

ICONES
ROXBURGHIANAE
OR
DRAWINGS OF
INDIAN PLANTS

FASC. II



BOTANICAL SURVEY OF INDIA

CALCUTTA

1968

(Date of Publication 31st. August 1968)

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FOREWORD

In the publication programmes of the Botanical Survey of India, the reprinting of William Roxburgh's ICONES assumed a degree of priority and importance. The first fascicle, with 24 colour plates in photo off-set printing came out on the 6th July, 1967, only after a considerably long and protracted period of over four years having had to be spent in attending to various formalities as well as to the actual process of printing the fascicle. The present fascicle, which forms the second in the series, is now presented to the public in a much less lapse of time since the issue of its predecessor. As in the previous fascicle, the present one has also 24 selected colour plates reproduced in photo off-set process, and it is envisaged that five such fascicles would go to form one volume of ICONES ROXBURGHIANAE to consist of illustrations of plants, the authorship of which are ascribed to William Roxburgh. It is hoped that future issues of these ICONES will follow in fairly quicker succession.

I cannot but adequately express my high appreciation for the unfailing help Mr. K. S. Srinivasan, Deputy Director, Botanical Survey of India rendered in seeing through this publication in all its phases and for his enthusiasm and energy in matters of scientific interest. The officers of the Publication Section of Botanical Survey of India, deserve special praise for their continued energetic and enthusiastic work in bringing out this publication, and for their great care and patience in seeing through the proofs and other technicalities attached to the printing of these plates. Messrs Sree Saraswaty Press Ltd., Calcutta, deserve all praise for the efficient and expeditious publication of this fascicle.

It is hoped, that the series will be well received, and the present efforts of the Botanical Survey will go a long way in fulfilling one of the long-felt needs of the scientific public.

Calcutta
15.7.1968

K. SUBRAMANYAM
Director
Botanical Survey of India

LIST OF PLATES

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24	<i>Grewia sapida</i> Roxb.	1291

1. HIBISCUS CANCELLATUS Roxb.

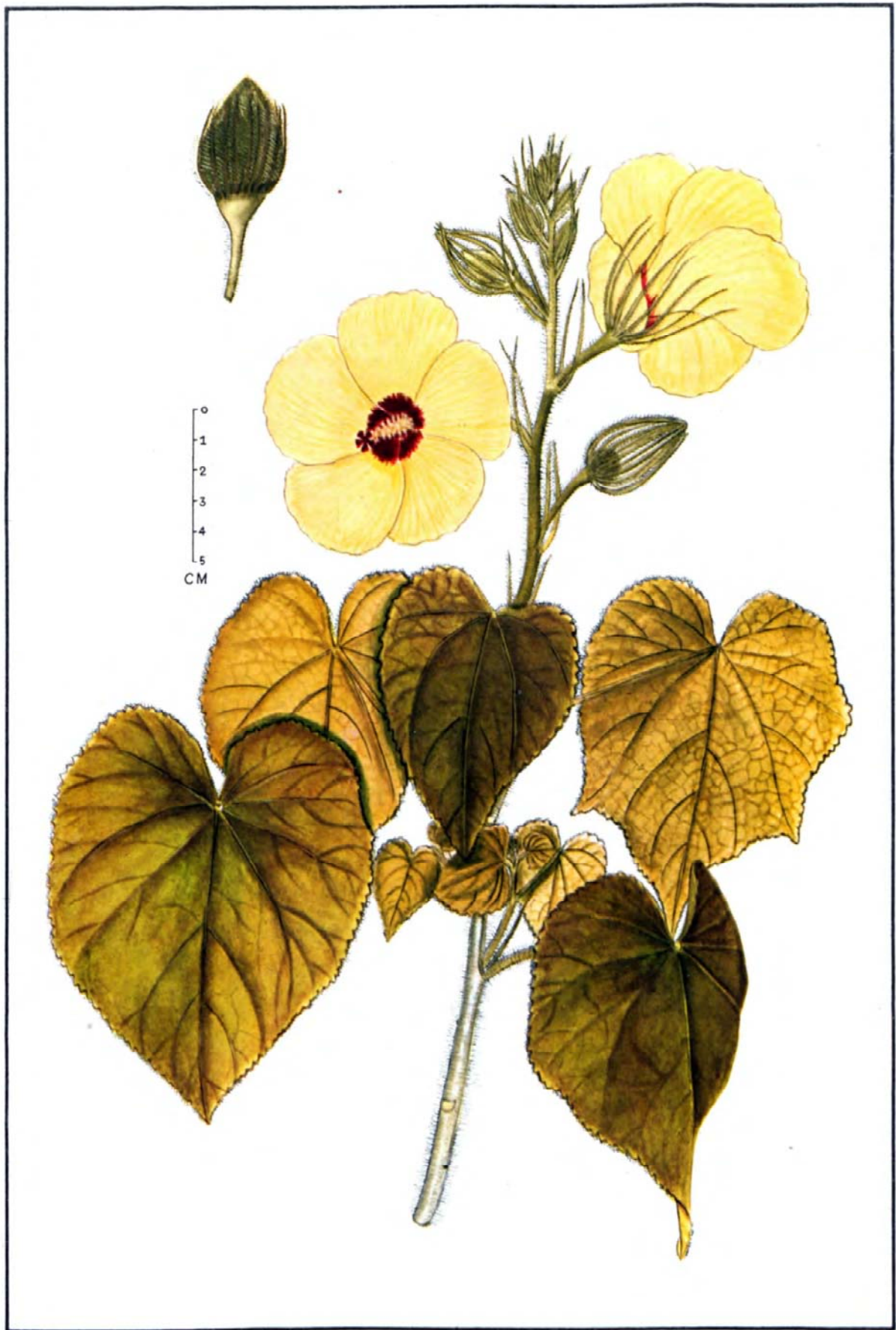
Annual, erect, every part hairy and bristly; *leaves* cordate, more or less angled, crenate. *Stipules* subulate. *Racemes* terminate. *Exterior calyx* of about fifteen long incurved filiform leaflets; *inner* spathiform; *capsule* ovate.

From Nepal Dr. Buchanan sent the seed to the Botanic Garden, where the plants blossom during the rainy season.

Root annual. *Stem* straight, with but few sub-erect, round branches, clothed with much long hair intermixed with stiff sharp bristles; height of our plants about three feet. *Leaves* petioled, cordate, generally more or less angular, crenate, very hairy; from four to six inches long, and from three to five broad. *Petioles* horizontal, nearly as long as the leaves, round, and like every other part of the plant, very hairy. *Stipules* subulate, very long and very hairy. *Flowers* numerous, peduncled, drooping, solitary in the superior axils, and on a pretty long straight, terminal raceme, large, campanulate, of a lively yellow, with the bottom of the bell crimson. *Bracts* like the stipules. *Calyx*; the *exterior* one as it were inflated, and composed of from ten to eighteen or twenty long, filiform, incurved, hairy permanent leaflets; the *inner* one spathiform. *Capsule* ovate, length of the exterior calyx, five furrowed, very hairy, five-celled, five-valved. *Seeds* numerous, reniform, black.

H. cucullatus, *Suppl.* 311. Cavanilles and Willdenow consider this a species of *Pavonia* viz. *P. cancellata*. see *Willd. ed. sl.* 583.

(W. Roxburgh, *Flora Indica* 3: 201, 1832)



HIBISCUS CANCELLATUS Roxb.

2. HIBISCUS COLLINUS Roxb.

Arboreous. *Leaves* cordate, three-lobed, repand, smooth. *Exterior calyx* of from eight to ten lanceolate, waved, permanent leaflets. *Capsules* oblate, very hairy, and lined with pungent bristles.

Teling. Kanda-gang.

A native of the mountainous parts of the Circars, where the natives use the bark as a substitute for hemp. Flowering time, the rainy season.

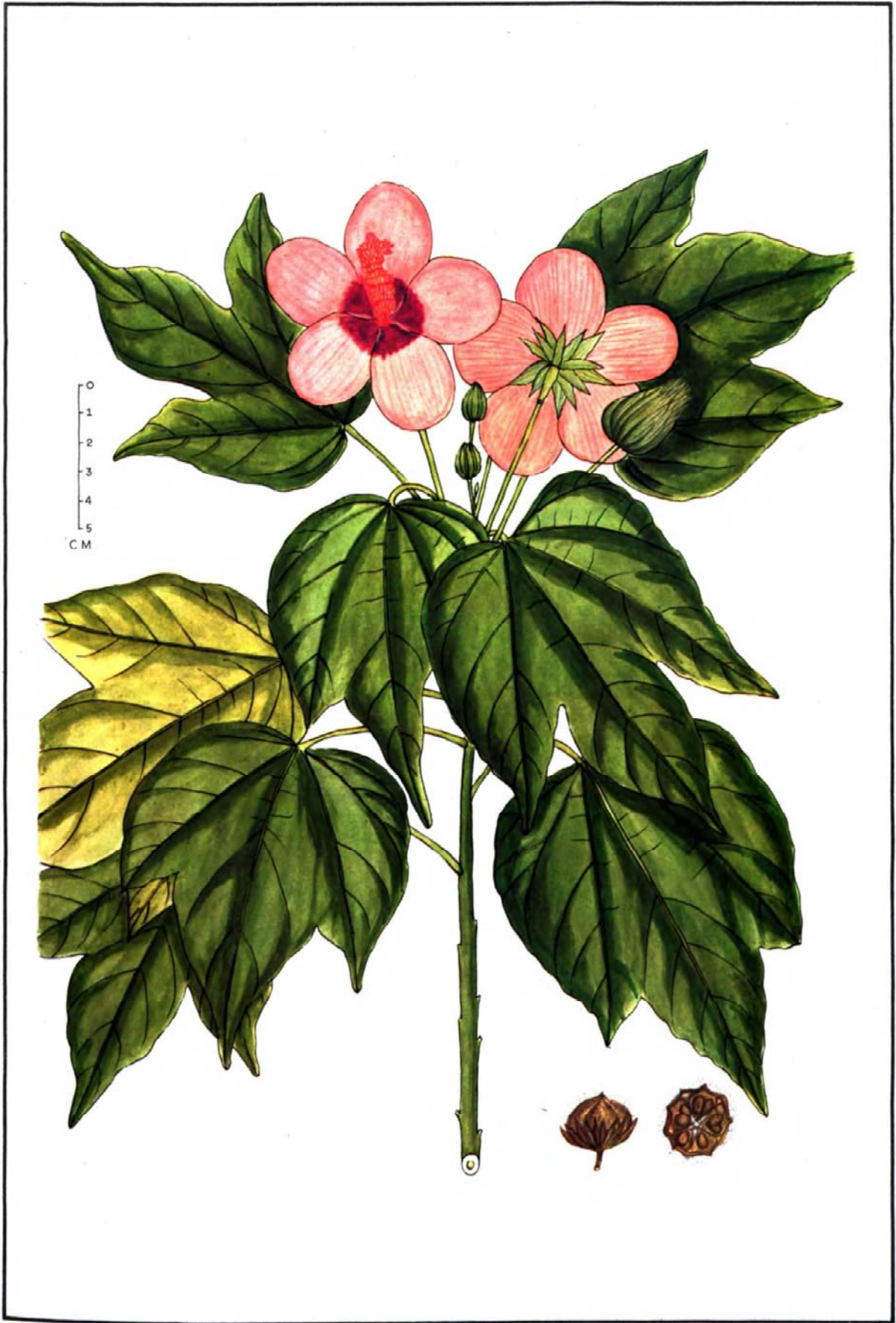
Stem arborescent. *Branches* ascending. *Leaves* alternate, petioled, slightly three-lobed, from three to five-nerved, scolloped, waved, sometimes toothed, smooth. *Petioles* round, rather shorter than the leaves. *Stipules* bristle-like, falling. *Peduncles* solitary from the axils of the exterior leaves and terminal, as long as the petioles, round, one-flowered, articulated near the apex. *Flowers* large, rose-coloured, with a dark purple centre. *Calyx*; *exterior* from eight to ten-leaved; *leaflets* erect, lanceolate, pointed; *margins* waved and reflexed. *Corol* flat. *Filaments* collected in verticels round their tube. *Capsule* roundish, a little oblate, five-ribbed, covered with much strong, grey, burning hair; the sutures on the inside are also thickly lined with stiff hairs.

The mountaineers use the bark of this species for cordage.

I have often observed that the bark of most of the Indian plants of this class, particularly of this family, might be employed for the same purposes as hemp. It almost always peels off in very long slips, and is very tough, that of *Abroma augusta* is particularly so, and is of the same natural order.

In India I have also often observed with admiration, that those flowers with pistils longer than the stamens, and that are not naturally pendulous, stand in an oblique, or nearly perpendicular direction; this obliquity is further assisted by the curvature of their pistils, which together with the oblique direction of the flower, generally bring their stigmas immediately below the anthers. This structure is most conspicuous in the flowers of those plants belonging to the natural order *Columnifera*, and is certainly a strong argument in favour of the *Sexual System*.

(W. Roxburgh, *Flora Indica* 3: 198, 1832)



HIBISCUS COLLINUS Roxb.

3. HIBISCUS FURCATUS Roxb.

Shrubby, very ramous, armed with sharp thorny bristles arising from coloured, glandular tuberculi. *Leaves* from entire to three-parted, grossly serrate, and hairy. *Stipules* falcate, lanceolate. *Peduncles* solitary, axillary, one-flowered; *exterior calyx* of ten forked leaflets. *Capsule* hairy, ovate, acute.

Discovered by the Rev. Dr. Carey, indigenous in the interior parts of Bengal. The seed sent by him to the Botanic Garden in one year produced plants that were six or eight feet high, and blossomed during the rainy season.

Stems erect, somewhat ligneous. *Branches* numerous, expanding, armed with numerous stiff, acute, spinous, recurved bristles, issuing from small, coloured, glandular papilli; amongst the bristles, soft hairs are intermixed. *Leaves* from cordate below, to three and even five-lobed about the middle of the plant; and again near the top narrow-cordate; all are serrate and hairy; the size very various. *Petioles* almost as long as the leaves, and armed like the branches. *Stipules* falcate, lanceolate; *margins* ciliate. *Peduncles* axillary, solitary, one-flowered, shorter than the petioles, and like them armed with the same sharp bristles. *Flowers* large, yellow with a dark crimson bottom. *Calyx*, the *exterior* one about two-leaved, each leaflet enlarged beyond the middle; from the base of the enlargement on the upper side, issues a clavate, erect, or incurved segment; these form a cancellated dome over the inner, five-parted, rigid, glandular, bristly, hairy calyx; while the exterior broader, but shorter segments spread out horizontally. *Capsule* very hairy on the outside. *Seeds* few, from two to four in each cell.

I considered this to be *bifurcatus*, *Linn. Sp. Pl. ed. Willd.* iii 819 until I reared that very plant, from seed received from the Island of Trinidad; the shrubs are nearly of the same size, but in that species every part is less hairy, the coloured glandular base of the bristles are not to be found; the *stipules* simply setaceous, and the flowers rose-coloured; consequently I must consider this a well-marked distinct species, though nearly allied in the shape of the leaves and exterior calyx. Like many of the other plants of the natural order, *Columnifera* of Linnaeus, or *Malvacea* of Jussieu, the bark of this species of *Hibiscus*, yields abundance of strong, white, flaxen fibres; but the prickliness of the plant renders it very troublesome to handle.

Note: *Hibiscus bifurcatus* in the upper left corner taken from the real American Plant reared in the Botanic Garden at Calcutta from seed from Trinidad.

(W. Roxburgh, *Flora Indica* 3: 204, 1832)



HIBISCUS FURCATUS Roxb.
(Left top inset—Flower of *Hibiscus bifurcatus*)

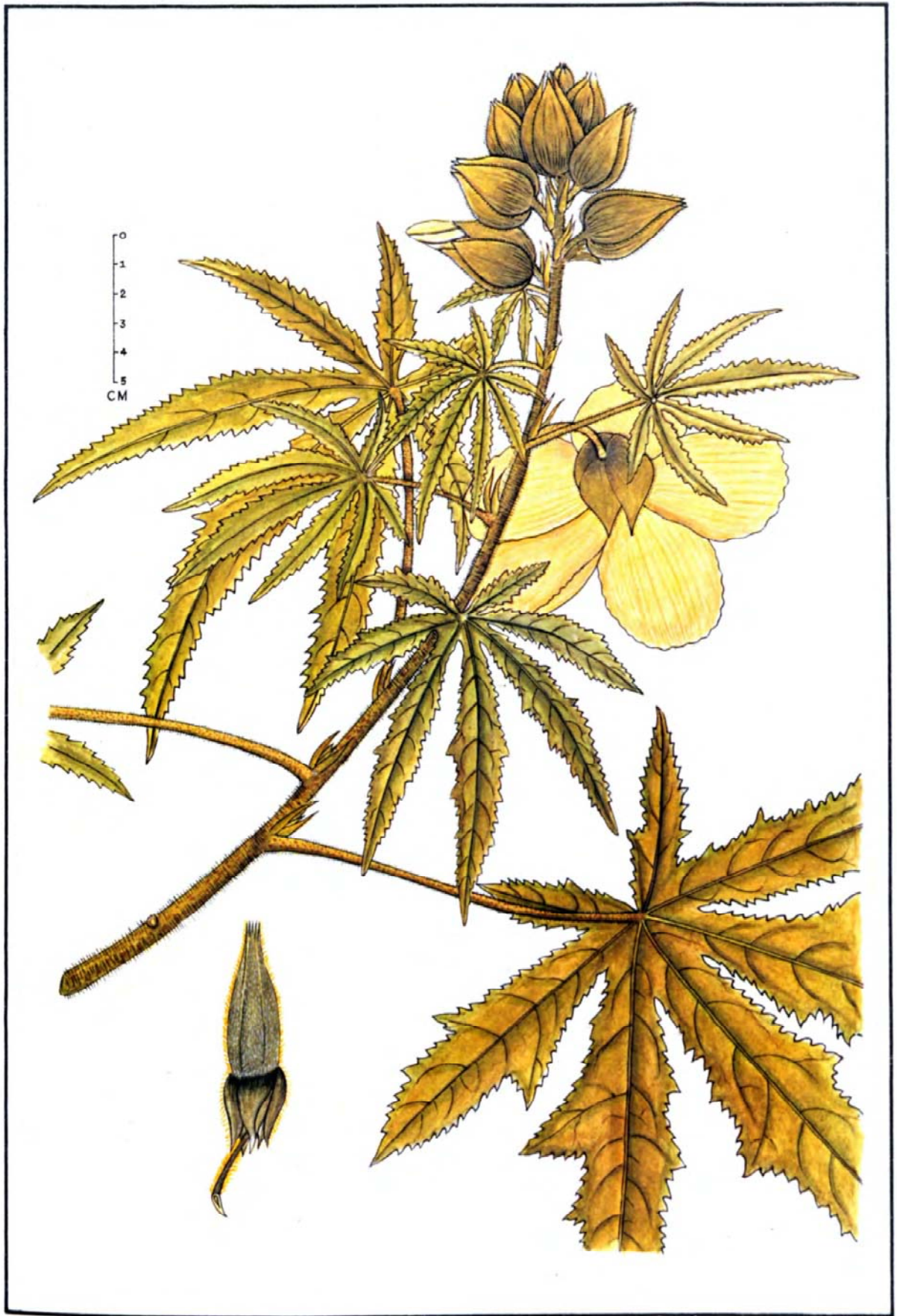
4. HIBISCUS PUNGENS Roxb.

Perennial, erect, ramous, every part armed with acute bristles. *Leaves* palmate; *division* linear-lanceolate, somewhat lobate, and deeply dentate-serrate. *Stipules* ensiform. *Racemes* terminal. *Exterior calyx* four-leaved, permanent. *Capsule* slender, acuminate, hairy, longer than the calyx.

From Nepal Dr. Buchanan sent the seeds to the Botanic garden, where the plants blossom about the close of the rains and in the cold season.

Stem erect, as thick as a walking cane, and often continuing for two or more years. *Branches* ascending, all are round, green, and densely clothed, as is every other part of the plant, with innumerable, diverging, strong, acute bristles; which enter the skin like spines. *Leaves* long-petioled, alternate, palmate; *lobes* linear-lanceolate, often lobate, and always deeply serrate-dentate; length and breadth of the whole leaf, from six to eight inches. *Stipules* broad-ensiform, or sub-lanceolate. *Racemes* terminal. *Flowers* drooping rather short-pedicelled, large, deep yellow. *Bracts* like the stipules. *Calyx*; the *exterior* one of four, large, broad-ovate, permanent leaflets; the *inner* one five-toothed. *Capsule* of a long, thin, tapering, conical form, and much longer than the calyces.

(W. Roxburgh, *Flora Indica* 3: 213, 1832)



HIBISCUS PUNGENS Roxb.

5. HIBISCUS TETRAPHYLLUS Roxb.

Annual, erect, ramous, hairy. *Leaves* palmate; *divisions* variously lobate, and acutely dentate. *Stipules* and *bracts* lanceolate. *Flowers* racemed. *Exterior calyx* four-leaved. *Capsules* linear-oblong, hairy.

A large, racemous, annual species, of from four to five feet high, found about Calcutta. Flowering time, the wet and cold seasons.

Stem erect, armed with very stiff short hairs, as well as the branches. *Leaves* palmate, hairy, and scabrous; *lobes* variously lobed, and dentate. *Petioles* round, longer than the leaves. *Stipules* lanceolate. *Flowers* large, yellow, campanulate, nodding on long terminal racemes, and from the exterior axils. *Calyx*, the *exterior* one four-leaved. *Capsule* ovate-oblong, five-sided, armed with much very stiff hair.

(W. Roxburgh, *Flora Indica* 3: 211, 1832)



HIBISCUS TETRAPHYLLUS Roxb.

6. KYDIA CALYCINA Roxb.

Exterior calyx four-leaved larger than the corol.

Hind. Choupultea.

Teling. Pandikee.

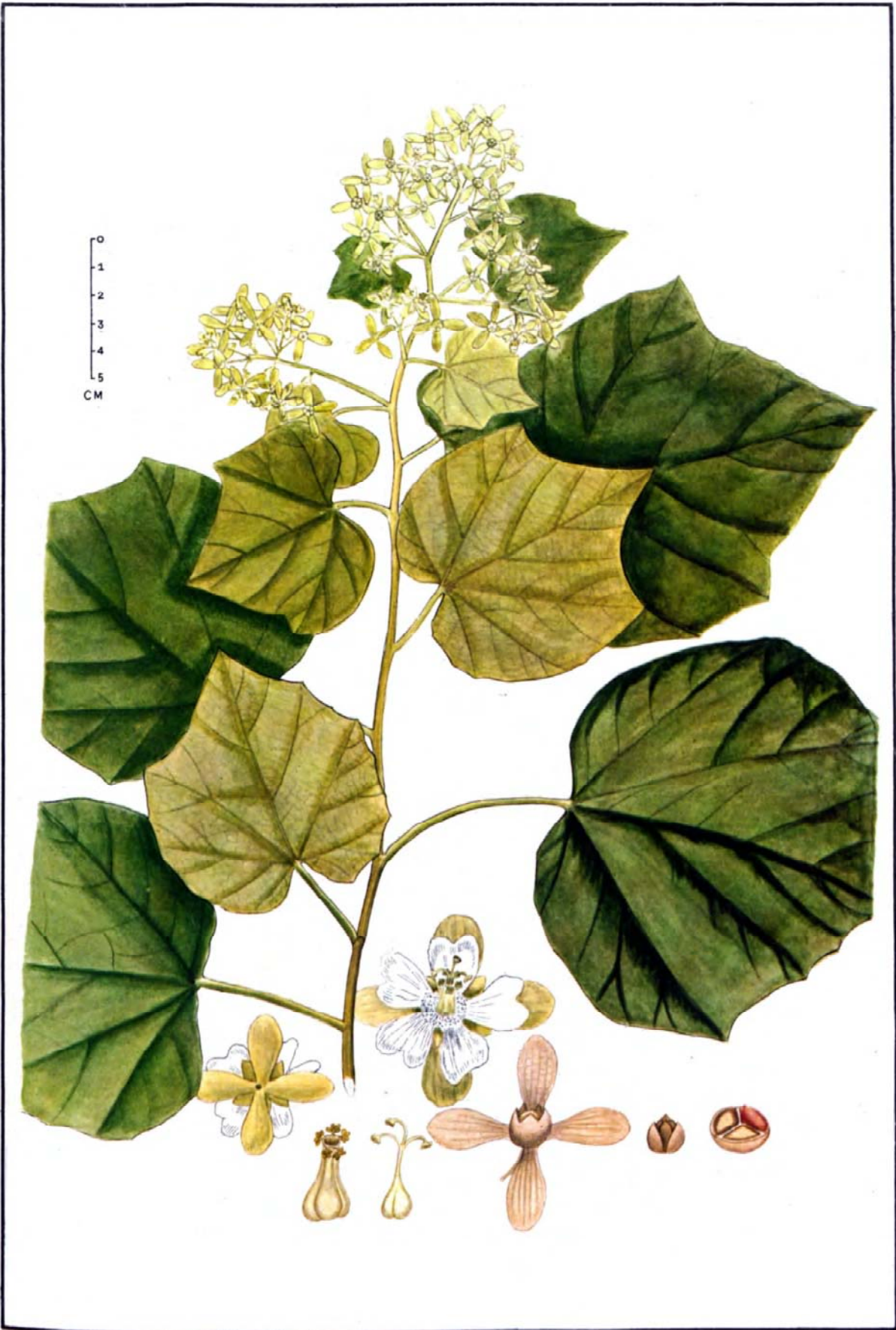
I have every reason to imagine this will form a new genus; its essential character being, I think, very distinct from any of those hitherto described; nor do I believe it was known to Dr. König, for I have never met with it but amongst the Circar mountains, where he never was.

It delights in such soil as is generally found on the banks of rivulets, water-courses, &c. where it grows to be a tree of a middling size. Flowering time, the cold season.

Trunk straight; *bark* ash-coloured. *Head* large, spreading, very ramous; *young shoots* covered with a brown mealy dust. *Leaves* alternate, petioled, broad-cordate more or less from three to five-angled, irregularly-dentate, from three to five-nerved; both sides downy; there are also small tufts of stellate hairs dispersed over both sides, together with a farinaceous dust; from three to six inches each way; on the middle nerve a little below the middle, and sometimes also on the two next to it is an oblong, hollow, yellow gland. *Petioles* round, from two to three inches long, covered with brown farina. *Panicles* terminal, large, globular, crowded, many-flowered. *Flowers* numerous, middle-sized, pure white, collected in small umbellets, many of which make a panicle. *Bracts* small, rust-coloured, downy. *Pedicels* filiform, round, about three quarters of an inch long, covered with brown, farinaceous powder. *Calyx* double; the *exterior* one constantly four-leaved, spreading. *Leaflets* oblong, obtuse, downy, striated; three times longer and larger than the inner calyx, permanent. The *interior* calyx one-leaved, campanulate, half five-cleft; mealy on the outside, and clothed with white short hairs on the inside. *Corol*; *petals* five, obliquely-obcordate, much longer than the interior calyx, but shorter than the exterior one, woolly at the base. *Filaments* five, exceedingly short, thick, coalesced below into a tube. *Anthers* twenty, four of them sessile, round the apex of each of the short filaments, oval, lobed, one-celled. *Germ* superior, conical. *Style*, length of the tube formed by the filaments, three-cleft; *divisions* recurved. *Stigmas* very large. *Capsule* small, somewhat three-lobed, hid in the inner calyx, covered with brown farina, and stellate rugosities, three-celled, three-valved, opening from the apex. *Seeds*, one in each cell, obtusely three-sided, brown, affixed to the bottom of the cell.

Note: I have found many of the flowers male. As yet I am unacquainted with the uses of this tree.

(W. Roxburgh, *Flora Indica* 3: 188, 1832)



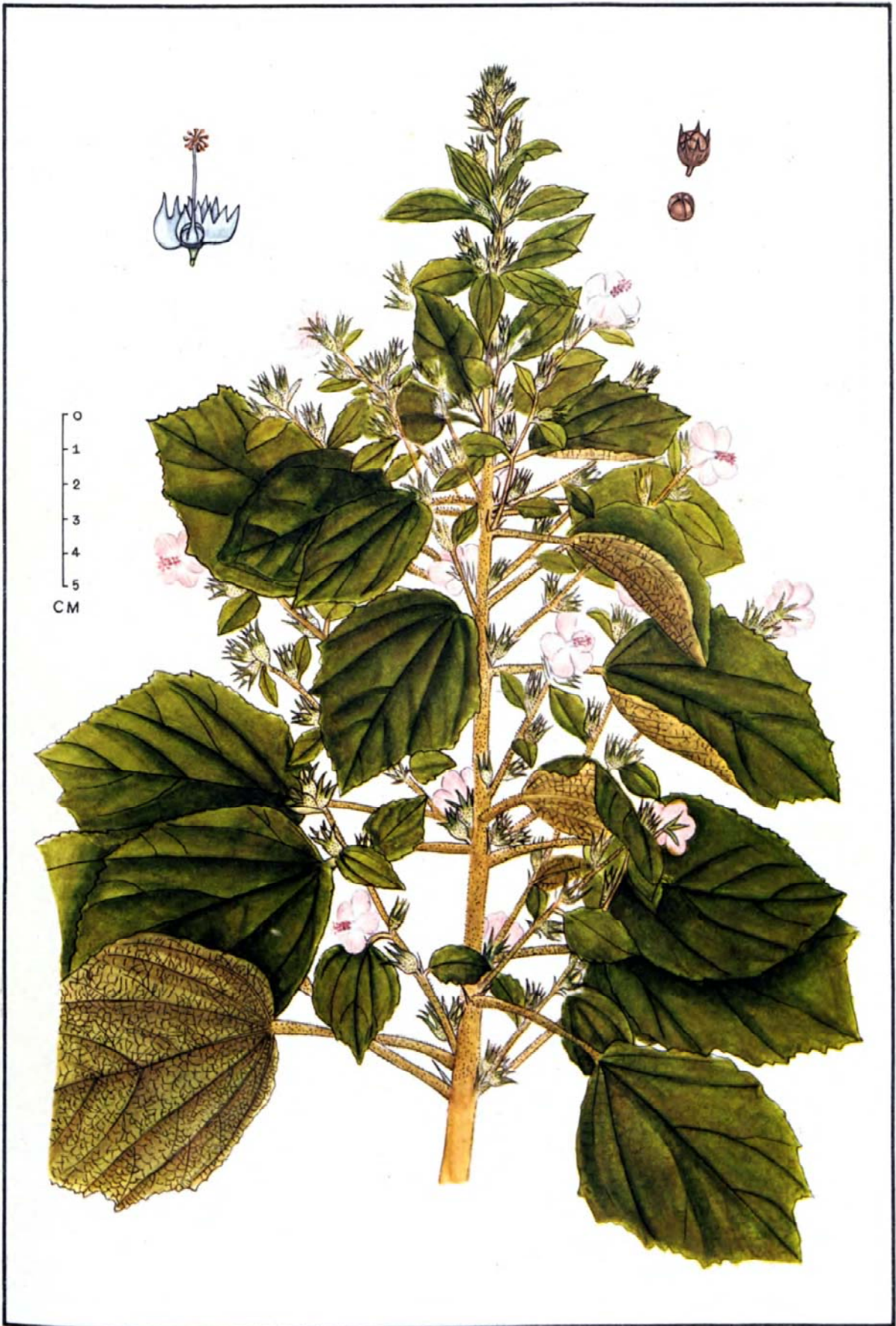
KYDIA CALYCINA Roxb.

7. URENA REPANDA Roxb.

Shrubby, erect, ramos, pubescent. *Leaves* ovate-cordate, repand, serrate-dentate. *Capsules* smooth.

A low, stout, very ramos species, a native of Coromandel; flowers in October.

(W. Roxburgh, *Flora Indica* 3: 182, 1832)



URENA REPANDA Roxb.

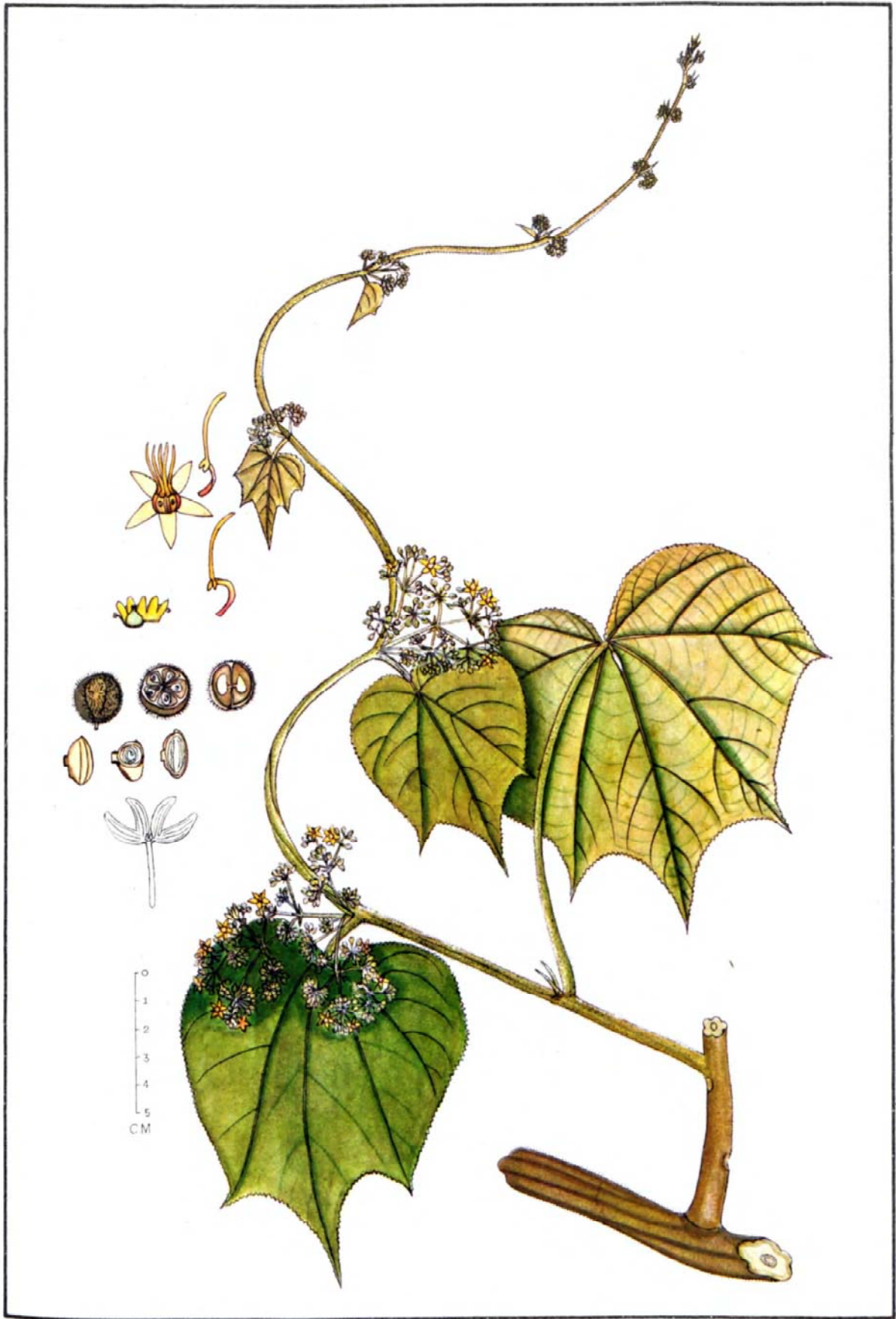
8. BÜTTNERA PILOSA Roxb.
(*Buettneria pilosa* Roxb.)

Shrubby, twining, hairy. *Leaves* from three to five, acute-angled, dentate. *Umbels* axillary, proliferous.

A most extensive, twining shrub; a native of Chittagong. The flowering time in the Botanic Garden at Calcutta is September. The seeds are ripe in April. I have also had specimens from Silhet.

Stem woody, twining, in five years old plants as thick as a man's wrist, and irregularly obtuse-sulcate. *Branches* numerous, twining up and over large trees, to a very great extent; the younger ones very hairy, and irregularly obtuse-sulcate. *Leaves* alternate, petioled, having from three to five acute angles, dentate, posterior lobes large and rounded; about seven-nerved with a large, long gland on the middle one near the base, from four to six inches each way. *Petioles* round, often as long as the leaves, hairy. *Stipules* subulate, hairy. *Umbels* axillary, generally one large, and super-decompound; and two or more smaller, all are clothed with short, harsh pubescence, and are much shorter than the leaves. *Bracts* subulate. *Flowers* numerous, small. *Calyx* of five, spreading, pale-coloured, lanceolate leaflets. *Petals* five; the lower third part of their length linear, yellow on the outside, and red within; much incurved so as to form a circular dome over the pistil and nectary, open at the five sides, and in the vertex, the other two-thirds filiform, below slightly incurved, above recurved; colour a bright orange. *Nectary* five-cleft, yellowish, divisions fleshy, truncate, shorter than the lower portion of the petals. *Filaments* short, inserted into the fissures of the nectary, recurvate. *Anthers* two-lobed. *Germ* round, hairy. *Style* short, five-grooved. *Stigma* minutely quinquidentate. *Capsules* the size of a filbert, round, armed with long, rigid bristles; texture hard, approaching to that of a nut, five-celled, ten-valved. *Seeds* solitary, small in proportion to its cell, and attached to its inner angle, ovate-oblong, rather pointed at the apex, and obliquely truncate at the base. *Integuments* three; the *exterior* and *interior* membranaceous; the middle one hard and thick. *Perisperm* none or very thin. *Embryo* inverse, yellow. *Cotyledons* large, two-lobed; and rolled spirally up. *Plumula* two-lobed. *Radicle* cylindric, nearly as long as the seed, superior.

(W. Roxburgh, *Flora Indica* 1: 618, 1832)



BÜTTNERA PILOSA Roxb.

9. PTEROSPERMUM LANCEAEFOLIUM Roxb.

Leaves lanceolate, acuminate, entire. *Flowers* axillary, long-peduncled. *Capsule* lanceolate; *cells* from two to four seeds.

Beng. Bun Kulla.

A tree, a native of the forests in the neighbourhood of Silhet, where it blossoms about the beginning of the rains in May and June; and the seed ripens at the beginning of the cold season.

Young shoots slender, hoary, and uncommonly straight. *Leaves* alternate, short-petioled, lanceolate, with a round base, entire, acuminate, hoary underneath, from three to six inches long by one and a half broad. *Stipules* generally bifid, or trifid, ferruginous. *Peduncles* axillary, half the length of the leaves, round, slender, clavate at top, supporting a single, pretty large, white fragrant flower. *Bracts* two, or three, rather above the middle of the peduncle, like the stipule, but more divided. *Calyx* five-cleft; *segments* linear, revolute, hoary. *Petals* five, rather longer than the calyx, obliquely cuneiform. *Stamina* as in the genus, viz. fifteen fertile filaments, with five longer, sterile ones; all are united at the base, and inserted on the cylindrical receptacle, which elevates them and the germ. *Anthers* fifteen, linear, erect. *Germ* oblong, five-celled, with about four seeds in each, attached to the axis. *Style*, the length of the sterile filaments. *Stigma* clavate. *Capsules* lanceolate, hoary, with very light grey, soft, short pubescence, very obscurely five-cornered, five-celled, five-valved. *Seeds* from two to four in each cell, attached as in the germ, oval winged; the wing nearly as broad as the seed, and about three or four times its length.

(W. Roxburgh, *Flora Indica* 3: 163, 1832)



PTEROSPERMUM LANCEAEFOLIUM Roxb.

10. PTEROSPERMUM SEMI-SAGITTATUM (Buch.) ex Roxb.

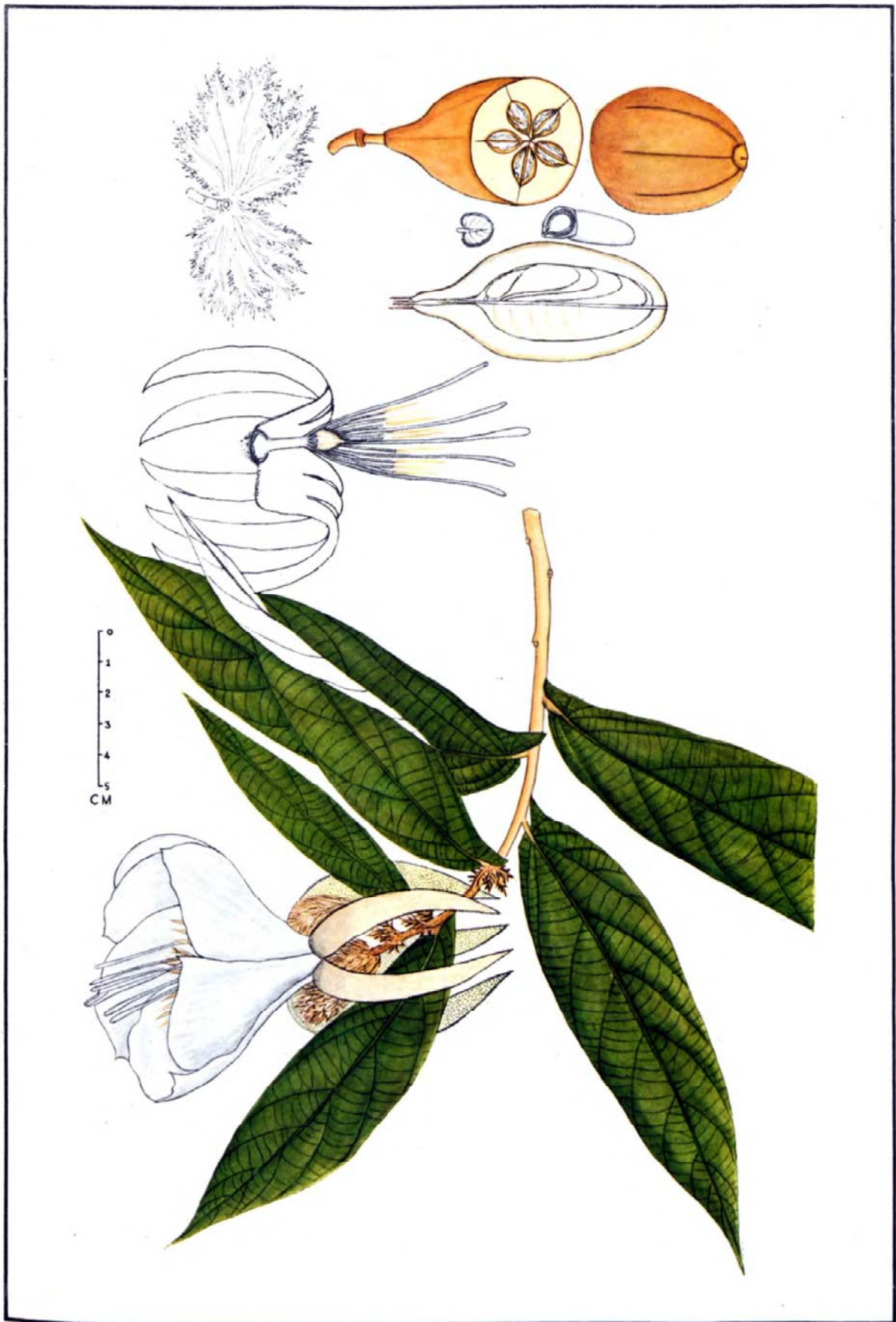
Leaves sub-lanceolate, entire, base of the inferior half protruded. *Flowers* terminal and solitary. *Capsule* oblong-elliptic, densely clothed with stellate pubescence.

Found by Dr. Buchanan at Chittagong, and from thence seeds were sent by him to the Botanic Garden at Calcutta in 1797, where the trees grow luxuriantly, and flower about the close of the hot season, ripening their seeds ten months afterwards. In twelve years the trees are thirty or forty feet high; thick in proportion, and promise to be larger.

Trunk straight. *Young shoots* very downy. *Bark* of the trunk and large branches ash-coloured. *Leaves* alternate, bifarious, short-petioled, spreading, lanceolate, entire, the base of the inferior half of each leaf protruded into a lobe of considerable size, and generally longer than the petiole, smooth above, hoary underneath, about six inches long, and nearly two broad. *Stipules* finely pinnatifid. *Flowers* terminal, and axillary, generally solitary, on short, downy, rust-coloured peduncles, drooping, large, pure white. *Bracts* or *involucre*, generally three-leaved, and very downy, from three to five-parted, with divisions variously lacinate. *Calyx* five-cleft; *divisions* recurvate, linear, longer than the corol; on the inside white, and villous; on the *outside* clothed with brownish, stellate, short hairs. *Corol* sub-campanulate. *Petals* five, obliquely obovate-cuneate. *Filaments* fifteen, with anthers which are shorter than the style, and five abortive ones as long as the style; they are not united at the base, but inserted on the apex of the long sub-cylindrical receptacle, round the base of the germ. *Germ* a little elevated above the stamina, on a short, proper, fleshy receptacle, ovate, downy. *Style* single, filiform, as long as the abortive stamina. *Stigma* clavate. *Capsule* without angles, oblong-elliptic, from two to three inches long, and one and a half in diameter, ligneous, clothed with an immense quantity of brown, stellate pubescence, five-celled, five-valved. *Seeds* about ten in each cell, attached from the lower and inner angle in two rows to the inner edge of the triangular valves, obliquely oval, compressed; from the upper end rises a large, straight, thin, brown, membranaceous wing. *Integument* single, spongy, of a light brown. *Perisperm* amygdaline, entering into the various folds of the cotyledons. *Embryo* nearly as extensive as the perisperm, erect, pure, white. *Cotyledons* two, foliaceous, nearly round, variously folded. *Plumula* minute, conical. *Radicle* cylindric, inferior, its point immediately opposite to the umbilicus of the seed.

I am not at present possessed of any information respecting the uses the natives make of any part of this tree, nor of the quality of its timber. It grows fast to be of considerable magnitude, and is at all times ornamental, being clothed to the ground with numerous branches, abounding in beautiful foliage.

(W. Roxburgh, *Flora Indica* 3: 160, 1832)



PTEROSPERMUM SEMI-SAGITTATUM (Buch.) ex Roxb.

11. STERCULIA ALATA Roxb.

Leaves cordate, entire, from three to five-nerved. *Racemes* crowded about the ends of the branchlets, length of the petioles. *Follicles* sub-rotund. *Seeds* numerous, winged.

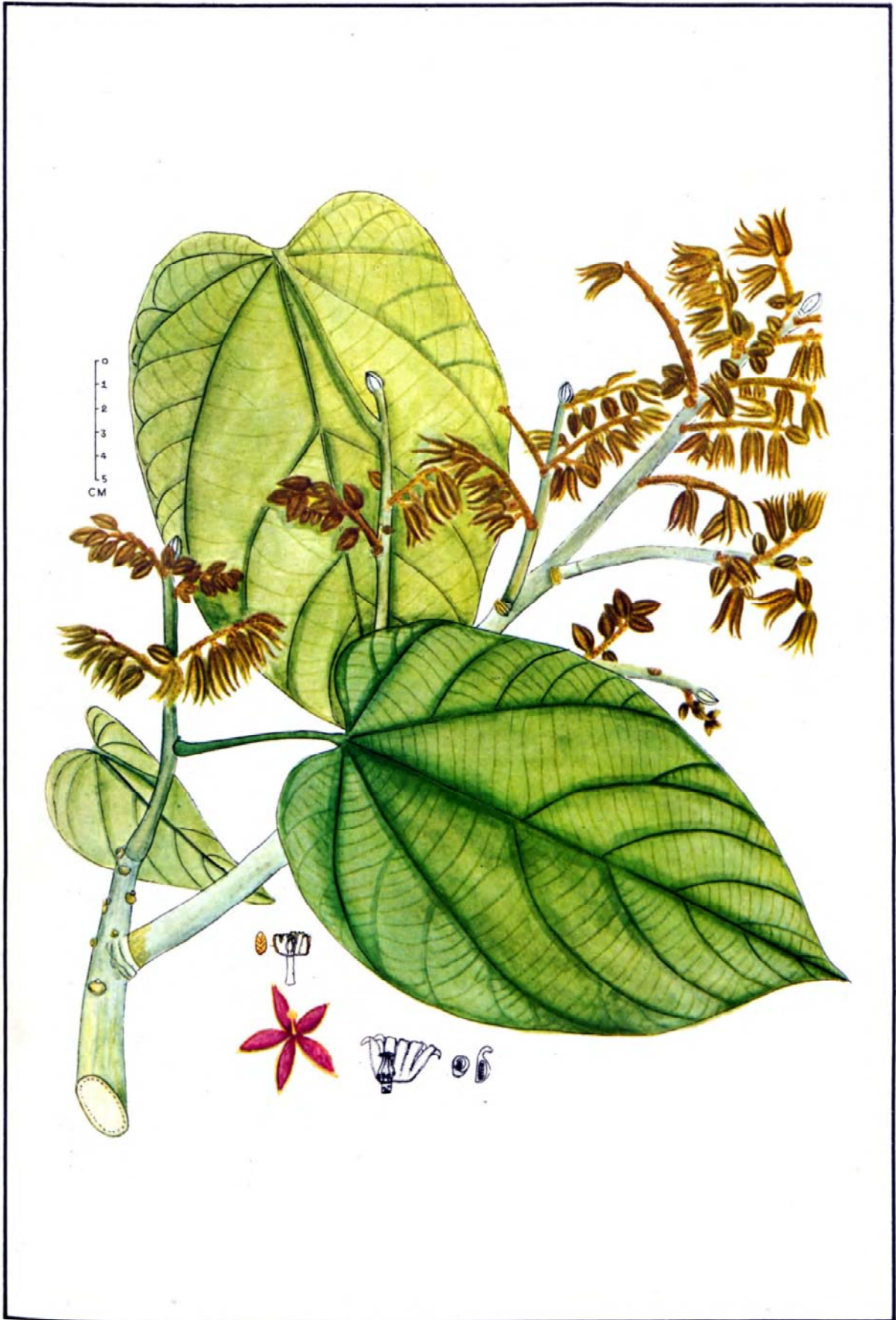
A native of the countries immediately east of Bengal, where it grows to be a large, handsome, very ramous tree. Flowering time, in the Botanic Garden, February and March, and the seed ripens about the close of the year. In the province of Chittagong, the tree is called *Buddha Narikella*, which may be translated, *Boodh's coco-nut*, *Narikella* being one of the Sanskrit names of the *Coco-nut*. In Silhet it is called *Toola*, and there the seeds are said to be eaten by the natives as a cheap substitute for opium.

Trunk, in trees twenty-five years old, now growing in the Botanic Garden, straight, tall, four feet above the ground, three and a half feet in circumference. *Bark* quite smooth, and ash-coloured. *Branches* numerous, towards the top of the tree ascending, below divaricate. In its native soil they arrive at a much greater size; viz. ten feet in circumference and above one hundred high. *Leaves* alternate about the ends of the branchlets, petioled, cordate, entire, smooth, from three to five-nerved, from four to twelve inches long, and from three to eight broad. Deciduous about the time the blossoms appear in February and March. *Petioles* round, smooth, from one to four inches long. *Stipules* minute, subulate, caducous at a very early period. *Racemes* axillary, sometimes terminal, thin, sub-panicled, but the most common mode is racemes in pairs from the axils of the former years toward the ends of the branchlets, and about as long as the petioles, or more densely clothed with ferruginous stellate pubescence. *Flowers* pretty large, short-pedicelled, reflex; male and female on the same racemes. *Bracts* ensiform, three under each flower, and caducous at a very early period. *Calyx* campanulate, divided nearly to the base, into five thick, fleshy, recurved, lanceolar segments; outside clothed with ferruginous, stellate pubescence; inside elegantly striated with crimson and yellow. *Corol* none.

MALE FLOWERS. *Column* of the abortive stamina cylindric, much shorter than the calyx, straight. *Filaments* scarcely any. *Anthers* imbricated in five fascicles of about five each, which unite below the middle and form a cup round the five imperfect germs.

FEMALE HERMAPHRODITE FLOWERS. *Column* none. *Stamina* five sessile bundles of imperfect anthers embracing the five grooves of the base of the germs. *Germ*s five, singly semi-ovate, one-celled, with two rows of ovula in each, vertically attached to the inner angle of the cell. *Styles* short, recurved, villous. *Stigmas* rather broad and emarginate. *Follicles* or rather *leguminous capsules* from one to five, from the size of a man's fist, to that of an infant's head, nearly round, long-peduncled, one-celled, one-valved; *valve* thick, tough, and very fibrous; *surface* densely clothed with a brownish olive, mealy pubescence. *Seeds* many, attached to the margins of the valve, oblong, considerably compressed, each terminated by a long, broad, spongy wing (hence the specific name), which becomes thin and sub-membranaceous at the apex. *Integuments* three; the *exterior* one, a brown, friable, spongy body with a few fibres from the wing; the *middle* or *second* one forms an oval nuciform envelope for the embryo only, and seems composed of three parts; the exterior and interior thin, brown and friable, and the middle part thicker, tough and hard; the *interior* integument a thin membrane. *Perisperm* none. *Embryo*; *cotyledons* equal, conform to the seed, three-nerved. *Plumula* two-lobed. *Radicle* patelliform, lodged immediately within the umbilicus, relative, centripetal.

(W. Roxburgh, *Flora Indica* 3: 152, 1832)



STERCULIA ALATA Roxb.

12. STERCULIA LANCEAEFOLIA Roxb.

Leaves lanceolate, entire, smooth. *Racemes* axillary, simple, much shorter than the leaves; *flowers* red, long-pedicelled. *Capsules* oblong, villous, from four to eight-seeded.

Ushlea the vernacular name in Silhet, where it is indigenous, growing to be a middling sized tree. Flowering in March and April, and the seed ripening in May and June.

Bark of the trunk and larger branches ash-coloured; *young shoots* slightly villous, I may say smooth, as the little pubescence they have, when very tender, soon rubs off; thus it is also with the leaves. *Leaves* alternate, petioled, lanceolate, rather obtusely acuminate, entire, smooth, from four to eight inches long, by from one to three broad. *Petioles* about an inch long, thick at both ends. *Stipules* thick, subulate, a little hairy, caducous. *Racemes* axillary, or under the leaves, and much shorter than they, simple, erect. *Flowers* few, small, red, long-pedicelled, by far the greater part are male. *Calyx*, *stamina* and *pistillum* as in the genus. *Capsules* follicular; from one to five come to maturity, they are oblong, rather obtuse; the surface rather harsh with very minute, short hairs; length about three inches. *Seeds* from four to eight, oval. *Integuments* three; the *exterior* one thin, brittle, polished, black; the *second* thin, brown; between it and the exterior one a firm, dull-coloured, soft, sebaceous lamina; the *interior* integument membranaceous, light-brown. *Perisperm* in rather small quantity. *Embryo* straight, of a pale yellow. *Cotyledons* oval, nearly the size of the perisperm, thick and fleshy. *Radicle* ovate, pointing to the apex of the seed, directly opposite to the umbilicus.

(W. Roxburgh, *Flora Indica* 3: 150, 1832)

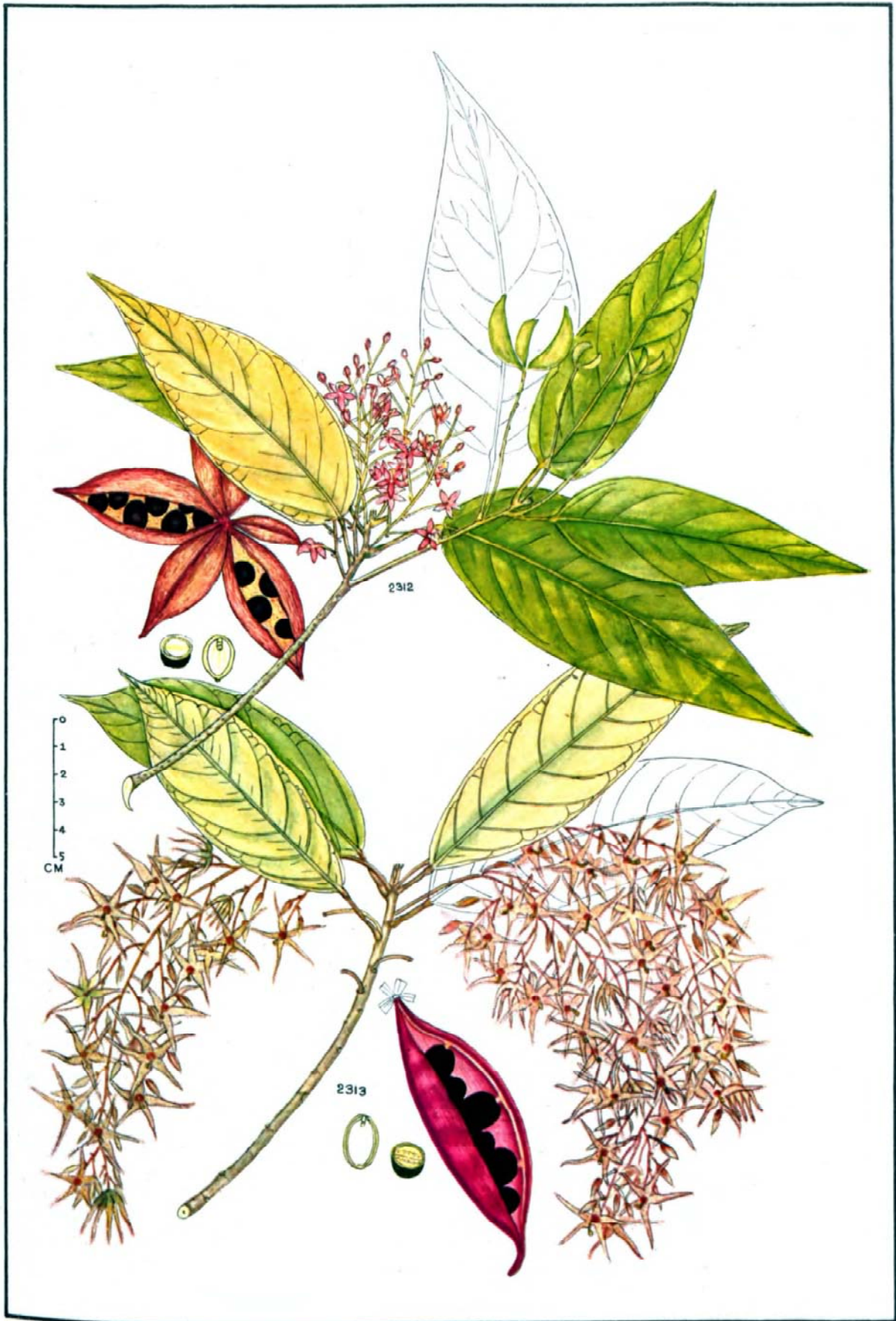
STERCULIA COCCINEA Roxb.

Leaves lanceolar, entire, smooth. *Panicles* axillary, drooping; segments of the calyx expanded, filiform and woolly. *Capsules* oblong, beaked, from four to eight-seeded.

A small tree, a native of Silhet where it blossoms during the hot season, and the seed ripens in May and June. It is conspicuous on account of the spreading, slender, woolly segments of the border of the calyx, and the crimson capsules.

Young shoots a little hairy. *Leaves* alternate, petioled, lanceolar, with a rather abrupt base, entire, obtusely acuminate, with a few depressed, stellate, harsh hairs underneath, from four to eight inches long, and from one to three broad. *Petioles* about an inch long, and hairy. *Stipules* subulate, hairy. *Panicles* axillary, and under the leaves, solitary, the length of the leaves, but pendulous; while scarcely expanded, a little hairy. *Flowers* rather long-pedicelled, pretty large, by far the greatest part male, of a greenish yellow colour, tinged with pink. *Bracts* subulate. *Calyx* rather flat; *segments* of the border five, long, slender, and woolly, spreading out in various directions, not converging, with their lips united, as in *Balanghas parviflora*, and *angustifolia*, which also have long slender segments. *Stamina* and *pistillum* as in the other species already described. *Capsules* follicular, from one to five come to maturity, linear-oblong, ending in a sub-cylindric, obtuse, curved beak, villous, both the inner and exterior surfaces of a bright crimson; general length from three to four inches. *Seeds* from four to eight, oval, smooth, of a bright chesnut colour. *Perisperm* in small quantity, and quite divided by the cotyledons. *Embryo* straight. *Radicle* in the apex of the seed directly opposite to the umbilicus.

(W. Roxburgh, *Flora Indica* 3: 151, 1832)



STERCULIA LANCEAEFOLIA Roxb. (2312)
STERCULIA COCCINEA Roxb. (2313)

13. STERCULIA GUTTATA Roxb.

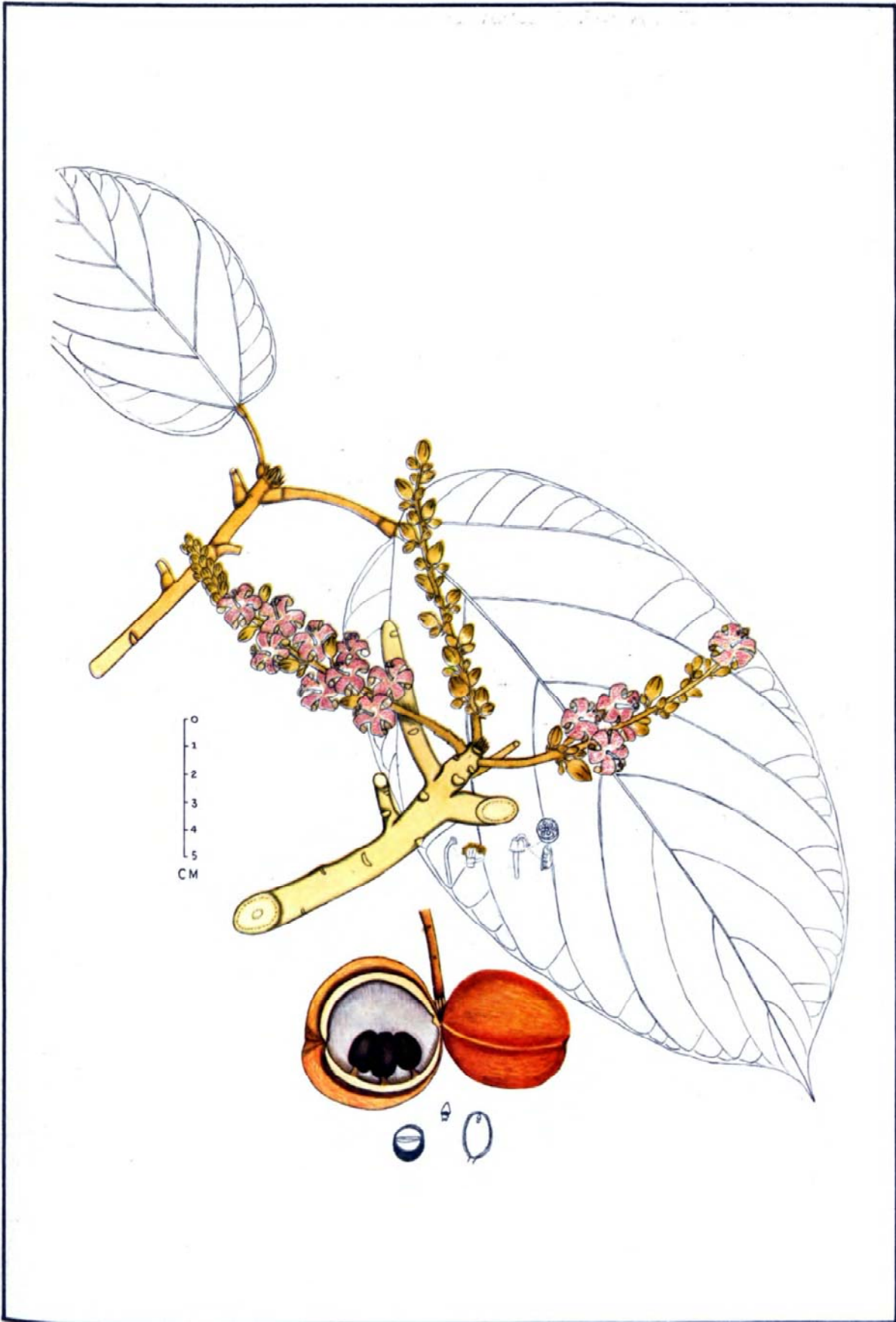
Leaves oblong, entire, villous underneath. *Racemes* terminal, and from the fork of the branches, simple.

Ramena-pou-maram. *Rheed. Mal.* iv. t. 61.

A native of Malabar, from Wynaad Captain Dickenson sent the seeds to the Botanic Garden in 1802, and the young trees reared therefrom, blossomed for the first time in December 1809. They were then about twenty feet high, and the trunk twenty-one inches in circumference, four feet above the ground.

Trunk straight to the top of the trees. *Bark* considerably cracked, and no doubt in old trees much so; that of the young parts smooth, ash-coloured; *young shoots* clothed with stellate down, inwardly it abounds with very strong, white, flaxen fibres, of which the inhabitants of Wynaad manufacture a kind of coarse cloth. *Petioles* round, downy, from two to three inches long. *Stipules* ensiform, caducous at an early period. *Racemes* terminal, and from the divisions of the branchlets, diverging, simple, clothed with ferruginous stellate pubescence. Flowers tern, short-pedicelled, middling sized, inodorous, by far the greater part hermaphrodite. *Bracts* lanceolar, a larger one below the middle flower of the three, and a minute one under each of the other two. *Calyx* nearly rotate, with its five segments revolute, both sides very pubescent; the outer side pale yellow; the inner one beautifully marked with numerous, minute purple glands on a yellow ground. *Anthers* about a dozen, inserted on the border of the thin nectarial belt which embraces the base of the germ. *Germ*s long-pedicelled, globose, from three to five-lobed; three most frequent, downy, from three to five-celled; each cell contains two vertical rows of ovula, attached to the inner angle of the cell. Many of the flowers are abortive, or male-hermaphrodite. *Style*, in the fertile hermaphrodite, retrofracted, nearly as long as the germ; in the male-hermaphrodite scarcely any. *Stigma* from three to five-lobed. *Capsules* from one to five, nearly round, of the size of a small apple, one-celled, one-valved with the surface furrowed, orange-coloured, lined on the inside with a firm, smooth, fibrous, pink-coloured parchment-like membrane; the margins of the opening, and pedicels of the seed very hairy. *Seeds* few, oblong, of the size of a field bean. *Integuments* three; the *exterior* one thin, black and brittle; the *second* thin, light brown and tough; between these two is a soft, white, sebaceous substance; the *inner* integument is membranaceous. *Perisperm* on each side of the embryo amygdaline. *Embryo* straight. *Cotyledons* elliptic, extending completely through the perisperm. *Radicle* small, lodged in the apex of the seed opposite to the umbilicus.

(W. Roxburgh, *Flora Indica* 3: 148, 1832)



STERCULIA GUTTATA Roxb.

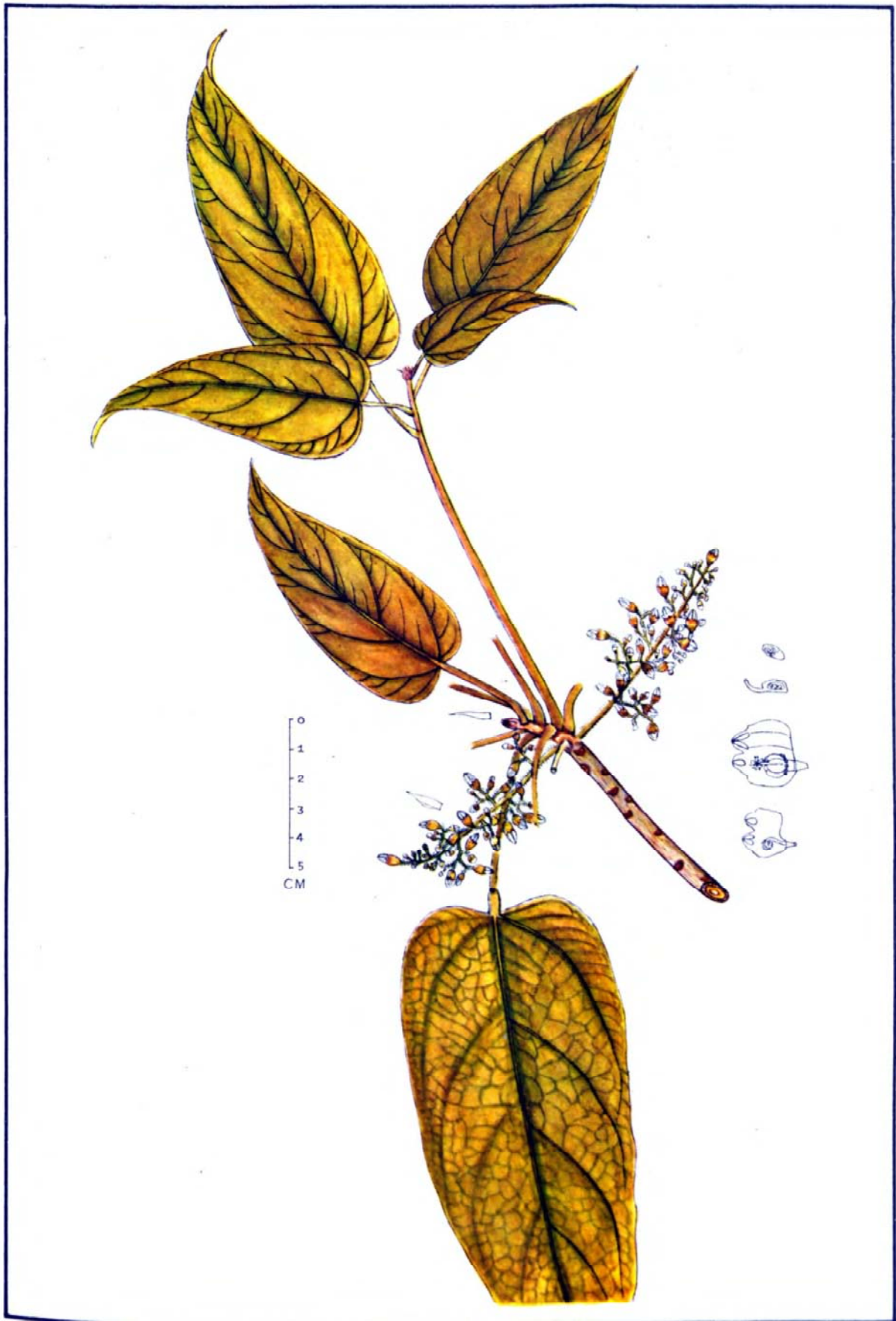
14. STERCULIA PARVIFLORA Roxb.

Leaves cordate-oblong, acuminate. *Panicles* lateral, diverging. *Tube* of the calyx gibbous, with the apices of its segments united, and the sides gaping.

Hind. Ram-julparee.

A middling sized tree, a native of the hills east of Tippera. In flower in March.

(W. Roxburgh, *Flora Indica* 3: 147, 1832)



STERCULIA PARVIFLORA Roxb.

15. STERCULIA VILLOSA Roxb.

Leaves from five to seven-lobed; *lobes* repand, or lobate, firmly acuminate. *Panicles* pendulous. *Follicles* oblong, villous, many-seeded.

A native of the mountainous countries to the eastward of Bengal. Flowering time, the beginning of the hot season.

Trunk straight. *Bark* smooth. *Branches* few, spreading. *Leaves* alternate, petioled, roundish, or cordate-lobate, five-nerved; there are generally from five to seven acute, long-pointed, lobate lobes; when young very downy, particularly underneath, from twelve to eighteen inches each way. *Petioles* round, as long as the leaves, or longer, downy. *Stipules* lanceolate-cordate, downy, caducous. *Panicles* terminal, the longer pendulous, the shorter drooping, or diverging; every part covered with rust-coloured down. *Flowers* numerous, male and hermaphrodite mixed; the former by far the most numerous; all are pretty large; *border* of a pale yellow, or straw-colour, and the bottom of the bell pink. *Bracts* filiform, caducous. *Calyx* campanulate, outside downy.

HERMAPHRODITE FLOWERS. *Anthers* ten, two-lobed, inserted on the toothed edge of a membranaceous ring, which surrounds the base of the germs. *Germs* globular, elevated above the base of the *corol* by a curved cylindric column. *Style* single, the length of the germs, and recurved so much as to bring the five-lobed stigma into contact with the anthers. *Capsules* five, or fewer, &c. as in the germs, and covered with soft, rust-coloured down.

MALE FLOWERS. *Calyx* as in the hermaphrodite. *Stamens*; column, as long as the hermaphrodite, style and column taken together, hooked, apex a little enlarged for the reception of ten small twin anthers round its margin, in their centre, consisting of five glands the representation of a pistil.

(W. Roxburgh, *Flora Indica* 3: 153, 1832)



STERCULIA VILLOSA Roxb.

16. BERRIA AMOMNILLA Roxb.
(*Berrya ammonilla* Roxb.)

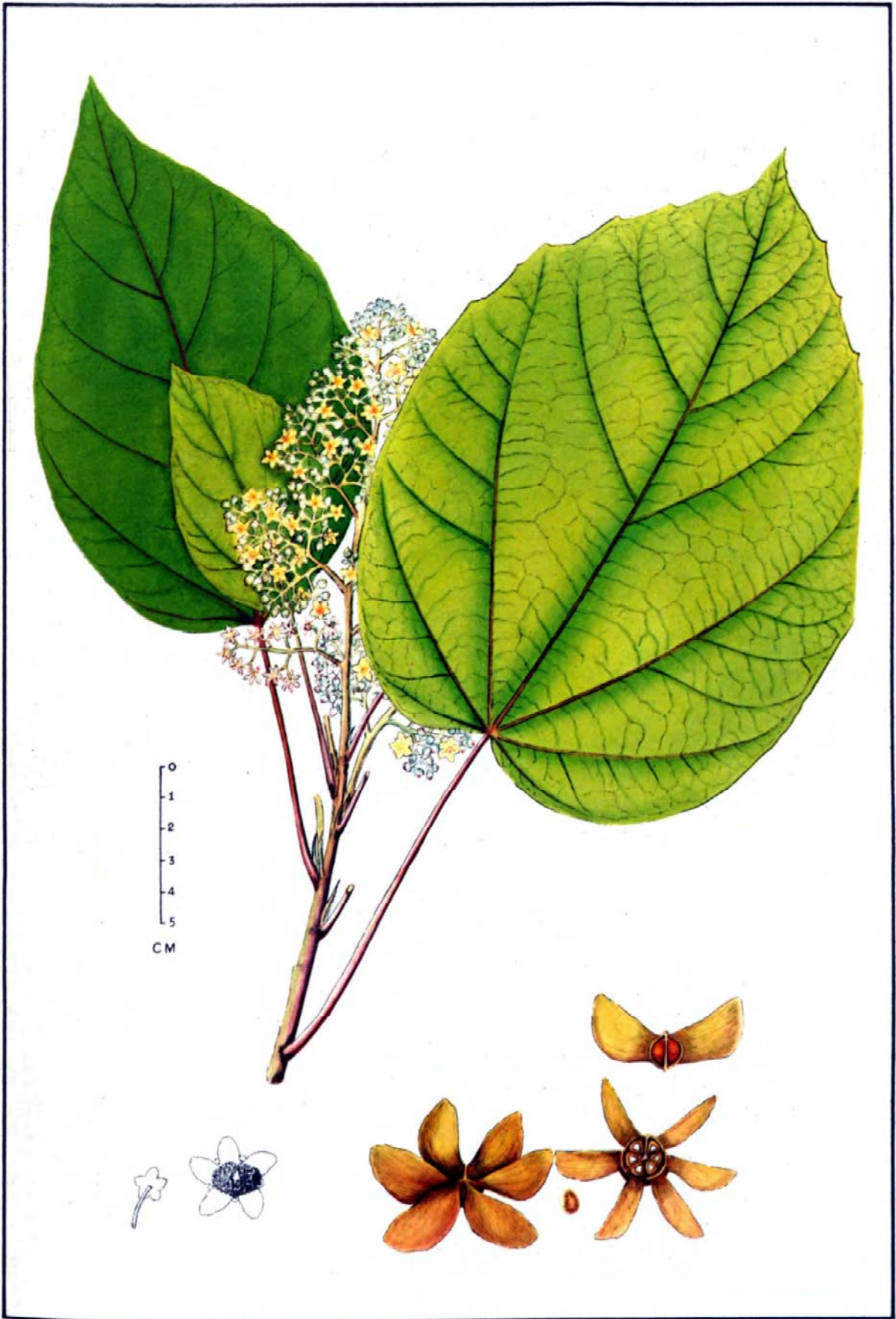
Cing. Ammonilla.

Eng. Trincomalee wood tree.

A native of Ceylon and one of their largest and most useful timber trees. Much of the wood is annually exported from Trincomalee. Trunk in young trees in the Botanic Garden at Calcutta, straight with smooth, light-brown bark, and an extensive, very dense, shady head. *Leaves* alternate, petioled, cordate, sometimes slightly scolloped, from five to seven-nerved, acute, smooth on both sides, from four to eight inches long. *Petioles* rather shorter than the leaves, slender, round, smooth, and often coloured. *Stipules* ensiform. *Panicles* terminal, and axillary, large, ramose, bearing numerous, elegant, middle-sized white flowers. *Calyx* one-leaved, downy, on the outside splitting irregularly into three, four or five segments, permanent. *Petals* five-spreading, linear-oblong, double the length of the calyx or more. *Filaments* numerous, half the length of the petals. *Anthers* incumbent, two-lobed, of a bright yellow. *Germ* superior, hairy, ovate, three-lobed, three-celled, with about six or eight ovula in each, attached in two vertical rows of the axis. *Style* short. *Stigma* three-cleft.

Capsules six-winged, round, three-celled, three-valved, each valve ornamented with two large oblong, membranaceous, reticulated, expanding villous wings. *Seeds* from one to four in each cell, irregularly ovate, clothed with much stiff, light-brown, short hair, affixed to the central receptacle near its apex. The hair very readily enters the skin and produces as much painful itching as that of *Carpopogon pruriens* (*Dolichos pruriens* Linn.). *Integuments* three, the exterior one friable, light-brown; the second tough, smooth and darker coloured; the inner one a membrane adhering to the perisperm. *Perisperm* conform to the seed, amygdaline. *Embryo* inverse, of a pale yellow. *Cotyledons* roundish, from five to seven-nerved. *Plumula* two-lobed. *Radicle* oblong, superior, with its point immediately within the umbilicus.

(W. Roxburgh, *Flora Indica* 2: 639, 1832)



BERRIA AMOMNILLA Roxb.

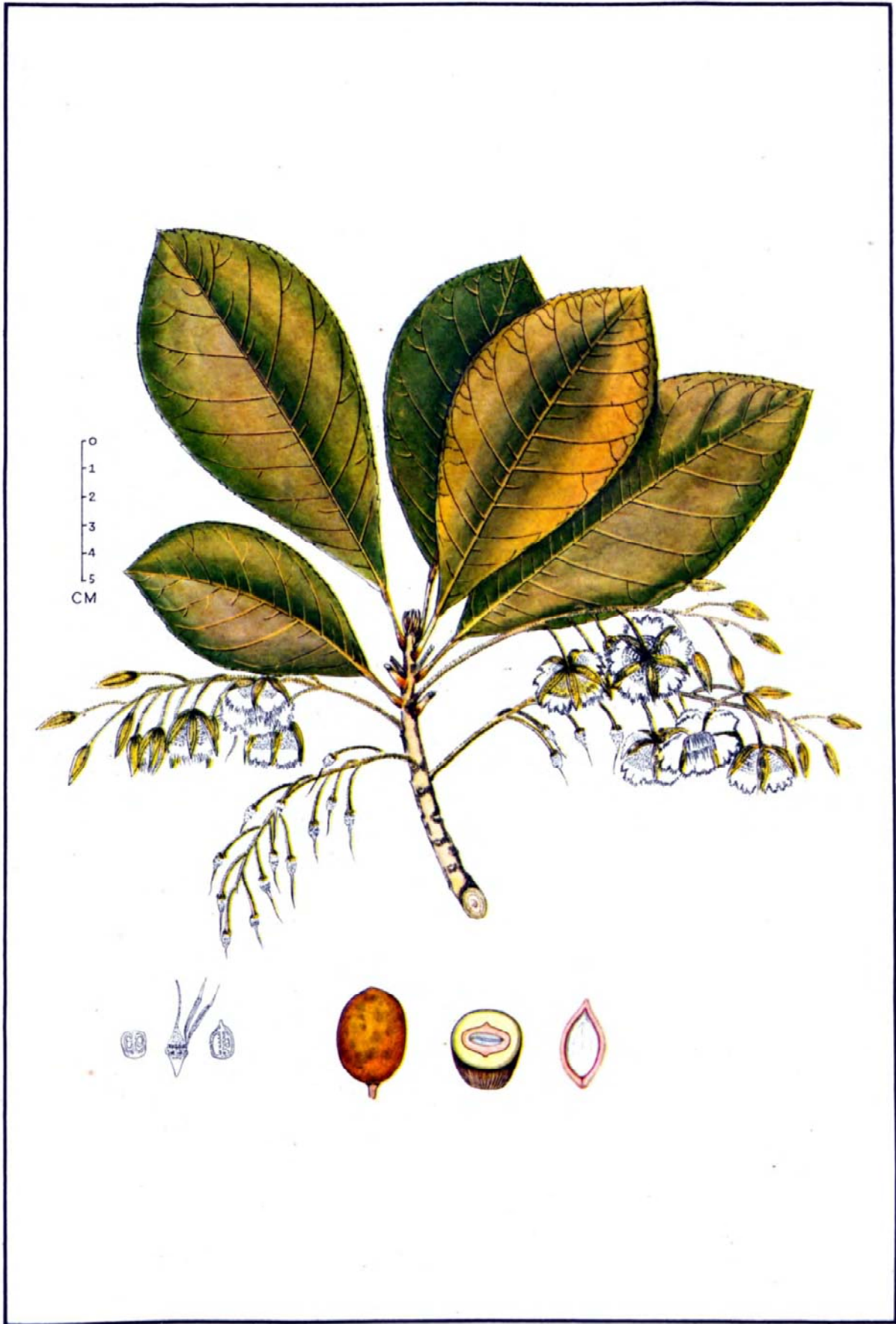
17. ELAEOCARPUS ARISTATUS Roxb.

Leaves petioled, obovate-cuneate, obtuse, and obtusely serrulate. *Racemes* axillary. *Stamina* from forty-five to fifty, awned. *Drupe* oval; *nut* generally one-celled.

Ran dulia is the vernacular name in Silhet, where it is indigenous, and grows to be a tree of very considerable magnitude. Flowering time in April, and the fruit ripens in August.

Young shoots thick, and rather rough, with a few hairs, which soon disappear by the wind, friction &c. *Leaves* alternately crowded about the ends of the branchlets, petioled, cuneate-obovate, obtuse, and obtusely serrulate, smooth on both sides, and firm in texture; from four to six inches long and from two to three broad. *Petioles* about an inch long, with a very few short hairs scattered over them. *Stipules* subulate, hairy, caducous. *Racemes* axillary, drooping and spreading, of the length of the leaves, a little hairy. *Flowers* few, long-pedicelled, generally drooping, large, yellow, and fragrant. *Calyx* of five, lanceolate, hairy, villous leaflets. *Petals* five, cuneiform, having the exterior margin deeply lacinate, very hairy, particularly on the outside; the hairs white, depressed, and pointing forward. *Filaments* regularly from forty-five to fifty, short, smooth, and slender, inserted in five, scarcely distinct bundles, on the top of the hairy receptacle. *Anthers* linear, opening at the top, the exterior lip of this mouth is continued into a pretty long, simple, straight arista. *Germ* ovate, very hairy, and elevated on the usual receptacle, which is here very hairy, two-celled, with from ten to twelve *ovula* in each, attached in two vertical rows, to the middle of the partition. *Style* subulate. *Stigma* acute. *Drupe* the size, shape and colour of a large olive. *Nut* oblong, both ends pointed, having a pretty large rib on each of the flattened sides running from the base of the apex, one, rarely two-celled, surface a little rugose, texture both hard and tough. *Seed* solitary, oblong, flat. *Integument* single, thick, hard, and of a dark brown. *Perisperm* conform to the seed, cartilaginous. *Embryo* inverse. *Cotyledons* as much extended as the perisperm, oblong, very thin, three-nerved. *Radicle* oval, superior.

(W. Roxburgh, *Flora Indica* 2: 599, 1832)



ELAEOCARPUS ARISTATUS Roxb.

18. ELAEOCARPUS GANITRUS Roxb.

Leaves alternate, lanceolar, serrulate. *Flowers* racemed. *Stamina* forty, bearded. *Drupe*s spherical; *nuts* spherical, five-celled.

Ganitrus sphaerica. Gaert. sem. 2. p. 271. t. 139.

Ganitrus. Rumph. Amb. 3. p. 162. t. 101.

Sans. Roodraksha

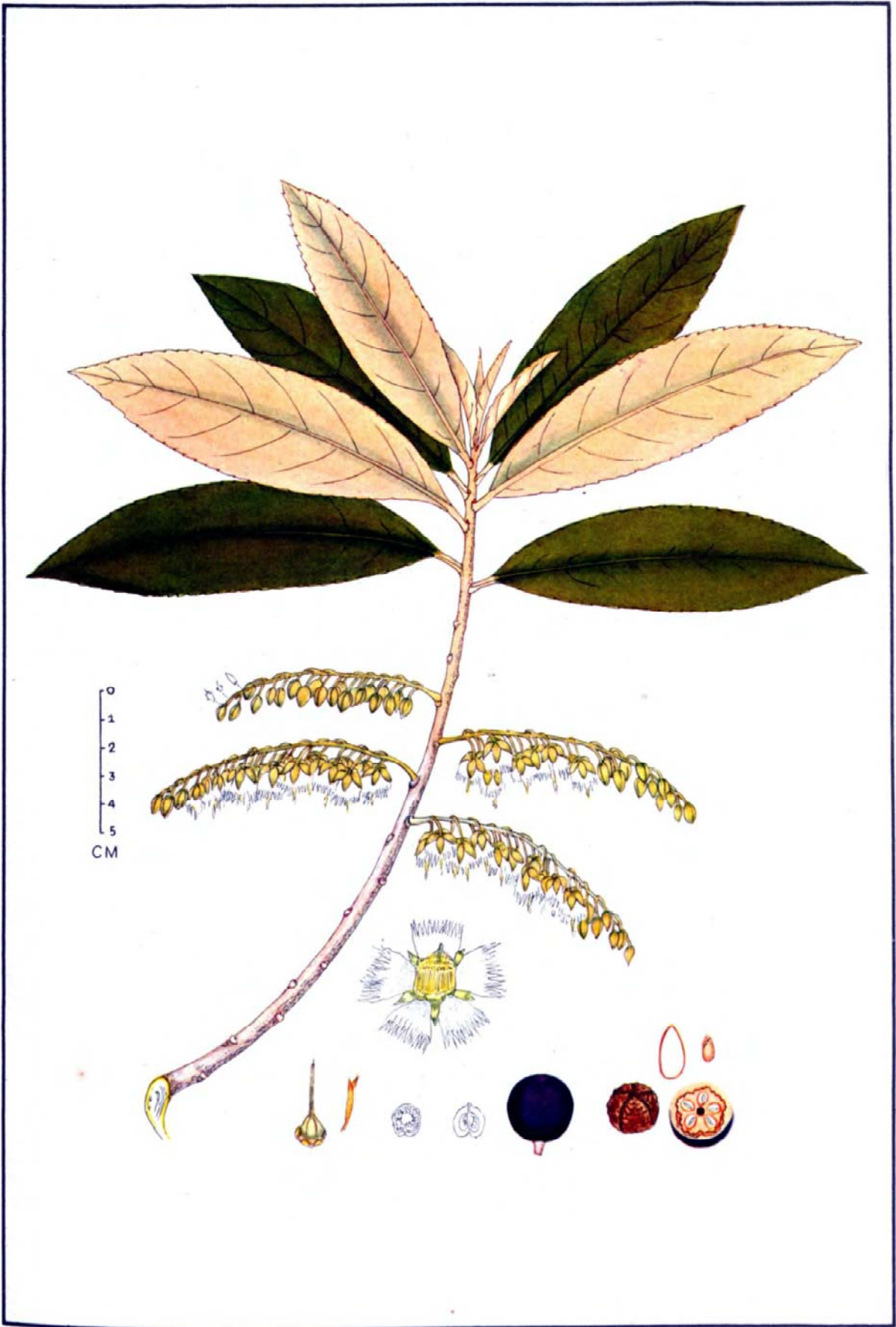
Hind. Roodrakh

Beng. Roodrakhya

A tree, a native of various parts of India, as well as of the Malay Archipelago. The following description of the tree was made from one growing in the vicinity of Dacca, which was brought to that place by a fakir some years ago, and there planted in his garden, and is now according to the information of the Honourable Charles Andrew Bruce, about the size of a large apple tree. It blossoms in February and March, and the fruit ripens in November.

Leaves alternate, approximate, short-petioled, lanceolar, serrulate, smooth on both sides, but while very young slightly sericeous, about six inches long, and about one and a half broad. *Stipules* minute, conical, caducous. *Racemes* from the former years branchlets below the leaves, and rather shorter than they, simple, drooping, one-flowered. *Flowers* of a middle size, drooping, white. *Bracts* of the pedicel solitary, one-flowered; of the calyx two, opposite, oblong, villous, having the anterior margins dentate and all dropping off at an early period. *Calyx* five-leaved, *leaflets* lanceolate, acute, the length of the petals, slightly villous on both sides; on the inner a small longitudinal rib runs down the middle. *Petals* five, sessile, oblong, the length of the stamina; the exterior half divided into numerous, subulate segments, somewhat villous. *Nectary* none, unless the receptacle of the germ and stamina can be so called, it projects into five obscure lobes, between the insertions of the petals. *Filaments* about forty, short, inserted on a large, convex receptacle on which the germ sits. *Anthers* linear, two-celled, gaping at the apex, where there are sometimes a few distinct hairs. *Germ* superior, ovate, villous, five-lobed, five-celled, with about four seeds in each, attached to the upper end of the axis. *Style* longer than the stamina, five-grooved. *Stigma* simple, small, acute. *Drupe* perfectly round, smooth of the size of a large cherry, and of a deep purple colour; *pulp* firm, rather dry and of a dull brownish yellow colour. *Nut* spherical, thick, very hard, having the surface elegantly tubercled, and marked with five-equidistant, deep grooves running from the apex to the base, five-celled. *Seeds* generally solitary, though sometimes two, when single, oblong, tapering most at the apex. *Integuments* two; the exterior one brown, hard, smooth, and brittle; the inner one grey, and membranaceous. *Perisperm* conform to the seed, oily. *Embryo* inverse nearly as long and broad as the perisperm. *Cotyledons* oblong, thin, three-nerved. *Plumula* two-lobed. *Radicle* oblong, superior. Gaertner has no doubt mistaken the apex of the drupe of the plant, for the base; and if more proof is required, let me add of *Elaeocarpus serratus* also, there the *embryo* is also inverted, though the nut is never more than three-celled, that being the number of cells in the germ, and also my *E. bilocularis*, where the *perisperm* and *embryo* are the same, and the nut bilocular. I am a very inferior judge of natural orders, but certainly think this cannot belong to the same order with *Garcinia*, in which I include *Gambogia*, and two species of *Xanthochymus*. If it does, I must despair of ever making any progress in this branch of the science.

(W. Roxburgh, *Flora Indica* 2: 592, 1832)



ELAEOCARPUS GANITRUS Roxb.

19. ELAEOCARPUS LANCEAEFOLIUS Roxb.

Leaves alternate, lanceolar, serrate, smooth. *Stamina* fifteen, bearded. *Drupe* long, turbinate, with a one-celled nut of nearly the same shape.

Sufed-pai is the vernacular name in Silhet, where it grows to be a middling sized tree. Flowering time, the beginning of the rains; the fruit ripens in September and October.

Young shoots round and perfectly smooth. *Leaves* about the ends of the twigs, alternate, short-petioled, broad-lanceolar, serrate, rather obtuse, pointed, smooth on both sides, from four to six inches long, and scarcely two broad. *Stipules* none. *Racemes* axillary, and from those of the last year, solitary, diverging with a curve, rather shorter than the leaves. *Flowers* alternate, pretty long-pedicelled, recurvate, small, white. *Calyx* five-leaved; *leaflets* lanceolate. *Petals* five, cuneiform; exterior margin deeply lacinate. *Nectarial glands* five, large, embracing the lower part of the germ. *Filaments* fifteen, short, two between the nectarial glands and one from the inside of the apex of each of them. *Anthers* linear, gaping at top, and there somewhat bearded. *Germ* ovate, three-celled, with two *ovula* in each, attached to the axis. *Style* the length of the corol. *Stigma* small, three-toothed. *Drupe* long, turbinate, of the size and appearance of a large olive, smooth, when ripe of a greenish yellow, one-celled. *Nut* sub-clavate, turbinate, tapering most towards the base, and having there a superficial perforation, one-celled, three-valved. *Perisperm* conform to the seed. *Embryo* inverse. *Cotyledons* cordate-lanceolate. *Radicle* superior.

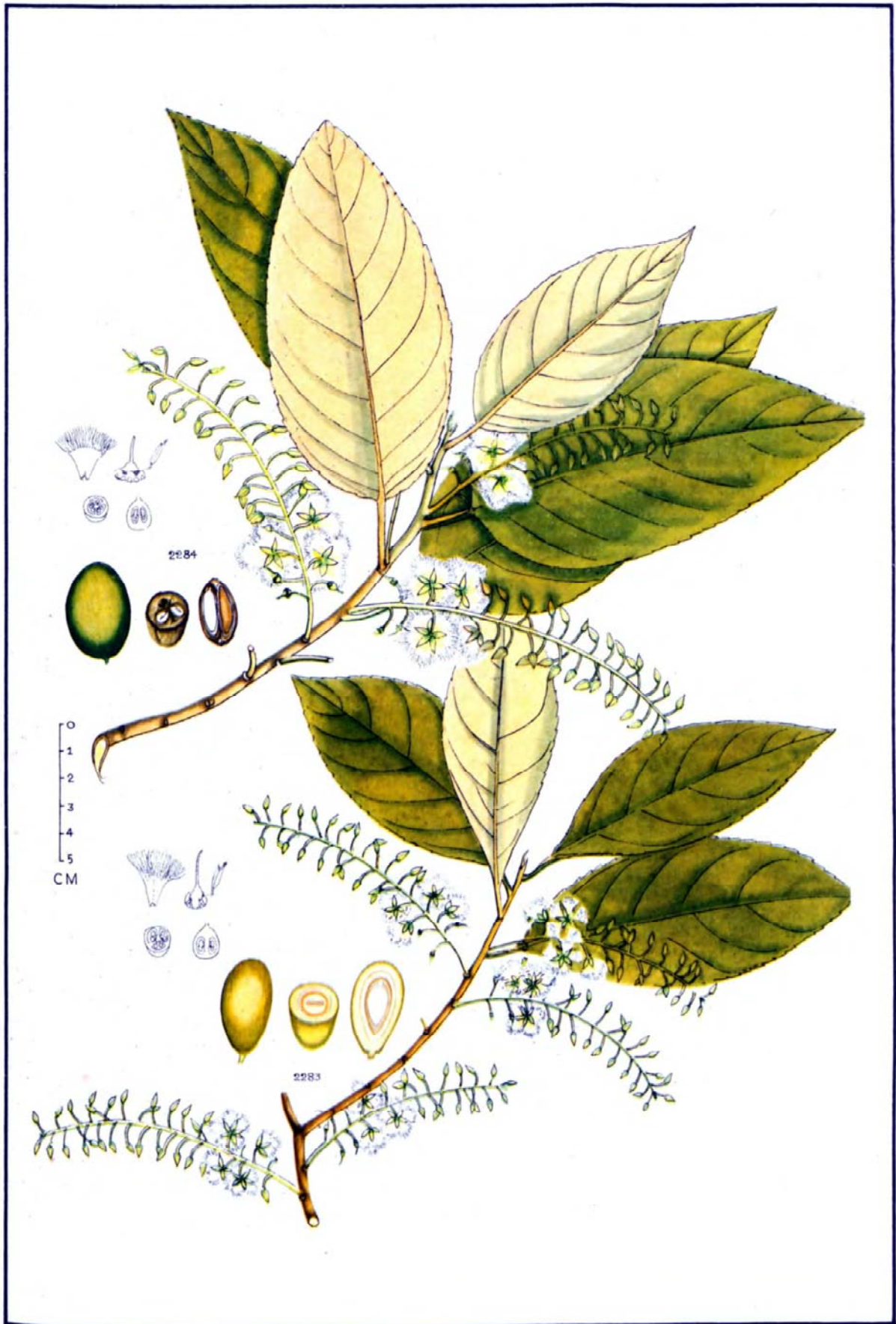
(W. Roxburgh, *Flora Indica* 2: 598, 1832)

ELAEOCARPUS RUBUSTUS Roxb.
(*Elaeocarpus robustus* Roxb.)

Leaves ovate-oblong, serrate, acuminate, smooth. *Stamina* fifty, bearded. Dulpai, probably *Julpai*, is the vernacular name in Silhet, where it is indigenous, and grows to be a very large tree. *Flowering* time the beginning of the rains in June.

Young shoots slightly villous. *Leaves* alternate, petioled, ovate-oblong, serrate, acuminate, smooth, thick, and of a hard texture, about six inches long, and three broad. *Petioles* about an inch long. *Racemes* axillary, and from those of the last year, solitary, simple, diverging with a curve, villous, scarcely so long as the leaves. *Flowers* numerous, large, white, fragrant, pedicelled, drooping. *Calyx* of five lanceolate, hoary leaflets. *Petals* five, broad-cuneiform, with the exterior margin multifid. *Nectarial glands* five, large, villous. *Filaments* fifty, nine between each pair of glands, and one from the inside of the apex of each short. *Anthers* linear, gaping at the top, and somewhat bearded. *Germ* oval, three-celled, with two *ovula* in each attached to the axis. *Style* shorter than the petals. *Stigma* small, tri-dentate. *Drupe* oval, of the size of a pigeon's egg, smooth, of a yellow olive colour, and pulpy; when ripe one-celled. *Nut* oblong, rugose, very hard, three-celled, and in time having three valves. *Seed* solitary, linear, oblong. *Perisperm* conform to the seed, soft and oily. *Embryo* inverse, &c. as in the other species.

(W. Roxburgh, *Flora Indica* 2: 597, 1832)



ELAEOCARPUS LANCEAEFOLIUS Roxb. (2284)
ELAEOCARPUS RUBUSTUS Roxb. (2283)

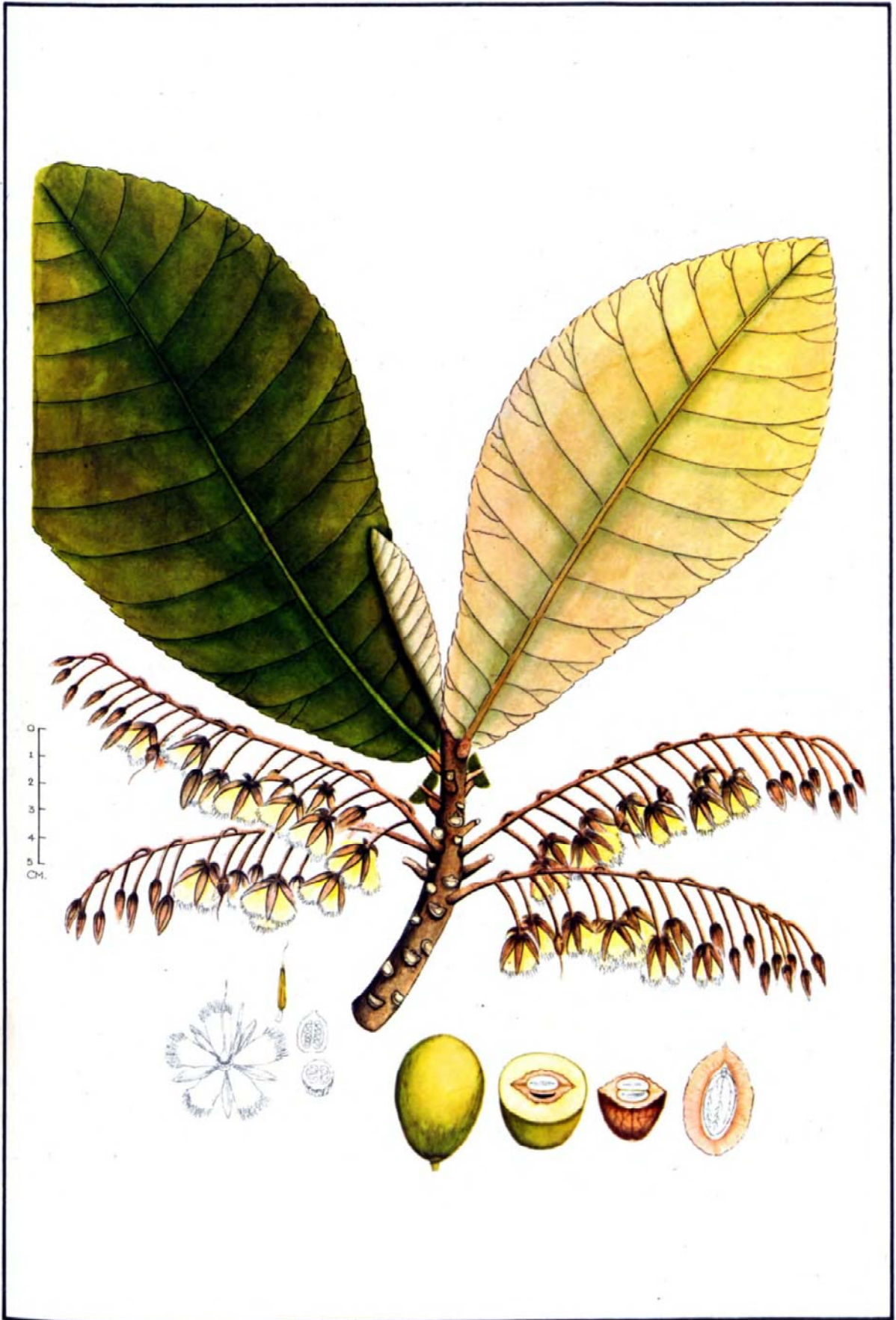
20. ELAEOCARPUS RUGOSUS Roxb.

Leaves subsessile, obovate-oblong, serrate, smooth. *Racemes* below the leaves, single. *Stamina* thirty, terminated by a single thread. *Drupe* oval; *nut* rugose, thin-edged, from one to two-celled.

Bun Julpai, the vernacular name in Chittagong, where it is indigenous, and grows to a great size, with a scanty crown. Flowering time March; the seed ripens in June and July.

Leaves about the ends of the branches, alternate, subsessile, obovate-oblong, serrate, of a firm texture, smooth on both sides, except when very young, thin, and clothed with a little ferruginous down; from six to twelve inches long, and from four to six broad. *Racemes* numerous, under the leaves, and shorter than they spreading nearly horizontally. *Flowers* large long-pedicelled, drooping. *Peduncles* and *pedicels* clothed with dark ferruginous down. *Bracts* small, caducous. *Calyx* five-leaved; *leaflets* lanceolate, on the outside downy. *Petals* five, sub-cuneiform, villous, with the apex irregular, and deeply cut into numerous filiform segments. *Filaments* thirty, short, inserted round the base of the germ, into a villous receptacle. *Anthers* linear, crowned with a single thread. *Germ* superior, villous, grooved, two-celled, with about eight ovula in each, attached in an imbricated order, in two vertical rows from their apices to the middle of the partitions. *Style* longer than the stamina. *Stigma* simple. *Drupe* obovate, of the size of a small pullet's egg, smooth, of an olive yellow. *Nut* oblong, a little pointed, rugose, having the edges sharp, thick, hard and tough, one, rarely two-celled. *Seed* solitary, oblong. *Integument* single, thick and brown. *Perisperm* conform to the seed, horny. *Embryo* inverse. *Cotyledons* very thin, oblong, three-nerved, nearly as broad and long as the perisperm. *Plumula* two-lobed. *Radicle* ovate, superior.

(W. Roxburgh, *Flora Indica* 2: 596, 1832)



ELAEOCARPUS RUGOSUS Roxb.

21. GREWIA OPPOSITIFOLIA (Buch.) ex Roxb.

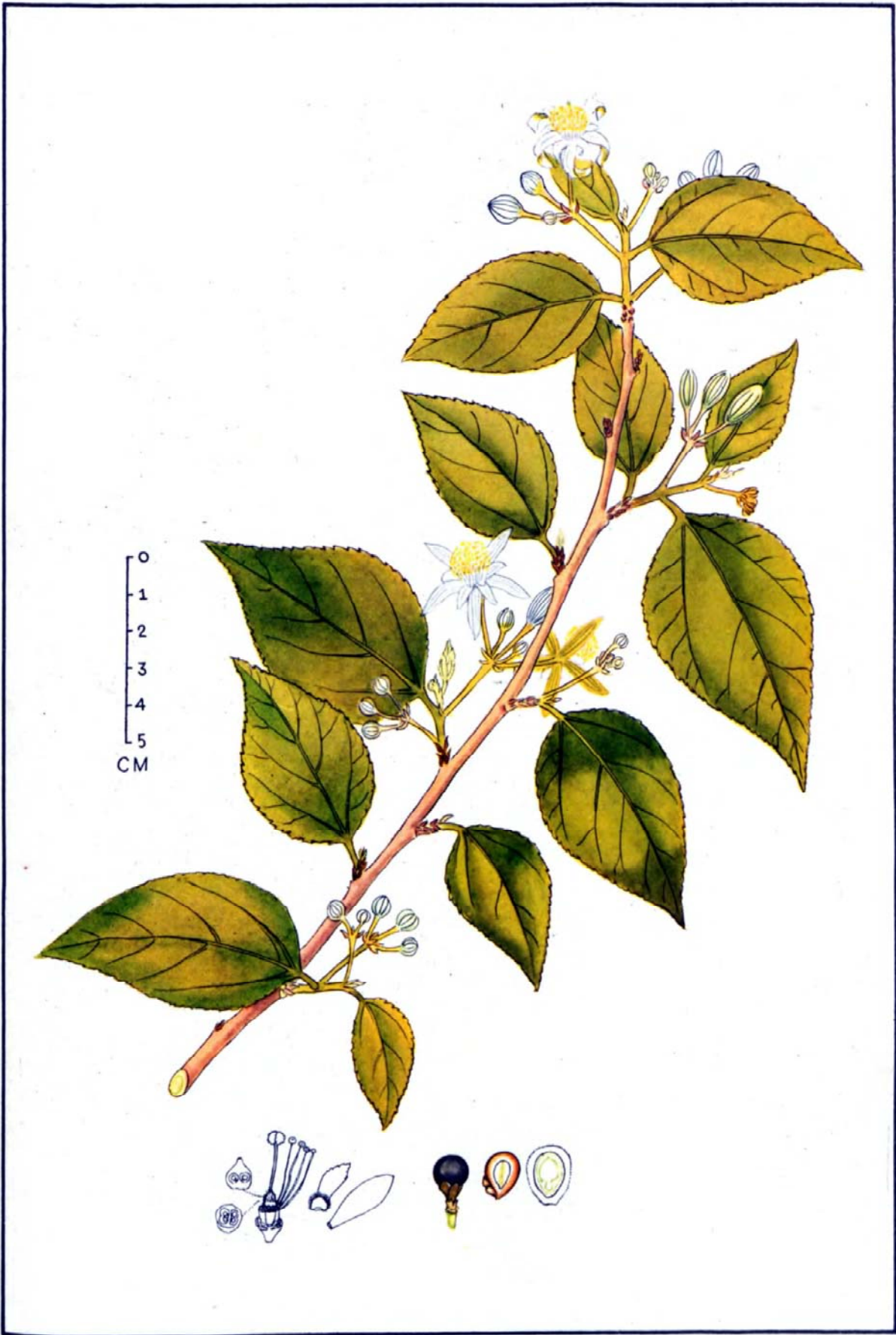
Arboreus. *Leaves* rhomb-ovate, gland-serrate, scabrous. *Peduncles* leaf opposed, from three to five-flowered. *Petals* lanceolate. *Drupe* from one to four-lobed; *nuts* one-celled.

A native of Nepal, from thence Dr. Buchanan sent seeds to the Botanic Garden at Calcutta in 1802, and in March, April, May and June 1808, the young trees were in flower, and ripened their seeds in October and November.

Trunk distinct, erect, stout as a man's arm. *Bark* pretty smooth, light ash colour. *Branches* spreading much, and covered with bark like the trunk. *Branchlets* or *young shoots* bifarious, round, harsh with stellate pubescence, and very short hairs. *Leaves* bifarious, alternate, short-petioled, from ovate, to rhomb-shaped, three-nerved, serrate, with the serratures obtuse and glandular, of an obscure green, and rather harsh on both sides, from two to three inches long, and one and a half broad. *Stipules* ensiform, hairy. *Peduncles* opposite to the leaves, solitary, much longer than the petioles, round, harsh, from three to five-flowered. *Pedicels* clavate, shorter than the peduncles. *Flowers* pretty large, yellowish. *Bracts*, or involucre several, round the insertion of the pedicels, ensiform, caducous. *Calyx*, the five-leaflets linear, three-ribbed on the back. *Petals* lanceolate, with apices acute, but often somewhat serrate-dentate. *Nectarial* glands round, and ciliate. *Germ* ovate, hairy, two-celled, with two ovula in each, attached to the partitions. *Style* the length of the numerous stamina. *Stigma* of two spreading green lobes with ragged edges. *Drupe* from one to four-lobed, one is most common, and the abortive ones appear attached to its base on one side, smooth, of an olive colour, fleshy; *flesh* a dull purple. *Nuts* one in each lobe of the drupe, obovate, thick, and very hard, one-celled. *Perisperm* conform to the nut. *Embryo* straight, nearly as long as the perisperm, green. *Cotyledons* cordate. *Radicle* ovate, inferior.

It is allied to *G. orientalis*, but the difference is sufficiently marked by the shape of the leaves, and their glandular serratures in this independent of its being a tree, and the other always a shrub, and scandent when protected and supported; and also the smooth drupe with one-celled nuts.

(W. Roxburgh, *Flora Indica* 2: 583, 1832)



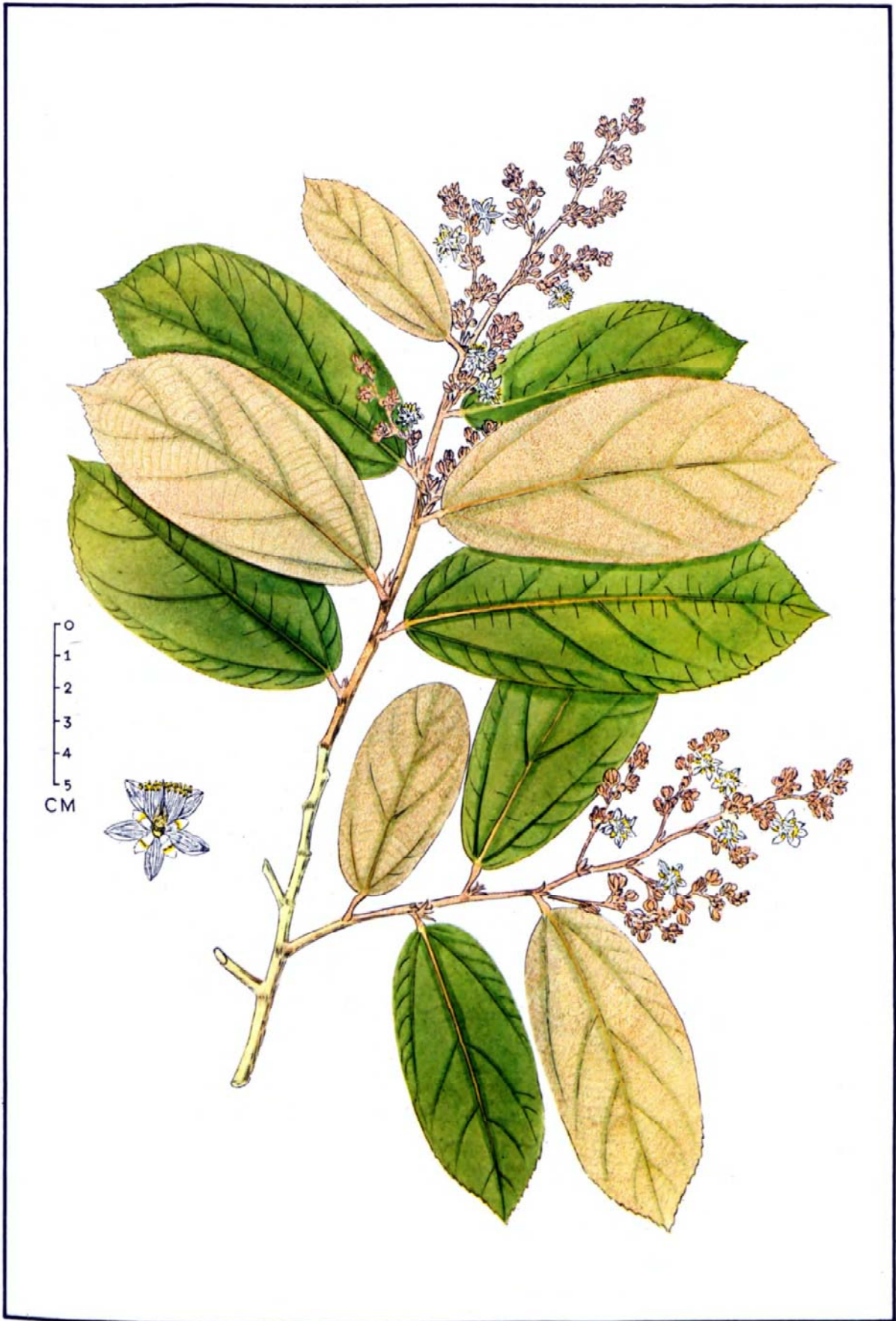
GREWIA OPPOSITIFOLIA (Buch.) ex Roxb.

22. GREWIA PANICULATA Roxb.

Leaves short-petioled, cuneate-oblong, towards the apex serrate, downy, with soft, stellate pubescence, underneath, three-nerved. *Stipules* two-cleft. *Panicles* terminal, mealy. *Petals* entire.

A native of Pulo Pinang, where it was found by Dr. Hunter.

(W. Roxburgh, *Flora Indica* 2: 591, 1832)



GREWIA PANICULATA Roxb.

23. GREWIA POLYGAMA Roxb.

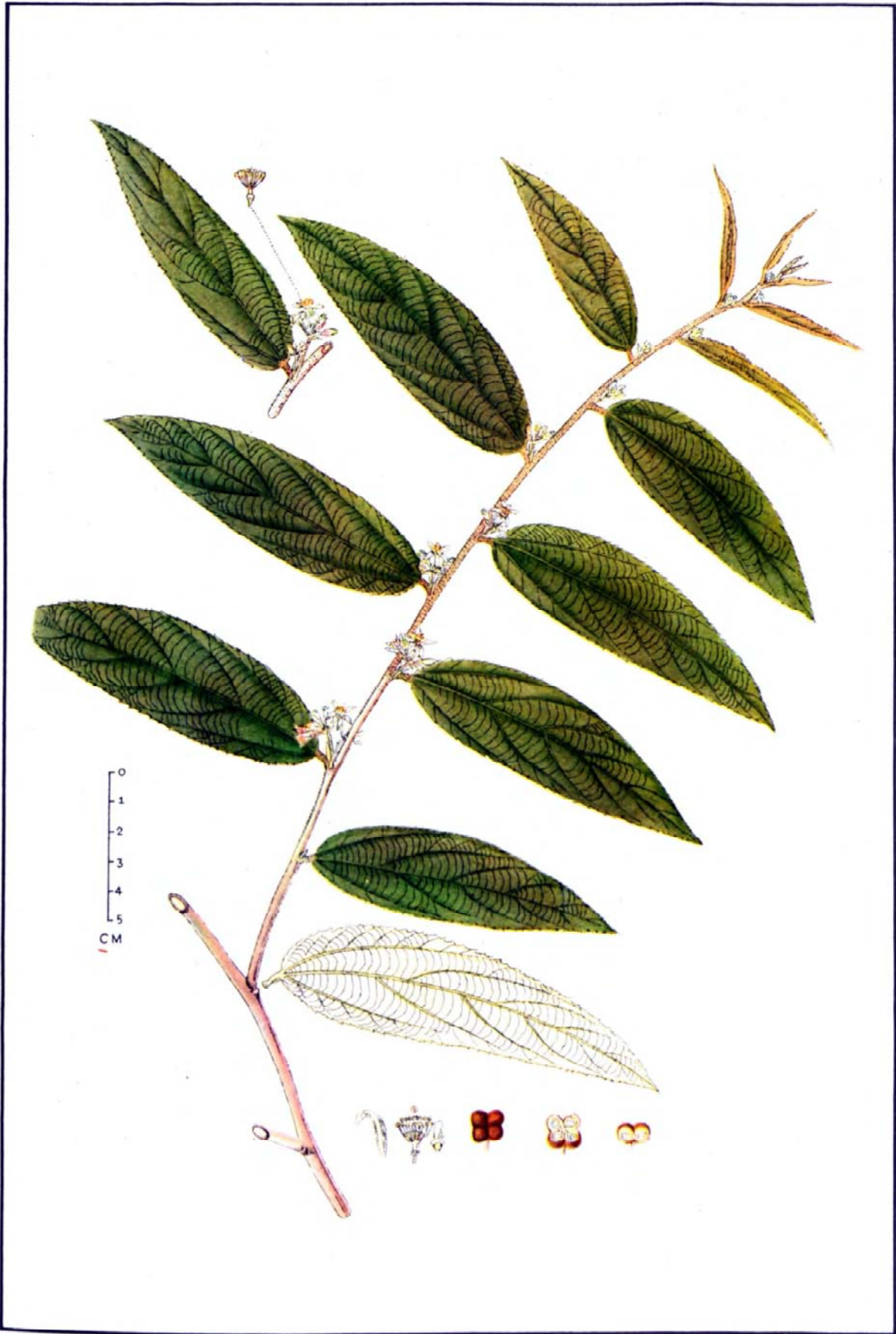
Polygamous. Shrubby. *Leaves* lanceolate, serrate, hairy. *Peduncles* axillary, longer than the petioles, from two to six-flowered. *Drupe* twin; each two-lobed, with a solitary one-celled, one-seeded nut in each.

A native of the interior parts of Bengal. Flowering time, the rainy season; the seed ripens during the cool months of November and December.

Trunk trifling. *Branches* bifarious, spreading; *young shoots* downy and scabrous. *Leaves* alternate, bifarious, short-petioled, lanceolate, serrate, three-nerved, both sides downy, particularly the under one, and hairy; about four inches long and about one broad. *Stipules* subulate. *Peduncles* axillary. In the male two, three, or four together, two or three times longer than the petioles, round, hairy, each supporting from two to six pedicelled, small white flowers. *Bracts* or *involucres* subulate, villous, generally one to each pedicel. *Calyx*; *leaflets* linear, expanding, villous, twice the length of the petals. *Petals* oblong, with apices entire, and the usual hairy nectarial mark on the inside of the lower half. *Filaments* numerous. In the male flowers inserted on an elevated receptacle; in the hermaphrodite ones round the base of the germ, and mixed with much white hair. *Pistil*; in the flowers of the male plant there is nothing like one. In the female it is roundish, and very hairy. *Style* longer than the stamens. *Stigma* very large, stellate. *Drupe* four-lobed, hairy. *Lobes* about the size of a small pea, each containing a single, one-seeded nut.

It differs from *G. pilosa*, in being polygamous, and the nuts being one-celled. It is also nearly allied to my *G. tomentosa*, the best distinguishing mark is the male flowers in this species.

(W. Roxburgh, *Flora Indica* 2: 588, 1832)



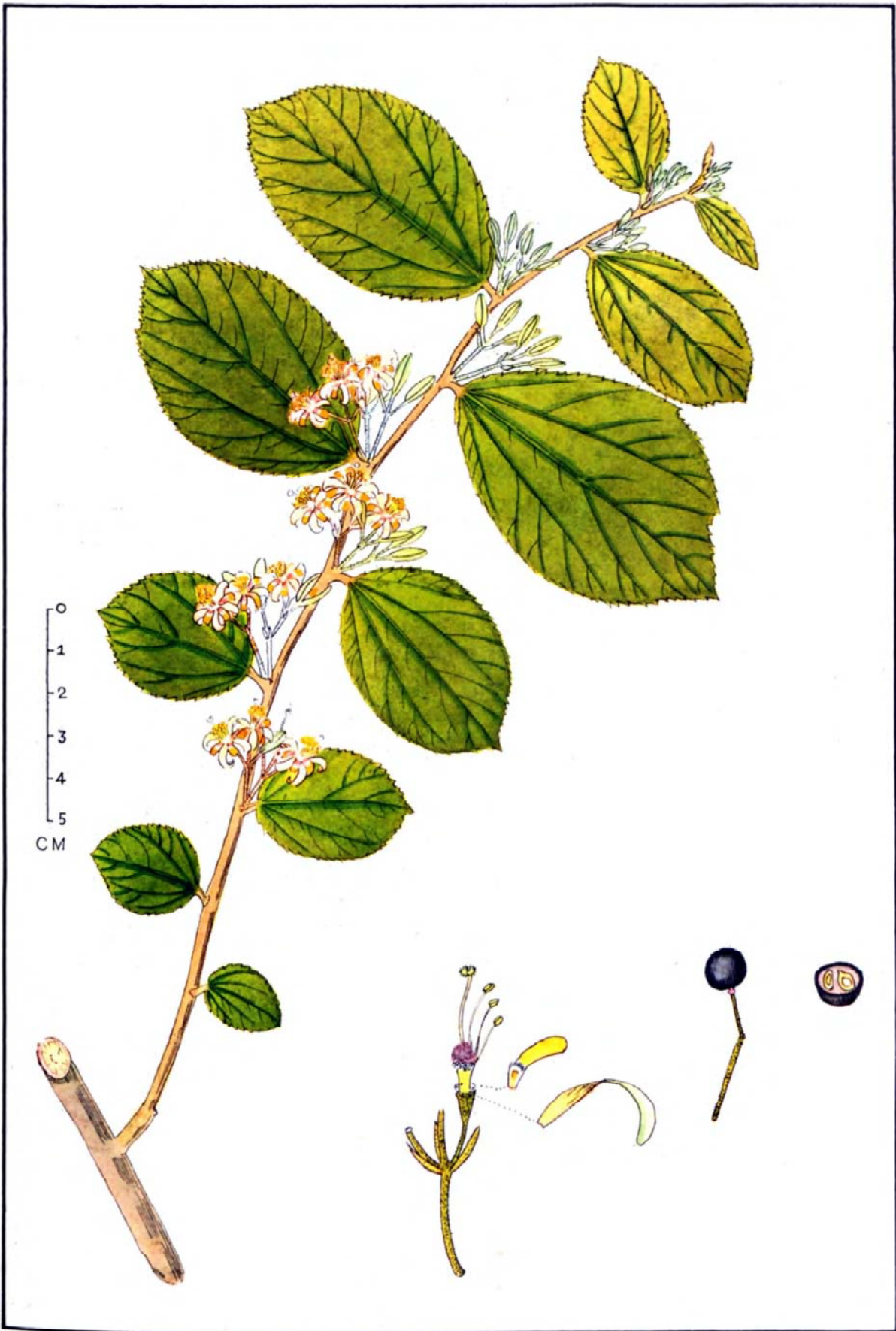
GREWIA POLYGAMA Roxb.

24. GREWIA SAPIDA Roxb.

Suffruticose. *Leaves* oblong, sublobate, small, five-nerved, scabrous. *Peduncles* axillary, four times longer than the petioles, several together, three-flowered. *Petals* two-toothed. *Drupe*s round, with from one to three one-seeded nuts.

A native of Bengal. It flowers during the hot season; the fruit is small, but palatable.

(W. Roxburgh, *Flora Indica* 2: 590, 1832)



GREWIA SAPIDA Roxb.