

CUCURBITACEAE

by

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Mostly annual herbs, rarely perennials or shrubs; stems often 5-angled, prostrate or climbing by means of tendrils. Leaves alternate, petiolate, simple and then often palmately-lobed and with a cordate base or palmately compound with the lateral leaflets asymmetrical. Stipules wanting. Tendrils arising beside the petiole, sometimes with a joint, branched or simple, usually coiling in the upper part. Inflorescence consisting of axillary cymes, racemes or panicles, or flowers solitary. Flowers usually unisexual, rarely hermaphrodite, actinomorphic. Receptacle bell-shaped or tubular. Sepals 5, imbricate, free or basally connate. Petals 5, inserted on the rim of the receptacle, free or united, the lobes valvate. Stamens 3, free or variously united; filaments free; anthers free, cohering or confluent into a head, two of them 2-celled, the other one 1-celled. Ovary inferior, or nearly so, (1—2)—3—(4—6)-celled; style short; stigma 3 cleft or 3 lobed. Ovules numerous to 1, placentas parietal. Fruit a berry. Seeds many. Embryo straight; cotyledons large. Endosperm wanting.

About 850 species in 100 genera of tropical and subtropical distribution; a few species in temperate regions.

Key to the genera:

1. Stamens 5, wholly free *Luffa cylindrica* (p. 105)
Stamens 3 2
2. Staminate flowers solitary 3
Staminate flowers in spikes or racemes 4
3. Peduncles of staminate flowers filiform; tendrils simple
. *Momordica* (p. 102)
Peduncles of staminate flowers short; tendrils 2—3-parted
. *Citrullus* (p. 107)
4. Staminate inflorescences fasciculate (or rarely solitary) . *Cucumis* (p. 99)
Staminate inflorescence racemose, spicate or subumbellate at the apex of
a common peduncle 5

5. Stems and tendrils woody; stem trunklike at the base . *Doyerea* (p. 104)
Stems and tendrils herbaceous; stem never trunklike at the base . . . 6
6. Leaves trilobed almost to the base *Ceratosanthes* (p. 101)
Leaves not deeply trilobed 7
7. Leaves broadly ovate-cordate or 5-angular, entire or 3—5-lobed, up to
c. 10 cm long; fruit berry-like, 1.5 × 1 cm . . . *Melothria* (p. 98)
Leaves roundish in outline, broadly cordate-reniform, weak-palmately
5—7-angled or sublobed; fruit dry, oblong to cylindrical or club-shaped,
6—50 cm long *Luffa* (p. 105)

Melothria Linnaeus, Spec. Plant. 35. 1753

Monoecious or rarely dioecious, slender herbs, climbing or prostrate, annual or with perennial rootstocks. Leaves entire or more or less lobed, membranaceous. Tendrils simple or rarely bifid. Flowers small, yellow or white. Male flowers in a raceme or rarely solitary. Receptacle campanulate. Calyx green; sepals 5, tooth-like. Corolla deeply 5-partite. Stamens 3; filaments free; anthers free or cohering, oblong or subglobose, one 1-celled, the others 2-celled, sometimes all anthers 2-celled. Pistillode globose or ring-like. Female flowers: solitary at the base of the male inflorescence. Calyx and corolla as in the male flowers. Stamines 3 or wanting. Ovary ovoid, constricted below the calyx tube; style short, surrounded by the ring-like disk at the base; stigmas 3. Ovules numerous, horizontal. Fruit berry-like, globose or ovoid, pulpy. Seeds ovoid, globose or oblong, usually compressed.

About 60 species in warm and tropical regions.

Melothria guadalupensis (Spreng.) Cogn.

COGNIAUX in DE CANDOLLE, Mon. Phan. 3: 580. 1881; DUSS, Fl. phan. Ant. franç. 309. 1897; URBAN, Symb. Ant. 4: 610. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 382. 1913; BRITTON & MILLS PAUGH, Bahama Fl. 426. 1920; URBAN, Symb. Ant. 8: 694. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 266. 1925; FAWCETT & RENDLE, Fl. Jamaica 5: 255, fig. 97. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 422. 1940; ALAIN, Fl. Cuba 5: 160. 1962; GOODING *et al.*, Fl. Barbados 414. 1965; ADAMS, Flowering plants of Jamaica 503. 1972; — *Bryonia guadalupensis* SPRENGEL, Syst. Veg. 3: 15. 1826; — *Melothria fluminensis* GARDNER, Lond. Journ. Bot. 1: 173. 1842; BOLDINGH, Fl. D.W. Ind. Isl. 1: 195. 1909; URBAN, Symb. Ant. 4: 611. 1911; FAWCETT & RENDLE, Fl. Jamaica 5: 256. 1926; — *Melothria pervaga* GRISEBACH, Fl. Br. W. Ind. Isl. 289. 1860.

Herb with tuberous roots; branches climbing or creeping, much branched, glabrous. Leaves petiolate; blade membranaceous, broadly ovate-cordate or 5-angular, entire or 3—5-lobed, acute or short-acuminate at the apex, cordate or with a broad, deep sinus at the base, 5—10 × 4—7 cm, margin undulate or with a few teeth, very rough above, rough beneath; petiole slender, striate, subglabrous, 2—6 cm long. Tendrils filiform, simple, glabrous or somewhat villous. Male flowers small, arranged into racemes; peduncle filiform, sparse-

pilose, 2—3 cm long, 2—6-flowered; pedicels 2—3 mm long. Receptacle campanulate or suburceolate, pilose, 2.5 × 2 mm. Sepals subulate, 0.5—1 mm long. Corolla yellow, villous, 3—4 mm wide, the lobes ovate-oblong, acute to obtuse at the apex. Anthers narrowly oblong, densely ciliate, 1.7 mm long, connective broad without appendages. Female flowers solitary; pedicel filiform, more or less glabrous, 3—6 cm long. Ovary oblong-ovoid; style short; stigmas bi-lobed, 1 mm long. Fruit ovoid or subglobose, shortly beaked, at first green, marked with 6 pale lines, afterwards becoming red and black-purplish, 1.5 × 1 cm. Seeds obovoid, subacute at the base, winged, 4 × 2.5 mm, whitish.

Tropical continental America, Bahamas, and West Indies.

Common in thickets.

SABA: between Windwardside and Hellsgate, 400 m (Stoffers 3367, fem.fl. May); between Crispine and Small Rendez Vous (Stoffers 3065, male fl. Ap.); Windwardside (Bolding 1933, fl. July); Gain Bay Gut (Suringar s.n., st. Ap. [L]).
 ST. EUSTATIUS: The Quill (Bolding 433, st. June); inner slope of The Quill, 350 m (Bolding 418, st. June).

Cucumis Linnaeus, Spec. Plant. 1011. 1753

Annual herbs, or with perennial rootstocks, generally monoecious; stems trailing or climbing, hispid or scabrous. Leaves deeply incised or angular, dentate or palmately 3—7-lobed. Tendrils simple. Flowers yellow. Male flowers fasciated or rarely solitary. Receptacle campanulate or top-shaped. Sepals 5, subulate, remote. Corolla subcampanulate, 5-parted, its lobes oblong-ovate, acute at the apex. Stamens 3; filaments free, short, inserted near the base of the receptacle; anthers free or cohering, oblong, one 1-celled, the others 2-celled, the cells linear, flexuous or curved, rarely straight, the connective prolonged into a papillose appendage; pistillode represented by a gland. Female flowers: solitary or fasciated. Receptacle, sepals, and corolla as in the male flowers. Staminodes 3, setiform or ligulate. Ovary inferior, globose, ovoid or sub-cylindric; style short, simple; stigmas 3—5. Disc present. Ovules numerous, horizontal, on 3—5 placentas. Fruit of various shapes, usually indehiscent. Seeds numerous, ovate or oblong, compressed.

About 40 species, mostly natives of tropical Asia and Africa, very few in America and Australia.

Key to the species:

1. Leaves deeply 3-lobed with the lateral lobes divided again; corolla 5—7 mm long *C. anguria*
- Leaves suborbicular or reniform-cordate; corolla 8—9 mm long
 *C. dipsaceus*

Cucumis anguria L.

LINNAEUS, Spec. Plant. 1011. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 288. 1860; Duss, Fl. phan. Ant. franç. 309. 1897; BOLDINGH, Fl. D.W. Ind. Isl. 1: 195. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 264. 1909; URBAN, Symb. Ant. 4: 613. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 384. 1913; Fl. D.W. Ind. Isl. 2: 106. 1914; URBAN, Symb. Ant. 8: 697. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 264. 1925; FAWCETT & RENDLE, Fl. Jamaica 5: 262, fig. 100. 1926; QUESTEL, Fl. Isl. St. Bartholomew 193. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 53. 1954; Zakflora 129. 1954; Zakflora 118. 1964; ALAIN, Fl. Cuba 5: 156. 1962; GOODING *et al.*, Fl. Barbados 413. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 139, fig. 47. 1971; ADAMS, Flowering plants of Jamaica 504. 1972.

Monoecious, annual herb; stems stout, branched, trailing or climbing, angular, rough, hispid with long white hairs. Leaves petiolate; blade membranaceous to herbaceous, deeply 3-lobed with the lateral lobes divided again, cordate at the base, the margin sinuate, with small teeth, the lobes obovate, obtuse at the apex, villose to hispid, 5—10 cm long and wide; petiole slender, hispid, 8—12 cm long. Tendrils subglabrous. Male flowers fascicled or rarely solitary; pedicels filiform, 1—2 cm long. Receptacle campanulate, hirsute, 5—7 mm long. Sepals subulate, 2—4 mm long. Corolla yellow, pubescent, 5—6 mm long; lobes ovate, acute at the apex. Stamens 3, free; filaments glabrous, 1—2 mm long; anthers ovate, 2-celled, 2 mm long; connective broad with deeply lobed appendages, its lobes lobulate; pistillode 3-lobed. Female flowers solitary; pedicel stout, hirsute, 5—10 cm long. Ovary oblong, with short tubercles; style 1—2 mm long; stigmas connate, 2 mm long. Fruit ovoid provided with prickles, 6 cm long, pale yellow, indehiscent. Seeds oblong, white, 4—5 × 2—2.5 mm.

Tropical and subtropical America from Texas and Florida southwards; West Indies.

Vernacular names: konkomber, konkomber shimarón (Leeward Group)
pumpkin (Windward Group).

ARUBA: in garden in Savaneta (Stoffers 1597, fl. Jan.); Oranjestad (Suringar s.n., st. Feb. [L]); without loc. (Boldigh s.n., female fl.).

BONAIRE: Soebi Blancoe (Arnoldo 387, st. Jan.).

CURAÇAO: Caracas Baai (Britton & Shafer 3142, fl. & fr. March); Klein Santa Marta (Stoffers 111, fr. Sept.); Noordkant Plantation (Stoffers 162, fl. Oct.); Savonet (Suringar s.n., st. Jan. [L]); Coppermines near Savonet (Suringar s.n., flb. Jan. [L]); Fort Nassau (Suringar s.n., st. Jan. [L]).

SABA: along roads, 200—300 m (Boldigh 1707, fr. July).

St. EUSTATIUS: without loc. (v. Groll-Meyer 156, fl.).

Cucumis dipsaceus Ehrenb.

EHRENBERG in SPACH, Hist. nat. veg. phan. 6: 211. 1838; ALAIN, Fl. Cuba 5: 155. 1962; ARNOLDO, Zakflora 127, fig. 156. 1954; Zakflora 118, fig. 156. 1964.

Monoecious, annual herb; stems prostrate, slender, branched, hispid. Leaves petiolate; blade membranaceous, suborbicular or reniform-cordate, rounded at

the apex, deeply emarginate at the base, 5-veined from the base, 5—10 cm long and wide, margin minutely dentate, 3—5-angular-sublobate, hispid or scabrous; petioles stout, hispid or echinate, 5—12 cm long. Tendrils simple, stout, hispid. Male flowers solitary or fascicled; peduncle filiform, sparsely hirsute, 0.5—1.5 cm long. Receptacle subcylindrical, hirsute with long hairs, 5—6 mm long, and 2.5 mm wide at the top. Sepals subulate, 2 mm long. Corolla yellow, villous, 8—9 mm long, with oblong and obtuse lobes. Stamens 3; filaments slender, glabrous 0.7—0.8 mm long; anthers oblong, 2.5 mm long, connective with slender dilated and bilobate, papillose and long-ciliate, 0.8—1 mm long appendage. Female flowers solitary; peduncle slender, 0.5—1 cm long. Ovary densely hirsute with stiff hairs; style 1—2.5 cm long; stigmas connate. Fruit ovoid-cylindric, pale-yellow, 3—5 × 2—3 cm, armed with slender, soft, 5—7 mm long prickles. Seeds oblong, subacute at the apex and base, 4—5 mm long, 2 mm wide and 1 mm thick.

Native of tropical and subtropical Africa; often cultivated and escaped.

Vernacular names: konkomber marga, konkomber shimarón (Leeward Group).

CURAÇAO: Klein Santa Marta (Stoffers 105, fl. & fr. Sept.); Groot Santa Marta (Arnoldo 1900, fl. Jan.); Cas Cora (Arnoldo 1058, fl. & fr. May); Piscadera (de Wilde 52 A, fr. Feb. [L]).

Ceratosanthes Burm. ex Adanson, *Fam.* 2: 139. 1763

Slender, monoecious or dioecious, climbing herbs, sparsely pubescent or rarely tomentose, with a large, tuberous root. Leaves petiolate; blade 3—5-lobed, rarely trifoliolate. Tendrils simple, slender. Flowers white. Male flowers arranged in a raceme. Receptacle tubular. Sepals 5, tooth-like. Corolla subrotate, 5-partite; its lobes oblong-cuneate or sublinear, deeply 2-fid. Stamens 3, inserted on the tube of the receptacle; anthers sessile, broadly oblong, one 1-celled, the other two 2-celled; connective broad. Pistillode wanting or glandular. Female flowers in racemes, rarely solitary. Perianth as in the male flower. Staminodes 3 or wanting. Ovary spindle-shaped, ovoid or subglobose; style elongate; stigmas 2, deeply bifid. Ovules few or many, horizontal on 2 placentas. Fruit ovoid or oblong. Seeds few or many, roundish, flattened; testa smooth.

About 25 species in tropical and subtropical America.

Ceratosanthes palmata (L.) Urb.

URBAN in FEDDE, *Repert.* 15: 323. 1918; WILLIAMS, *Fl. Trinidad & Tobago* 1: 444. 1940; ARNOLDO, *Zakflora* 130, fig. 152. 1954; *Zakflora* 117, fig. 152. 1964; — *Trichosanthes palmata* LINNAEUS, *Syst. ed.* 10. 1278. 1759; — *Ceratosanthes corniculata* (LAM.) COGNIAUX in DECANDOLLE, *Monogr. phan.* 3: 724. 1881; DUSS, *Fl. phan. Ant. franç.* 309. 1897; BOLDINGH, *Fl. Ned. W. Ind. Eil.* 383. 1913; *Fl. D.W. Ind. Isl.* 2: 105. 1914; — *Trichosanthes corniculata* LAMARCK, *Encycl.* 1: 191. 1783; — *Cerathosanthes tuberosa*

J. F. GMELIN, Syst. 102. 1791; GRISEBACH, Fl. Br. W. Ind. Isl. 289. 1860; JOHNSTON, Proc Bost. Soc. Nat. Hist. 34(7): 264. 1909; — *Trichosanthes tuberosa* WILLDENOW, Spec Plant. 4: 601. 1805.

Stems slender, elongate, angular-sulcate, glabrous; root tuberous. Leaves petio- late; blade 8—15 cm long and wide, emarginate at the base, trilobed almost to the base, lobes lanceolate or sublinear, acute or acuminate at the apex, lateral lobes bi-lobed again, margin entire or slightly undulate, sparsely pubescent or nearly glabrous on both surfaces. Tendrils very slender, glabrous. Male inflores- cence consisting of 5—10-flowered racemes, peduncle slender, glabrous, 10—15 cm long; pedicels filiform, puberulous, 3—8 mm long. Receptacle 12—13 mm long, gradually broadening above to a diameter of about 2 mm. Sepals erect, oblong-lanceolate, 2 mm long. Corolla white-yellow, about 1 cm long. Female inflorescence and flowers as in the male. Fruit narrowly ovoid, acute at the apex, longitudinally striate, pale with dark-green marbling, 3—4 × 1.5—2 cm. Seeds oblong, white, 5—6 mm long, 2 mm wide and 0.7—0.8 mm thick.

Venezuela, Lesser Antilles.

Vernacular names: batata di djuku, plantasia, lenga di chuchubi, batata di zumbi (Leeward Group).

ARUBA: hofje at foot of Hooiberg (Arnoldo 128, fl. & fr. Dec.); calcareous soil near Oranjestad (Boldingh 6224, fl. Dec.).

BONAIRE: Dos Pos (Stoffers 571, fl. Nov.).

CURAÇAO: Mundo Nobo (Arnoldo 2021, fl. Ap.; 1145, fl. & fr. Nov.); Malpais (Stoffers 297, fl. & fr. Oct.; Britton & Shafer 3116, fl. March); road from Cas Chiquito to Veeris Berg (Boldingh 4707, fl. Oct.); road to Veeris (Suringar s.n., fr. Jan. [L]); road to Plantersrust (Suringar s.n., st. Jan. [L]); Hofje of Siberië (Boldingh 5196, fl. & fr. Nov.); St. Patrick (Lens 838, fl. Feb.); Savonet (Suringar s.n., st. Jan. [L]); Seroe Christoffel (Suringar s.n., male fl. Jan. [L]).

Momordica Linnaeus, Spec. Plant. 1009. 1753

Monoecious or rarely dioecious herbs, climbing or prostrate, annual or perennial by rhizomes. Leaves entire, lobed or 3—9-fid. Tendrils simple or bifid. Flowers usually yellow or rarely white; pedicels often with a large bract. Male flowers solitary, corymbose or racemose. Receptacle short, campanulate or funnel- shaped, closed by 2 or 3 oblong, incurved scales. Sepals 5, rounded, ovate or lanceolate. Corolla rotate or broadly campanulate, usually 5-partite; segments obovate or oblong, ribbed. Stamens (2—)3(—5), inserted on the rim of the receptacle; filaments short, free; anthers at first cohering, afterwards free, one 1-celled, the others 2-celled, connective not produced beyond the apex. Pistillode wanting or glandular. Female flowers solitary. Receptacle, sepals and corolla as in the male ones. Staminodes wanting or 3 glands surrounding the base of the style. Ovary oblong or spindle-shaped; style slender; stigmas 3, entire or lobed. Ovules numerous, horizontal, on 3 placentas. Fruit oblong, spindle-shaped

or cylindrical, berry-like, indehiscent or dehiscent with 3 valves from the apex. Seeds few or many, turgid or compressed.

About 60 species, chiefly in Africa; but also several in Asia; a few dispersed through all tropical and subtropical regions.

Momordica charantia L.

LINNAEUS, Spec. Plant. 1009. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 287. 1860; Duss, Fl. phan. Ant. franç. 307. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 265. 1909; URBAN, Symb. Ant. 4: 612. 1911; BOLDINGH, Fl. Ned. W. Ind. Eil. 383. 1913; Fl. D.W. Ind. Isl. 2: 105. 1914; BRITTON & MILLSPAUGH, Bahama Fl. 425. 1920; URBAN, Symb. Ant. 8: 696. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 262. 1925; FAWCETT & RENDLE, Fl. Jamaica 5: 258, fig. 99B, C, D. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 438. 1940; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 92, fig. 140. 1954; ALAIN, Fl. Cuba 5: 154. 1962; GOODING *et al.*, Fl. Barbados 415. 1965; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 141, fig. 140. 1971; ADAMS, Flowering plants of Jamaica 504. 1972.

Monoecious herb; stems climbing, branched, puberulous or tomentose, especially the younger parts; branches up to 2 m long. Leaves petiolate; blade reniform to suborbicular in outline, 5—12 cm long and wide, deeply 5—7-lobed, the lobes ovate-oblong, toothed or lobulate, glabrous or pubescent; petioles subglabrous or villous, 2.5—7 cm long. Tendrils slender, simple, pubescent, with a reniform bract at some distance above the insertion. Male flowers solitary. Pedicel slender, glabrous or short-villous, 5—15 cm long; bract reniform or orbicular-cordate, entire, mucronate at the apex, slightly pubescent, 5—15 mm wide attached at or below the middle of the peduncle. Sepals ovate-lanceolate, acute, 4—6 × 2—3 mm. Corolla yellow, its segments obtuse or emarginate at the apex, 1.5 × 0.8—1.2 cm. Female flowers solitary; pedicel 5—10 cm long with bract near the base; bract as in the male flowers. Receptacle, sepals and corolla as in the male flowers. Ovary spindle-shaped, mucronate. Fruit oblong, orange-yellow, tuberculate, 8—30 cm long, opening by 3 valves from the apex. Seeds compressed, slightly 3-lobed at both ends, 13—16 × 7—9 mm, covered with pulp of crimson colour.

Native of the Old World tropics; introduced into America.

Common in hedges, waste places, etc.

Vernacular names: batata di djuku, batata di zumbi, lenga di chuchubi, plantasia (Leeward Group).

ARUBA: Fontein Plantation (Stoffers 1691, flb. Jan.).

CURAÇAO: without loc. (Boldingh 5084, flb. & fr.).

SABA: The Bottom (Arnoldo 911, fl. & fr. Aug.); between Windwardside and Hellsgate, 400—450 m (Stoffers 3369, fl. May); along roads, 200—300 m (Boldingh 1706, fr. July); along roads between The Bottom and Windwardside, 200 m (Boldingh 1325, fl. July); between The Bottom and St. John, 300 m (Stoffers 3273, fl. May); Ladder Gut, 100—200 m (Stoffers 2764, fl. Ap.); Great Rendez

Vous, 475 m (Stoffers 3092, fl. Ap.); Fort Bay Gut, 100—200 m (Stoffers 2868, fl. Ap.).

ST. EUSTATIUS: along roads in Oranjestad (Stoffers 3895, flb. July; Boldingh 562, fl. & fr. June); on slope of the cliff near Oranjestad (Boldingh 58, st. May); without loc. (v. Groll-Meyer 42, flb.; 35, flb.).

ST. MARTIN: hills along northern side of Cul de Sac, 75—100 m (Stoffers 2627, fl. March).

Doyerea Grosourdy, Med. Bot. Criollo 2: 201. 1864

Dioecious herbs, usually climbing or sometimes prostrate, roughish or sub-tomentose. Leaves petiolate, rounded or cordate, entire, lobed or palmate. Tendrils simple or rarely bifid or wanting. Flowers crowded in fascicles. Receptacle shallow. Sepals 5, short. Corolla 5-partite; petals ovate-oblong, not emarginate. Stamens 3, free, inserted on the receptacle; filaments short; anthers glabrous, one 1-celled, the others 2-celled; anthers completely united; connectives narrow and shortly produced beyond the apex. Pistillode minute. Female flowers sessile or shortly pedicellate, solitary or rarely racemose. Receptacle, sepals, and corolla as in the male flowers. Staminodes wanting or small. Ovary ovoid, 2—3-locular; style erect; stigma 3- or 2—4-lobed. Disc wanting. Ovules horizontal. Fruit a berry, fleshy, ovoid or elliptical or rarely globose, obtuse or beaked at the apex, opening transversely at the base. Seeds few, obovoid or subglobose.

About 30 species in tropical and subtropical regions, mostly in Asia and Africa.

Doyerea emetocathartica Gros.

GROOURDY, Med. Bot. Criollo 2: 338. 1864; ADAMS, Flowering plants of Jamaica 503. 1972; — *Corallocarpus emetocatharticus* (GROS.) COGNIAUX, Bull. Soc. Bot. Belg. 30: 279. 1891; URBAN, Symb. Ant. 4: 611. 1911; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 267. 1925; WILLIAMS, Fl. Trinidad & Tobago 1: 439. 1940; ARNOLDO, Zakflora 127. 1954; Zakflora 117. 1964.

Climbing herb, stems stout, elongate, branched, glabrous, jointed at the nodes, branches short-tomentose when young. Leaves petiolate; blade orbicular or broadly triangular in outline, 4—9 × 5—10 cm, sinus broad and rounded, angular or deeply 3-lobed; lobes undivided, ovate or ovate-oblong, obtuse at the apex, margin remotely denticulate, appressed pubescent or glabrescent above, whitish woolly-tomentose beneath; petiole slender, densely short-villous, 1—3 cm long. Tendrils stout, terete, glabrous. Flowers all sessile, densely clustered. Male flowers: receptacle short-villous, 0.6—0.7 mm long and wide. Sepals erect, narrowly triangular, 0.5 mm long. Corolla shortly pilose, segments ovate-oblong, acute at the apex, 1 mm long. Female flowers ovary oblong, longitudinally striate, densely villous at the base. Fruit sessile, narrowly ovoid, rounded at the base, subacute at the apex. Seeds 6—8, 10—12 × 6 mm, ovoid,

slightly compressed, obliquely truncate at the base, 4.5 mm long, 3 mm wide, 2—2.5 mm thick.

Mexico to Venezuela and Colombia, Puerto Rico, St. Thomas, St. Croix, Guadeloupe, Gasparie Island, Margarita, Bonaire, and Curaçao.

In hedges.

BONAIRE: along road from Kralendijk to Rincón (Stoffers 536, fr. Nov.).

CURAÇAO: Groot Santa Marta (Arnoldo 1211, st. Sept.).

Luffa Adanson, Fam. 2: 138. 1763

Monocious, annual, climbing herbs, glabrous, rough or pubescent. Leaves usually 5—7-lobed. Tendrils bi- to many-branched. Inflorescence consisting of bracteolate racemes of male and female flowers or the female flowers solitary. Flowers pedicellate. Receptacle campanulate or top-shaped. Sepals 5, triangular or lanceolate. Corolla yellow, rotate; petals free, obovate or obcordate. Stamens 3 (or 4—5); filaments free or 2 united, often dilated and villous below; anthers, if 3, one 1-celled and the others 2-celled, if 5 then all 1-celled; cells linear, arcuate to strongly coiled. Pistillode glandular or wanting. Female flowers solitary. Receptacle prolonged above the ovary. Sepals and petals as in the male flowers. Staminodes 3 (or 4—5). Ovary long, furrowed, cylindric or angular; style columnar; stigmas 3, fleshy, often bilobate. Ovules numerous on 3 placentas, horizontal. Fruit dry, oblong or cylindric, smooth or echinate, fibrose inside, 3-locular, opening by a lid at the apex, style persistent. Seeds many, oblong, compressed.

Eight species, of which one in tropical America, the rest natives of the tropics of the Old World, but cultivated or subsponaneous in the tropics of the New World.

Key to the species:

1. Fruit ovoid-oblong, 10-ribbed, c. 6 cm long; leaves broadly cordate-reniform, 10—12 cm long and wide, angled or 3—5-lobed *L. operculata*
Fruit cylindrical, club- or spindle-shaped, up to 50 cm long; leaves roundish in outline or weakly palmately 5—7-angled or sublobed, up to 25 cm in diam. 2
2. Leaves roundish in outline; stamens usually 5; fruit cylindrical to spindle- or club-shaped, not ribbed but with 10 dark, longitudinal lines
. *L. cylindrica*
Leaves weakly-palmately 5—7-angled or sublobed; stamens 3; fruit club-shaped, acutely 10-ribbed *L. acutangula*

Luffa cylindrica (L.) Roem.

ROEMER, Syn. Monogr. 2: 63. 1846; Duss, Fl. phan. Ant. franç. 308. 1897; URBAN, Symb. Ant. 4: 613. 1911; Symb. Ant. 8: 697. 1921; BRITTON & WILSON, Sci. Surv. Porto Rico

& Virgin Isl. 6: 263. 1925; FAWCETT & RENDLE, Fl. Jamaica 5: 261. 1926; WILLIAMS, Fl. Trinidad & Tobago 1: 439. 1940; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 86, fig. 127. 1954; Zakflora 128, fig. 155. 1954; Zakflora 118, fig. 155. 1964; ALAIN, Fl. Cuba 5: 153. 1962; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 141, fig. 127. 1971; — *Momordica cylindrica* LINNAEUS, Spec. Plant. 1009. 1753.

Vine, climbing or trailing; stems up to 6 m long, 5-angled, glabrous, rough at the angles. Leaves petiolate; blade herbaceous, roundish in outline, 15—25 cm in diam., cordate at the base, palmately (3—)5—7-lobed, its lobes triangular or lanceolate, acute or acuminate at the apex, rough on both sides; petiole stout, rough, 10—12 cm long. Tendrils usually 3-branched, slightly pubescent. Male and female flowers in the same axil. Common peduncle of the male inflorescence 10—15 cm long, flowers 15—20 in the upper part, pedicels 0.5—2 cm long. Receptacle short, broadly campanulate, not angled, slightly pubescent. Sepals triangular-ovate, not keeled, 1.5 cm long. Petals oblong-cuneiform, rounded or scarcely emarginate at the apex, 2—3 × 1—1.5 cm, yellow, thin and quickly fading. Stamens usually 5 with 1-celled anthers or 3, and then one 1-celled and two 2-celled anthers; filaments slightly villous at the base, 6—8 mm long, anthers 6 mm long. Pedicel of female flower stout, 2—10 cm long. Receptacle 7 mm, prolonged above the ovary. Sepals 1.5 cm long, lanceolate. Petals as in the male flower. Ovary cylindric, not constricted at the top. Fruit spindle-shaped, cylindric or long club-shaped, not ribbed, but with 10 dark longitudinal lines, 15—50 cm long and 6—10 cm broad. Seeds ovate, smooth, flat, 12 mm long and 8—9 mm wide, 2—2.5 mm thick, surrounded by a short wing.

A native of the Old World tropics; cultivated and subsponaneous in the tropics and subtropics of the New World.

Escaped from cultivation.

Vernacular name: serbette di pober (Leeward Group).

***Luffa acutangula* (L.) Roxb.**

ROXBURGH, Hort. Beng. 70. 1814; GRISEBACH, Fl. Br. W. Ind. Isl. 288. 1860; URBAN, Symb. Ant. 4: 613. 1911; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 6: 263. 1925; FAWCETT & RENDLE, Fl. Jamaica 5: 261. 1926; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 86. 1954; ALAIN, Fl. Cuba 5: 154. 1962; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 140, fig. 48. 1971; — *Cucumis acutangulus* LINNAEUS, Spec. Plant. 1011. 1753.

Differing from the preceding species in the following characters. Leaves weak-palmately 5—7-angled or sublobed. Receptacle 5-angled. Sepals keeled, 12 mm long and 6 mm wide. Petals obcordate, emarginate, and mucronulate at the apex, 2 × 2—2.5 cm. Stamens 3; filaments 3—4 mm long, villous at the base. Ovary club-shaped, 10-ribbed, constricted at the apex. Fruit club-shaped, obtuse or shortly acute at the apex, acutely 10-ribbed. Seeds blackish, rough, not winged, bilobed at the base, 11—12 mm long, 7—8 mm broad and 2 mm thick, not margined.

A native of tropical Africa and tropical Asia; cultivated and subsponaneous in all tropical countries.

Escaped from cultivation.

ARUBA: Hofje Fonteijn (Arnoldo 327, fl. Dec.; Stoffers 1699, fl. Jan.).

CURAAO: Wishi (Arnoldo 88, fl.).

Luffa operculata (L.) Cogn.

COGNIAUX in MARTIUS, Fl. Bras. 6(4): 12, t. 1. 1878; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 86. 1954; ARNOLDO, Zakflora 128. 1954; Zakflora 118. 1964; Gekw. en nutt. pl. Ned. Ant. 144. 1971.

Vine, stems up to 3 m long, 5-angled, glabrous. Leaves petiolate; blade herbaceous, broadly cordate-reniform, rough, 10—12 cm long and wide, angled or 3—5-lobed, lobes acuminate at the apex, margin denticulate; petiole slender, more or less roughish, 2—8 cm long. Tendrils long, 2-fid or rarely simple. Male and female inflorescence in the same axil; flowers pale yellow. Peduncle of male inflorescence 5—8 cm long, 6—10-flowered; pedicels 0.5—1.5 cm long. Male flowers: receptacle short, broadly campanulate, slightly villous. Sepals lanceolate, not keeled, about 8 mm long and 3 mm wide. Petals ovate, acute at the apex, 8—10 × 4—5 mm. Stamens 3; filaments dilated, slightly papillose at the base, 2—3 mm long. Female flowers with 0.5—2 mm long pedicels. Receptacle spindle-shaped, slightly villous, muricate. Sepals and petals as in the male flowers. Staminodes small, papillose. Fruit ovoid-oblong, about 6 cm long, beaked, 10-ribbed, angular, spiny; beak slender, 1—2 cm long. Seeds oblong, brown, 9—10 mm long, 4 mm wide and 1.5 mm thick, not margined.

Tropical America from Mexico to Brasil; introduced into Curaçao.

Escaped from cultivation.

CURAAO: Hato (Arnoldo 346, fl. Jan.).

Citrullus Forskål, Fl. aegypt. arab. 167. 1775

Monoecious or dioecious, annual or perennial herbs, smelling of musk; trailing over the ground. Leaves simple, rounded or triangular-ovate, deeply 3—5-lobed, the lobes lobulate or deeply cut. Tendrils 2—3-fid. Flowers solitary, large, yellow. Male flowers: receptacle shallowly campanulate. Sepals 5, narrow, free. Corolla rotate or broadly campanulate, deeply 5-parted, its lobes ovate-oblong, obtuse at the apex. Stamens 3; filaments short, inserted halfway the receptacle; anthers one 1-celled, the others 2-celled, cells linear, flexuous, connective not prolonged. Pistillode glandular. Female flowers: sepals and corolla as in the male flower. Staminodes 3, short, bristle-like or ligulate. Ovary ovoid, 3-locular; style short, columnar; stigmas 3, irregular, replicate. Ovules numerous, hori-

zontal, on 3 placentas. Fruit globose or oblong, fleshy or dry, indehiscent. Seeds numerous, oblong, compressed.

Four species, natives of the eastern Mediterranean region and tropical- and south Africa; cultivated in tropical and subtropical regions.

***Citrullus lanatus* (Thunb.) Matsumura & Nakai**

MATSUMURA & NAKAI, Cat. Sem. et Spor. Hort. Bot. Univ. Imp. Tokyo 30, n. 854. 1916; — *Momordica lanata* THUNBERG, Prodr. Fl. Cap. 13. 1794; — *Citrullus vulgaris* SCHRADER, in ECKLON & ZEYHER, Enum. plant. Afr. austr. 279. 1836; DUSS, Fl. phan. Ant. franç. 310. 1897; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 264. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 383. 1913; Fl. D.W. Ind. Isl. 2: 106. 1914; URBAN, Symb. Ant. 8: 697. 1921; FAWCETT & RENDLE, Fl. Jamaica 5: 264. 1926; QUESTEL, Fl. Isl. St. Bartholomew 193. 1941; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 45, fig. 49. 1954; ALAIN, Fl. Cuba 5: 156. 1962; ARNOLDO, Gekw. en nutt. pl. Ned. Ant. 138. 1971; — *Citrullus citrullus* (L.) KARSTEN, Deutsche Fl. 889. 1882; SMALL, Bull. Torrey Bot. Cl. 25: 606. 1898; — *Cucurbita citrullus* LINNAEUS, Spec. Plant. 1010. 1753.

Annual herb; stems villous and at the top lanata-villous. Leaves petiolate; blade triangular-ovate, membranaceous, rough, 8—20 × 5—15 cm, deeply cut into 3 segments; cordate at the base; segments pinnately or bipinnately cut, lobes with wavy margin or more or less lobulate, obovate, oblong, lanceolate or linear, the terminal lobe acute or acuminate, the other lobes rounded or rarely acute; petiole 6—12 cm long, long-villous. Tendrils stout, bi-fid, pubescent. Male flowers on elongate, villous pedicels, receptacle 4 mm long and wide, villous; sepals narrowly lanceolate 4 mm long; corolla yellow, villous, 2.5—3 cm wide, its lobes ovate-oblong, obtuse at apex; stamens with 1 mm long filaments, dilated at the base; anthers 3 mm long; pistillode cup-shaped, 1 mm long. Ovary woolly; style slender, 1 mm long; stigmas densely papillose. Fruit subglobose or ellipsoid, 15—40 cm long, fleshy greenish or marbled; flesh juicy red. Seeds black, red, or marbled, marginate.

A native of tropical South Africa; cultivated and subsponaneous in tropical regions.

Sometimes to be found escaped from cultivations.

Vernacular names: patia, watermeloen (Leeward Group).

Uses: fruit sweet and edible, cultivated in the islands of the Leeward Group.

ARUBA: plantation near Washington (Stoffers 1525, fl. Jan.).

CURAÇAO: near Willemstad (Went 1092, st. Nov.).