricate, flowers actino-
morphic..... | 1. Tradescantia |
| 2 Bracts solitary (or if 2 or more then not
paired), flowers zygomorphic | 10 |
| 3 Inflorescences axillary, sessile | 2. Callisia |
| 3 Inflorescences terminal, stipitate and/or
pedunculate | 4 |
| 4 Stamens 6, all similar, fertile, opening by
slits | 3. Gibasis |
| 4 Stamens dimorphic, 2-3 fertile, 2-4 sterile,
opening by slits, or 6 opening by apical
pores | 5 |
| 5 Inflorescences clustered, cymes very short
(and paired), flowers white or pale
pink | 4. Tripogandra |
| 5 Inflorescences solitary or aggregated into
umbels or panicles, cymes relatively lax,
flowers white, purple or blue | 6 |
| 6 Cymes one-sided, elongate, 2-4 in an
umbel | 5. Tinantia |
| 6 Not as above | 7 |
| 7 Annuals, decumbent or creeping, flowers
small, less than 1 cm diam. | 8 |
| 7 Perennials, relatively robust, flowers more
than 1 cm diam. | 9 |
| 8 Creeping, cyme usually solitary, leaves
linear-lanceolate | 6. Murdannia |
| 8 Decumbent, cymes numerous in a panicle,
leaves oblong-ovate..... | 7. Aneilema |
| 9 Tall scrambling herb, inflorescence lax,
flowers blue | 8. Dichorisandra |
| 9 Subcaulous herb, panicle very dense,
flowers white | 9. Palisota |
| 10 Fruit dehiscent, flowers blue | 10. Commelina |
| 10 Fruit indehiscent, flowers white..... | 11. Commelinopsis |

1. TRADESCANTIA *Linnaeus**Tradescantia* L., *Sp. Pl.*: 288 (1753)

Perennial herbs of diverse habit with fibrous or tuberous root-stock; flowers bisexual, actinomorphic, in bifacially paired and fused cincinni subtended and largely enclosed by paired boat-shaped bracts similar to or differentiated from the leaves; sepals 3, free, rarely united, rarely accrescent and fleshy in fruit; petals usually free, sometimes clawed at base, rarely united into a slender tube, blue-violet, purple, pink or white; stamens 6, all similar and equal or subequal, anther-connectives broad, versatile; ovary 3-locular with (1-)2 ovules in each locule, orthotropous to anatropous; stigma capitate; fruit a capsule, seeds with linear or very rarely punctiform hilum and dorsal or lateral embryotega.

1 Flowers white, petals free 2

1 Flowers pink or purple, petals united at base into a slender tube; creeping herb... 1. *T. pendula*2 Stout erect or decumbent herb to 1 m or more tall with evident stem; sepals persistent, becoming fleshy in fruit..... 2. *T. zanonina*2 Bromeliiform herb with short stem and numerous imbricate, linear leaves; sepals marcescent 3. *T. spathacea*1. *Tradescantia pendula* (Schinzl.) D. R. Hunt in *Kew Bull.* 35: 201 (1981)*Zebrina pendula* Schnizl. in *Bot. Zeit.* 7:870 (1849)*Cockroach grass*

Decumbent herb, rooting at the nodes; leaves ovate-oblong to broadly ovate, acute, rounded at base, 4-10 cm long, 1.5-3 cm broad, slightly fleshy, bluish green and often silvery-striped above, usually purplish beneath, nearly glabrous; fertile shoots leaf-opposed, often perforating the sheath of the subtending leaf, peduncle elongate, up to 10 cm or more long, bracts unequal, imbricate, the outer longer, 2-5 cm long, the inner shorter, 1-2 cm

long; bracteoles linear, subulate, ca 3 mm long, chaffy brown; pedicels to 3 mm long, calyx 5–8 mm long, irregularly lobed, tubular below, white; corolla tube up to 10 mm long, 1.3 mm in diameter, white; lobes ovate, 5–10 mm long, 3–7 mm broad, purplish pink or more rarely violet-blue; stamens epipetalous, filaments 3–5 mm long, bearded, anther-connective to 1 mm broad, white; ovules 2 in each locule; seeds with punctiform hilum and more or less lateral embryotega.

Native to Mexico, widely cultivated and naturalized, very variable. Also widely cultivated is *Tradescantia pallida* (Rose) D. R. Hunt cv. "*Purpurea*" with purplish, linear-lanceolate leaves and pink flowers.

Trinidad: North Post to Maqueripe, 22.3.1920, Britton, Hazen & Mendelson 894 (GH, NY); Centeno, March 1959, Ndum (TRIN 20383); Non Pareil Estate, near Sangre Grande, 8.9.1952, Simmonds (K, TRIN 14771); Tabaquite, March 1913, Druce s.n. (OXF), 1919, Broadway s.n. (GH, K, NY).

2. *Tradescantia zanonía* (L.) Sw., *Fl., Ind. Occ.* 1:604 (1797);

D. R. Hunt in *Kew Bull.* 35:201 (1981)

Commelina zanonía L., *Sp. Pl.*: 41 (1753)

Campelia zanonía (L.) Kunth in *Nov. Gen. Sp.* 1:264 (1816)

Stout erect or decumbent herb to 1 m or more tall, often unbranched; leaves crowded towards top of stem, lanceolate to oblanceolate, acuminate at apex, cuneate and sub-petiolate at base, up to 35 cm long and 8 cm wide, membranous, not fleshy, dark green above, paler green or silvery beneath, nearly glabrous; inflorescences axillary, often perforating the sheaths of the subtending leaf, simple or branched, up to 20 cm long; bracts subequal to unequal, 2.5–6 cm long, 1–2.5 cm broad; bracteoles small, 1–3 mm long; pedicels short, up to 6 mm long, unequal sepals cucullate, especially the upper, 3–5 mm long, accrescent with the pedicel, purplish-black enclosing the fruiting capsule; petals free, broadly

obovate-quadrate, 6–10 mm long, 5–8 mm broad, usually white; stamens free, filaments 4–8 mm long, barbate or glabrous, anther-connective sagittate; seeds with linear hilum and sub-lateral embryotega.

Mexico to Brazil; W. Indies.

Trinidad: Heights of Aripo, 10–26.1.1922, Broadway (K, NY, TRIN 9922), 11.4.1922, Broadway (TRIN 10518), 25.3.1934, Bruins-Lich (TRIN 13003), 500 m, 16.2.1947, Simmonds 66 (K, TRIN 13827), 700–750 m, 17.8.1959, Webster & Miller 9729 (TRIN 19234).

3. *Tradescantia spathacea* Sw., *Prodr.*: 57 (June/July, 1788)

Rhoeo spathacea (Sw.) Stearn in *Baileya* 5(4): 198 (1957)

R. discolor (L'Hérit.) Hance ex Walp., *Ann.* 3: 660 (1852–3)

T. discolor L'Hérit., *Sert. Angl.*, 8, t. 12 (late 1788 or Jan. 1789)

Erect herb with short stem to about 20 cm; leaves imbricate, crowded, narrowly linear-lanceolate, acuminate, scarcely narrowed above the sheath, 20–35 cm long, 3–5.5 cm broad, fleshy, glabrous, green on both surfaces or more commonly dark bluish-green above and purple beneath; inflorescences axillary, peduncle usually short, 2–4.5 cm long, simple or branched; bracts deeply boat-shaped, broadly ovate, 2–4.5 cm long, 2.5–5 cm broad; flowers numerous, scarcely exerted from the bracts; bracteoles membranous, transparent; pedicels ca 1.5 cm long, recurved in fruit; sepals ovate-lanceolate, 3–4 mm long, pale green; petals free, very broadly ovate, 5–8 mm long, 5–7 mm broad, white; stamens free; filaments 4–7 mm long, bearded below, anther-connective broadly obdeltate; ovules solitary in each locule; seeds oblong-ellipsoid with linear hilum and sub-lateral embryotega.

Mexico, Guatemala, Belize, native or naturalized in Cuba in the W. Indies. Widely cultivated.

Trinidad: without locality, Fendler 860 (E, K, NY); Chaguaras, 20.3.1920, Britton & Hazen 820 (GH, NY); Point Gourde, 14.4.1975, Philcox & Andrews 7654 (K), 28.7.1977, Philcox 8079 (K, TRIN); Five Islands, 27.5.1924, Riley 222 (K).

2. *CALLISIA* Loefling

Callisia Loefl., *Iter. Hisp.*: 305 (1758); Moore in *Baileya* 6: 135-147 (1958)

Perennial herbs; flowers actinomorphic, bisexual, typically in sessile fascicles (each a fused pair of abbreviated cymes) in the axils of upper leaves, these normal or reduced almost to the sheath; sepals 3-2, usually hyaline; petals 3-2, white or pink; stamens 6 or 3-1, filaments glabrous; anther-connectives usually broad, versatile; stigma papillose or penicillate; ovary 3-2-locular, ovules 2 in each locule; fruit a small capsule, seeds with punctiform hilum and dorsal embryotega.

Callisia repens L., *Sp. Pl.* ed. 2, 62 (1762)

Slender-stemmed prostrate herb, rooting at the nodes and forming mats; leaves ovate, acute, rounded to subcordate at base, sessile, usually 1-4 cm long, 1-2 cm broad, fleshy, pale green, glabrous, margins ciliate; flowering branches usually ascending, the leaves progressively smaller, the flower-clusters barely exerted beyond the sheaths; sepals 3, linear-lanceolate, 2-3 mm long, green, minutely pubescent; petals 3, oblong, slightly shorter than the sepals, colourless, hyaline; stamens 3, exerted, ca 6-8 mm long; stigma penicillate.

Tropical America.

Trinidad: Chacachacare, 20.2.1848, Crueger (K, TRIN 471); Monos, plants cultivated in Botanic Garden, 18.11.1868, Finlay (TRIN 828); St Augustine, I.C.T.A., cultivated, November 1958, Shepherd (TRIN 15696, 15697).

3. *GIBASIS* Rafinesque

Gibasis Rafin., *Fl. Tell.* 2: 16 (1837)

Annual or perennial herbs, creeping, decumbent or tufted, mostly with root tubers; flowers actinomorphic, bisexual, borne in solitary abbreviated ebracteate cincinni aggregated in pairs or umbels; sepals and petals 3, free; stamens 6, equal, anther-connectives broadly triangular, versatile; ovary 3-locular, with 2 ovules per loculus; stigma capitellate; fruit capsular; seeds with elongate-punctiform to linear hilum and dorsal embryotega.

Gibasis geniculata (Jacq.) Rohw. in *Abh. Auslandsk.* 61(C.18): 143 (1956)

Tradescantia geniculata Jacq., *Select. Stirp. Am.*: 94, t. 64 (1763)

Aneilema geniculata (Jacq.) Woodson in *Ann. Missouri Bot. Gard.* 29: 147 (1942)

Perennial herb with creeping decumbent stems geniculate and rooting at the lower nodes; leaves ovate or oblong-ovate, often some unequal-sided, acute at apex, rounded to cordate at base, sessile, 3–10 cm long, 1.5–3 cm broad, slightly fleshy, dark glossy green above, tinged purple below, villous; cincinni paired but individually stipitate, stipites very slender, 1–2 cm long, villous with gland-tipped hairs; pedicels 4–10 mm long, with gland-tipped hairs; sepals oblong-lanceolate, boat-shaped, 2.5–3 mm long, 1 mm broad, glabrous or almost so, green; petals ovate, 3–3.5 mm long, 2–2.5 mm broad, white; stamens 2.5–3 mm long, filaments bearded at base; style equalling the stamens.

Widespread in tropical America.

Trinidad: without locality, Fendler 862/1 (K, NY); Gulf Islands, June 1845, Crueger s.n. (K); Chacachacare, 22.4.1866, Finlay (NY, TRIN 1989); Dr. Neilson's Island (?Nelson Island) (TRIN 474); Staubles to Tetrion Bay, 12.7.1927, Williams (TRIN 11661); Maraval, January 1893, Alexander (TRIN 5421), 5.4.1968, Sastre 346 (A, K); Maracas, 2.2.1857, Crueger (K, TRIN 465); Orinola Trail, Trace to El Tucuche, 4.3.1920, Britton & Hazen 257 (GH, K, NY, TRIN), up to ca 500 m, 2.2.1947, Simmonds 59 (K, TRIN 13826); El Tucuche, 2.8.1976, Adams & Kalloo 14063 (K, TRIN 21585), 4.4.1920, Freeman & Britton (TRIN 9108); Arima Valley road, ca 180 m, 24.3.1959, Cowan & Simmonds 1190 (GH, NY, TRIN 16123); Morne Bleu, Arima, 27.1.1920, Freeman (TRIN 9577); Aripo, March 1897, Alexander (TRIN 6272); near the Oropuche Cave, 1.2.1948, Simmonds 268 (TRIN 14171); Oropuche Local road *via* Valencia, milepost 2½, 7.5.1926, Broadway 6267 (K); San Juan Estate, Montserrat Hills, 26.2.1947, Simmonds 75 (TRIN 13825); road to Mayaro, 13.3.1866,

Finlay (TRIN 1990); La Fortune Trace, Moruga, 11.2.1916, Broadway (TRIN 7594); Las Hermanas, 29.4.1958, Simmonds (K, NY, TRIN 15483); Todd's Road Railway, 30.1.1917, Broadway s.n. (TRIN).

Tobago: Mason Hall, riverside, 3.3.1913, Broadway 4394 (E, GH), 6.5.1913, Broadway 4654 (K); Roxborough-Parlatuvier road, 25.10.1937, Sandwith 1919 (K, NY); Pigeon Hill, 7.4.1959, Cowan & Forster (TRIN 16277).

4. *TRIOGANDRA* Rafinesque

Tripogandra Rafin., *Fl. Tellur.* 2: 16 (1837); Handlos in *Rhodora* 77: 213-333 (1975)

Annual or perennial herbs, fibrous-rooted, erect or trailing, rarely scandent; flowers bisexual, zygomorphic, in bifacially paired and fused cincinni not subtended by evident bracts but borne on a common peduncule, these pedunculate double-cincinni solitary or variously clustered or aggregated; sepals 3, free; petals 3, free, white or pink; stamens 6, dimorphic, the outer whorl usually fertile, shorter, filaments glabrous or bearded, with narrow connective, the inner whorl fertile or staminodal, longer, filaments curved to be erect in front of the upper petal, glabrous or variously bearded, connective various; ovary 3-locular with 2 ovules in each loculus; stigma capitellate or capitate; fruit capsular; seeds with punctiform to linear hilum and dorsal embryotega.

1 Longer stamens bearded 2

1 Longer stamens glabrous 3. *T. glandulosa*

2 Leaves usually ovate; sepals pilose;
petals less than 3.5 mm long (Tobago) ... 1. *T. multiflora*

2 Leaves usually narrowly ovate; sepals
glabrous; petals 3.5-6 mm long..... 2. *T. serrulata*

1. *Tripogandra multiflora* (Sw.) Rafin., *Fl. Tellur.* 2: 16 (1837)

Tradescantia multiflora Sw., *Prod.*: 57 (1788)

Tradescantia multiflora Sw., var. *tobagensis* Urban, *Symb. Ant.* 7: 174 (1912)

Perennial herb, trailing and rooting at nodes, flowering stems erect to 80 cm, leaves narrowly to broadly ovate, apex acute, base oblique to 8 cm long and 3 cm broad, usually glabrous; inflorescences numerous, terminal and in the upper leaf-axils; peduncles to 3.5 cm long, usually pilose; pedicels 1.5–4 mm long, more or less pilose; sepals 2–4 mm long, usually pilose, often green with red base, petals ovate, 1.5–4 mm long, 1–2 mm broad, white in our area, elsewhere white or pink; longer stamens bearded, shorter glabrous; seeds usually 1.0 mm long or less, grey or brown, minutely pitted.

The Tobago plant is atypically small, but does not merit varietal status, according to Handlos.

Jamaica, Costa Rica, W. tropical S. America to Argentina.

Tobago: Mason Hall, 19.10.1937, Sandwith 1865 (K, NY); above waterfall, Hillsborough Road, ca 200 m, 5.6.1975, Philcox & A. Raynal 7919 (K, P, TRIN); Speyside, 13.8.1958, Purseglove P 6362 (K, TRIN 17423); point opposite Melville Island, 25.10.1925, Freeman & Williams (TRIN 11408), Cradley, 10.1889, Eggers 5693 (K).

2. *Tripogandra serrulata* (Vahl) Handlos in *Baileya* 17: 33 (1970)

Commelina serrulata Vahl, *Eclogae Amer.* 2: 4 (1798)

?*Tradescantia elongata* G.F.W. Meyer, *Prim. Fl. Essequibo*: 146 (1818)

(*Tradescantia cumanensis* auct., non Kunth)

Perennial herb, trailing and rooting at the nodes, flowering stems erect to 1 m or more; leaves narrowly ovate, apex acute, base oblique, to 13 cm long, 3 cm broad, usually glabrous; inflorescences terminal and in the uppermost leaf-axils; peduncles up to 5 cm long, glabrous; pedicels 1–5 mm long; sepals 2.5–5 mm long, glabrous, green with hyaline edge; petals ovate-elliptic, 3.5–6 mm long, 2.3–4.3 mm broad, pink in our area, elsewhere pink or white; seeds (not seen from our area) 1–1.5 mm long, grey or greyish-brown with lighter coloured reticulations.

Until recently this species was identified in our area as *Tripogandra* or *Tradescantia elongata*, a problematical name which has covered several species and whose type is lost. According to Handlos, the plant from E. Venezuela, Guyana, Surinam and Trinidad is sterile and he tentatively includes it under *T. serrulata*, within whose variation he claims it falls.

Mexico to Colombia, Ecuador, Peru, Venezuela, Surinam, Guyana, W. Indies.

Trinidad: Chacachacare, 17.1.1847, Crueger (TRIN 469); St Joseph, Government Farm, 3.7.1929, Williams (TRIN 12226); Arima Valley road, 24.3.1959, Cowan & Simmonds 1180 (TRIN 16122); milepost 11, Arima-Blanchisseuse road, ca 700 m, 11.6.1945, Simmonds 49 (TRIN 13822); Valencia via Arima, 25.3.1920, Broadway (TRIN 8990); milepost 7, Cumaca road, Heights of Oropouche, ca 400 m, 1.2.1948, Simmonds 276 (TRIN 14172); Sangre Grande, 27.12.1978, Laurence s.n. (TRIN); Guaico-Tamana road, 7.5.1953, Baker & Simmonds (TRIN 15005).

3. *Tripogandra glandulosa* (Seub.) Rohw. in *Abh. Auslandsk.* 61(C. 18): 156 (1956)

Tradescantia glandulosa Seub. in Mart., *Fl. Bras.* 3(1): 253 (1855)

Tradescantia umbellata sensu Griseb., *Fl. Brit. W. Ind.*: 524 (1864) non Vahl

Perennial herb, decumbent and rooting at nodes, flowering stems erect to 40 cm; leaves ovate or in our material oblong-elliptic, apex acute, base rounded, to 8 cm long, 3 cm wide, blade glabrous except towards base of midrib below, sheath with villous hairs at orifice and in a line down one side; inflorescences terminal and in the uppermost leaf axils; peduncles to 1.5 cm long, glabrous below, glandular-pilose at apex; pedicels 4-5 mm long, glandular-pilose; sepals 3 mm long, glandular-pilose; petals ovate, 4-5 mm long, 2.5-3.5 mm broad; stamens glabrous; seeds (not seen from our area) 0.8-1.4 mm long, light grey to brown, ribbed and minutely pitted.

The above description is largely based on the Trinidad material which is not typical, lacks seeds, and may not be correctly identified. Handlos, however, regards the plant as nearer *T. glandulosa* than any other species and thus accepts the long-standing identification by Rolfe. All the material seen is now more than a century old, but if still in existence the plant should be re-collected and studied in more detail.

Typical *T. glandulosa* occurs from S. Brazil and Bolivia to N. Argentina.

Trinidad: without locality, Fendler 862 (K); Diego Martin, 1899, McLean s.n. (TRIN); St Ann's, August 1858, Crueger 22 (K).

5. *TINANTIA* Scheidweiler

Tinantia Scheidw. in *Allg. Gartenz.* 7: 365 (1839), *nom. cons.*

Annual or short-lived perennial herbs; flowers bisexual or polygamous, zygomorphic, in short or elongate cincinni borne singly or aggregated in pairs, umbels, or rarely verticils; sepals 3, free; petals 3, free, shortly clawed at base in most species, blue, purple or white; stamens 6, diverse, all fertile, free or the upper 3 united at base, anther-connectives narrow; ovary usually 3-locular, with (1-)2-5 anatropous ovules in each locule; stigma capitellate; fruit a capsule; seeds with linear hilum and lateral embryotega.

Tinantia sprucei C. B. Clarke in DC., *Monogr. Phan.* 3: 287 (1881)

Erect annual (?) herb to 60 cm, with fleshy stems; leaves elliptic to oblanceolate, acuminate at apex, cuneate and subpetiolate at base, to 25 cm long and 8 cm broad, rather thin, sparsely pilose or glabrous, margins densely short-ciliate; peduncle 4-13 cm long, bearing an umbel of 2-5 cincinni each 3-5 cm long; bracteoles small, persistent; pedicels 5-10 mm long, minutely pubescent; sepals ca 7 mm long, persistent and somewhat accrescent, glabrous or sparsely hairy, green; petals 3, unequal, upper two longer, all broadly ovate, shorter than the sepals, white, fugacious; stamens

free, upper 3 with short yellow-bearded filaments and yellow anthers, lower 3 with long, glabrous, violet filaments and pale anthers; ovules (1-)2 per locule.

Guyana, Venezuela, Brazil.

Trinidad: without locality, Fendler 861 (E, K, NY); St Ann's, 29.7.1912, Freeman (TRIN 7987); St Augustine, 1.10.1949, Simmonds 404 (K, TRIN 14429); Arima, 1904, Dannouse s.n. (NY, TRIN).

6. MURDANNIA Royle

Murdannia Royle in *Illustr. Bot. Himal.*, 403, t. 95, fig. 3, (1839), *nom. cons.*, Brenan in *Kew Bull.* [7]: 179 (1952)

Annual or perennial herbs; cymes aggregated into panicles or verticils or solitary, flowers zygomorphic; sepals 3, equal, free; petals 3, subequal, free; stamens 3-6, the outer whorl usually fertile, sometimes one staminodal or absent, inner whorl staminodal or rarely 1 or more absent; staminodes hastate or trilobed at apex; capsule subequally 3-valved; seeds with punctiform to linear hilum and dorsal to lateral embryotege.

Murdannia nudiflora (L.) Brenan in *Kew Bull.* [7]: 189 (1952)

Weak, prostrate or decumbent annual herb, rooting at nodes; leaves narrowly lanceolate or linear, rounded-acute at apex, sub-amplexicaul at base, 3-6 cm long, 3-7 mm broad, sparsely hairy or glabrous; cyme usually solitary with ca 5-8 flowers; peduncle 2-5 cm or more long; pedicels ca 3 mm long at anthesis, rigid and 4-5 mm long in fruit, glabrous; sepals 2 mm long, glabrous; petals ca 2 mm long, white, blue or purplish-pink; fertile stamens 2, sterile 2-4, filaments barbate; capsule 3-4 mm long, valves apiculate, persistent.

Introduced to tropical America from Asia and an aggressive weed of lawns, etc. The flowers open from about 11 a.m. to 1 p.m. only.

Trinidad: without locality, Fendler 865 (E, K); Scotland Bay, 16.8.1977, Philcox & Olivier 8191 (K, NY, P, TRIN); Queen's Park, September 1889, Broadway (TRIN 3901); St Joseph Stock Farm, 10.7.1958, Purselove P 6194 (TRIN 15680); St Augustine, I.C.T.A., 5.11.1958, Cruikshank, Haizel & Muchangwe (TRIN 20348), 28.9.1960, Dingle 25 (TRIN 20200), 21.12.1961, Rae (K, TRIN 16656), 7.9.1947, Simmonds 172 (K, TRIN 13831), April 1962, Walsh-Kemmis (TRIN 20233); Waller Field, 19.8.1973, Adams 13614 (K, TRIN 21054); Point Fortin, 22.10.1924, Broadway 5450 (K); Icacos, 17.11.1915, Broadway (TRIN 7402).

7. ANEILEMA R. Brown

Aneilema R. Br., *Prodr.*: 270 (1810); Faden, *Biosystematic study of the genus Aneilema* (Ph.D. thesis, Washington Univ., St Louis, Missouri, U.S.A., 1975)

Annual or perennial herbs of diverse habit with fibrous or tuberous rootstock; cymes variously aggregated into panicles or solitary, flowers zygomorphic; sepals 3, subequal, free; petals 3, subequal, or free, the posticous clawed, the anticus often much reduced; stamens 6-5, the 3 anticus fertile (sometimes the middle one sterile), the 3-2 posticous staminodal, staminodes bifid or bilobed; capsule usually 2-valved; seeds with linear hilum and lateral embryotega.

Aneilema umbrosum (Vahl) Kunth, *Enum.* 4: 71 (1843)

Decumbent perennial herb, rooting at the nodes; leaves lanceolate to ovate, shortly acuminate, more or less abruptly contracted into the subpetiolate base ca 6-10 cm long, 2-3 cm broad; inflorescence a lax terminal panicle 5-9 cm long, the branches with small, persistent cup-shaped bracteoles ca 1 mm long; flowers small, 6-10 mm diam.; upper petals large, white, lower reduced; fertile stamens 2, filaments barbate, anthers blackish; staminodes 3, the posticous with conspicuous yellow antherodes; capsule 3-5 mm long.

Tropical Africa and tropical S. America. The American plant is considered to be closer to var. *ovato-oblongum* (P. Beauv.) Brenan than the type variety though intermediate in some respects.

var. *ovato-oblongum* (P. Beauv.) Brenan in *Kew Bull.* [7]: 200 (1952)

A. ovato-oblongum P. Beauv., *Fl. d'Oware et Benin* 2: 72 (1818), t. 104 (1819?)

A. umbrosum subsp. *ovato-oblongum* (P. Beauv.) J. K. Morton in *J. Linn. Soc. Bot.* 59: 461 (1965), not validly published.

Generally smaller and weaker than the type variety. Leaves 6–8 cm long; panicle *ca* 5 cm long, branch axes 1–2 cm long; sepals *ca* 2.5 mm long; upper petals *ca* 6 mm long including the 2 mm claw, 3 mm broad, lower unclawed, 4 mm long; capsule 3–4 mm long.

Trinidad and tropical S. America.

Trinidad: Pitch Lake. 7.8.1897, Ex Herb. Lehmann. 8852 (K).

8. DICHORISANDRA Mikan

Dichorisandra Mikan in *Del. Fl. Faun. Bras.*, t. 3 (1820)
nom. cons.

Stout perennial herbs, erect or rarely scandent or subcaulous from the shortly rhizomatous base; flowers bisexual, zygomorphic, in terminal or rarely axillary raceme-like panicles; sepals 3, free, unequal, the outermost longest, cucullate, often coloured like the petals; petals 3, free or shortly and indirectly united at the base by fusion with the filaments of the antesealous stamens, violet-blue and often white towards base, or white throughout; stamens 6–5, subequal, or the two whorls more or less unequal; filaments glabrous; anthers contiguous, narrowly oblong, opening by apical pores; ovary 3-locular with several ovules in each locule, stigma punctiform; fruit a capsule; seeds covered with a fleshy orange or red false aril (developmentally part of the outer integument).

Dichorisandra hexandra (Aubl.) Standl. in Standley & Calderon, *List. Pl. Salvad.*: 48 (1925)

D. aubletiana R. & S., *Syst. Veg.* 7: 1181 (1830)

Sprawling or scandent herb 1-5 m long, branched; leaves oblong-elliptic to elliptic-lanceolate, acuminate at apex, rounded or broadly cuneate and subpetiolate at base, mostly 5-10 cm long and 2-4 cm broad, nearly glabrous; inflorescence racemose-paniculate, the axis 4-8 cm long, glabrous to densely pubescent; cymes about 5-12, each subtended by a linear bract, shortly stipitate, and 1-several-flowered; flowers subsessile; sepals 5-8 mm long, glabrous; petals oblong to broadly ovate, 10-13 mm long, 6-10 mm broad, the anterior slightly smaller, purple or violet-blue, margins and base white; stamens 6, subequal; anthers ca 6 mm long, white; capsule subglobose, about 1 cm diam.; seeds orange.

Tropical America.

Trinidad: without locality, Fendler 863 (K), Grisebach s.n. (K); Maraval, 11.10.1846, Crueger (TRIN 475), 1891, Baptiste (TRIN 5445); Caroni South Bank Road, 26.8.1940, Cheesman & Baker 375 (TRIN 13688), near San Rafael, 7.9.1947, Simmonds 169 (K, TRIN 13832); Santa Cruz Valley, Cutuchupano Road, 22.7.1924, Freeman (NY, TRIN 11209); Maracas, Dannouse (K, TRIN 6756), 16.8.1845, Crueger (TRIN 470), San Jose Estate, 3.9.1918, Wood (TRIN 9404); El Tucuche summit, ca 1,000 m, 29.8.1939, Friend 41 (NY); South of Mausica Savannah, 2-2.5 miles S of d'Abadie Post Office, 25.8.1959, Webster 9893 (TRIN 19271); San Fernando, 2.9.1865, Finlay (TRIN 1988); near Siparia Quarry, 3.10.1947, Dale (TRIN 13777); Southern Watershed Reserve, 11.9.1929, Marshall (TRIN 12237), 4.11.1949, Simmonds 431 (K, TRIN 14483); Dibi Valley, 26.8.1892, Broadway & Urich (NY, TRIN 4768); Maqueripe, 18.10.1906, Mrs Rene Tredholm, s.n. (TRIN).

9. PALISOTA *Reichenbach ex Endlicher*

Palisota Reichenb., *ex* Endl., *Gen. Pl.* 125 (1836) *nom. cons.*

Subcaulicous or caulescent perennial herbs, leaves large for the family; flowers bisexual, zygomorphic, borne in lax to dense terete or cylindric panicles; sepals 3, free, unequal, petaloid, the outermost largest, hooded; petals 3, free, blue, pink or white; stamens 6-5, the outer whorl reduced to 3(-2) staminodes, bearded, anther-less, the inner fertile, unequal, the uppermost longest, anthers contiguous;

ovary 3-locular with 2-several ovules in each locule; stigma truncate, papillose; fruit indehiscent; seeds exarillate with punctiform hilum and dorsal embryotega.

Palisota bracteosa C.B. Clarke in DC., *Monogr. Phan.* 3: 133 (1881)

Subacaulous from shortly rhizomatous base and fusiform tubers; leaves narrowly obovate, acuminate at apex, cuneate into a long petiole-like base, to 60 cm or more long and 15 cm broad, membranous, dark glossy green above except for broad, finely greenish-white midstripe, paler beneath, scurfy pubescent, the petiolar base and sheath densely woolly-tomentose; inflorescence the dense cone-like panicle about 5(-12) cm long borne on a stout peduncle 10(-20) cm long, bracts numerous, imbricate, ovate-lanceolate to ovate, the largest 4 cm or more long, 1-2 cm broad, membranous, brown, villose ciliate; pedicels up to 1.5 cm long, slender; sepals and petals oblong, 5 mm long, 1.5 mm broad, white or pink tinged, glabrous; stamens *ca* 4 mm long overall with yellow anthers, posticous filament 3 mm, anther 1 mm, anticus filaments more slender 2.5 mm, anthers 1.5 mm long; staminodes 1.5 mm long; gynoeceium 2.5 mm long; ovary with 2(-1) ovules in locular; fruit a pointed ovoid berry 8-11 mm long, 6-7 mm in diameter, pink or red; seeds 3 mm long.

Native of W. tropical Africa, introduced in Trinidad.

Trinidad: cultivated in the Botanic Gardens, June 1893, Broadway (TRIN 9055), 30.11.1921, Broadway (K, TRIN 9775), 27.2.1957, Simmonds s.n. (K, TRIN).

10. COMMELINA *Linnaeus*

Commelina L., *Sp. Pl.*: 40 (1753)

Perennial herbs, often tuberous-rooted; flowers bisexual or polygamous, zygomorphic, in single or paired (but not united) cymes more or less enclosed by a spathaceous bract, a few species with subterranean, cleistogamous flowers; sepals 3, free, unequal, the outermost cucullate; petals 3, free, usually very unequal, the

lower reduced, the upper two clawed, rarely all equal; fertile stamens 3, anticonous, often dimorphic, filaments glabrous; staminodes 3-2, posticous, with sterile cruciate-quadrifid anthers, filaments glabrous; ovary 3-2-celled, cells 1-2-ovulate; capsule dry, dehiscent; seeds exarillate with linear hilum and lateral embryotega.

- 1 Spathe "open", adaxial margins free;
capsule usually 5-seeded 2.
- 1 Spathe "closed", adaxial margins fused;
capsule 2-3 seeded 3. *C. erecta*
- 2 Plant low, creeping; upper petals usually
less than 5 mm long 1. *C. diffusa*
- 2 Plant robust; upper petals 1 cm or more
long 2. *C. robusta*

1. *Commelina diffusa* Burm. f., *Fl. Ind.* 18, t. 7, fig. 2 (1768)

C. nudiflora sensu Burm. f., *l.c.* 17, non L.

C. longicaulis Jacq., *Coll. Bot.* 3: 234 (1789)

Prostrate to ascending herb, branching and rooting at nodes; leaves lanceolate or ovate-lanceolate, 2.5-6 cm long, 1-2 cm broad, usually obtuse, rounded at base, nearly glabrous; peduncle very short or up to 5 cm long; spathe semi-ovate, acute or acuminate, 8-20 mm long, 5-10 mm broad, glabrous or ciliolate, margins rounded at back, free; cymes 1-3-flowered, the lower usually with male flowers only, the upper with bisexual flowers; sepals 3-4 mm long; upper petals 4-5 mm long, blue, lower much reduced or sub-obsolete, pale blue or whitish; capsule usually 5-seeded, seeds black.

Cosmopolitan weed.

Trinidad: Botanic Garden, 5.6.1889, Broadway (TRIN 3798); San Juan, El Socorro Road, 3.6.1970, Rankin 295 (K, TRIN); St Augustine, I.C.T.A., 30.1.1947, Simmonds 51 (K, TRIN 13829), 6.10.1960, Dingle 43 (TRIN), 12.10.1960, Dingle 50 (TRIN); Oropouche Lagoon, 29.3.1920, Britton, Hazen & Freeman 1137 (GH, K, NY).

Tobago: Plymouth, 26.2.1981, Adams & Baksh 227.

2. *Commelina robusta* Kunth, *Enum.* 4: 52 (1843)

(*C. persicariifolia* sensu Griseb., *Fl. Brit. W. Ind.*: 525 (1864), *non* Delile)

Rather robust herb with erect or sprawling decumbent stems; leaves lanceolate to oblong-lanceolate, acuminate, tapered or rounded and oblique at base, shortly subpetiolate, up to 15 cm long, 2-4 cm broad, nearly glabrous; inflorescences solitary or more often several clustered at top of stem; peduncles usually less than 1 cm long; spathe semi-orbicular, subacute, 1.5 cm long and broad, margins fused adaxially, glabrous or nearly so, soon stiffly papery and finely transversely striatulate; lower cyme with 1-2 usually male flowers, the stipe 2-4 cm long, persistent, pubescent; upper cyme several-flowered, the lower flowers perfect; upper sepal small, 2 mm long, greenish; lower sepals coherent, 4-5 mm long, membranous; upper petals clawed, 1 cm or more long, the limb ca 6 mm broad, bright or pale blue; lower petal small, incurved, whitish; filaments and style reddish, anthers yellow; capsule 5-seeded.

Vegetatively similar to *Commelinopsis glabrata* D. R. Hunt which differs in its indehiscent fruit and white flowers.

Trinidad: Maracas Falls, 20.5.1861, Crueger 59 (TRIN 473), 18.3.1927, Broadway 6781 (K), 1.2.1947, Simmonds 52 (K, TRIN 13828).

3. *Commelina erecta* L., *Sp. Pl.*: 41 (1753)

(*C. virginica* auct. *non* L.)

C. elegans Kunth in H.B.K., *Nov. Gen. Sp.* 1: 259 (1816)

Erect or decumbent herb arising from clustered slender-tuberos roots; leaves lanceolate to ovate-lanceolate, acute or acuminate, rounded at base, 7-10(-15) cm long, 1-3 cm broad, usually glabrous; inflorescences solitary or 2-4 clustered at top of stem; peduncle usually less than 1 cm long; spathe semi-ovate, shortly acuminate, 2-3.5 cm long, 6-12 mm broad, glabrous or hairy, margins fused at back; lower cyme obsolete, upper 3-6-flowered; sepals 4-5 mm long; upper petals pale to deep blue, 1-2.5 cm long, lower much reduced, white; capsule 2-3-seeded, seeds greyish-brown to black, smooth puberulent, 4 mm long.

America, from the southern U.S.A. to Argentina; very variable.

Trinidad: Chacachacare, 17.1.1847, Crueger s.n. (K), 25.1.1921, Broadway (TRIN 10517); Point Gourde, 28.7.1977, Philcox 8082 (K, TRIN); Botanic Garden (TRIN 5777); San Juan to Port-of-Spain, 13.6.1903, Johnston 74 (GH, K); Government Farm, St Joseph, 3.7.1929, Williams (TRIN 12207, 12225), 7.2.1958, Purselove P 6028 (K, TRIN); St Augustine, I.C.T.A., 5.11.1958, Cruikshank, Haizel & Muchangwe (TRIN 20343), 4.10.1963, Lyonga 8 (TRIN 20248); Caura road, ca 2 miles N of Tacarigua, 11.7.1976, Adams 13991 (K, TRIN 21587); Lopinot Road, 31.8.1973, Adams 13768 (K, TRIN 21245); Blanchisseuse, 29.8.1967, Wong 40A (TRIN 19329); East of milepost 38, Coccal road, 20.7.1977, Philcox, Kelly & Ramcharan 8041 (K, TRIN); near Talparo, 20.9.1947, Simmonds 179 (TRIN 13830).

Tobago: Bacolet, October 1889, Eggers 5573 (K); point opposite Melville Island to Charlotteville, 25.10.1925, Freeman & Williams (TRIN 11431).

11. COMMELINOPSIS Pichon

Commelinopsis Pichon in *Not. Syst.* (Humbert) 12: 227 (1945-6)

Perennial herbs; flowers bisexual or polygamous, zygomorphic, in paired (but not united) cymes more or less enclosed by a spathaceous bract; peduncles solitary or aggregated towards the stem apex; sepals 3, unequal, the outermost cucullate; petals 3, free, subequal to all shortly clawed or very unequal, the lower reduced; fertile stamens 3, antecious, filaments glabrous; staminodes 3-2, posticous, with hastate-triangular anthers, filaments glabrous; ovary 3-celled, the upper 1-ovulate, the lower 2-ovulate; capsule indehiscent, coriaceous or crustaceous, red, blue, black or white; seeds usually 5, adhering in a mass to the dissepimenta, exarilate, with linear hilum and dorsal embryotega.

Commelinopsis glabrata D.R. Hunt in *Kew Bull.* 35: 199 (1981)

Commelinopsis persicariifolia sensu Pichon in *Not. Syst.* (Humbert) 12: 227 (1946); Aristequieta in *Bol. Acad. Cienc. Fis. Mat. Nat.* 25: 110 (1966); Howard, *Fl. Lesser Antilles* 1: 434, fig. 92 (1979)

Phaeosphaerion persicariifolium sensu C.B. Clarke in DC, *Monogr. Phan.* 3: 137 (1881); Standley & Steyermark, *Fl. Guatemala*, in *Fieldiana Bot.* 24(3): 21 (1952)

Athyrocarpus persicariifolius sensu Hemsley, *Biol. Centr. Amer.* 3: 386 (1885)

[Non *Commelina persicariifolia* Delile in Redouté, *Liliaceae* 8; t. 472 (1816)]

Coarse erect or decumbent herb with stems to 1 m or more long, rooting at lower nodes; leaves lanceolate or oblong-lanceolate, acuminate, rounded and oblique at base, 8–16 cm long, 2.5–4 cm broad, glabrous or nearly so; sheaths crimson; peduncles 1–4, at stem apex, less than 1 cm long, thick; spathe broader than long, acute, rounded at back, 2–3 cm long, papery, striatulate, margins free, pubescent or glabrous, greenish-white; lower cyme 3–1-flowered, flowers male or absent; upper cyme with 2–10 or more flowers; sepals white; upper petals white, long-clawed, lower short; fertile stamens long; staminodes short; capsule ellipsoidal, 7 mm long, 5 mm diam., white; seeds adhering to the septum, with dorsal embryotega.

Tropical America.

This species has long been confused with *Commelina persicariifolia* Delile, but the type of that name was a plant of unknown origin with an equal-petalled blue corolla. It lacked fruits, but was almost certainly a species of *Commelina*.

Further study is desirable to determine the status of the very robust variant of *Commelinopsis glabrata* which has been collected several times in Trinidad (Alexander, TRIN 6874; Simmonds 76, TRIN 14065; Simmonds 229, K, TRIN 14020).

Commelinopsis glabrata is closely allied to *Commelinopsis rufipes* (Seub.) D.R. Hunt, which has conspicuously rufous-ciliate leaf-sheaths and has been recorded from the mainland only.

Trinidad: without locality, Fendler 864 (K); Hart's Cut, 1900, Alexander (TRIN 6874); Maraval, January 1893, Baptiste (TRIN 5422); El Tucuche, 10.1.1922, Freeman & Williams (TRIN 10091); col between Piedra Blanca and Naranja, ca 600 m, 2.1.1948, Simmonds 76 (TRIN 14065), 9.3.1959, Simmonds (TRIN 15725); Mt Aripo, by the Caves trail, near river-crossing, ca 700 m, 24.12.1947, Simmonds 229 (K, TRIN 14020); Arena Forest Reserve, 16.11.1955, Pena (K, TRIN 15375), 10.12.1926, Broadway 6498 (K); Irois Forest, 24.1.1928, Williams (K, TRIN 11925), 25.1.1928, Broadway 6716 (K, holotype).

FAMILY 7—RAPATEACEAE

By D. PHILCOX

Perennial herbs, usually glabrous; leaves linear to lanceolate, sheathed at base, midrib prominent; inflorescence capitate, umbellate or spicate, involucre or not; flowers hermaphrodite, trimerous with separate calyx and corolla, regular, densely bracteolate, sessile or pedicelled; calyx free or connate, hyaline and membranous at base; corolla tubular with spreading lobes; stamens 6, inserted within corolla-tube and shorter than corolla; anthers linear, basifixed, tetragonous, opening with terminal pores or slits; ovary superior, 3-celled; style simple; stigma minute; ovules few in each cell or solitary; fruit capsular, 3-celled; seeds ovoid or oblong.

RAPATEA Aublet

Rapatea Aubl., *Pl. Guian.* 1: 305 (1775), 3: tab. 118 (1775)

Involucral bracts 2, connate at base enclosing globose inflorescence; flowers usually pedicelled; ovary 3-celled, each with basal ovule, developing to 3-celled, 3-seeded capsule.

Rapatea paludosa Aubl., *Pl. Guian.* 1: 305 (1775), 3: tab. 118 (1775); Griseb., *Fl. Brit. W. Ind.*: 525 (1864); Vittien in Pulle, *Fl. Surin.* 1: 194 (1938)

Leaves linear-lanceolate, long acuminate, narrowed at base into winged petiole; lamina 0.6–1.15 m long, 3–6 cm wide, midrib prominent on both surfaces; petiole (16–)20–25 cm long, 1.5–5 cm wide, folded approximately at midrib, sheath-like at base; scape 25–60 cm long, flattened, winged, 10–15 mm broad above, 5 mm broad below, dark blackish-brown short pubescent especially below inflorescence; involucre of 2 subequal bracts 10–16 cm long, 3.5–5 cm wide at base, broadly lanceolate-ovate, long acuminate, connate at base, subtending capitulum of many, pedicelled flowers; pedicels 10–12(–15) mm long, in axils of small lanceolate bracts; bracteoles 8–12(–14), varying in size from 5 mm long, 2 mm wide to 12 mm

long, 3.5 mm wide, lanceolate, long-mucronate, straw-coloured, densely imbricate; sepals 4 mm long, connate at base forming tube 2 mm long; petals yellow, membranous, connate at base, obtuse, slightly longer than sepals; filaments 3 mm long; anthers 6 mm long with brown 2 mm long appendage bearing anther pore; ovary obovoid, trigonous; style filiform, terminal; capsule 5 mm long, obovate, trigonous, membranous, 3-celled; seeds 4 mm long, 2.5 mm diameter, transversely wrinkled.

Trinidad: without locality, Fendler 868 (K), Purdie s.n. (K); Caroni Swamp, Finlay (TRIN 1500); Guapo, 15.11.1905, Dannouse s.n. (TRIN); Aripo Savannah, 9.8.1973, Adams 13504 (TRIN 21011), Freeman (TRIN 7936), February 1851, Crueger s.n. (K), 8.7.1848, Purdie 110 (K), November 1951, Baker (K, TRIN 14714); Cumuto, 3.11.1929, Broadway 7675 (BM); Arima, Dannouse s.n. (TRIN); Long Stretch, 1.2.1948, Chenery (K, TRIN 14116), April 1948, Chenery s.n. (K), 26.7.1977, Philcox, Andrews & Kelly 8059 (K, P, TRIN); Ortoire-Nariva Windbelt Forest Reserve, 10.1.1977, Ramcharan 118 (TRIN 22106); Caratal Forest, 21.5.1959, Simmonds (K, TRIN 15738).

Trinidad, Venezuela and Colombia; Guiana.