XXII. *Description of select Indian Plants.* By Henry Thomas Colebrooke, Esq. F.R.S. & L.S.

Read April 15, 1817.

HAVING had the opportunity, during a long residence in India, of examining some plants, which had not, so far as I know, been previously described, and others which had been but incompletely so, I purpose to submit to the notice of the Linnean Society, in this and successive communications, such of them as appear deserving of remark, either as constituting new kinds, or notable species of previously settled genera.

Under the first head is a plant of which the delineation is here presented under the Indian name ; as this seems not unsonorous, nor otherwise objectionable. In general it is desirable to avoid the coinage of new words, and to preserve existing names, whenever they are not too barbarous for admission into the classical nomenclature of botanical science. I propose therefore to retain the Indian term, scarcely altered, for a denomination of the genus ; and accordingly to name it *Sabia* from the Hindi *Sabja*.

Under the second head, one of the most remarkable of the plants which will be here offered to the Society's consideration is a species of *Strychnos*, which bears much resemblance to that described and figured by M. Leschenault*, and by him affirmed to be one of two which afford poison used to envenom weapons in

* *Ann. du Mus.* 16. p. 479. pl. 23.

Java,

Java, and the most deadly of the two which have been there employed for that nefarious purpose. Neither M. Leschenault nor Dr. Horsfield, who has also noticed it*, saw the fructification. But the first of those naturalists has concluded (I presume from the habit) that it is a *Strychnos*. The plant which I take to be nearly allied to it, if not specifically the same, and of which I have examined the fruit, is an undoubted *Strychnos*. It grows in the mountains and forests north and east of Silhet in Bengal; where, from numerous other instances, the flora is known to partake largely of that which belongs to the Malayan peninsula and archipelago. The mountains confining the province of Silhet seem to be the boundary, in the geography of plants, between the hither and remoter India, between the cis-gangetic and trans-gangetic regions.

The specimen of this *Strychnos* was sent to me by Mr. M. R. Smith, who, without being himself conversant with botany, has laboured assiduously in advancing the science by collecting specimens of indigenous plants from countries contiguous to that sequestered province, and by communicating his acquisitions to the botanical garden at Calcutta.

The flowers of this plant have not been seen by me. But the examination of the fruit authorized the pronouncing of it to be a *Strychnos*; which has been verified by Dr. Wallich, the present superintendant of the botanical establishment at Calcutta. It differs from Leschenault's description and drawing, as the leaves are ovate, acuminate; his elliptic, acute. Dr. Horsfield designates the leaves of the Javanese species as in pairs, or pinnate in two or three pairs; egged, spear-shaped, terminating in a long narrow point. Nevertheless, the prominent character of the incrassated tendrils, noticed by Leschenault, raises a surmise that

* *Bat. Trans.* 7.

the

the *Har-cuchila* of Silhet may be the same with the *Tieuté* or *Chitik* of Java.

The Bengalese name, which is that of the *Nux vomica* (*cuchila*), with a distinctive epithet (*hár*), shows that the natives of Silhet have remarked the affinity of these Indian species of *Strychnos*. The specimen was received thence with the information that "the plant has medicinal virtues;" but without any intimation of deleterious qualities in the bark or root. The leaves are used externally as suppurative; and the seed internally as a febrifuge. In a large dose, however, it is said to be poisonous.

In this, as in most, if not in all, the species of the genus, the wood, and still more the bark, are intensely bitter. This is eminently the case in the two species first known and described, *S. colubrina* and *Nux vomica*. They are employed in the Indian practice of medicine, especially the bark of the root; which is administered by native practitioners as a febrifuge. Their seeds are used singly, and in conjunction with opium as an adulteration of that drug, for their narcotic efficacy; and are also employed by venders of ardent spirits to augment the intoxicating power of the liquor vended by them.

In the Javanese species, a decoction of the bark of the root has been ascertained by Dr. Horsfield to be a most active poison when internally administered. The soluble matter of the bark appears also to be the efficient part of it as a mortal venom introduced by a wound.

Notwithstanding the seeming contrast of qualities between a medicine and a poison, it is possible that the same substance, which is deadly in a greater quantity, may be salutary in smaller doses: the presumption, therefore, is not conclusive against the identity of the species indigenous in Java and in Silhet.

Another plant now submitted is a species of a genus named
by

by Gärtner *Pygeum*. Nothing more of his plant was seen by him besides the fruit; and as no marked difference sufficient to discriminate the species is presented in the mature fructification, it is possible that the species now described may be the same which he named *Pygeum zeylanicum*. It seems prudent, however, to give provisionally a distinct trivial name to a plant, which most probably is specifically different.

Two plants of the natural order of the *Asclepiadeæ* have been selected for insertion in the present communication: the first of them, a species of *Dischidia*; only one species of that genus having been hitherto described. It was figured by Rumphius, being native of the Molucca islands. The present sort is indigenous in the north-east of Bengal: and the ingenious botanist, by whom the genus was constituted, has intimated, that India possesses other species of it not yet examined in a perfect state*. Another plant now described is a *Tylophora*; in which genus the specific characters of eight sorts have been established by its author: but none I believe have been delineated by figure.

One more plant of a known genus is here described; and, in deference to authorities of the Linnean school, under the generic name of *Macrolobium*. I should be disposed, however, to follow Lamarck in separating very dissimilar plants, which Schreber has collected into one group. If this be allowed, and Lamarck's generic name be retained, the plant now described may be designated *Vuäpa bijuga*.

* Brown's *Prodromus*.

Salvia lanceolata.

S A B I A.

PENTANDRIA MONOGYNIA: pentapetalous, inferior.

Ess. CHAR. *Petals* lanceolate, persistent. *Stamina* straight.

Drupe superior, reniform, one-seeded. *Embryo* direct, spiral.

No *perisperm*.

SABIA LANCEOLATA.

TAB. XIV.

Native of Silhet, where it flowers in October, and bears ripe seed in May.

Beng. (at Silhet) *Sabjâ-lat*.

Stem shrubby, scandent, flexuose. *Leaves* alternate, short-petioled, lanceolate, acute, entire, smooth; 4—6 inches long; 1—1½ broad. *Corymbs* axillary and terminal; forming a loose, ovate panicle: primary divisions ternate. *Flowers* numerous, small; green with a slightly-purplish tinge. *Bractes* minute, ovate, acute. *Perianth* five-parted, acute, persistent. *Segments* ovate. *Petals* five, lanceolate, acute, spreading, smooth, persistent. *Filaments* five, flat, subulate, shorter than the petals, inserted at their base. *Anthers* round. *Germ* round. *Style* columnar, short. *Stigma* simple. *Drupe* reniform, pulpy, dark-blue, size of a kidney-bean, one-seeded, sitting on the permanent calyx and corolla. *Nut* or *Pyrene* solitary, unequally two-lobed, attached by the middle of the smaller lobe a little above the base. *Shell* crustaceous, thin, fragile. *Seed* solitary, attached to the navel by a clavate ligament; honey-coloured; spiral, anfractuous (a single chink on one side, and two on the other, answering to plicatures of the cotyledons). *Integument* single, chartaceous. *Embryo* erect, conform to the seed, white. *Cotyledons* almond-fleshy, writhed (being folded one within the other; plaited once longitudinally and thrice transversely). *Scape* dorsal, curved, filiform. *Radicle* conical, inferior.

REFERENCES.

A. B. C. Flower magnified.

D. E. F. Fruit (natural size).

G. Seed in a state of germination (natural size).

H. The same denuded ; or embryo.

STRYCHNOS AXILLARIS.

TAB. XV.

Leaves ovate, acuminate. *Tendrils* axillary, thickened. *Berry* oval, one-seeded.

Native of mountainous countries north and east of Silhet in Bengal ; where it blossoms in the hot season, and ripens its fruit in the beginning of the rainy season.

Beng. (at Silhet) *Ar-cuchila*, or *Hár-cuchila*.

Stem shrubby, scandent. *Leaves* opposite, short-petioled, ovate, acuminate, three-nerved, smooth, polished. *Tendrils* axillary, thickening above the middle. *Fascicles* axillary, opposite, branched, corymbose, short-peduncled. *Flowers* small, white. *Bractes* two, opposite, ovate, acute, ciliate, persistent. *Perianth* five-cleft. *Segments* ovate, ciliate. *Corol* tubular, smooth, five-toothed. *Teeth* lanceolate, acute. *Throat* bearded with numerous hoary hairs. *Filaments* from the middle of the tube of the corol. *Anthers* oblong, bearded at the base with copious hoary hairs. *Pistil* shorter than the stamina. *Stigma* subcapitate. *Ovary* two-celled, with numerous ovules affixed to a central receptacle. *Berry* elliptico-globular, size of an olive, yellow (pale orange), sitting on the permanent calyx, one-celled (the second being almost obliterated) : filled with gelatinous yellow pulp. *Seed* solitary. *Integuments* double, membranaceous. Exterior invested with dense, short hair, to which

Strychnos axillaris.

L. Goussier sculp.

Dischidia Bengalensis.

J. Curtis sculp.

which the pulp strongly adheres. Interior thin, brownish. *Perisperm* conform to the seed, undivided, white, semitransparent, horny. *Germ* almost half the length of the perisperm, milk-white. *Cotyledons* cordate, three-nerved. *Radicle* inferior, cylindric, longer than the cotyledons.

Compare with *Strychnos Tieuté*, Leschenault, *Ann. du Mus.* 16. 479. pl. 23. and *Tshittik*, Horsfield, *Bat. Trans.* 7.

DISCHIDIA BENGALENSIS.

Leaves oblong, ancipital.

Native of Silhet, where it is named, like other parasites, *Pará-rúhá*; and thence introduced into the botanical garden at Calcutta by Mr. M. R. Smith. Flowering season, April.

Roots a few short slender fibres from each joint. *Stem* perennial, parasitic, (by culture, terrestrial,) scandent, radican, and sometimes twining; round, slender, jointed, lactescent. *Leaves* at the joints, short-petioled, opposite, oblong, obtuse, smooth, firm, fleshy, two-edged, entire, veinless, yellowish-green. Length 1—1½ inch. Breadth ⅓—½. *Petioles* round, less than a quarter of the length of the leaf. *Umbels* from alternate axils: short-peduncled, simple, few-flowered (about 10). *Flowers* very small, yellowish-white, inodorous. *Perianth* five-parted; segments ovate, coloured (white). *Corol* urceolate, five-toothed. *Throat* villous. *Toothlets* ovate, erect. *Nectary*, or stameneous tube, subcylindric. *Stameneous crown* five-leaved. *Leaflets* subulate, bifid. *Segments* lanceolate, reflex, involute. *Germs* ovate. *Styles* short. *Stigma* a pentagonal obtuse pyramid.

The mature fruit has not been seen. But the flower sufficiently marks the genus.

TYLOPHORA EXILIS.

TAB. XVI.

Panicles terminating in umbellets. *Corolline segments* oval, obtuse. *Leaves* subcordate, acute, smooth, becoming firm, fleshy.

Introduced into the botanical garden at Calcutta in 1810 from Chitagong, of which it is native. Bears flowers and ripe seed in the middle of the rainy season (August).

Stem perennial, simple, scandent, twining with the sun, several yards in length, no thicker than a crow-quill; rooting at the joints if it trail on the ground: young parts thinly beset with soft hairs. *Leaves* opposite, petioled, ovate to cordate, acute or even acuminate, entire, smooth on both surfaces, few-veined: old leaves firm, fleshy. Length 1—2 inches. Breadth half as much. *Petioles* $\frac{1}{4}$ inch; round, somewhat channelled on the upper edge. *Flowers* small, dilute purple, inodorous. *Panicles* subaxillary, solitary, ramous, lax, dichotomous, or flexuose with alternate divergent pedicels; terminating in umbellets; many-flowered. *Peduncles* slender, round. *Pedicels proper*, somewhat clavate. *Bractes* triangular to ensiform, minute. *Perianth* five-parted. *Segments* triangular. *Corol* rotate. *Divisions* oval, obtuse. *Nectary*, or *stamineous tube*, round at the base, five-angled in the middle. *Germes* ovate. *Styles* most short. *Stigma* flat, pentagonal. *Follicles* oblong, tapering to a pointed apex, round on one side, flat on the other. *Seed* ovate, bracteate, convex without, concave within, papillous, margined, denticulate at the base, cinnamon-colour, crowned with a fascicle of many long silky hairs.

The panicle of this, compared with proliferous umbels of some other asclepideous plants, seems to indicate a derivation from
such

Tylophora exilis

J. Curtis sculp.

Macrotelium bingum.

such an umbel by elongation of the ramifications; which, scattering the rays of what should form an umbellet, converts the inflorescence into a panicle.

MACROLOBIUM BIJUGUM.

TAB. XVII.

Flowers triandrous. *Six* sterile filaments. *Leaves* two-paired.

Whence or how introduced into the botanical garden at Calcutta, where a solitary plant has long been, is uncertain. It flowered there for the first, and, so far as is known, the only time, in 1813, in the hot season; the tree being about eight feet high; and ripened a single legume in September.

Trunk arborescent, erect. *Bark* gray, smooth. *Branches* spreading, dichotomous, drooping towards the extremity. *Leaves* alternate, pinnate, two-paired. *Leaflets* obliquely elliptic, falcate, wavy, polished: 4—5 inches long; 2—2½ broad. *Petioles* swollen at the base; upper edge channelled. *Stipules* none. *Corymbs* terminal, compound; primary ramifications dichotomous. *Pedicels* articulate: upper part gibbous, fistular. *Flowers* white, inodorous. *Bractes* none. *Perianth* four-leaved. *Leaflets* round, concave, downy. *Corol* irregular. *Petal* one, vexilliform, round-cordate, wavy. *Claw* linear, downy on both surfaces. *Wings* and *Keel* none. *Filaments* nine: three antheriferous, filiform, thrice as long as the corol, incurved: six sterile, (a pair on either side of the vexillum, and solitary ones alternating with the fertile;) less than a quarter of the length of the fertile ones: all united at the very base, and free above, dark chesnut-coloured, beset towards the lower end with thinly-scattered white hairs: tips of the sterile filaments hooked, white. *Anthers* linear, incumbent. *Germ* linear-oblong, compressed, villous, containing a few (about eight) globular ovula. *Style* length

length and situation of the stamina, filiform. *Stigma* headed, two-lobed. *Legume* broad-falcate, compressed, few-seeded. *Seed* black, immersed in lateritious meal: unequally reniform or nearly three-cornered, compressed.

This is seemingly a plant of the same genus with the *Vouapa* and *Simira* of Guiana described by Aublet; from the first of which a genus was constituted by Lamarck (*Illust. Genres*, i. 96). Schreber, followed by Willdenow, has united them with the *Outea* of the same author, in a genus of which the character is taken from the plant last mentioned*. In deference to their authority, the Indian plant is here described under the name assigned by them to the genus; entertaining nevertheless an opinion, that, with the *Vouapas*, it should be separated from that, and formed into a distinct genus with the essential character nearly as given by Lamarck: "Calyx four-leaved or four-parted. A single unguiculate petal. Three fertile stamens opposite to the petal. Legume compressed, few-seeded." The affinity of the Indian plant now described to the *Bauhinia*, *Poinciana*, &c. places it in the natural order of *Cassias*; from which it should not perhaps be disjoined even in the artificial system; as *Bauhinias* with sterile filaments seem to indicate, that its proper place is in the *Decandria* class.

P Y G E U M.

Gartner de Fruct. 1. p. 218. t. 46. f. 4.

ICOSANDRIA MONOGYNIA. *Calyx* inferior, six-toothed. *Petals* six. *Drupe* dry, transversely oblong. *Embryo* inverse, without perisperm.

P Y G E U M ACUMINATUM.

TAB. XVIII.

A large tree, native of mountainous countries bordering on

* *Gen. Plant.* no. 62. *Spec. Plant.* no. 78.

Silhet.

Pygeum acuminatum.

Silhet. Flowers in the rainy season, and ripens its seed in the cold season, about January.

Beng. (at Silhet) *Ghorma*.

Trunk arboreous. *Leaves* alternate, short-petioled, ovate to broad lanceolate, (sometimes unequal,) acuminate, entire, smooth, shining; 4—6 inches long, $1\frac{1}{2}$ —3 broad. *Petioles* $\frac{1}{2}$ inch; round beneath, channelled on the upper edge. *Racemes* length of the leaf, erect, simple, cylindric. *Peduncles* four-cornered, slender, villous. *Pedicels* as long as the flowers. *Flowers* yellowish-green, inodorous. *Perianth* cyathiform, six-toothed, deciduous, leaving a small entire ring at the base of the fertilized germ. *Teeth* subulate. *Petals* six, on the margin of the calycine cup, ovate, villous. *Filaments* numerous (30—40) on the margin of the calycine cup, capillary. *Anthers* round. *Germ* above, roundish, villous. *Style* filiform, length of the stamina. *Stigma* truncate. *Drupe* transversely oblong, juiceless at maturity, size of an olive, dark-purple. *Nut* subreniform, contracted in the middle; lobes subequal; crustaceous. *Seed* conform to the nut, attached dorsally a little below the apex. *Integument* single, chartaceous. *Perisperm* none. *Embryo* conform to the seed, inverse, yellowish-white. *Cotyledons* thick, flat on the contiguous ends, and hemispherical on the outer; amygdaloid. *Radicle* superior, very small, conical.

Gærtner, who constituted the genus, saw neither flower nor any other part of the plant besides the fruit: consequently, until his Ceylonese plant has been further examined, it must remain doubtful, as I apprehend, whether the species be distinct: and, at all events, the specific character cannot be yet determined, as but one species is fully described.