

**ICONES
ROXBURGHIANAE
OR**

**DRAWINGS OF
INDIAN PLANTS**

FASC. VIII



BOTANICAL SURVEY OF INDIA

HOWRAH

1978

(Date of Publication—31st March 1978)

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1. ADENIA HONDALA (Gaertn.) de Wilde in Blumea 15: 265. 1967.

Modecca tuberosa Roxb. Fl. Ind. 3: 134. 1832.

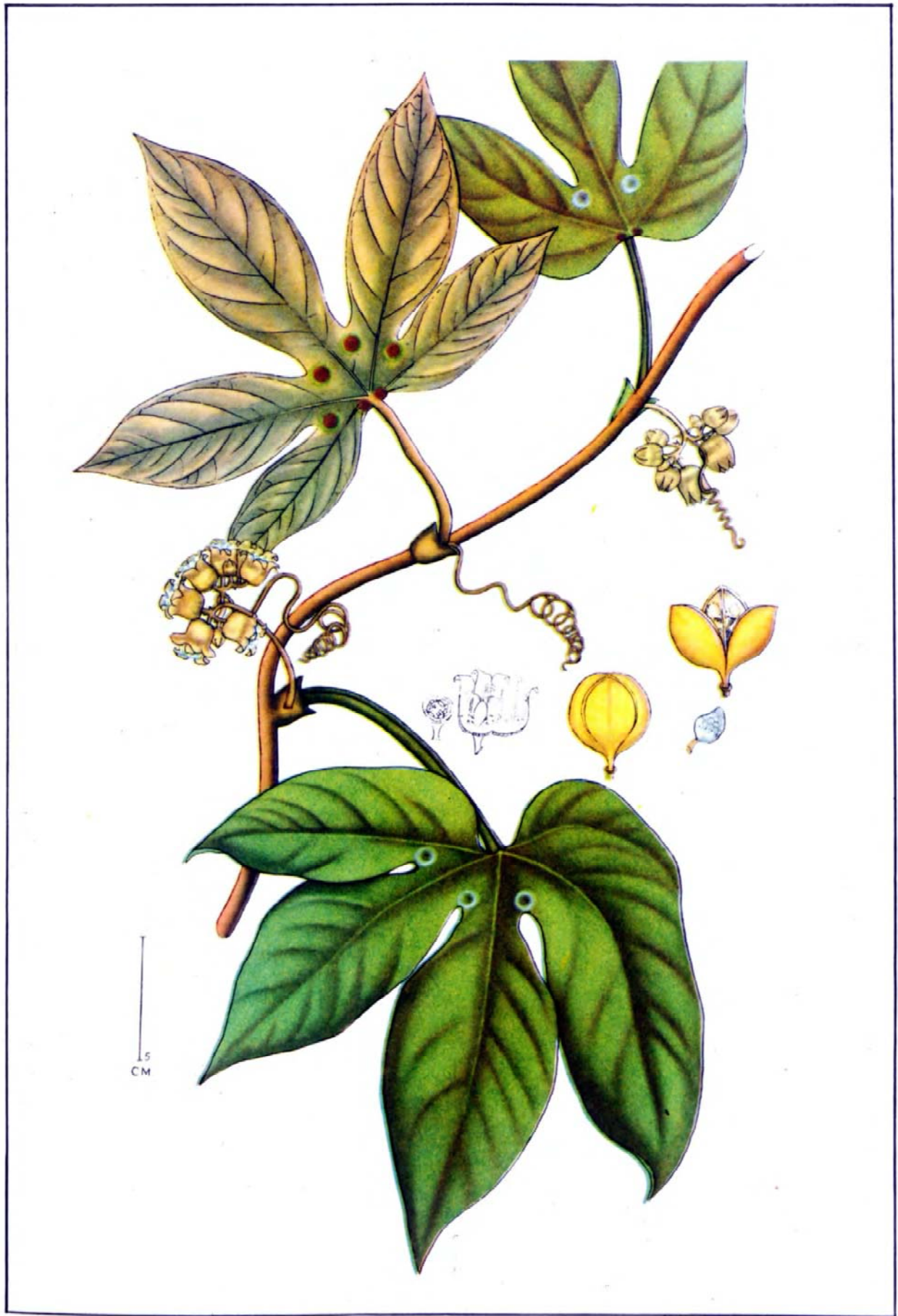
Leaves three, rarely five-lobed: *lobes* sub-lanceolar, apex of the petioles with two glands and one (or an eye) under each sinus. *Capsules* globular.

Modecca. *Rheed. Mal.* viii. t. 20.

A most extensive, perennial, climbing plant, with large, fusiform root, a considerable portion of which is above ground, tapering from the surface of the earth, into the stem, which in a few years becomes ligneous; *younger shoots* cylindric and smooth. From Cochin it was introduced by Mr. Brown into the Botanic garden at Calcutta, where it blossoms during the rainy season.

Leaves alternate, petioled, when the plants are very young simply cordate, often from three to five-lobed (palmate,) but three is by far the most common; *lobes* entire, sub-lanceolate, smooth, rather acuminate; general size from six to eight inches each way. *Glands*, a large yellow one under each sinus and two on the base where it joins the petiole. *Petioles* considerably shorter than the leaves; *base* enlarged into a horn-shaped process on each side, this portion is permanent. *Stipules* none. *Tendrils* springing from the inside of the larger permanent base of the petioles, when not floriferous, simple. *Flowers* pretty large, short-pedicelled, and generally from a small dichotomous corymb on the middle of the tendril. *Calyx* one-leaved, coloured, greenish yellow, of a short, sub-campanulate form, with a short five-parted border. *Petals* five, linear; the *upper half* ciliate, inserted on the tube of the calyx, near its bottom, the whole hid within it. *Nectarial scales* five, alternate with the petals, vaulted, and serving to confine the five anthers. *Filaments* five, their base united into a ring round the base of the pedicel of the germ, and about as long as its pedicels, recurved. *Anthers* small, roundish. I suspect there are male flowers which I have not yet seen, with more perfect anthers. *Germ* superior, short-pedicelled, oval, one-celled; *ovula* numerous, attached to three vertical, parietal receptacles. *Styles* three, recurved. *Stigmas* large, globular. *Capsule* pedicelled, globular, fleshy even when ripe, of a bright glossy yellow, and the size of a crab-apple, one-celled, three-valved, open from the apex. *Seeds* many, attached as in the germ, by short cords, obliquely cordate. *Aril* a laciniate, white membrane, round the base only.

(W. Roxburgh, *Flora Indica* 3: 134. 1832)



ADENIA HONDALA (Gaertn.) de Wilde
(*Modecca tuberosa* Roxb.)

2. MODECCA DUBIA Roxb.

Leaves ovate-oblong, entire, or slightly sub-lobate; two glands at the base.

A native of Sumatra, from thence introduced by Dr. C. Campbell, into the Botanic garden at Calcutta, where one male plant blossomed in February 1808.

Stem and *branches* shrubby, climbing to an extent of some fathoms. *Bark* of the ligneous plants ash-coloured; that of the young shoots smooth and green. *Leaves* alternate, petioled, oblong, obtuse-pointed; some of them slightly three-lobed toward the apex, smooth on both sides, having at the base a large yellow gland on each side, from three to four inches long, and from one and a half to two inches broad. *Petioles* axillary, about an inch long, channelled. *Tendrils* axillary, simple, with two lateral lobes; at the season of flowering, these lobes lengthen into stout, one-flowered peduncles. *Flowers* axillary, pedicelled, small, of a pale greenish yellow, three together on a very short common peduncle, or in pairs from the just mentioned lobes of the tendrils. *Calyx* one-leaved. *Tube* gibbous; *mouth* five-cleft. *Segments* oblong, revolute. *Petals* five, inserted into the calyx, a little below the sinuses of its border, lanceolate, and with the segments of the calyx becoming revolute. *Filaments* five, very short, inserted on a small receptacle in the bottom of the calyx. *Anthers* sagittate. *Germ* none, a slender, sub-rotate body, with a two or three-cleft apex in the centre of the stamina is all that presents itself.

(W. Roxburgh, *Flora Indica* 3: 135. 1832)



MODECCA DUBIA Roxb.

3. HODGSONIA MACROCARPA (Bl.) Cogn. in DC. Monogr. Phan. 3: 349. 1881. (♂)

Trichosanthes heteroclita Roxb. Fl. Ind. 3: 705. 1832.

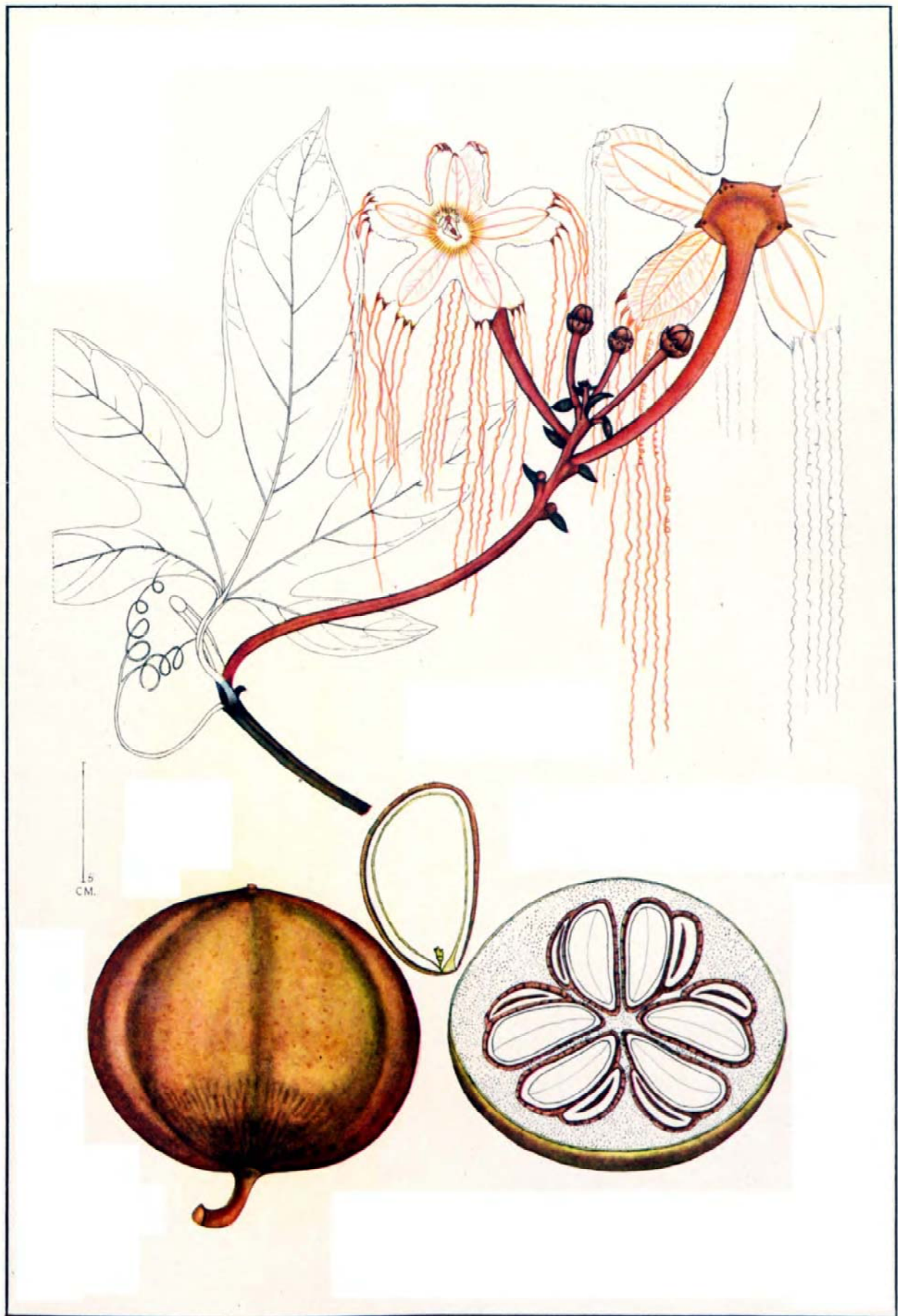
Perennial, scandent. *Leaves* from three to five-lobed; *male flowers* racemed; *female* ones solitary, or racemed. *Pepo* sub-globular, containing as many as six large, two-lobed, nuciform seeds.

Goolur of the natives of the Silhet district.

A native of the eastern parts of Bengal. From Silhet Mr. Robert Keith Dick, the Judge of that district, sent plants to the Botanic garden in 1805, where they blossom during the greater part of the year, and the seed ripens in October. Now, 1811, the original plants sent by Mr. Dick are of many fathoms extent, running to the top of high trees, yet continuing to increase rapidly, and do not by any means appear to have attained their full size.

Root ramous, as in most other plants. *Stems* one or several from the same root, perennial, climbing to a great extent, up and over large trees. *Bark* of the old ligneous parts olive-coloured, and somewhat cracked; that of the young shoots smooth, and a little furrowed. *Leaves* alternate, petioled, from three to five-lobed, from three to five-nerved, smooth on both sides, having the lobes entire, oblong, or triangularly ovate, acuminate, from six to twelve inches each way. *Petioles* shorter than the leaves, nearly round, reddish, and smooth. *Stipules* solitary, sub-axillary, thick, short, conical, coloured. MALE FLOWERS. *Racemes* axillary, solitary, about the length of the leaves, smooth, of a deep brown, bearing several alternate, sub-sessile, very large flowers near the apex. *Bractes* solitary, oblong, acute, thick, and firm. *Calyx* one-leaved, funnel-shaped clothed on the outside with much ferruginous, mealy pubescence; *mouth* five-toothed, with one, two, or three smooth, elevated, chesnut coloured, small glands on the outside of each tooth. *Corol* five-parted, inserted on the mouth of the calyx; *segments* sub-obcordate, retuse, with an acute point in the centre, having half of the outside, which was exposed to the weather before expansion, coloured brown, the rest pale yellowish white; the exterior margins wonderfully perforated and fringed with most beautiful, very long, spiral, pendulous, villous, yellow threads. *Filaments* three, from the mouth of the tube of the calyx under the corol, clavate. *Anthers* united, forming a broad inverted cone; variously grooved with the polliniferous, worm-like cells. *Pistillum* not any appearance of this organ. FEMALE FLOWERS sometimes on a distinct plant. *Peduncles* axillary, cylindric, dark brown, rather more than one inch long, one-flowered. Sometimes, though rarely, they are also on a raceme, which is very short compared with that of the male flowers. *Calyx* and *corol* as in the male. *Stamina* none. *Germ* inferior, broad-cordate, deep brown, studded with elevated, paler coloured specks, one-celled, containing six pairs of ovula attached to the base of the three receptacles, and separated by much spongy, juicy pulp. *Style* the length of the tube of the calyx and adhering to it, except at the base and apex. *Stigma* large, three-lobed; *lobes* emarginate. *Berry* oblatly spheroidal, somewhat villous, apex somewhat pointed of the size of a shaddock, being about five or six inches in diameter, when dry, brittle, one-celled. *Seeds* six, when all come to maturity, which is common, sub-reniform, unequally two-lobed; the fertile lobe about three inches long, by nearly two broad, and about one in thickness, convex or circular on the exterior edge, straight on the inner one, with the apex rounded, and the base less so; the abortive lobe is much smaller, but of the same form. *Integuments* three, the exterior one a perfect very hard, ligneous, porous, villous nut; in its base is a slit, or opening through which the base of the next integument passes; the middle one thick and spongy particularly before perfect maturity, in that state it may be taken for a perisperm; the exterior one membranaceous, and slightly reticulate. *Perisperm* no other than the middle gray spongy envelope of the seed. *Embryo* erect. *Cotyledons* conform to the cell of the exterior integument, thick, firm, white. *Plumula* of two unequal lobate lobes. *Radicle* conic; inferior.

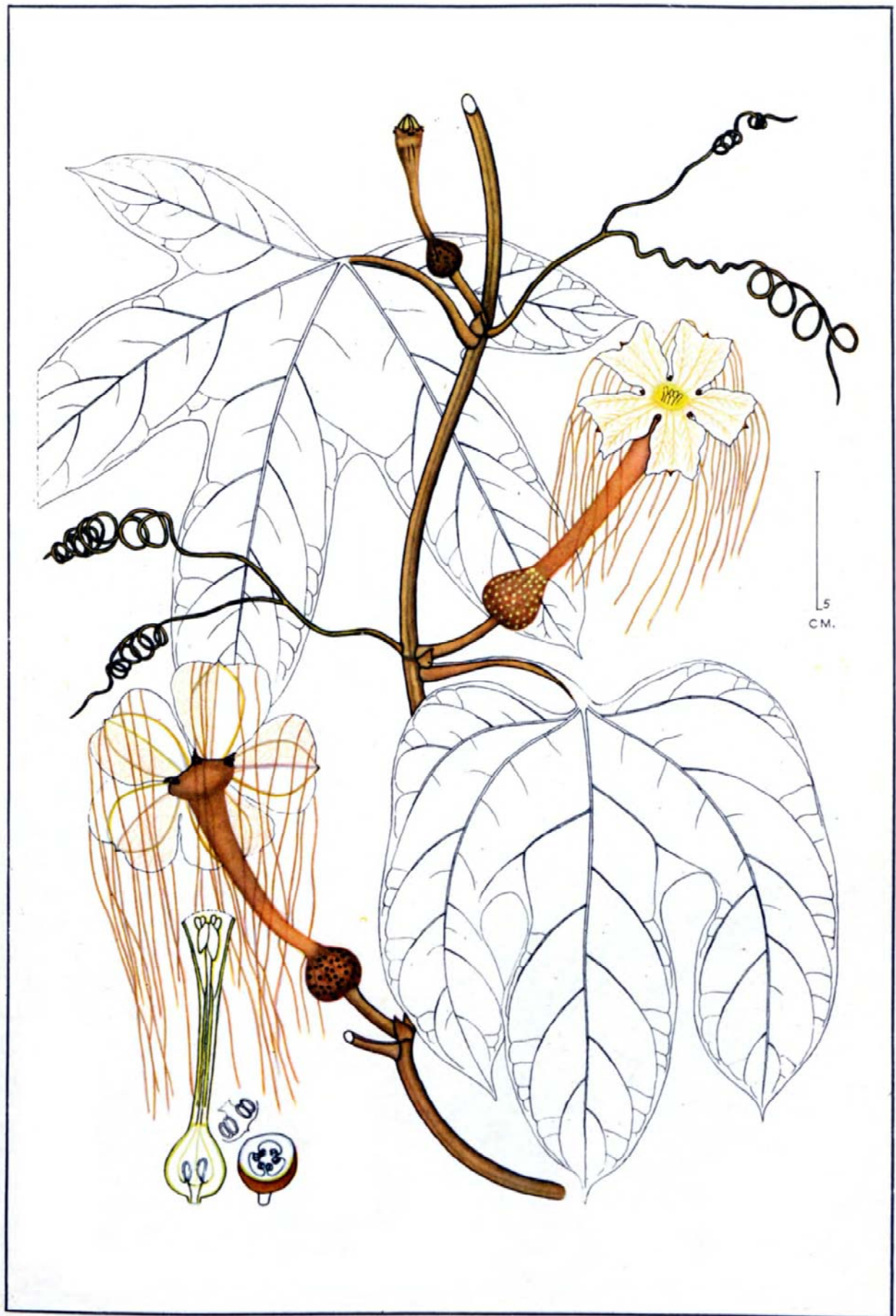
(W. Roxburgh, *Flora Indica* 3:705. 1832)



HODGSONIA MACROCARPA (Bl.) Cogn. (♂)
(*Trichosanthes heteroclita* Roxb.)

4. **HODGSONIA MACROCARPA** (Bl.) Cogn. in DC. Monogr. Phan. 3: 349. 1881. (♀)

Trichosanthes heteroclita Roxb. Fl. Ind. 3: 705: 1832.



HODGSONIA MACROCARPA (Bl.) Cogn. (♀)
(*Trichosanthes heteroclita* Roxb.)

5. TRICHOSANTHES BRACTEATA (Lamk.) Voigt, Cat. Hort. Cal. 58. 1845.

T. palmata Roxb. Fl. Ind. 3: 704. 1832.

Perennial. *Fruit* globular, smooth. *Leaves* palmate; *lobes* acute, sub-lanceolate. *Male flowers* racemed; *female* ones solitary.

Beng. Mukhal.

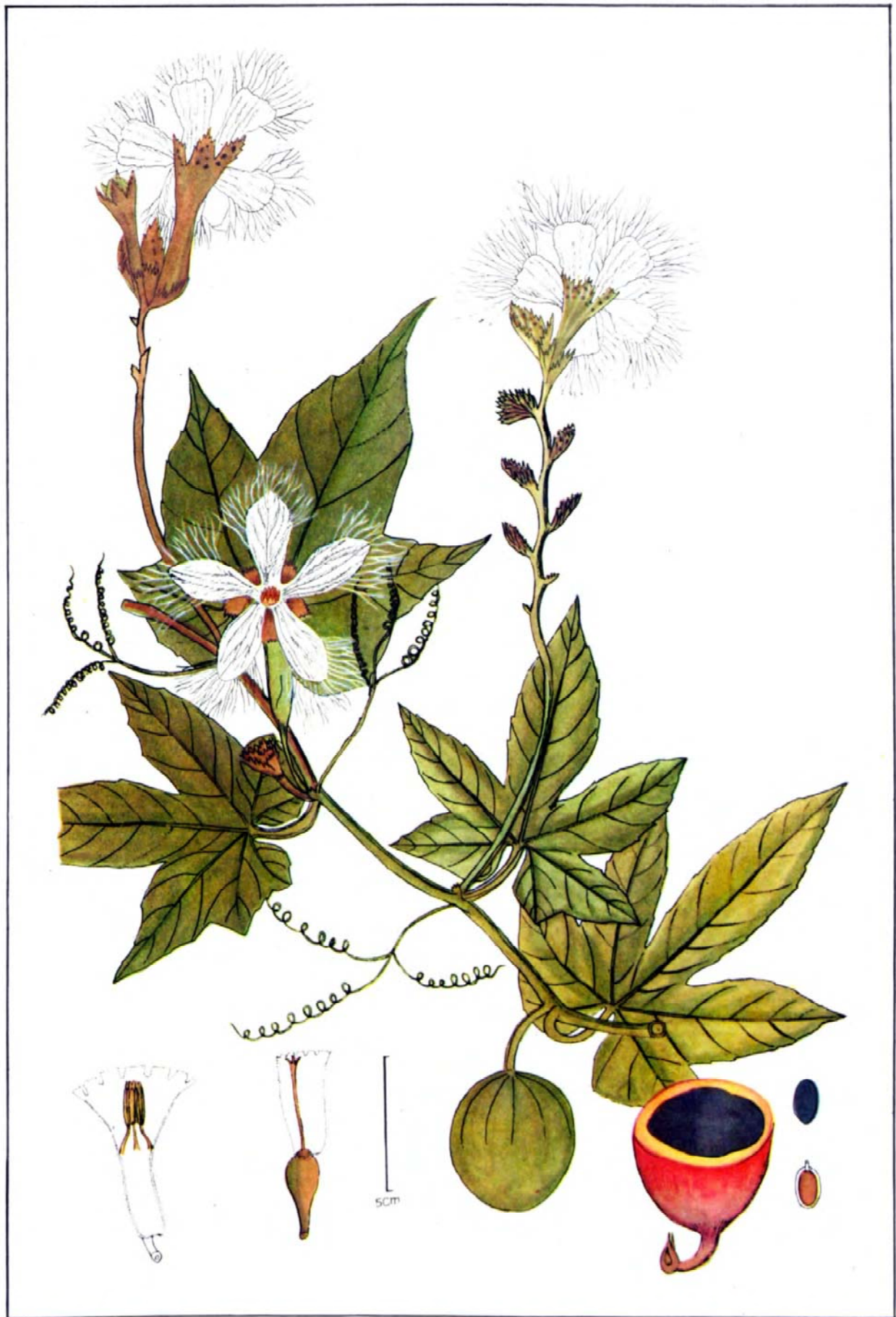
Teling. Kaki-danda.

A large, climbing perennial; a native of forests, where it runs over the highest trees. It flowers during the hot and rainy seasons.

Stem angular, covered with gray, scabrous, somewhat corky bark, the young green parts smooth. *Tendrils* three-cleft. *Leaves* scattered, petioled, generally palmate, though sometimes only from three to five-lobed; divisions acute, slightly serrate, from three to five-nerved, smooth, having frequently several round, glandulous, hollow spots on the under side. *Petioles* channelled. *Stipules* single, small, axillary. MALE FLOWERS racemed, large, white, most beautifully fringed with long, white, ramous filaments. *Racemes* axillary, longer than the leaves. *Bractes* solitary, one-flowered, oval, fringed, covered on the outside with dark green glandulous spots. *Calyx* bracte-like. FEMALE FLOWERS generally axillary, peduncled, though sometimes racemed also. *Fruit* globular, smooth, of the size of a small orange, when ripe of a bright deep red, replete with a dirty looking, dark greenish, soft pulp, in which the seeds nestle.

The fruit is reckoned poisonous, and I am told it is mixed with rice and employed to destroy crows.

(W. Roxburgh, *Flora Indica* 3: 704. 1832)



TRICHOSANTHES BRACTEATA (Lamk.) Voigt
(*T. palmata* Roxb.)

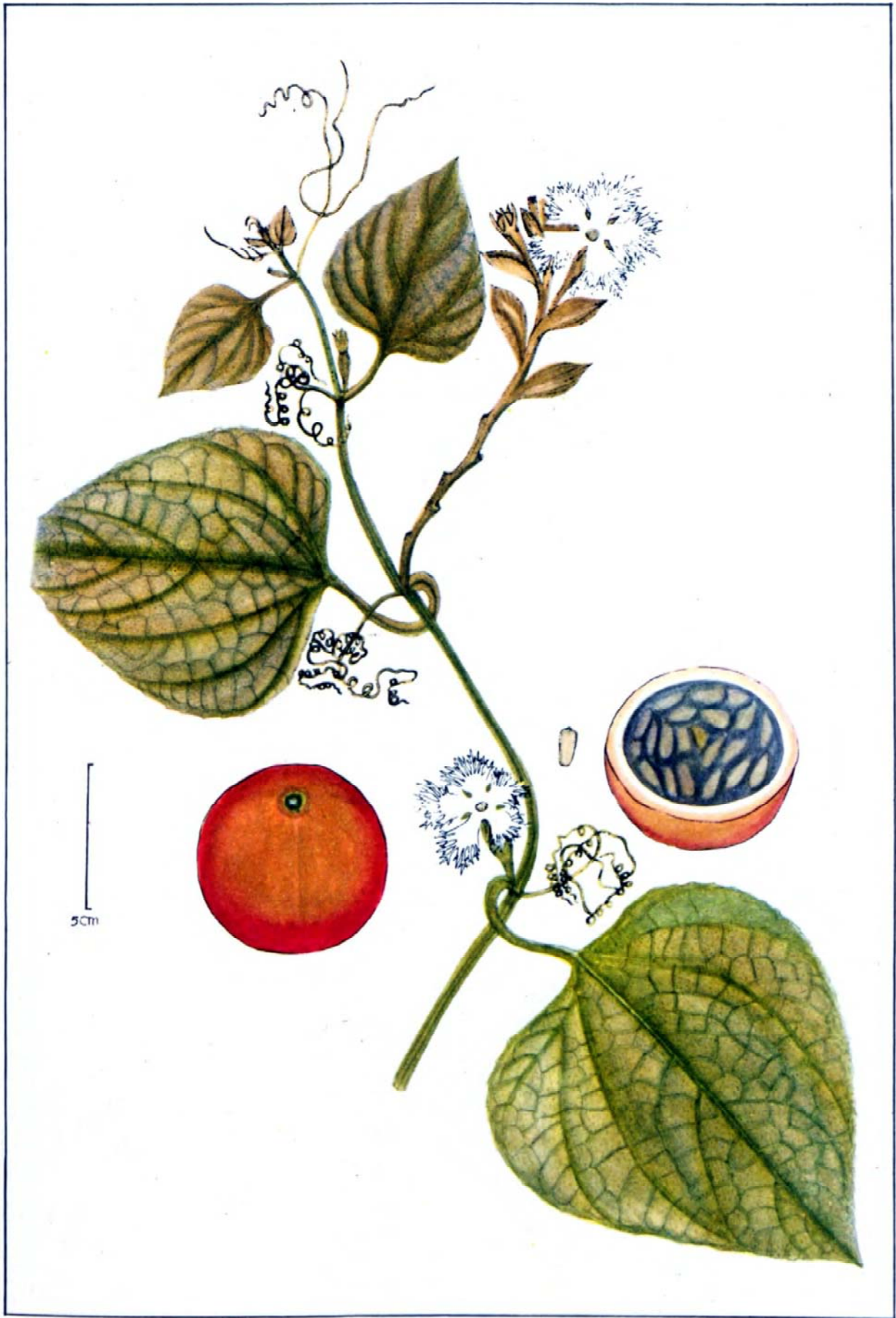
6. TRICHOSANTHES CORDATA Roxb.

Root perennial, tuberous. *Pomes* globose, smooth, of the size of an orange. *Leaves* cordate, and cordate-lobate. *Male flowers* racemed; the *female* ones solitary.

Boomee-Koomura of the Hindoos near the mouth of the river Megna, where the plant grows wild, and its root is used by the natives, as a substitute for Colomba root. It has by mistake I presume, been sent to London as the real Colomba of Mozambique.

Root tuberous, perennial, growing to the size of a man's head. *Stems* herbaceous, climbing to the length of some fathoms, five-sided, villous, or even somewhat scabrous when old. *Tendrils* opposite, three-cleft. *Leaves* alternate, petioled, cordate and cordate-lobate finely dentate, villous on both sides, about six inches each way. *Petioles* channelled, a little hairy, scarcely half the length of the leaves. *Male raceme* axillary, solitary, as long as the leaves. *Bractes* alternate, sessile, cuneate, oblong, acute, serrulate, one-flowered. *Flowers* large, white, the fringe of the segments coarser than in the other species known to me. **FEMALE FLOWERS** axillary, solitary, short-peduncled. *Pome* spherical, of the size of an orange, and of nearly the same colour, only redder, and as in *T palmata*, which it is much like, the cells and partitions are very obscure. *Seeds* numerous, immersed in soft, gelatinous, green pulp.

(W. Roxburgh, *Flora Indica* 3: 703. 1832)



TRICHOSANTHES CORDATA Roxb.

7. TRICHOSANTHES DIOICA Roxb.

Dioecous, herbaceous. *Pomes* oblong, smooth. *Seeds* globular. *Leaves* cordate, dentate, scabrous; both male and female flowers solitary.

Sans. Putulika.

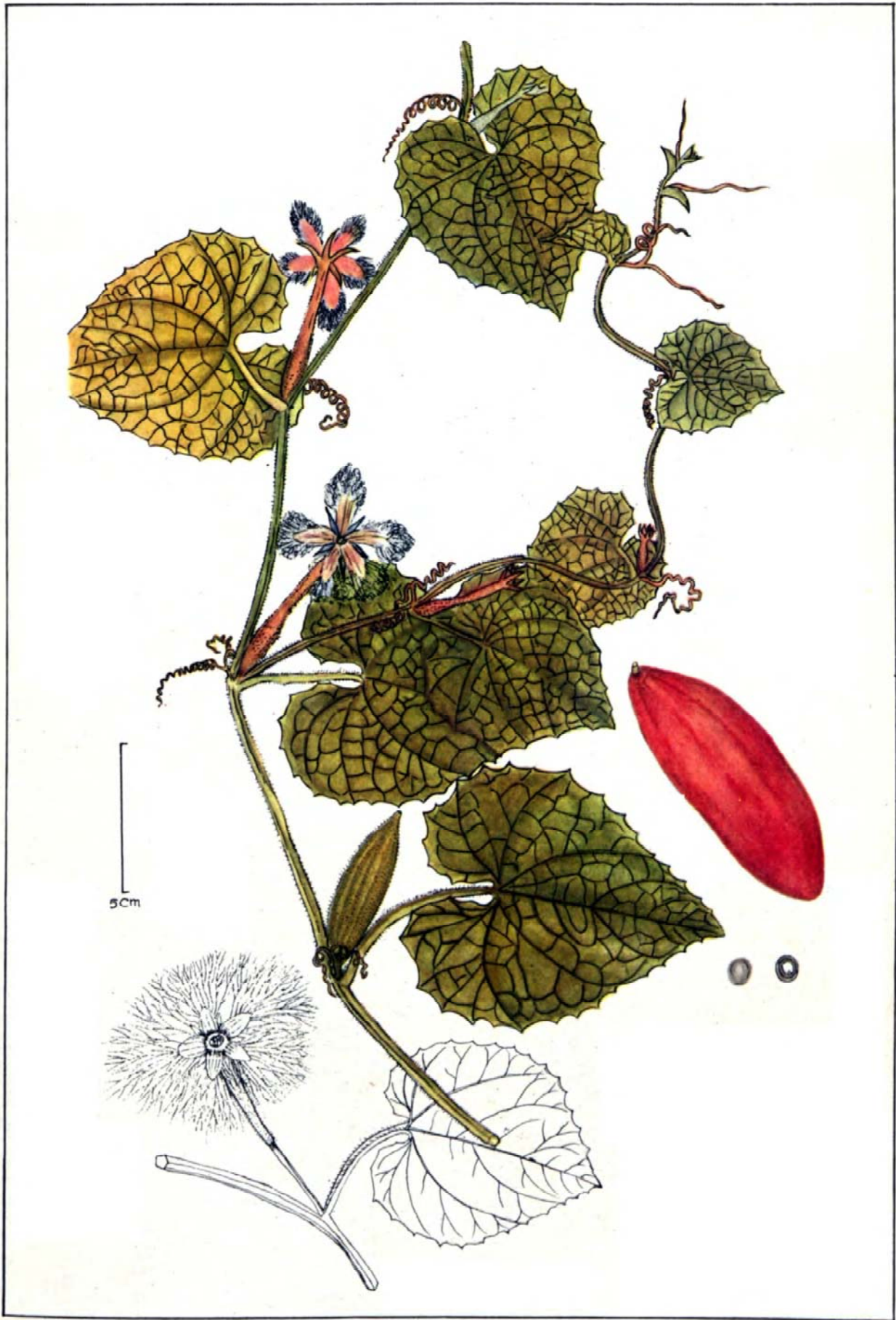
Beng. Putal.

Hind. Pulwul.

This is by far the most useful species of *Trichosanthes* I am yet acquainted with. It is much cultivated by the natives about Calcutta, during the rains. It is unknown on the coast of Coromandel.

Root perennial. *Stems* creeping and running to a great extent, five-sided, scabrous. *Leaves* alternate, petioled, cordate, dentate, scabrous, when young soft. *Petioles* woolly, variously bent, channelled. *Tendrils* simple, or two-cleft. MALE FLOWERS on a separate plant, axillary, solitary, on pretty long peduncles. *Tube* of the corol very long, trumpet-like; *stamens* three, distinct. FEMALE FLOWERS axillary, solitary, short-peduncled. *Corol* large, with the fringe ample. *Pomes* oblong, both ends obtuse, when ripe smooth, and of a deep orange colour, about four inches long, and the same in circumference. *Seeds* globular, with a somewhat callous border. The unripe fruit and tender tops are much eaten both by Europeans and natives in their curries, and are reckoned exceedingly wholesome.

(W. Roxburgh, *Flora Indica* 3: 701. 1832)



TRICHOSANTHES DIOICA Roxb.

8. TRICHOSANTHES LOBATA Roxb.

Pomes linear oblong, smooth. *Leaves* downy, from five to seven-lobed; *lobes* scollop-toothed. *Male flowers* racemed. *Female* solitary.

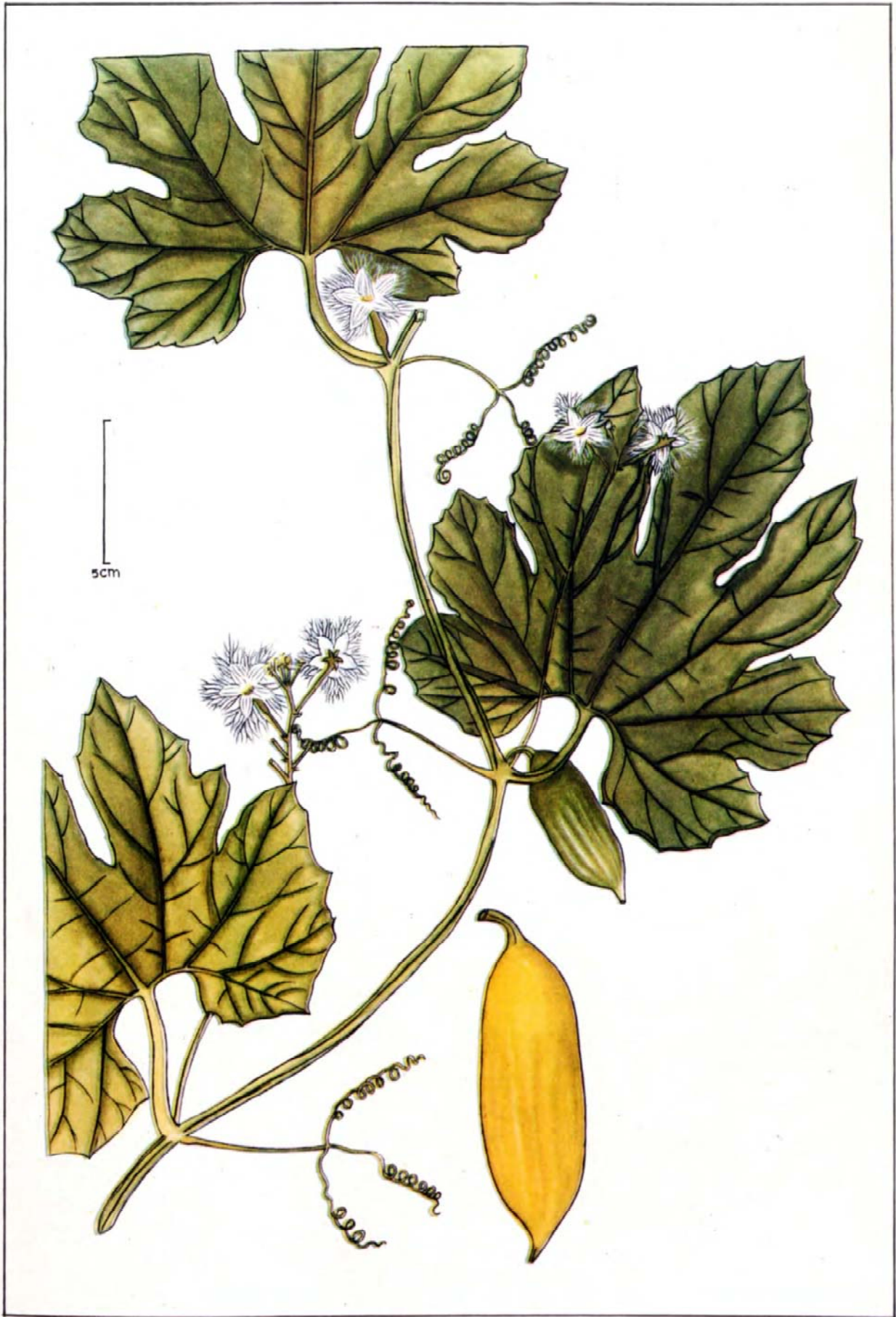
Beng. Bun-chichinga.

This plant grows in hedges, and among bushes. It flowers during the wet season.

Stems five-sided, somewhat hairy, running to a great extent. *Leaves* petioled, from five to seven-lobed; *lobes* obovate, scollop-toothed, of a soft downy texture; from six to seven inches each way. *Tendrils* three-forked. *Female flowers* racemed, white. The female ones solitary, and white also. *Pomes* linear oblong, smooth, ornamented, lengthways except near the base, with ten white streaks. *Seeds* each surrounded with its own proper gelatinous, bright red nidus.

This is never eaten, although it appears to be a useful species.

(W. Roxburgh, *Flora Indica* 3: 703. 1832)



TRICHOSANTHES LOBATA Roxb.

9. LUFFA GRAVEOLENS Roxb.

Leaves reniform, and scollop-toothed. *Fruit* oblong, beset with soft innocent prickles while short papillae, and short hairs closely clothe the interstices.

A native of the Rajmahl hills, from thence the seeds were brought to the Botanic Garden, where the plants blossom during the rainy season, and the seed ripens about three months afterwards.

Stems running, as in the common cucumber, and nearly as long they, more slender, and somewhat villous. *Tendrils* from three to four-cleft. *Leaves* reniform, somewhat lobed, and always scollop-toothed, surface armed with a few minute denticuli. *Flowers* axillary, male and female mixed, and blossoming in succession, though it rarely happens that more than one of the female flowers are productive. The male blossoms are larger and sub-sessile, the female short-peduncled, with one or two glandular, sub-rotund bractes on each. *Fruit* oblong, about the size of a man's thumb, armed with numerous, conical, soft, innocent points, and between them covered with short hairs and little papillae; when ripe dark, of a brownish black, containing many black, oval, compressed seeds, mixed with dry white fibres, as in *L. acutangula* &c.

The whole plant has a most disagreeable, heavy smell.

(W. Roxburgh, *Flora Indica* 3: 716. 1832)



LUFFA GRAVEOLENS Roxb.

10. LUFFA ECHINATA Roxb.

Dioecous, scandent. *Leaves* about five-lobed, scollop-toothed. *Male flowers* racemed. *Female* ones solitary. *Fruit* oval, echinate, with straight, long bristles.

A native of the coast of Coromandel. It flowers about the close of the rains. The seed ripens during the cold season.

Stems herbaceous, scandent, five-sided, most slightly hairy, one or two fathoms long. *Tendrils* two-cleft. *Leaves* generally five-lobed, somewhat hairy, particularly the nerves, and veins on the under side; margins scollop-toothed. *Petioles* as long as the leaves, ribbed. *Stipules* axillary, solitary, oblong, glandular. MALE *Racemes* axillary, solitary, longer than the leaves, bearing many small, white flowers, on long pedicels. *Petals* obovate. *Filaments* three, two with twin anthers. FEMALE *Peduncles* axillary, solitary, shorter than the petiole, one-flowered. *Petals* as in the male. *Style* three-cleft; *divisions* two-parted. *Fruit* oval, of the size of a nutmeg, armed with numerous, long, rather soft, diverging bristles, obscurely divided into three cells, by numerous dry fibres; opening at top with a stopple. *Seeds* several, ovate, compressed, scabrous, black.

(W. Roxburgh, *Flora Indica* 3: 716. 1832)



LUFFA ECHINATA Roxb.

11. LUFFA ACUTANGULA (Linn.) Roxb. var. AMARA (Roxb.) C. B. Clarke
in Hook. f. Fl. Brit. Ind. 2: 615. 1879.

L. amara Roxb. Fl. Ind. 3: 715. 1832.

Stems slender. *Leaves* slightly from five to seven-lobed. *Male flowers* racemed; the *female* ones solitary. *Fruit* oblong, with ten sharp ridges.

Beng. Kerula

Teling. Sheti beera.

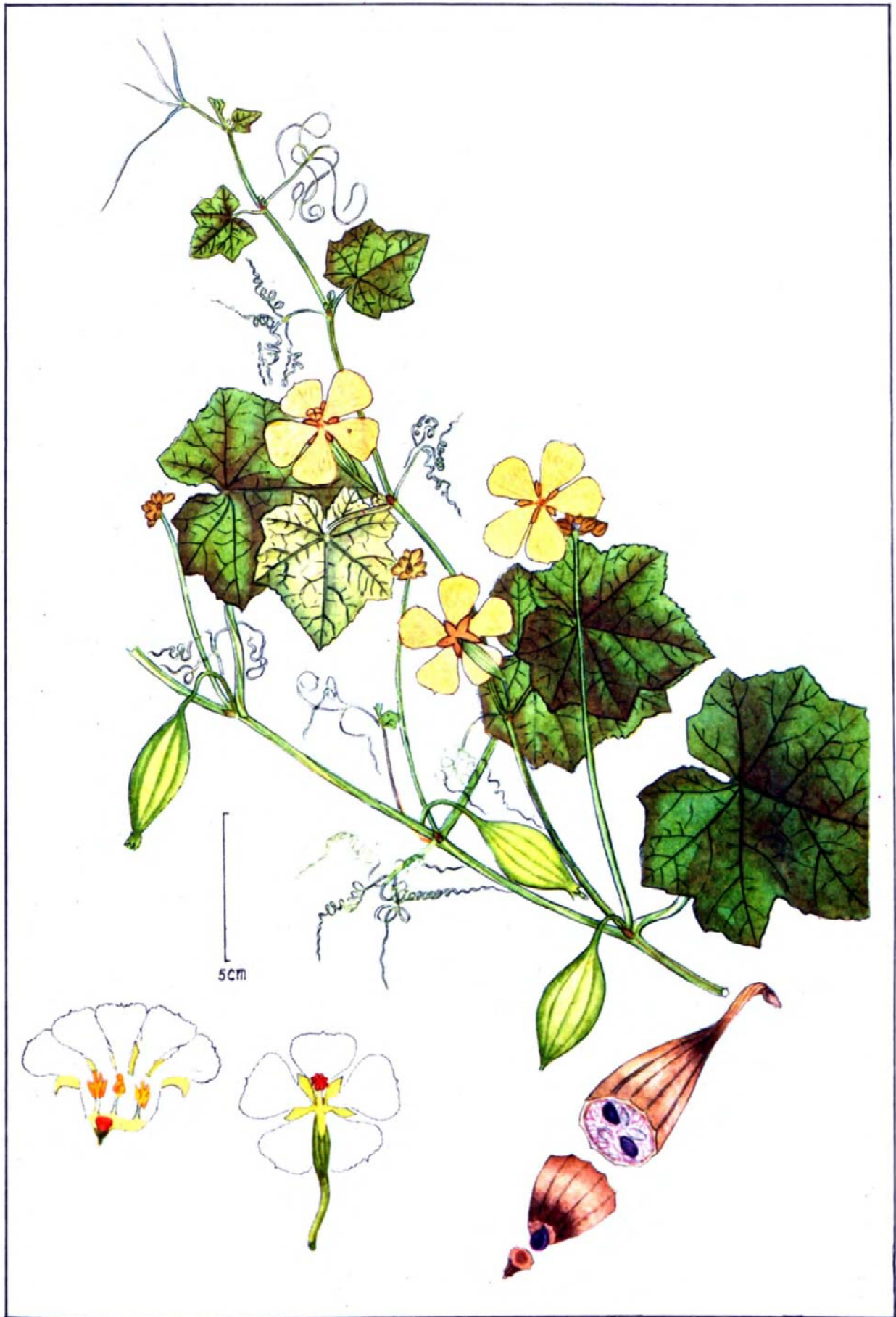
This species grows wild in hedges and dry uncultivated places. It flowers during the later part of the rains and the cold season.

It is *Cucumis indicus striatus opercula donata*, of Plukenet, t. 172. f. 1. which is a very good figure of it.

Stems, leaves, inflorescence, and flowers as in *Luffa acutangula*. *Fruit* oblong, three or four inches long, and one in diameter, tapering equally towards each end, ten-angled, as in *L. acutangula*, when ripe, dry, of a gray colour, and replete with the same dry fibres; the lid or stopple which till then shuts up the apex drops off and the seeds fall out. *Seeds* of a blackish gray colour, marked with elevated minute black dots.

Every part of this plant is remarkably bitter, the fruit is violently cathartic and emetic. The juice of the roasted young fruit is applied to the temples by the natives to cure headach. The ripe seeds either in infusion or substance are used by them to vomit and to purge.

(W. Roxburgh, *Flora Indica* 3: 715. 1832)



LUFFA ACUTANGULA (Linn.) Roxb. var. AMARA (Roxb.) C. B. Clarke
(*L. amara* Roxb.)

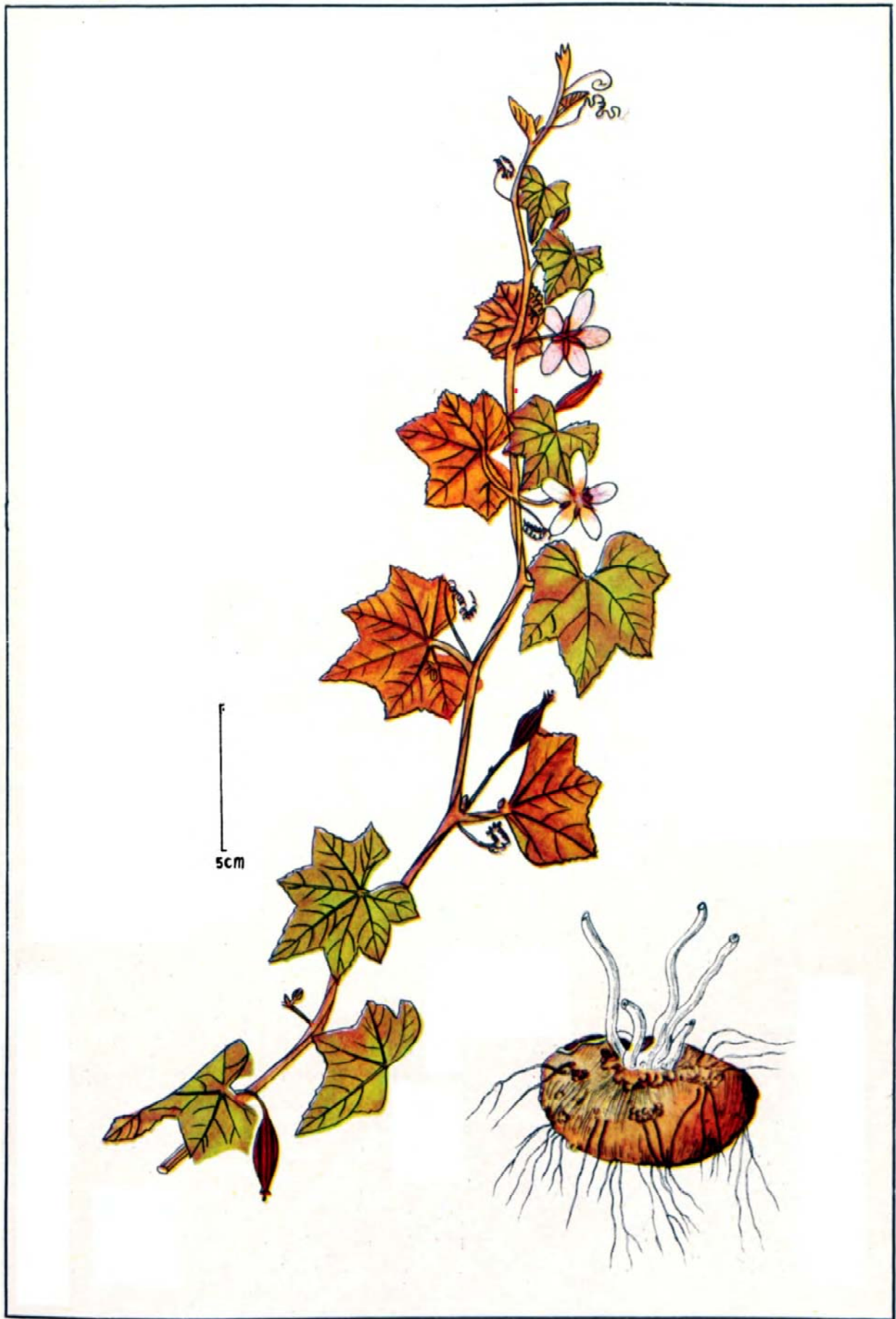
12. LUFFA TUBEROSA Roxb.

Root tuberous and perennial. *Leaves* from five to seven-lobed, dentate. *Male flowers* on very short racemes; the *female* ones solitary long-peduncled. *Fruit* oblong, with eight sharp ridges.

This is a rare species; it grows in hedges, and amongst bushes on the banks of water courses.

Root perennial, tuberous, turnip-shaped, with small warts over it, and here and there fibrous roots from these warts. *Stems* slender, five-sided, climbing, smooth. *Tendrils* simple. *Leaves* cordate, from five to seven-angled, toothed or serrate, smooth, about two inches each way. MALE FLOWERS a few on short, axillary racemes, white. *Filaments* two, one bearing three anthers, and the other two. FEMALE FLOWERS axillary, solitary, long-peduncled, white. *Fruit* in form exactly like that of *L. amara*, but without the stopple, and with only eight angles, about an inch and a half long, and half an inch in diameter; internal structure as in the last described three species.

(W. Roxburgh, *Flora Indica* 3: 717. 1832)



LUFFA TUBEROSA Roxb.

13. LUFFA CYLINDRICA (Linn.) Roem. Syn. Pepon 63. 1846.

L. pentandra Roxb. Fl. Ind. 3: 712. 1832.

Leaves angular lobate, or palmate. *Stamens* five. *Fruit* linear, marked with ten straight lines like ridges. *Seed* with elevated dots and sharp waved margins.

Petola. *Rumph. Amb.* v.t. 147.

Momordica *Luffa*. *Willd.* iv. 603.

Cattu picinna *Rheed. Mal* viii. t. 8.

Beng. Doondool.

Purula Kindi and Tita purula, a wild variety.

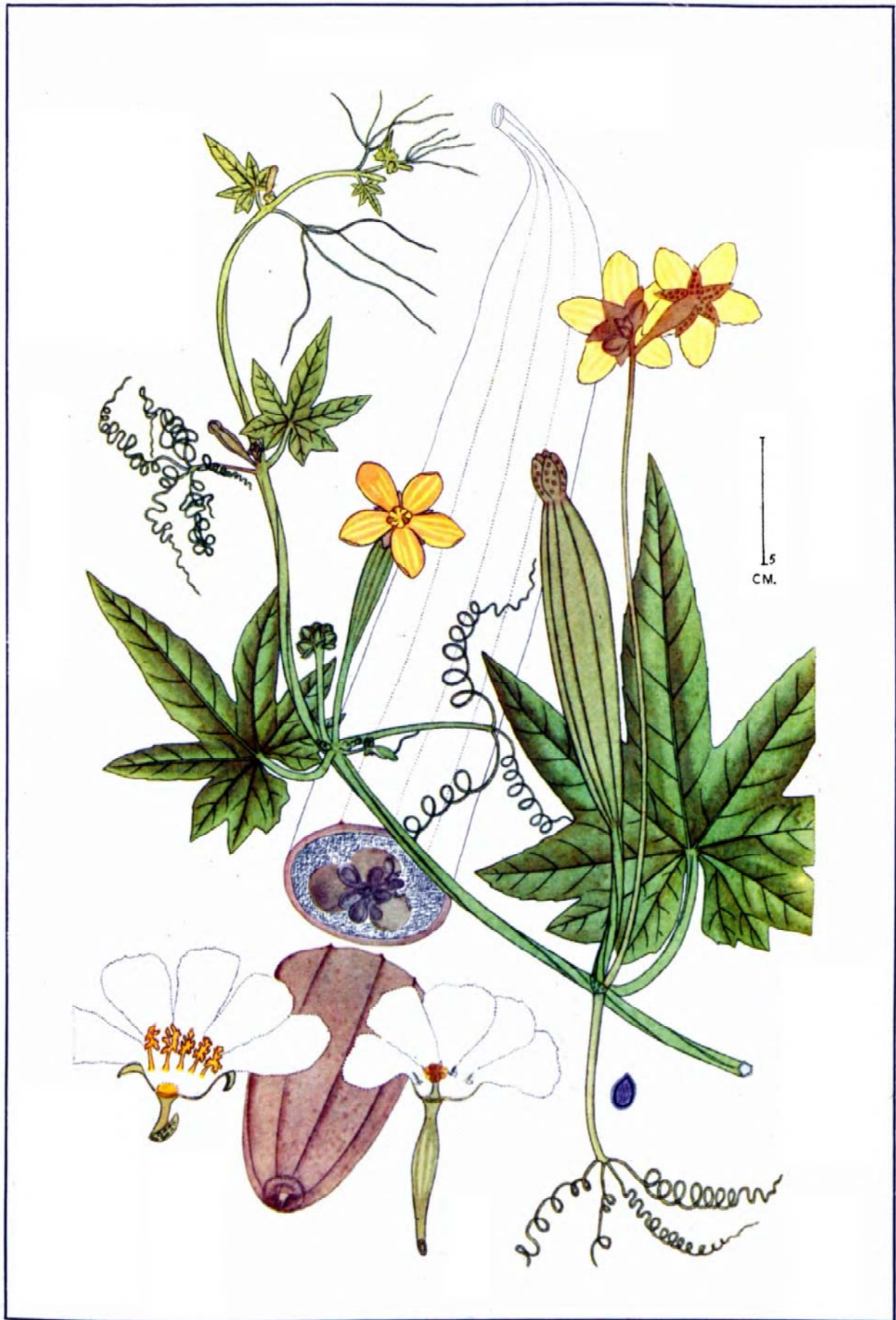
Teling. Nuni-beerd.

I have only found this plant in its cultivated state. It is considerably larger than *acutangula* in all its parts, and is cultivated at the same season.

Tendrils from four to six-cleft. *Leaves* alternate, petioled, the lower ones five-angled with the angles acute, the superior ones palmate; segments conic, lanced, very acute; all slightly serrate, pretty smooth, from six to twelve inches each way. *Petioles* striated, a little channelled. *Stipules* solitary, axillary, cordate, glandular as in *L. acutangula*. MALE FLOWERS racemed, as in *L. acutangula*, but in this species the lowermost flower of the raceme is often female. *Bractes* as in *L. acutangula*. *Filaments* five, distinct. *Anthers* sub-equal, contorted, worm-like. FEMALE FLOWERS solitary, peduncled, axillary or the lowermost on the raceme. *Calyx* five-leaved, glandular. *Nectary* five-lobed, glands with woolly insertions. *Stigma* four-lobed. *Fruit* linear, smooth, striated, with ten deeper coloured streaks, but no elevations, from one to three feet long, and about three inches in diameter; internal structure as in the former. *Seeds* gray, with elevated dots; margin sharp, waved.

The unripe fruit is eaten by the natives in their curries, like that of the former species, but is not so much esteemed. The seeds are generally sown by the root of a tree on the huts of the natives, over which the plants run.

(W. Roxburgh, *Flora Indica* 3: 712. 1832)



LUFFA CYLINDRICA (Linn.) Roem.
(*L. pentandra* Roxb.)

14. LUFFA CYLINDRICA (Linn.) Roem. Syn. Pepon 63. 1846

L. clavata Roxb. Fl. Ind. 3: 714. 1832.

Leaves superficially from five to seven-angled, the posterior lobes rounded, margins minutely-dentate. *Male flowers* on long peduncled racemes; the *female* ones solitary; *fruit* clavate, very long and slender.

A native of the interior parts of Hindoosthan. The seeds were sent by Colonel Alexander Kyd at Allahabad to the Botanic garden at Calcutta, where the plants blossom and produce fruit during the cold season.

Stem scandent several fathoms long, five-sided, smooth. *Leaves* slightly from five to seven-lobed; posterior lobes rounded, the rest more acute, margin slightly dentate, pretty smooth on both sides, about six inches each way when full grown. *Flowers* very long, of a deep yellow. The male ones on axillary, long-peduncled racemes. The female ones axillary solitary, supported on peduncles about the length of the germ. *Bractes* of the male flowers solitary, one-flowered, oval, small, fleshy, glandular, inserted on the pedicel. *Fruit* pendulous, of a long, slender, clavate shape, three-celled, when ripe dry, and the partitions composed of dry fibres. *Seeds* numerous, thin, sharp-edged, lodged in the thickened part of the fruit near the apex. The young unripe fruit is eaten by the natives in their curries, and other stews.

(W. Roxburgh, *Flora Indica* 3: 714. 1832)



LUFFA CYLINDRICA (Linn.) Roem.
(*L. clavata* Roxb.)

15. GYMNOPTALUM COCHINCHINENSE (Lour.) Kurz in J. Asiat. Soc. Beng. 40: 57. 1871.

Momordica tubiflora Roxb. Fl. Ind. 3: 711. 1832.

Leaves roundish, angles obscure. *Female flowers* solitary; the *male* ones solitary, longer peduncled or racemed, with gashed bractes. *Tube* of the male corol long and gibbous. *Fruit* oblong, with ten hairy ribs.

A native of the forests about Dacca. From thence the late Colonel Peter Murray sent the seeds to the Botanic garden, where the plants blossom during the rains, and ripen their seed in two, or three months afterwards.

Root perennial. *Stems* creeping to an extent of many feet, slender, five-sided, somewhat rough with short hair. *Leaves* roundish, three or five-lobed, or angular, margins acutely tooth-letted, scabrous with harsh hairs on both sides. *Flowers* axillary, very large, pure white. The male ones solitary, and on a long peduncle while the plants are young, but when advanced, on long peduncled, axillary spikes with large, gashed, one-flowered bractes. The female ones solitary, short-peduncled, smaller. *Corol* that of the male with a long gibbous tube, that of the female shorter, and sub-cylindric. *Border* of five, large, spreading, obovate divisions. *Stamens* within the tube. *Style* the length of the tube. *Stigma* three-cleft. *Fruit* one-celled, oblong, ten-ribbed, rough with short stiff hairs, particularly the ribs, about two inches long, by three quarters of an inch in diameter, when ripe orange coloured, bursting slowly, exposing the smooth thick margined seeds disposed in three rows and enveloped in a soft dark greenish aril.

(W. Roxburgh, *Flora Indica* 3: 711. 1832)



GYMNOPETALUM COCHINCHINENSE (Lour.) Kurz
(*Momordica tubiflora* Roxb.)

16. MOMORDICA COCHINCHINENSIS (Lour.) Spr. Syst. Veg. 3: 14. 1826.

M. mixta Roxb. Fl. Ind. 3: 709. 1832.

Dioecous, root tuberous, perennial. *Leaves* sub-palmate, smooth; *petioles* with glands. *Male* and *female flowers* solitary and corol-bracted, with glands on the lower margins of the bractes. *Fruit* oval, sharply murexed.

Sans. Kurkuta.

Hind. Kakrool.

Beng. Gol-kakra.

Muricia Cochin Chinensis. *Lourier. Cochin Ch.* 733.

This plant is a native of thickets about Calcutta. Flowering time the wet season. Like *M. dioeca* it has male flowers on one plant, and female ones on another.

Root tuberous, perennial. *Stems* annual, climbing somewhat five-sided, smooth. *Tendrils* simple. *Leaves* petioled, from three to five-lobed, or palmate, sometimes serrate, smooth on both sides, from four to six inches each way with the lobes oblong. *Petioles* channelled, with an uncertain number of umbilicate, green glands scattered over them. MALE FLOWERS axillary, solitary, on long peduncles, or racemed, large, of a dirty whitish cream colour. FEMALE FLOWERS axillary, solitary. *Bractes* solitary, large, two-lobed, cowled, embracing the calyx as in *Momordica dioeca*. *Lobes* striated, a little scabrous, having lower margins fringed with many green glands. *Male calyx* of a dark blackish purple, striated, and scabrous. *Corol* five-petalled, campanulate, with the side downy, and the bottom marked with three-coloured spots. *Filaments* and *anthers* marked with the same dark purple colour, which prevails on the calyx. *Female calyx* and *corol* as in the male. *Pistillum* as in the genus.

(W. Roxburgh, *Flora Indica* 3: 709. 1832)



MOMORDICA COCHINCHINENSIS (Lour.) Spr.
(*M. mixta* Roxb.)

17. MOMORDICA DIOICA Roxb.

Dioecous, root perennial, tuberous. *Leaves* from three to five-lobed, scabrous. *Petioles* without glands. *Male* and *female flowers* solitary, the former cowl-bracted. *Fruit* ovate, muricate, bursting. *Seeds* a few.

Bem paval. *Rheed. Mal.* viii. t. 18.

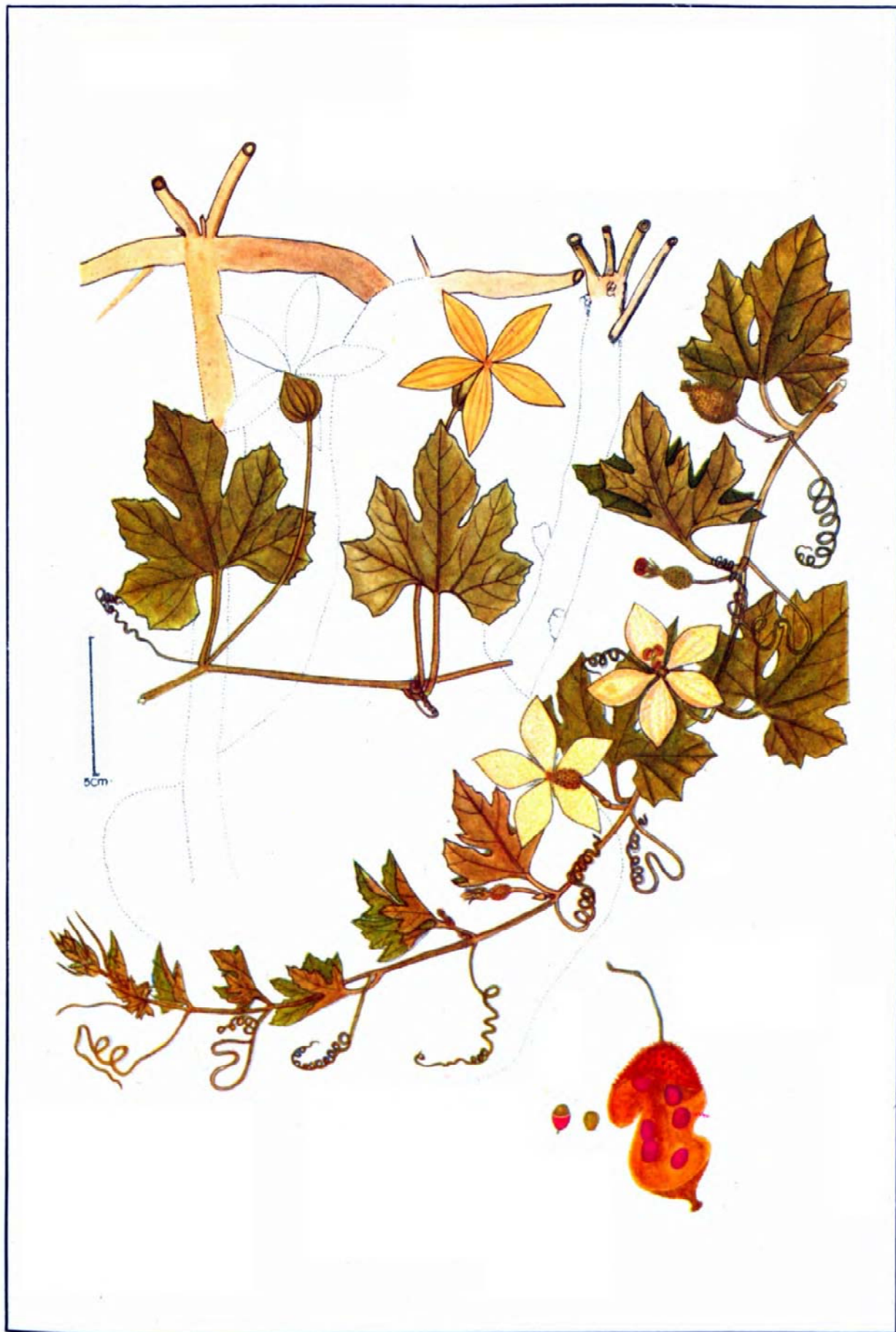
Poogakara is the Telinga name of the male plants; and Agakara of the female.

They are natives of thickets, and banks of rivers, where there are bushes for them to run on. Flowering time the wet and cold seasons.

Root tuberous, large, perennial, with somewhat of an astringent taste. *Stems* annual, five-sided, slender, smooth, about as thick as a log line, running to the extent of one or two fathoms. *Tendrils* simple. *Leaves* scattered, petioled, from three to five-lobed, irregularly toothed; above a little scabrous, below pretty smooth. MALE FLOWERS on a different plant, axillary, solitary, large, yellow, long-peduncled. *Peduncles* with a large, gibbous, striated, blown up spathe-like bracte at the apex, which encloses the bottom of the flowers. *Corol, petals* lanceolate. FEMALE FLOWERS axillary, solitary, peduncled, large, of a pale yellow. *Peduncles* about as long as the petals, near the base there is a small sheathing bracte. *Fruit* about the size and shape of a partridge's egg, murexed. *Seeds* many, oval, gray; each surrounded with a large, pulpy, crimson aril.

The natives eat the tender, green fruit in their curries; also the tuberous roots of the female plant; they are larger than those of the male, generally weighing from two to three pounds.

(W. Roxburgh, *Flora Indica* 3 : 709. 1832)



MOMORDICA DIOICA Roxb.

18. COCCINIA GRANDIS (Linn.) Voigt, Cat. Hort. Cal. 59. 1845.

Momordica monadelpha Roxb. Fl. Ind. 3: 708. 1832.

Dioecous. *Leaves* angle-cordate, smooth. *Corols* campanulate. *Filaments* single. *Fruit* smooth.

Bryonia foliis cordatis. Flor. Zeyl. N. 356.

B. foliis sub-rotundis. Burm. Zeyl. i. 19. f. 1, 2.

Vitis alva indica. Rumph. Amb. v. t. 166. f. 1.

Sungs. Vimba.

Beng. Tela-koocha.

Bryonia grandis. Willd. iv. 617.

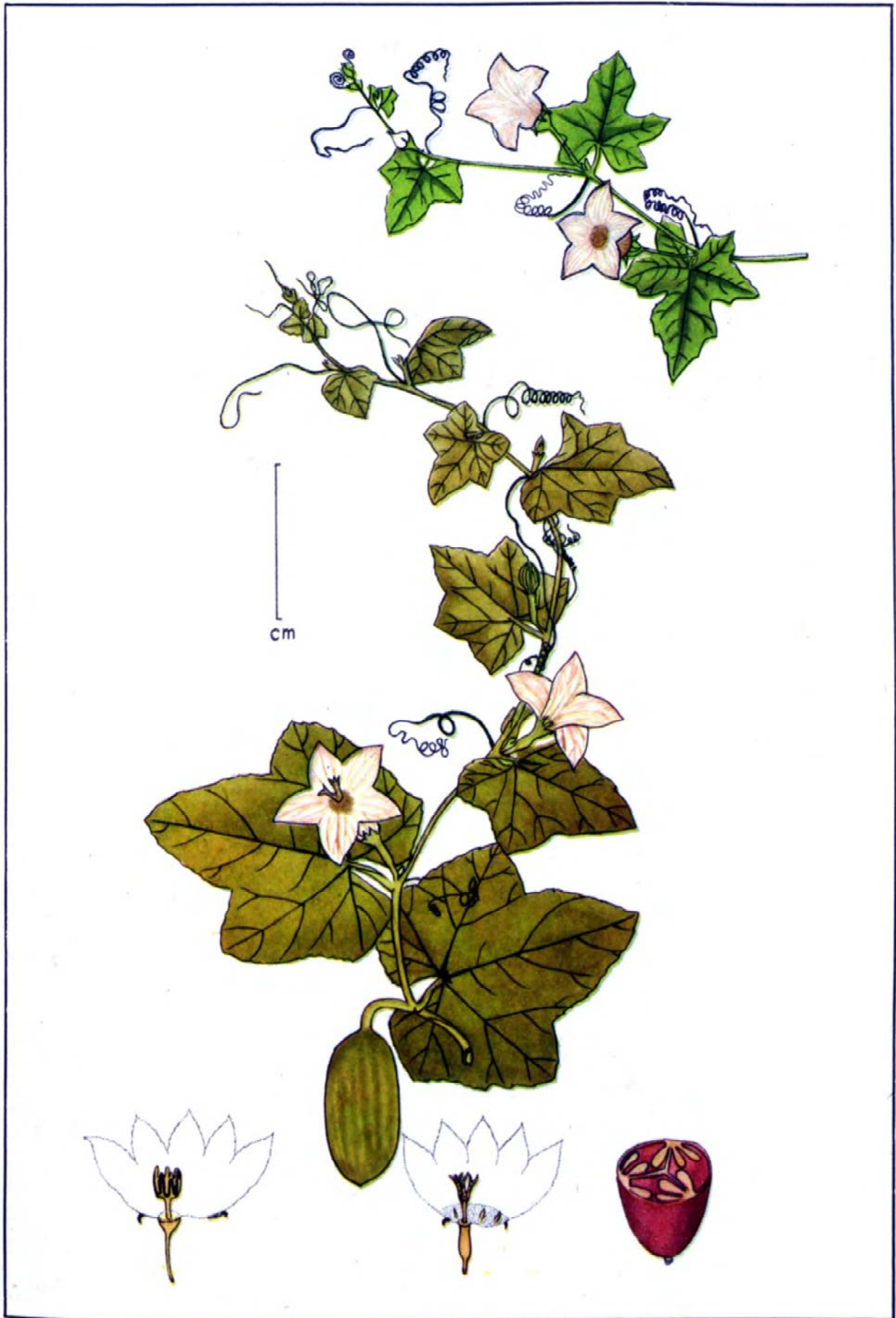
Teling. Kaydonda.

A native of every hedge in the country, and seems to thrive equally well in every soil. It is always dioecous.

Root ramous, not tuberous. *Stems* climbing, running over trees, and bushes, five-sided, perennial, scabrous. *Tendrils* lateral, simple. *Leaves* alternate, petioled, cordate, five-angled, with a few minute teeth round the margin, smooth, having one, two or three hollow glands, under the base, from two to three inches each way. *Petioles* round, smooth, about half an inch long. *Peduncles*, in both the male and female plants, axillary, single, undivided, one flowered. *Flowers* large, white, downy on the inside. *Male calyx* and corol as in the genus. *Filament* single, columnar, short. *Anthers* creeping up and down, sometimes three of the convolutions are elevated considerably above the rest. *Female flowers* on a separate plant. *Calyx* and *corol* as in the male. *Stamens*, there are only the rudiments of three filaments. *Style* single, short. *Stigma* three-cleft; *segments* double. *Berry* smooth, two inches long, and one in diameter, before ripe marked with ten streaks of white; when ripe red, three-celled, bursting irregularly. *Seeds* numerous as in *Cucumis*.

The ripe fruit is eaten raw by the natives, and while green in their curries. Crows and other birds are fond of them.

(W. Roxburgh, *Flora Indica* 3: 708. 1832)



COCCINIA GRANDIS (Linn.) Voigt
(*Momordica monadelphica* Roxb.)

19. CUCUMIS CALLOSUS (Rottl.) Cogn. in Das, Pflanzenr. 88: 129. 1924.

C. trigonus Roxb. Fl. Ind. 3: 722. 1832.

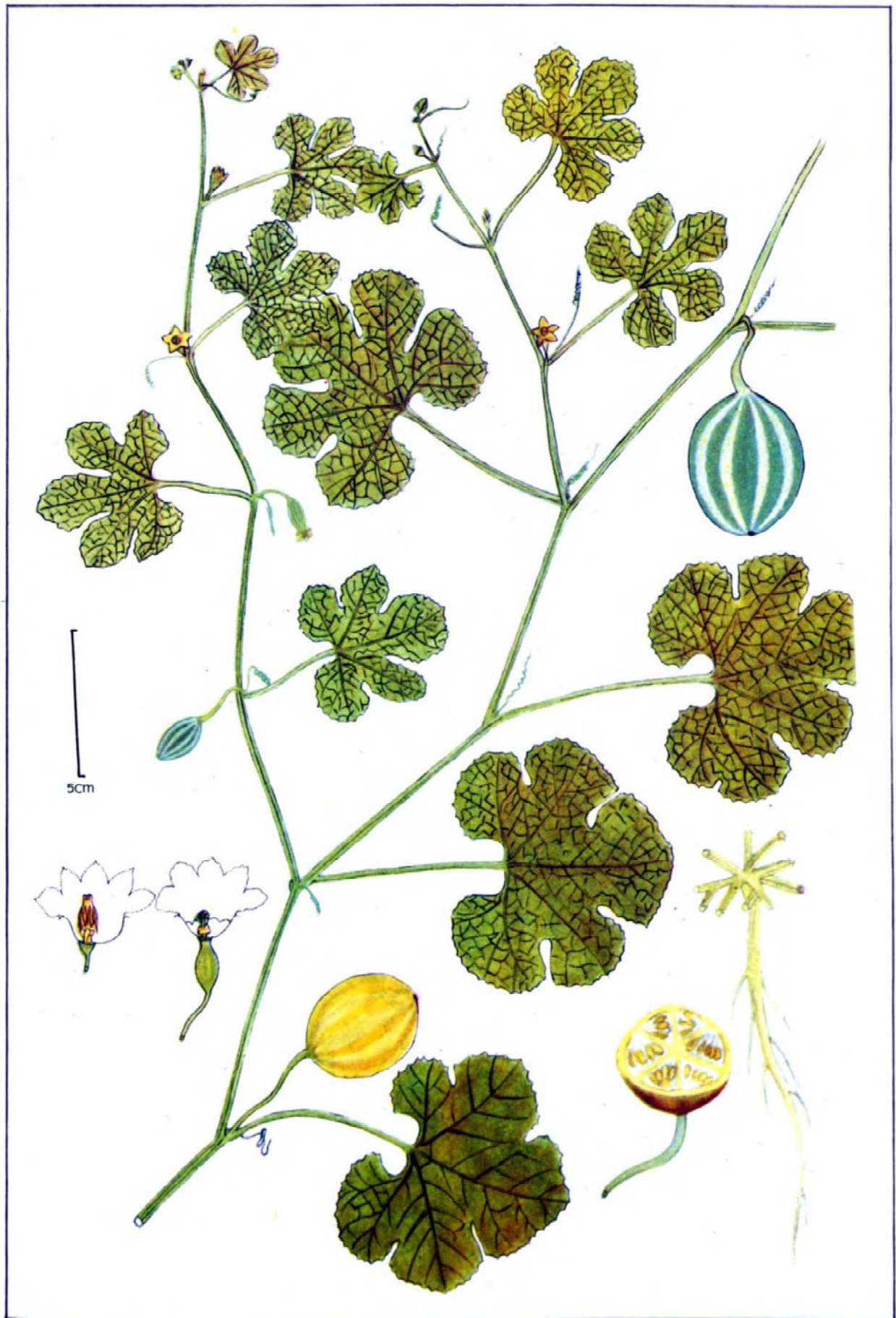
Leaves deeply five-lobed; *lobes* rounded, toothed. *Fruit* oval, obsoletely three-sided, ten striated, smooth, of the size of a pullet's egg.

Teling. Pam-budinga.

The plant of this species resembles very much the last described one; it is never cultivated, is a native of the higher lands that have been lately cultivated; appears and flowers during the wet and cold seasons.

Stems like those of the last described species. *Tendrils* also simple, the leaves are more deeply lobed and rather more scabrous. Flowers small, scarcely half an inch in diameter, yellow; situation as in the last mentioned species. The specific difference is in the fruit; this is also oval and smooth, but three sided with the angles round and the surface streaked with ten light, and ten deep, well defined streaks of deeper and lighter yellow; before maturity these are of a deeper and lighter green colour. It is about the size of a pullet's egg. They are not eaten in these parts.

(W. Roxburgh, *Flora Indica* 3: 722. 1832)



CUCUMIS CALLOSUS (Rottl.) Cogn.
(*C. trigonus* Roxb.)

20. CUCUMIS CALLOSUS (Rottl.) Cogn. in Das, Pflanzenr. 88: 129. 1924.

C. turbinatus Roxb. Fl. Ind. 3: 723. 1832.

Leaves palmate, lobes sinuate and bristle-dentate. *Fruit* turbinate, absolutely three-sided, the size of a pullet's egg.

Teling. Nalla budinga.

This species is a native of the same places as the last, but differs from it in the plant being small, having much larger flowers, and pyriform maculated fruit; they are also somewhat triangular, and about the same size, the leaves are also more deeply lobed and bristle-toothed. The fruit of this sort is eaten by the natives.

(W. Roxburgh, *Flora Indica* 3: 723. 1832)



CUCUMIS CALLOSUS (Rottl.) Cogn.
(*C. turbinatus* Roxb.)

21. CUCUMIS MELO Linn. var. UTILISSIMUS (Roxb.) Duthie & Fuller, Field & Gard. Crops 2, 55, t. 53. 1883.

C. utilissimus Roxb. Fl. Ind. 3: 721. 1832.

Leaves five-lobed; *lobes* rounded, and tooth-letted. *Flowers* axillary; the *male* flowers crowded; the *female* solitary. *Fruit* short-oval, smooth, variegated, of the size of a small melon.

Teling. Dosray.

Beng. Kakri.

An annual, a native of the higher cultivated lands, but generally found in a cultivated state; the cold season is the most favourable.

Stems exactly as in *C. sativus*, but not quite so extensive. *Tendrils* simple. *Leaves* broad-cordate, generally more or less five-lobed; *lobes* rounded, tooth-letted; above pretty smooth, below scabrous, the largest generally about six inches each way. *Floral leaves* of the female flowers sessile, and very small. MALE FLOWERS axillary, peduncled, crowded, but opening in succession. FEMALE FLOWERS axillary, peduncled, solitary, both sorts yellow, about an inch or an inch and a half in diameter. *Fruit* fleshy, generally a very perfect oval; when young downy and clouded with lighter and darker green; when ripe perfectly smooth, variegated with deeper and lighter yellow; from four to six inches long, and from three to four in diameter.

This appears to me to be by far the most useful species of *Cucumis* that I know; when little more than one half grown, they are oblong, and a little downy in this state they are pickled; when ripe they are about as large as an ostrich's egg, smooth and yellow; when cut they have much the flavour of the melon and will keep good for several months, if carefully gathered without being bruised and hung up; they are also in this stage eaten raw and much used in curries, by the natives.

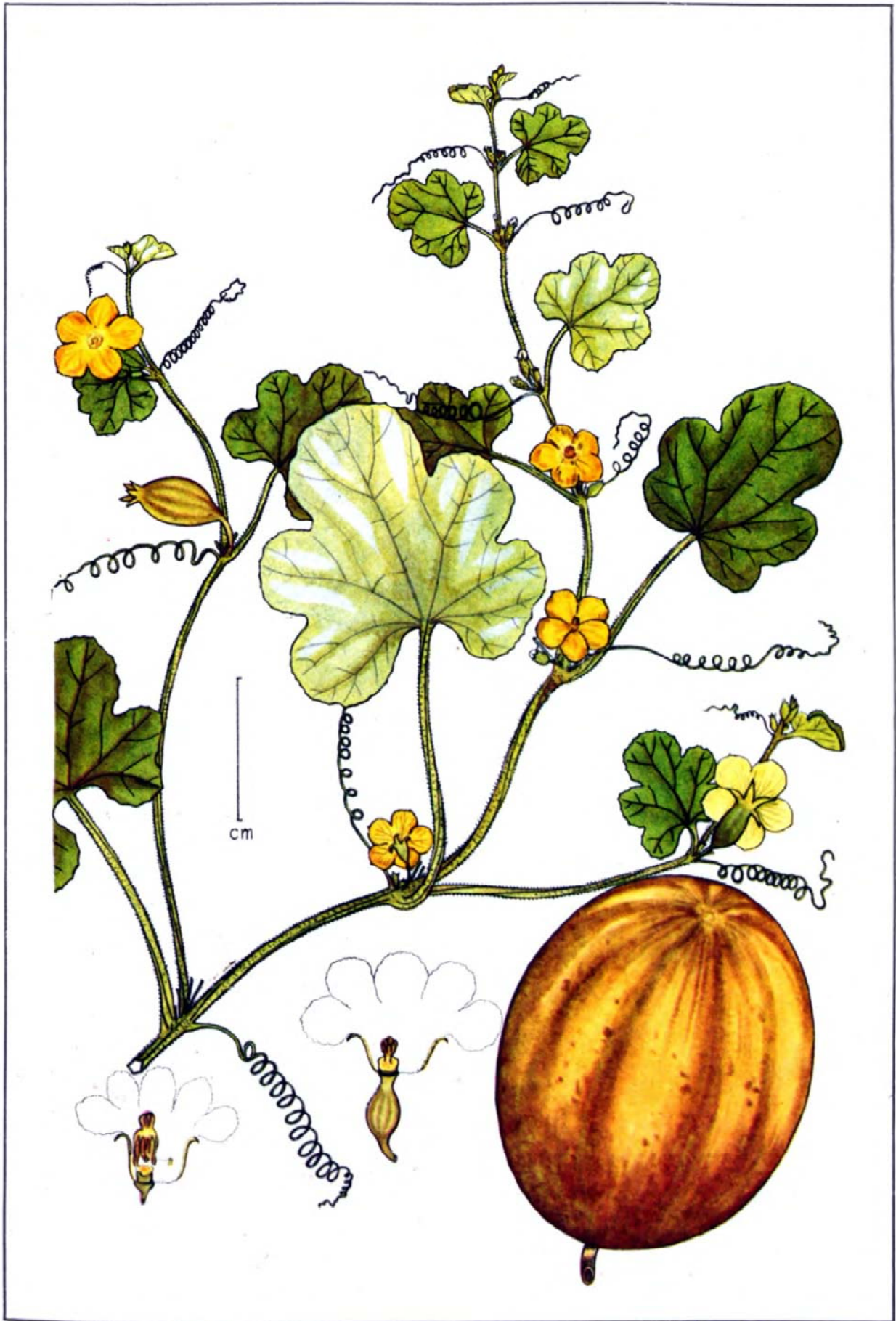
The seeds like those of the other *Cucurbitaceous* fruits contain much farinaceous matter blended with a large portion of mild oil; the natives dry and grind them into a meal, which they employ as an article of diet; they also express a mild oil from them, which they use in food and to burn in their lamps. Experience as well as analogy prove these seeds to be highly nourishing and well deserving of a more extensive culture than is bestowed on them at present.

The powder of the toasted seeds mixed with sugar is said to be a powerful diuretic, and serviceable in promoting the passage of sand or gravel.

As far as my observation and information goes, this agriculture is chiefly confined to the Guntoor Circar, where these seeds form a considerable branch of commerce; they are mixed with those of *Holcus Sorgam* or some other of the large culmiferous tribe and sown together; these plants run on the surface of the earth, and help to shade them from the sun, so that they mutually help each other.

The fruit I observed above keeps well for several months if carefully gathered and suspended. This circumstance will render them a very excellent article to carry to sea during long voyages.

(W. Roxburgh, *Flora Indica* 3: 721. 1832)



CUCUMIS MELO Linn. var. UTILISSIMUS (Roxb.) Duthie & Fuller.
(*C. utilissimus* Roxb.)

22. CUCUMIS MELO Linn. var. MOMORDICA (Roxb.) Duthie & Fuller, Field & Gard. Crops 2: 50, t. 49. 1883.

C. momordica Roxb. Fl. Ind. 3: 720. 1882.

Leaves round-cordate, sometimes five-angled, scollop-toothed; *male flowers* fascicled; the *female* solitary. *Fruit* smooth, cylindric, from four to eight pounds weight, bursting spontaneously.

Beng. and Hind. Foont or Tooti.

Teling. Pedda dosray.

This species I have only found in a cultivated state. In the Tanjore country, and the southern parts of the Carnatic, it is chiefly cultivated during the cold season. The plant is in all respects like that of the common cucumber, except that it is less scabrous, and larger.

MALE FLOWERS axillary, peduncled, crowded. FEMALE FLOWERS solitary, peduncled. *Fruit* very smooth, oblong, generally tapering a little towards the ends with elevation or depression; from twelve to twenty-four inches long, and from three to six in diameter, when ripe bursting slowly into various portions. *Seeds* as in *C. sativus*.

The fruit is much eaten both by natives and Europeans; when young they are a good substitute for the common cucumber, and when ripe (after bursting spontaneously,) with the addition of a little sugar they are little inferior to the melon, and reckoned very wholesome.

(W. Roxburgh, *Flora Indica* 3: 720. 1832)



CUCUMIS MELO Linn. var. MOMORDICA (Roxb.) Duthie & Fuller
(*C. momordica* Roxb.)

23. GYMNOPTALUM INTEGRIFOLIUM (Roxb.) Kurz in J. Asiat. Soc. Beng. 40: 58. 1871.

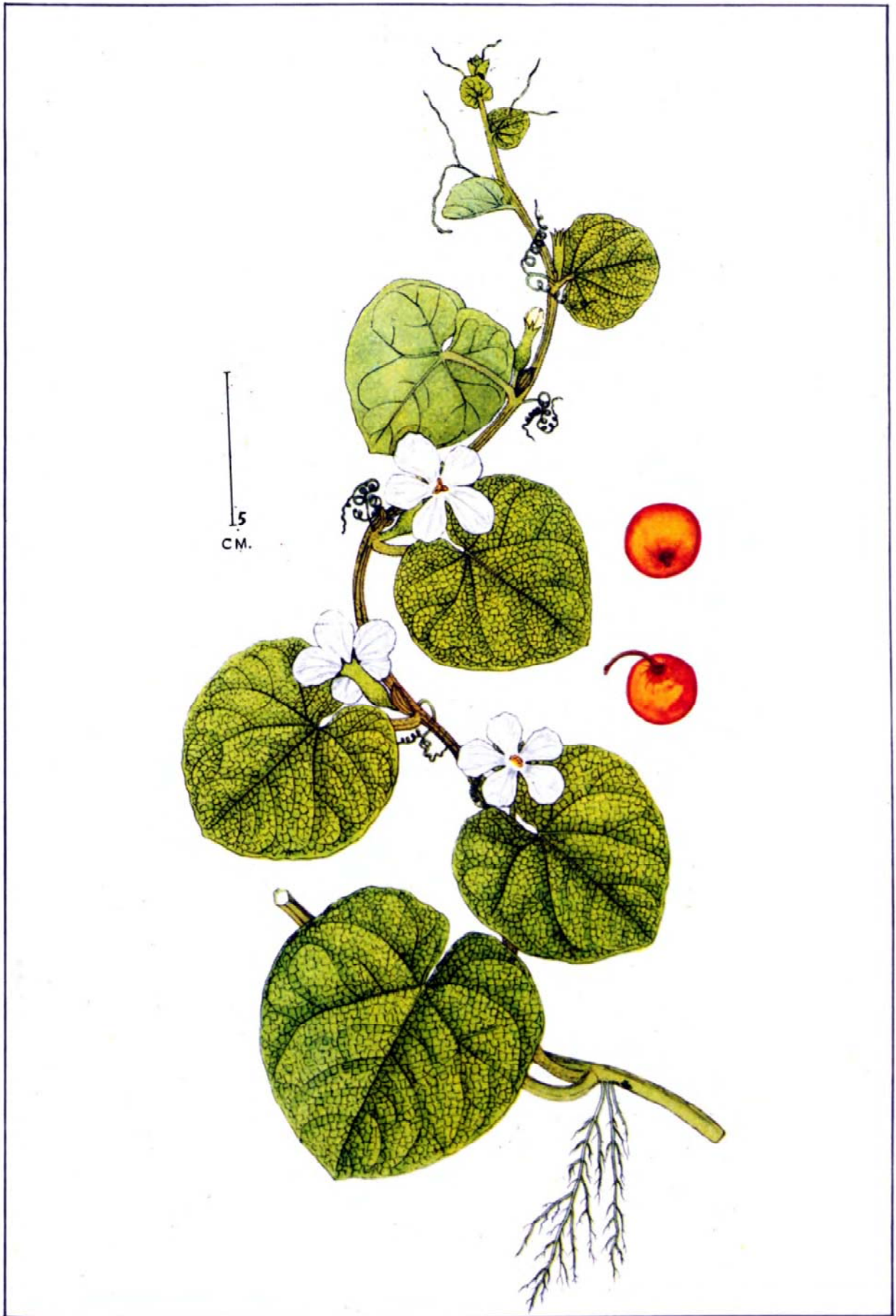
Cucumis integrifolia Roxb. Fl. Ind 3: 724. 1832.

Leaves sub-rotund, almost destitute of angles, very rugose, posterior lobes rounded, both male and female flowers solitary. *Fruit* globular, smooth.

A native of Bengal, blossoming and ripening its seeds during the rains.

Stems annual, creeping to a great extent, and exceedingly ramous, angular and hairy. *Leaves* sub-rotund with scarcely any angles, or rather marginal inequalities deeply sinuated behind, with the lobes rounded, very rugose, scabrous above and hairy underneath, from three to six inches each way. MALE FLOWERS solitary, long-peduncled, large, pure white, pubescent. FEMALE FLOWERS also solitary, but shorter peduncled, pure white and pubescent. *Fruit* globular, of the size of a nutmeg, smooth, when ripe of an orange colour.

(W. Roxburgh, *Flora Indica* 3: 724. 1832)



GYMNOPETALUM INTEGRIFOLIUM (Roxb.) Kurz
(*Cucumis integrifolia* Roxb.)

24. MELOTHRIA MUCRONATA (Bl.) Cogn. in DC. Monog. Phan. 3: 608. 1881.

Bryonia filiformis Roxb. Fl. Ind. 3: 727. 1832.

Stems filiform, five-sided, tendrils simple. *Leaves* cordate, sagittate, dentate, slightly scabrous. *Peduncles* as large as the petioles. *Female flowers* solitary, the male collected. *Berries* oblong, smooth.

A native of the Moluccas, and from thence introduced into the Botanic Garden where it blossoms during the cold season.

Stems climbing, very slender, five-sided, smooth. *Tendrils* simple. *Leaves* petioled, cordate-sagittate, with dentate margins, and the posterior lobes large, and nearly square, both sides being highly scabrous, from one to two inches long. *Petioles* angular, a little hairy, about as long as the leaves. *Male peduncles* sub-axillary, solitary or with a female peduncle, slender, rather shorter than the petioles, bearing at the apex several sessile, small, yellow flowers. *Calyx* and *corol* as in the genus. *Filaments* three, very short, inserted into the middle of the tube of the calyx. *Anthers* three, simple, obovate, sub-sessile. *Female peduncles* sub-axillary, solitary, or with a male peduncle, and about the same length, one-flowered, slender, smooth. *Calyx, corol* and *pistil* as in the genus. *Berry* oblong, very smooth, slightly marked, while immature, having ten longitudinal stripes; when ripe of a uniform blackish olive colour, nearly an inch long, and about a third thereof in diameter, three-celled, with several small red, flat, ovate seeds in each.

(W. Roxburgh, *Flora Indica* 3: 727. 1832)

MELOTHRIA INDICA Lour. Fl. Cochinch. 35. 1790.

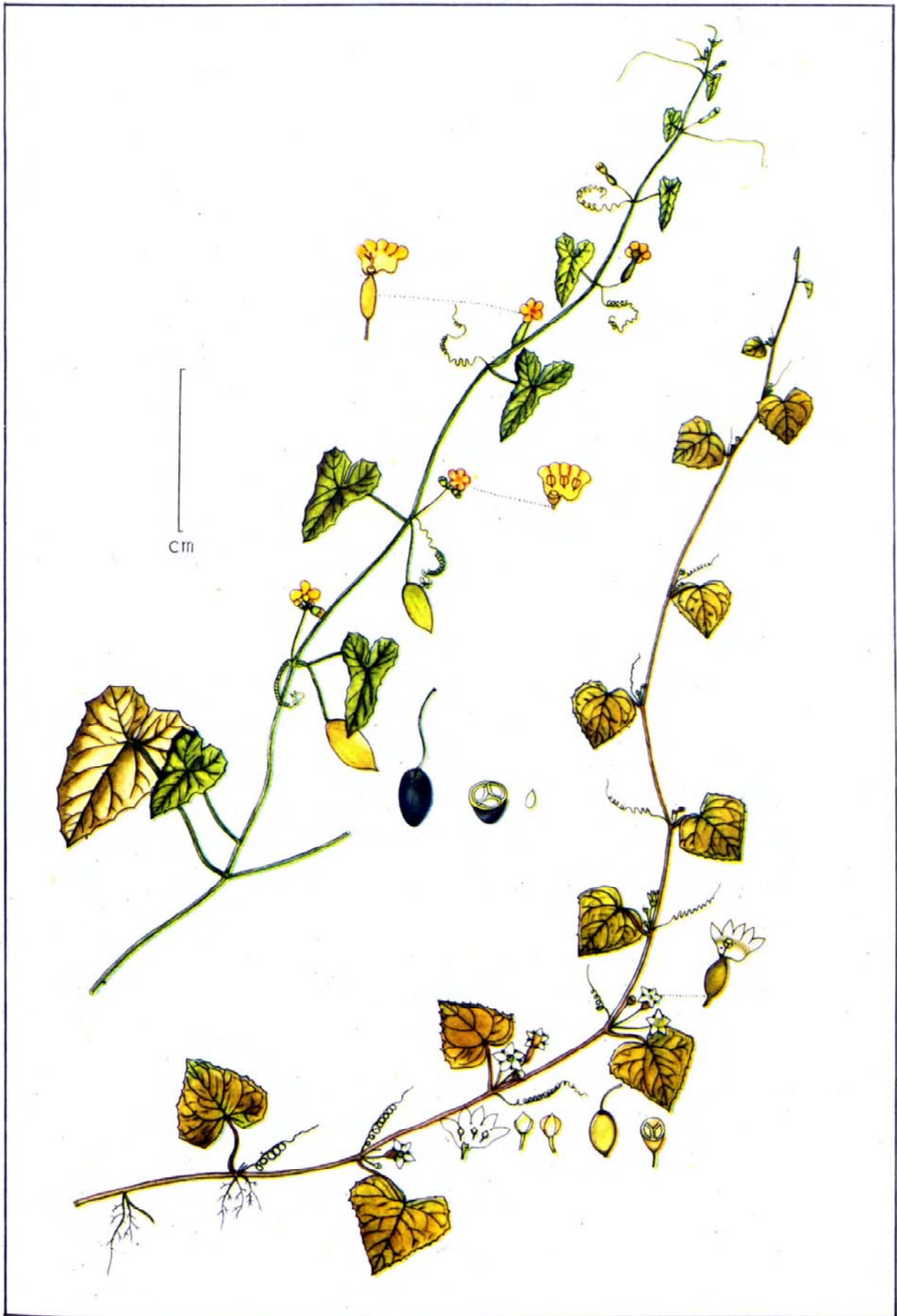
Bryonia tenella Roxb. Fl. Ind. 3: 725. 1832.

Filiform, creeping. *Leaves* from three to five-angled, denticulate, slightly scabrous. *Flowers* axillary, two male, and one female. *Berries* oblong, smooth.

A native of China, in the Botanic garden it blossoms during the rains, and ripens its seed in the cool season.

Root fibrous white, rather fleshy, and at least biennial. *Stems* and *branches* numerous, filiform, creeping, pretty smooth. *Leaves* petioled, from three to five-angled, denticulate, slightly scabrous, particularly underneath, about one inch long, and nearly as broad. *Tendrils* simple. *Flowers* axillary, two male, and one female together, each on its proper peduncle, small, pure white; the male rather large. *Filaments* three, from the bottom of the bell of the calyx or corol, each with a large fleshy lid, on each side of which is single anther crested behind with a tuft of orange-coloured hairs. *Germ* oblong. *Style* filiform. *Stigma* large, three-lobed. *Berries* oblong, very smooth, when ripe white, of the size of a French bean, many-seeded.

(W. Roxburgh, *Flora Indica* 3: 725. 1832)



Top — MELOTHRIA MUCRONATA (Bl.) Cogn.
(*Bryonia filiformis* Roxb.)
Bottom — MELOTHRIA INDICA Lour.
(*Bryonia tenella* Roxb.)

25. KEDROSTIS ROSTRATA (Rottl.) Cogn. in DC. Monogr. Phan. 3: 636. 1881.

Bryonia pilosa Roxb. Fl. Ind. 3: 726. 1832.

Herbaceous, hairy. *Leaves* round cordate, toothed, downy. *Male flowers* on a short filiform raceme. *Berries* beaked, hairy, from two to six-seeded.

Compared with *B. rostrata*. Willd. iv. 616.

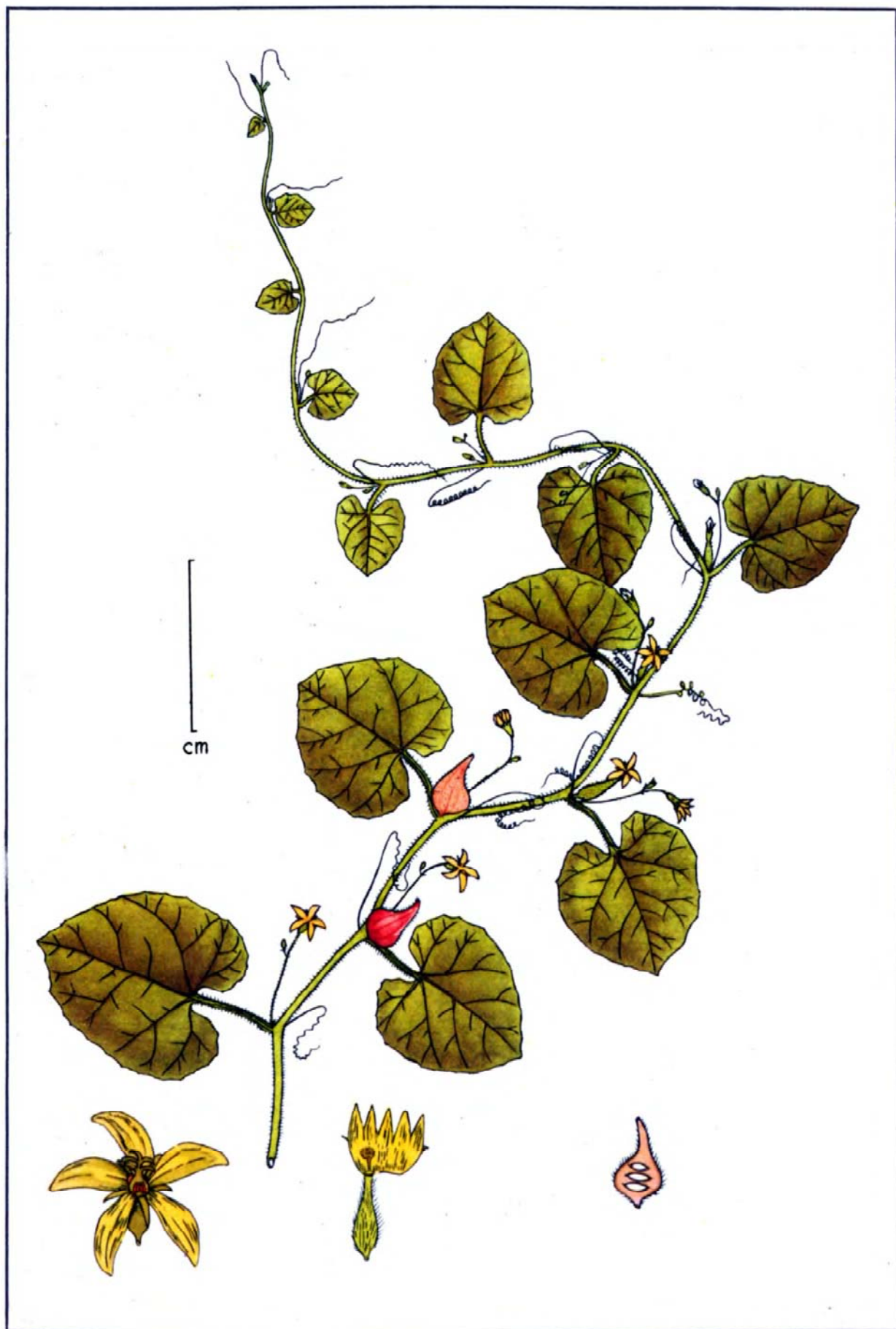
Teling. Cucuma-conda.

It grows with the former three species, and flowers at the same time.

Stems annual, climbing, five-sided, hairy. *Tendrils* simple. *Leaves* petioled, round, cordate, toothed, downy, from one to two inches each way. MALE FLOWERS axillary, generally two on a long delicate peduncle. FEMALE FLOWERS single, sessile in the same axill. *Berry* sub-conical, of the size of a cherry, red, striated lengthways, hairy. *Seeds* from two to six, black, with a membranaceous border.

Note. These three last described species are not employed for any use that I know of. That part of the Hindoo name of the second of them, Naga would imply that it was employed as a remedy for the bite of the Cobra Capella; but I could not procure any good authority for its being so.

(W. Roxburgh, *Flora Indica* 3: 726. 1832)



KEDROSTIS ROSTRATA (Rottl.) Cogn.
(*Bryonia pilosa* Roxb.)

26. CORALLOCARPUS EPIGAEUS (Rottl & Willd.) Clarke in Hook. f. Fl. Brit. Ind. 2: 678. 1879.

Bryonia glabra Roxb. Fl. Ind. 3: 725. 1832.

Herbaceous. *Stems* round and smooth. *Leaves* from three to five-lobed; lobes scollop-toothed. *Berries* conical, smooth.

Compare with *B. epigaea*. Willd. iv. 619.

Teling. Naga-donda.

It grows in places similar to the former species, and flowers at the same seasons.

Stems annual, climbing, seldom as thick as a quill, round, smooth, jointed, often bending at the joints in a right angle. *Tendrils* simple. *Leaves* petioled, three-lobed; lateral lobes often two-parted, and the anterior, from one to three-parted, all are remotely and slightly toothed, somewhat fleshy and very little scabrous; about two inches each way. *Petioles* round, smooth. MALE FLOWERS small, yellow, several collected on the apex of a round, smooth, common peduncle: each half its proper, short pedicel, and bracted at its insertion. FEMALE FLOWERS axillary, solitary, or accompanied with a male raceme, short peduncled. *Berry* conical, smooth, red, many-seeded.

(W. Roxburgh, *Flora Indica* 3: 725. 1832)



CORALLOCARPUS EPIGAEUS (Rottl. & Willd.) Clarke
(*Bryonia glabra* Roxb.)