

otherwise like the two first. The lower molars have two sharp-pointed ridges externally, and three ditto internally.

It appeared to me that this bat is very likely the smallest of its kind yet known in Australia, and indeed, perhaps, even the smallest mammal yet anywhere discovered. I compared it with Gould's "*Scotophilus picatus*," of which he says:—"This pretty little bat, which is the smallest and one of the most interesting of the true scotophili, inhabiting Australia, &c.;" and Captain Sturt, on the same subject, says—"This diminutive little animal flew into my tent at the depot, attracted by the light. . . .;" but the specimen before you is full half an inch shorter in the body, and two inches smaller between the wing-ends.

Should it be found that the specimen here in question is a member of a yet undescribed species, I venture to propose for it the name—*Vespertilio pygmæus*.

EXPLANATION OF PLATE :

Fig. 1, 2, 3, natural size ; 4, magnified about double natural size ; 5, 6, 7, 8, ditto four times ; 9, 10, ditto eight times.

Melbourne, July 1858.

ART. VIII.—*Some hitherto unknown Australian Plants.*
Described by Dr. FERDINAND MUELLER.

[Read before the Institute 18th August, 1858.]

STERCULIACEÆ.

Methorium integrifolium.

Clothed with starry velvet-hair ; leaves oval, almost entire, short-stalked, beneath net-veined ; stipules subulate, deciduous, shorter than the petioles ; cymes axillary, sessile, few-flowered ; teeth of the calyx acute, three or four times shorter than its tube ; column of stamens straight.

On rocky declivities of the sandstone table-land of the Upper Victoria River.

Leaves $1\frac{1}{2}$ -2 inches long, generally 1 inch broad, on both pages of equal color. Cymes several times shorter than the leaves. Calyx about $\frac{1}{4}$ inch long, exceeding the linear-subu-

late bracteoles. Laminæ of petals $1\frac{1}{2}$ line long, exerted; claws biauriculate. Tube of filaments enclosed. Anthers kidney-shaped. The fruit has not been found.

HALORAGÆÆ.

Myriophyllum dicoccum.

Lower leaves pinnate, with capillary opposite or alternate segments; upper leaves alternate, linear or lanceolate, entire, toothed or pectinate; flowers axillary, sessile; fruit consisting of two carpels, which are glabrous, truncate, round at their back and hardly tubercled.

In lakes, rivers, and lagoons towards the Gulf of Carpentaria.

The habit of the plant is that of certain forms of *M. variifolium*. Flowers at least in part hermaphrodite. Stigmas purple, long bearded. Stamens seemingly 4. Fruits solitary, about $\frac{3}{4}$ of a line long, slightly tapering upwards, rounded at the base, in exceptional cases augmented to 3 or even 4 carpels.

PORTULACÆÆ.

Calandrinia uniflora.

Annual, glabrous; stemless, or with an erect naked stem, producing a bunch of leaves at the apex; leaves longer than the stem, terete, acute, glaucescent, without any furrow; peduncles terminal, thin-filiform, thickened at the apex, one-flowered, twice or thrice longer than the leaves, with 2 or 3 cordate-lanceolate acuminate remote deciduous bracts; petals 8-11, lanceolate, almost three times longer than the orbicular-cordate sepals; stamens numerous; style none; stigmas 3-6; capsule as far as the middle four-valved.

On arid plains and ridges on the Victoria River.

Root pale, descendent, simple, with few fibres. Stem often red, $\frac{1}{2}$ - $1\frac{1}{2}$ inch long, at times undeveloped. Leaves and peduncles united, as the case may be, in a radical or terminal fascicle; the former 4 inches or less long, hardly thicker than one line. Peduncles erect, or ascendent, smooth, producing the bracts chiefly in their lower part. The latter hyalinous, clasping, very tender membranous, scarcely one line long. Sepals measuring two lines, rather acute, dropping in age.

Petals pink, about 5 lines long, persistent when faded. Filaments considerably shorter than the corolla, of unequal length, white, capillary. Anthers sagittate-ovate, white, fixed between their lobes, several times shorter than the filaments. Pollen yellow. Stigmas white, filiform, about one line long, adscendent. Capsule ovate or nearly globose, $\frac{1}{4}$ inch long. Seeds numerous, with their white funicles affixed to the basilar placenta, shining, black, perfectly polished, lenticular, measuring $\frac{2}{3}$ of a line.

MYRTACEÆ.

Calycothrix arborescens.

Glabrous; branchlets numerous, slender, spreading; densely torulous-cicatriscate; leaves very small, densely imbricate, cordate- or rhomboid-lanceolate, acuminate, with broad sessile base, above flat, beneath convex and somewhat keeled; stipules exceedingly minute, subulate, much shorter than the cicatrix, and to its centre inserted; flowers polyandrous; bracteoles free, orbicular-cordate, acuminate, not much longer than the pedicel, but nearly three times shorter than the cylindrical calyx-tube; lower portion of the calyx-lobes almost ovate, upper part drawn out into a long acumen, but without a proper bristle, somewhat scabrous, not reaching beyond the lanceolate pointed white petals.

In arid bushy plains towards the sources of the Roper and Limmen Bight rivers.

A tall, most beautiful shrub, sometimes forming a tree fully 25 feet high. Leaves, in drying, extremely deciduous, those of the younger branchlets $\frac{2}{3}$ -1 line, those of the older ones 1-2" long, all spirally arranged, their fall rendering the thin branchlets like those of *C. microphylla*, strangely sculptile by the innumerable little grooves of the cicatrices. Bracteoles greenish, scarcely longer than one line. Tube of the calyx tapering towards the base, yet not towards the apex; segments of the limb pale yellowish-green, 2-2 $\frac{1}{2}$ " long. Anthers roundish-cordate, terminating in two glands. Style longer than the white filaments.

The nearest allied species is *Cal. microphylla*, A. C. In *C. arborescens* and the following species is a clear transit to *Lhotzkyia* observable, which genus may well be united with *Calycothrix*.

Calycothrix brachychaeta.

Leaves linear-triangular, crowded, glabrous or pubescent, almost blunt, stalked; flowers sessile, collected in leafy spikes; bracteoles free, dilated at the truncate and ciliate apex, as long as the silky-downy tube of the calyx, or but little shorter, pointed by the apex of the keel; lobes of the calyx lanceolate, outside downy, gradually terminating in a ciliate acumen, but scarcely in a distinct bristle; petals white, lanceolate, acuminate, almost as long as the calyx-lobes; stamens 15-20.

On stony ridges along the rivers Victoria, Fitzmaurice and Roper.

A tall shrub. Leaves 2-3 lines long. Tube of the calyx $1\frac{1}{2}$ -2 lines long, slightly contracted towards the summit, hardly longer than the lobes.

This species bears, amongst its numerous congeners, only comparison with *C. conferta* and the following one.

Calycothrix achaeta.

(Sect. *Lhotzkya*.)

[*Lhotzkya cuspidata*, Ferd. Meuller, in Hooker's Journal of Botany, 1856, page 324.]

Hirtellous; branchlets very short, crowded; leaves on short stalks, very minute, densely imbricate, oblong-triangular, almost blunt, above one nerved, beneath scarcely keeled; stipules, none; flowers sessile; bracteoles free, obcordate, fringed, keeled, apiculate, $\frac{1}{3}$ shorter than the calyx-tube; lobes of the calyx ciliate, ovate or cordate orbicular, cuspidate by a short acumen, not much shorter than the ovate silky-downy tube, without manifest bristle; petals white, narrow, oblong-lanceolate, of twice the length of the calyx-limb; stamens 12-17; gland of the anthers conspicuous, double.

On the sandstone table land of Arnhem's Land.

A shrub 5-8' high. Leaves never much longer, often shorter, than one line. Tube of the calyx about one line long. Anthers round, yellowish. Style of equal length with the longer filaments.

Referring to *Chamælaucieæ*, I may mention, on this occasion, that the *Homaloxalyx ericæus* is to be combined with *Tryptomene*, as *Tr. homalocalyx*.

Melaleuca symphyocarpa.(Sect. *Asteromyrtus.*)

Branchlets almost terete and petioles slightly downy; leaves alternate, shining, oblong-lanceolate, flat, blunt, 5-9 nerved, thinly veined, tapering into a broad but very short petiole; flowers in free axillary and lateral heads; lobes of the calyx deciduous, nearly semiorbicular; phalanges penicillate polyandrous, orange, with a long and thin claw; capsules boney, perfectly united in a globose head, three-celled; valves short-exserted; seeds wingless.

On the sandy or gravelly banks of the Roper, Limmen Bight and Macarthur rivers, also on sometimes inundated localities of the neighbouring plains.

A large, very handsome bush, sometimes attaining the size of a small tree. Bark fissured, black, not lamellar. Leaves bright green, generally $1\frac{1}{2}$ - $2\frac{1}{2}$ inches long and 6-9 lines broad. Flowers varying from 8 to 15 in each head. Tube of the calyx already in early age connate, yellowish or red, more or less velvety; lobes green. Bracteoles downy. Petals spatulate-orbicular, $1\frac{1}{2}$ line long, glabrous, yellowish, half surpassing in length the calyx-lobes. Columns of the stamens 3-6 lines long, with the free portions of the filaments, which are 2-3 lines long and fasciculately but not flatly arranged, forming exactly a brush, at last deciduous. Anthers about $\frac{1}{4}$ line long, purplish red, after fœcundation black, didymous, fixed with their back, terminating in a small gland. Pollen almost free of color. Style smooth, orange or yellow, hardly as long as the stamens. Stigma green, peltate. Fruit heads measuring about half an inch, beautifully areolate by the vertex of the capsules. Seeds brown, 1 line long, clavate-filiform, truncate.

There exists no character by which Schauer's genus *Asteromyrtus* can be separated from *Melaleuca*. The same untenability of generic distinction is manifest between *Symphyomyrtus* and *Eucalyptus*, and the limits of the genera *Leptospermum* and *Fabricia* are likewise so far infringed, that I do not hesitate to unite them respectively.

M. globifera agrees in its brief specific characteristics, offered by R. Brown, with *Mel. symphyocarpa*, but the former is restricted to the south coast; nor does it fully accord with the generic note promulgated by the immortal R. Brown, in Aiton's Hort., Kew, iv., 410.

Melaleuca minutifolia.

Glabrous; branchlets numerous, generally opposite, extremely slender; leaves very small, opposite, sessile, ovate or lanceolate, acuminate, towards the base incurved, crowded, slightly spreading, deciduous; capsules spicate along the branches, globose-ovate, truncate or in age almost hemispherical, three-celled; seeds wingless.

In barren localities of North Western Australia.

A tall shrub. Leaves about $\frac{3}{4}$ - $1\frac{1}{2}$ lines long, in drying remarkably deciduous. Branchlets at the insertion of each pair gradually contracted, with rather conspicuous cicatrices.

It differs from *Melaleuca tamariscina*, its nearest congener, as follows: the arrangement of the leaves is not a spiral one, and after their fall the branchlets do not assume in consequence that truly screwlike appearance which characterizes *Melaleuca tamariscina*, although they are also singularly grooved and often more slender still; the leaves are neither closely appressed, nor are any of them blunt and subcordate, nor is the fruit-rachis velvet-downy. I have not yet seen ripe fruit of *M. tamariscina*, nor the flowers of either species, from which, probably, many other marks of discrimination may be derived.

CUCURBITACEÆ.

Cucumis jucunda.

Leaves cordate, undivided, somewhat angular, with minute and remote teeth; petioles shorter than the leaves, or at least of equal length with them; tendrils simple, their lower portion hispidulous; lobes of the calyx filiform-linear; ovary velvety; fruit small, ovate, powdery-downy, at least three times shorter than the peduncle; seeds numerous, their length that of the third or fourth part of the fruit diameter; funicle very short.

In Arnhem's Land and on the Gulf of Carpentaria, particularly on the banks of rivers, also in eastern tropical Australia, and in Central Australia observed with certainty as far south as Cooper's River.

Stems long, trailing or climbing, as well as the branches, with 5 blunt angles. Petioles, peduncles, stems and branches hispid with short, spreading bristles. Leafstalks angular, cylindrical, with a superficial furrow. Leaves $1\frac{1}{2}$ -4 inches long and broad, above hispidulous-scabrous, beneath along

the nerves and veins imperfectly hispidulous, otherwise scabrous-downy. Tendrils $1\frac{1}{2}$ -3 inches long, upwards spiral. Flowers monœcious, a few congregated and arising from the leaf-axis, with short peduncles. Lobes of the calyx $1-1\frac{1}{2}$ line long, appressed; tube villose, in the male flowers longer than the lobes. Corolla yellow, deeply five-cleft, inside glabrous, outside slightly downy or a little hispid; the lobes ovate, apiculate, $\frac{1}{4}-\frac{1}{3}$ inch long. Stamens of the male flowers gyrose, connate with the rudimentary pistil; anthers 5, in $2\frac{1}{2}$ pairs, almost sigmoid. Disk of the female flower yellow, patellar. Style green, smooth, upwards thickened. Stigmas three, greenish, scarcely longer than 1 line, nearly ovate, flat in front, convex at the back, each separable into two. Rudimentary stamens wanting. Pepo rather sweet, of a pleasant taste, exactly egg-shaped, irregularly six-celled, scarcely longer than one inch, not angular, simply green, covered with very minute almost powdery hair, which causes an acrid irritant sensation to the taste, but are almost spontaneously lost in age, when the fruit assumes a pale colour. Seeds ovate-cuneate, about $2\frac{1}{2}$ lines long, surrounded by a slightly tumid margin.

This cucumber is the *Cucumis pubescens* mentioned in Sir Th. Mitchell's *Trop. Austr.*, p. 110, but evidently not the true Willdenowian plant, as pointed out in the report on Mr. Gregory's plants from Cooper's Creek. The genuine may be sought, perhaps, in the following species. It is possible that the *C. pubescens* of Asa Gray, *Unit. Stat. Expl. Exped.*, p. 646, belongs to this species.

Cucumis picrocarpa.

Leaves in circumference cordate, 3-5 lobed, their lobes repand-denticulate, somewhat angular; petioles as long as the leaf, or at last somewhat longer; tendrils undivided, everywhere hispidulous; lobes of the calyx filiform-linear; ovary villous-woolly; fruit subtrigonal-ovate, with some minute scattered bristles, not half as long as the peduncle, which is tumid at the apex; seeds very numerous, many times shorter than the fruit-diameter; funicle long.

In many parts of tropical Australia.

It differs from the preceding, besides in the above characters, also in the lobes of the calyx and corolla, which are of twice the size, in finely white-and-grey-spotted fruit, which is constantly 2-3 inches long, regularly six-celled, of ex-

tremely bitter taste, whilst the seeds, notwithstanding the double or triple size of the fruit, are barely as long as those of *Cucumis jucunda*, and are attached to a funicle which exceeds their own length.

RUBIACEÆ.

Canthium vaccinifolium.

Glabrous; branchlets in two rows, recurved, more or less spinescent; leaves thick coriaceous, small, orbicular or ovate; peduncles axillary and terminal, 1-2-flowered; pedicels shorter than the calyx; corolla to the middle four-cleft; faux bearded; filaments shorter than the oblong anthers; stigma bifid, with blunt base; berry black.

In barren scrubby localities near the rivers Burdekin, Suttor, M'Kenzie, Dawson, and Burnett, accompanied by *Canthium oleifolium*.

A shrub 6' high or still higher, with numerous spreading branches. Leaves blunt or emarginate, flat, entire, 2-5 lines long, above slightly shining, beneath paler and opaque, one-nerved, hardly veined, their stalk $\frac{1}{2}$ - $\frac{3}{4}$ line long. Stipules $\frac{1}{4}$ - $\frac{1}{2}$ line long, 1 line broad, entire, deciduous, with a very short acumen. Peduncles one line or less long. Pedicels sometimes obliterated, at the base with extremely minute bracteoles. Calyx tube half-ovate, without ribs, scarcely one line long, with four very small acute teeth, one or the other sinus occasionally producing also a minute tooth. Corolla pale yellow, funnel-shaped, outside glabrous, inside above the middle of the tube white bearded; lobes lanceolate-ovate. Stamens inserted between the lobes of the corolla. Filaments very short, glabrous. Anthers sulphur-yellow, blunt, at the base a little emarginate, $\frac{3}{4}$ line long. Pollen bright yellow. Style filiform, green, smooth, $1\frac{1}{2}$ line long. Stigma ovate, bifid, $\frac{1}{2}$ line long. Berry globose, succulent, 2-3 lines long, rather sweet, with two nuts, which are nearly ovate, black, slightly tubercled, very convex at the back, slightly so in front, about $1\frac{1}{2}$ line long.

The plant may, with equal right, be referred to *Canthium* or *Psychotria*.

Canthium coprosmoides.

Glabrous; leaves thinly coriaceous, ovate, flat, entire, blunt at the apex, tapering into the petiole; peduncles none;

pedicels axillary, solitary or two or three together, scarcely as long as the calyx; lobes of the corolla 5, rarely 4, half as long as the tube, above thin velvety; faux bearded; anthers ovate, almost sessile; stigma hemispherical; berry red.

In scrubs on ridges along the rivers Dawson, Mackenzie, and Brisbane.

Shrub from 6-10 feet high. Leaves 1 to 2½ inches long, their stalk 1½-3 lines long, above dark-green and shining, beneath a little paler, finely veined. Stipules from a broad base subulate, 1½-2 lines long, deciduous. Calyx at first bell-shaped, scarcely longer than one line, with five acute and very short teeth. Corolla funnel-shaped, outside glabrous and yellowish; its tube ¼ inch long; its lobes ovate. Anthers ⅔ line long. Style bristlelike, glabrous, not exserted. Stigma slightly concave in the centre, half a line in diameter. Berry naked, 3-4 lines long, upwards a little broader, with two nuts.

HOMALINEÆ.

Blackwellia brachybotrys.

Leaves ovate or rhomboid, or round-ovate, tapering into a short petiole, smooth, their margin repand; raceme short, almost spicate; flowers small, slightly downy; tube of the calyx hemispherical; its lobes 6-7, linear, rather acute; petals but slightly or nearly half-exserted, oblong-lanceolate; glands velvety; stamens 6-7; styles 4-6, below their apex slightly downy.

On granite rocks, near the origin of the Gilbert River—rare.

A small tree with spreading branches; branchlets grey, brown, at last blackish, terete. Petioles 3-4 lines long, almost terete; leaves thin-coriaceous, one-nerved, net-veined, opaque, on both sides of equal color, 1-2 inches long. This species is closely allied to *Blackwellia axillaris* (Lam. illustr. 412); it differs principally in its short racemes, and in the form of the petals and calyx-lobes. Racemes terminal and lateral, rarely longer than one inch, often shorter, on short peduncles, with several or many flowers. Bracteoles at the base of each pedicel ternate, brown, triangular, persistent; all, but particularly the lateral ones, very minute. Calyx 1 line long, its lobes not touching each other with their margins in æstivation, at last spreading, as well as the ribless tube pale yellow

green. Petals 6-7, sessile, white, at least for a long while persistent. Filaments capillary, smooth, one line long. Anthers minute, didymous, white-yellow, affixed betwixt the cells. Styles white, about a half line long, subulate, divergent, with united bases. Vertex of the ovary free. Ovules several, pendulous. Ripe fruit unknown, but only 1 or 2 ovules advancing to maturity.

Mr. Allan Black, the custos of Sir Wm. Hooker's herbarium, first pointed out the position of this plant in Homalinea, justly alluding to its resemblance with Homalium, and observing that the homalideous order had not been previously noticed in Australia.

LYTHRACEÆ.

Amimannia crinipes.

(Sect. Cornelia.)

Annual; stems adscendant or procumbent; branches thread-like; leaves linear or oblong, blunt, somewhat fleshy, slightly scabrous, tapering into a very short petiole; peduncles axillary, solitary, one-flowered, capillary, crowded towards the summit of the branchlets, twice or many times longer than the leaves; calyces tetragonous-campanulate, bluntly four-lobed; sinus-teeth indistinct; petals four, white, ovate; capsules very tender, nearly ovate, perfectly immersed in the calyx, irregularly bursting.

In moist, sandy flats, and on the sandy-gravelly banks of rivers in Arnhem's Land.

A singular little plant, from a few inches to a span high, sometimes rooting along the stems.

LEGUMINOSÆ.

Bauhinia Carroni.

(Sect. Lysistemon.)

Leaflets oblique-ovate, glabrous, longer than the petiole, free to the base; corymbs few-flowered, nearly sessile; pedicels and calyces brownish-silky; tube of the calyx campanulate, with attenuated base; its teeth 5, short; petals imbricate, unequal, ovate and ovate-oblong, two or three times longer than the calyx, not spreading, outward scantily silky; filaments unequal, exserted, all fertile, free; anthers oval; pods oblong, flat, few-seeded; their stalks not adnate to the calyx.

From Newcastle Range to Darlings Downs, chiefly in the Brigalow Scrubs.

A large shrub, or more frequently a small tree. Bark of the branchlets smooth, at last black. Leaflets about twice as long as the terete petiole, $\frac{1}{2}$ - $\frac{2}{3}$ inch long, rather tender, green, opaque, 4-5-nerved, finely veined. Stipella in the sinus of the leaflet-pair, shorter than one line, rusty brown. Corymbs terminating the branches, but when the latter are reduced to mere innovations apparently axillary or lateral, few-flowered, with a short or no peduncle. Pedicels crowded, solitary, 2-3 lines long, upwards gradually thickened, at the base provided with three lanceolate-subulate bracteoles, which are shorter than one line, brown, silky, and early falling, calyx 4-6 lines long, sometimes toothless and oblique truncate, not membranous. Petals dark red, free, upper one ovate, about $\frac{1}{4}$ inch long, on both sides scantily silky, tapering into a claw shorter than one line. Lateral petals of the form of the upper one, which they cover, but a little larger, and inside glabrous. Lower petals oblong-ovate, 4-5 lines long, outside silky, inside nearly glabrous, with a claw measuring $1\frac{1}{2}$ -2 lines. Stamens all fertile, free, the upper ones but little, the lower ones long exserted. Filaments filiform, dark or pale red. Anthers oval, versatile, hardly one line long, yellow with red margin. Pollen golden-yellow. Stalk of the ovary longer than the petals. Style pink, 2-4 lines long. Stigma convex, oblique terminal. Pods two to four inches long, one inch broad, blunt at the apex, acute at the base; their stalk slender, often fully an inch long. Seeds compressed, roundish-ovate, brown, smooth, 3-4 lines long, slightly angular.

I name this stately plant to acknowledge permanently the arduous services which were rendered by Mr. Carron in the last disastrous expedition of Mr. Kennedy. A perusal of the sorrowful account, published by Mr. Carron, of this unfortunate journey, will likewise render evident how far he, in throwing so much light on the vegetation of North-East Australia, deserves the small tribute of botany paid to him on this occasion.

Bauhinia Leichhardtii.

(Sect. Lysistemon.)

Leaflets orbicular- or broad-ovate, as long as the petiole, free to the base, at last glabrous; corymbs few-flowered on very short peduncles; peduncles, pedicels, and calyces

covered with a brown velvet; teeth of the bell shaped calyx almost deltoid, as long as the tube; petals ovate and ovate-oblong, velvet-silky, not spreading, with short claws; filaments free, all fertile; pods oblong, flat, few-seeded, their stalk not adnate to the calyx.

Not rare in Arnhem's Land and around the Gulf of Carpentaria.

A small or middle-sized tree. This species, which I have named in memory of Dr. Leichhardt, who, like Allan Cunningham, referred to it repeatedly in his journal, resembles very much the *Bauhinia Carroni*, but differs, besides in the above notes, by the following characters:—

The leaves are downy whilst young, somewhat larger, the pedicels longer, the pods broader, and the seeds larger. *Bauhinia Carroni* commences with the Brigalow Scrub to occur where *Bauhinia Leichhardtii* ceases to exist. Whether the differences pointed out between the two species are, as it seems unlikely, caused by the diversity of the climate in the respective tracts which they occupy, remains yet to be ascertained.

Bauhinia Hookeri.

(Sect. *Lysistemon.*)

Leaflets broad-ovate, glabrous, as long as the petiole, free to the base; peduncles, pedicels, and calyces somewhat downy; corymbs few-flowered, on very short peduncles; calyx funnel-shaped, its oblong lobes scarcely shorter than the tube; petals orbicular, spreading, outside slightly silky, nearly three times longer than the calyxlobes; filaments free, all fertile, and exceeding the petals; anthers hastate-oblong; pods oblong, flat, few-seeded; their stalks not adnate to the calyx.

In the Brigalow scrubs from Newcastle Range to the Burnett River; also sometimes on trachytic rocks, between basalt boulders, and in the dry gravelly beds of rivers.

A tree of small size, sometimes a shrub.

Branchlets terete, smooth, glabrous, gray. Leaflets $\frac{3}{4}$ -1" long, opaque, 5-7-nerved, veined. Stipella, lanceolate-subulate, spadiceous, about 1 line long. Corymbs terminal, solitary or twine, on short peduncles, few-flowered, of agreeable scent. Pedicels solitary, 3-4 lines long, downy. Basilar bracteole ovate-lanceolate, about 1 line long; the two lateral ones inserted a little above the base of the pedicel, opposite,

somewhat smaller, lanceolate-subulate, all deciduous. Calyx green, not membranous, almost funnel-shaped, scantily downy, valvate in æstivation, equally 5-cleft; its lobes lanceolate-oblong, three-nerved, 3-4 lines long; tube oblong-cylindrical, very indistinctly ribbed, about half an inch long. Petals imbricate in æstivation, nearly of equal form, 9-10 lines long, pale red or nearly white, bi-lobed at the base of the lamina, inside almost glabrous, their claw $\frac{1}{4}$ inch long. Filaments compressed filiform, almost of equal size, about $1\frac{1}{2}$ inch long, glabrous, towards the base pale, towards the apex dark red. Anthers attached in the middle of their back, 2 lines long, hastate-oblong, yellow with red margin. Pollen golden yellow. Style compressed filiform, red, about half an inch long, smooth. Stigma peltate, smooth, green. Stalk of the ovary downy, $\frac{1}{2}$ - $\frac{2}{3}$ inch long. Pod oblique-oblong, compressed, 2-4 inches long, about one inch broad, 3-6-seeded. Seeds shining-brown, smooth, oblique, kidney-shaped or roundish-ovate, compressed, varying in length between 4 to 7 lines.

I have in grateful veneration attached to this noble plant the illustrious name of the Nestor of botanists, who has given in our science one of the very few examples of unremitting, ever disinterested labours continued to the most venerable age.

It is yet unknown which species of *Bauhinia* extends to extra-tropical latitudes on Cooper's River, where one member of this genus was observed both by Captain Sturt and Mr. Gregory.

Bossiaea phylloclada.

Glabrous, leafless; branches broad-winged; branchlets compressed, leaf-like, long-lanceolate, blunt, with alternate remote large teeth, with a thick midrib and spreading nerves; pedicels arising from the apex of the nerves, solitary, naked towards the summit, provided at the middle with two opposite bracteoles which are widely remote from the basal bracts; keel and standard twice as long as the wings; the former as well as the calyx woolly fringed; pods stalked, oblique-oblong.

On the edges of the sandstone tableland, and on stony declivities, and barren bushy undulations of Arnhem's Land.

A good-sized shrub, with many spreading branches; calyx 3 lines long; its upper lip large, with blunt lobes, the lower one with narrow lanceolate teeth; corolla yellow, petals of

the carina spathulate-obovate, below the middle and at the apex disjointed, $\frac{1}{2}$ inch long, with long claws; wings ovate; column of stamens slit in front; style capillary, glabrous; stigma minute.

Mirbelia aotoides.

Branchlets terete, with appressed downs; leaves scattered, or fasciculate, linear, entire, scabrous, with refracted margins, and a very short recurved mucro; peduncles wanting; pedicels solitary or twin, shorter than the calyx; bracteoles linear, very short, fixed to the base of the pedicel; upper lip of the silky calyx broad, emarginate, or with two very short blunt lobes; lower lip with three deltoid teeth; wings about as long as the standard, longer than the keel; pod smooth, short-stalked, perfectly two-celled, two seeded.

On sterile mountain ranges near the Burnett River.

A diminutive erect shrub, resembling somewhat the smaller forms of *Aotus villosa*. Leaves 4-6 lines long, $\frac{1}{2}$ - $\frac{2}{3}$ line broad, on very short, almost obliterated petioles, not distinctly veined; calyx about 2 lines long; flowers seen in a faded state only, apparently of the color of *Mirbelia grandiflora*; vexillum broader than long, smooth; keel blunt; ovary and style glabrous, the latter $1\frac{1}{2}$ line long; pods measuring nearly three lines; the septa arising from both sutures touching each other.

This ambiguous species forms a transit to *Aotus* on account of its bractless calyx, and to *Phyllota*, which produces also no strophiole. Amongst its congeners it is evidently in nearest contact with *Mirb. grandiflora*, which seems, according to the figure in Bot. Magazin. f. 2771, to be also devoid of calycine bracteoles, but it differs in the form of the calyx and leaves, and in a smooth ovary. No ripe fruit being found, it is not certain whether the endocarp separates in the manner of other *Mirbeliæ*. In some points it agrees with *Mirbelia floribunda*. I may remark on this occasion, that the genus *Oxycladium* is to be placed in the section *Mirbeliæ*, next to *Leptascma*, differing from that genus and the allied ones in a persistent replum of the pod, by which an approach of it is manifest to *Carmichælia*. No species of *Mirbelia* have hitherto been detected in the territory either of the colony of Victoria or of South Australia, although many species are known from East and West Australia.

Psoralea pustulata.

Suffruticose, erect, covered with short appressed hair and conspersed with glandular tubercles and minute warts; stems simple; petioles almost as long as the leaflets; stipules large, hastate- or lanceolate-ovate, acuminate; leaves consisting of three leaflets, except the uppermost, which are simple; leaflets ovate or lanceolate, blunt, with a short mucro, perfectly entire, ribbed by conspicuous lateral nerves; racemes rather dense, on short peduncles, axillary, solitary, twin or ternate, hardly three times longer than the leaflets; bractea nearly round, acuminate; pedicels ternate, several times shorter than the calyx; teeth of the latter acute, the lowest a little longer than the rest; pod laxly enclosed in the calyx, kidneyshaped ovate, compressed, rostellate, covered with sessile scutellar glands, connate with the seed.

On the banks of the rivers Victoria and Nicholson.

Stems several from each root, 5-10 feet high, flexible, terete, without furrows, rarely branched, sometimes decumbent, as well as the petioles, peduncles and leaves tubercled; petioles 1-2 inches long; stipules 5-6 lines long; leaflets cuspidate, $1\frac{1}{2}$ - $2\frac{1}{2}$ inches long, $\frac{3}{4}$ - $1\frac{1}{2}$ inches broad, with pinnate nerves, grossly dotted with immersed glands, flat, of equal color on both sides; racemes rarely divided; bracts 2-3 lines long, ciliolate, otherwise glabrous, glandulous; calyxes about 4 lines long, glandulous-tubercled, green, with bleaching tube, upper lip bifid; vexillum round, glabrous, outside pale, inside purplish, obscurely callous, with its deltoid unguis 4-5 lines long, surpassing a little the length of the wings and of the carina; wings purple, oblong, with a roundish white, basilar appendage, and a narrow unguis; carina straight, blunt, adherent to the wings, divided towards the base, white with purple summit; anthers round-didymous; stamens diadelphous, 9 connate to near the apex; style smooth; pod smooth, glandulous, 2-3 lines long; radicle half as long as the cotyledones.

Psoralea leucantha.

Suffruticose, erect, glabrous, branched, dotted with glandular points; petioles almost as long as the leaflets; stipules lanceolate-subulate; leaves consisting all of three

leaflets, which are narrow-lanceolate, rather acute, mucronulate, with entire or slightly repand or denticulate margin, and thin lateral nerves; racemes on short peduncles, axillary, solitary or 2-4 together, at last as long as the leaflets; bracts broad or lanceolate-ovate, acuminate; fruit bearing pedicels nearly as long as the calyx; teeth of the calyx acute, those of the upper lip short; pods brown, kidney-shaped, ovate, rostellate, compressed, wrinkled by sessile glands, longer than the appressed calyx, connate with the seed.

On the sandy, sometimes inundated, banks of the Victoria River, and its tributaries.

A strong-scented plant, several feet high, closely allied to the preceding species. Corolla white; the keel with a blueish spot at the apex.

Psoralea balsamica.

Shrubby, erect, covered with innumerable small brown glandular warts; petioles about half as long as the leaflets; stipules from a broad base linear-subulate; lower leaves trifoliolate, upper ones simple; leaflets oblong or ovate, blunt, emarginate, ribbed by prominent lateral nerves, terminated in a short mucro, irregularly denticulate, as well as the branchlets and petioles scantily downy; corymbs hardly as long as their peduncle, axillary and terminal with several crowded pedicels; the latter ternate and much shorter than the calyx, as well as their axis clothed with soft spreading down, almost glandless; bracts small, glandulous, ovate-roundish, acuminate; calyx downy, tubercled; its upper lip deeply bifid, a little longer than the lower one; teeth all nearly lanceolate, acute; pods broad-ovate, velvet-silky, compressed, not rostellate, laxly enclosed in the calyx, connate with the seed.

On the margin of rocky creeks flowing into the Nicholson and Van Alphen rivers.

A shrub, 4-8 feet high, not spreading, of a strong balsamic odour. Leaflets 1-1½ inch long, densely conspersed with glandular tubercles and subtile dots. Peduncles 1-1½ inch long, bearing flowers only towards the summit. Calyx nearly 3 lines long. Flowers blueish. Anthers cordate-ovate. Filaments diadelphous, connate to almost the apex. Style 1 line long, glabrous. Pods measuring scarcely 2 lines.

Zornia chatophora.

Glabrous, densely dotted with glands; stems erect, perennial, many branched; leaflets twin, long or narrow lanceolate, acute; stipules minute, triangular-lanceolate, acuminate; spikes terminal, on long peduncles, with numerous flowers; bracteoles lanceolate, almost five-nerved, with slightly ciliated apex and an acute protracted base; pods 3-5-jointed, with copious long upwards scabrous bristles, and also hispid; joints broad-semiorbicular; seeds quite smooth, shining, brown-black.

On sand ridges and on the sandstone table-land in the interior of Arnhem's Land, and thence towards central Australia.

A herb 1-2 feet high, with many dichotomous, slender stems. Petioles often an inch long. Leaflets 1-1½" long, 1-4" broad. Peduncles 2-5" long, erect, or slightly spreading. Bracteoles 3-4" long. Flowers yellow. Calyx membranous, whitish, ciliate, on the lower side somewhat downy. Stamens only towards the base connate. Anthers of the shorter filaments oblong-linear, of the longer ones ovate. Joints of the pod 1½" long. Seeds measuring 1 line.

COMPOSITÆ.

Pluchea. Cass.

(Sect. *Oliganthemum.*)

Involucre cylindrical, with narrow-lanceolate scales. Female flowers 2-3, hermaphrodite sterile ones 1-2. Pappus bristles of the fertile acheniums numerous, indistinctly biseriate; those of the barren acheniums with no or only one or two bristles.

Pluchea filifolia.

(*Oliganthemum filifolium*, Ferd. Mueller's herbar. North Austr. Expd.)

Annual, glabrous; leaves thread-like; flowerheads axillary and terminal; hermaphrodite flowers three-toothed, female ones with an exceedingly narrow ligule; fertile acheniums densely fulvous-silky.

In arid localities in the south-eastern part of Arnhem's Land.

Root undivided, slender, often flexuose, a few inches long. Stems a span long or shorter, spreading-branched, slightly scabrous. Leaves alternate, very narrow linear, curved, in consequence of their revolute margins filiform, $\frac{1}{2}$ -1 inch long, awnless. Peduncles more or less shorter than the involucre, which is 4-5 lines long; its scales in a few rows, green, at last brownish, sessile, with scarious margin, glabrous, the outer ones very short, the inner ones gradually longer, the innermost linear and running out in a subulate acumen. Receptacle very small, convex, tubercled. Corollas about 2 lines long, whitish; female ones extremely thin, with widened base, their ligules two-toothed, shorter than the capillary branches of the style. Hermaphrodite corollas filiform; their style short-exserted, undivided. Fertile acheniums scarcely longer than one line, with attenuate base and truncate summit; their pappus 2 lines long, brownish-yellow. Barren acheniums diminute.

Calotis plumulifera.

(Sect. *Acantharia.*)

Annual, dwarf, slightly hispid; stem erect, branched; leaves oblong-lanceolate, perfectly entire or remotely toothed, tapering at the base, the upper ones sessile; flowerheads small, pedunculate; scales of the involucre lanceolate acute; receptacle conical; ligules white; acheniums on both sides woolly with plumose downs, at the margins expanded into an acutely dilated wing, which is fringed with feathery hair; awns numerous, capillary, shorter than the achenium or nearly as long as it, unequal, in their whole length ciliated by short spreading or recurved hair.

On the Murray plains.

An herb 2-4 inches high, with the habit of a *Brachycome*. Root thin, simple, flexuose. Leaves $\frac{1}{3}$ to $\frac{2}{3}$ of an inch long, 1-2 lines broad. Peduncles axillary and terminal, sometimes an inch long, often shorter, bracteate by one or the other, small leaf. Flowers in each head numerous; the inner ones about 1 line long, perfectly barren, although hermaphrodite, with undivided style; the outer ones varying from 10 to 20 in number, of which some are occasionally abortive. Ligules with a lamina 1-1 $\frac{1}{2}$ line long, $\frac{1}{4}$ - $\frac{1}{3}$ line broad. Achenium-wings with a sinus descending from the vertex to the outer or middle point, thence tapering wedge-like, glabrous on

their sides. Bristles of the pappus generally more than 20, the longest one line long.

Calotis tropica.

(Sect. Acantharia.)

Glabrous or slightly hispid; rhizome perennial, fibrillous; stems numerous, erect, much-branched, angular; leaves linear, acute, tapering into the base, the upper ones gradually smaller, all entire; scales of the involucre linear, acute, scabrous; ligules white; acheniums small, hispidulous, with a thick ciliolate margin; awns 8-10, unequal, retro-aculeate, the longest three times shorter than the achenium.

In North-West Australia, generally in dry beds of rivers.

An herb, about one foot high. Leaves from $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, $\frac{1}{2}$ - $1\frac{1}{2}$ line broad. Flowerheads small. Receptacle broad-conical. Inner flowers sterile.

It is evidently allied to *Calotis breviseta*, of which the brief diagnosis does not suffice for recognition. If the *C. tropica* should prove a variety of that species, then still the above record of this plant will be acceptable, as not only its precise habitat was unknown, but also in showing how great changes this species is apt to undergo. All the other species of *Calotis* are restricted to extratropical latitudes.

Erigeron ambiguum.

(Sect. Euerigeron.)

Erect, branched, glandulous and hispidulous downy; leaves sessile, lanceolate, quite entire or grossly and remotely toothed; capitules corymbose, on long peduncles, hemispherical; scales of the involucre linear, acuminate, imperfectly fringed, almost as long as the ligules; central flowers few, indistinctly toothed; acheniums linear-oblong, moderately compressed, scantily appressed-hairy, half as long as the pappus; bristles of the latter 15-17, free, scabrous.

On the Gilbert River.

Probably a perennial herb. Lower leaves about $1\frac{1}{2}$ inch long, upper ones gradually shorter. Outer scales of the involucre $\frac{1}{2}$ line, inner ones about 1 line long, scarious at the margin. Female flowers very slender, with a short narrow

ligule, apparently white. Achenes fulvous, scarcely longer than half a line. Pappus white.

Amongst Indian species nearest to *E. Wightii*, otherwise resembling *E. Philadelphicum* and *purpureum*.

Ozothamnus decurrens.

(Sect. *Euozothamnus.*)

Leaves linear, short, spreading, truncate, with entirely revolute margin, in a double line decurrent, wrinkled, rough, shining; corymbs compound, terminal; flower-heads ovate-cylindrical, at last bell-shaped, yellowish-white, homogamous, with about 11 flowers; scales of the involucre blunt, with slightly tomentose back and hyaline margins; achenes scabrous-papillose; bristles of the pappus 21-25, a little thickened at the apex.

In the desert scrubs on the Murray and Darling rivers, and near Lake Alexandrina.

Branchlets angular and green, on account of the decurrent leaves. The latter generally only from 2-4 lines, sometimes half an inch long, hardly 1 line broad; the velvet of their lower page only visible in the midrib. Peduncles thinly tomentose. Flowerheads scarcely 3 lines long.

It differs from *Ozothamnus retusus* in shorter, more wrinkled leaves, with broader decurrent lines, in neither shining, nor glabrous, nor heterogamous flowerheads, and in more copious pappus-bristles.

Oz. adnatus, to which Dr. Sonder referred this plant doubtfully in the *Linnæa*, 1852, p. 511, differs, according to D. Candolle's note of that species, in shorter and appressed leaves, and in ovate scarcely yellowish flowerheads, being besides not a desert plant.

ASCLEPIADEÆ.

Bidaria erecta.

Stems erect, shrubby; branches with appressed hair; leaves linear, nearly sessile, glabrous or somewhat ciliate at the margin; umbels on very short peduncles, solitary or twin; flowers small; faux of the corolla bearded; stigma conical, longer than the stamens; follicles nearly terete.

On stony ridges along the Victoria River.

A shrub several feet high. Leaves from 2 to 4 inches long, 1-2 lines broad. Corollas nearly white.

Bidaria leptophylla.

Climbing; branchlets slender as well as the peduncles covered with velvet hair; leaves linear, slightly downy; peduncles as long as the umbel; corolla small, urceolate; its teeth blunt, three times shorter than the tube.

At the sources of the Burdeken River.

A milky plant, several feet high. Stems terete, sometimes rather silky. Leaves acute, opposite or, through imperfect development of the branchlets, fasciculate, at last glabrous, $1\frac{1}{2}$ -2 inches long, 1-2 lines broad, with flat margin. Umbels with several or many flowers, solitary or twin. Peduncles half an inch long or shorter. Pedicels longer than the linear-subulate unequal bracteoles. Calyx with fine appressed downs, scarcely longer than one line; its lobes lanceolate, acute, appressed. Corolla $2\frac{1}{2}$ lines long, outside glabrous; tube ovate; inside with a line of hair; limb spreading only half a line long with orbicular-ovate blunt lobes. Anthers terminated in a white membrane. Stigma white conical.

SCROPHULARINÆ.

Vandellia clausa.

(Sect. Bonnaya.)

Glabrous; stem simple, erect, producing leaves only at the base, sometimes with a pair of small bracts near the middle; leaves broad-ovate, repand or denticulate, the lower ones the smallest; racemes terminal, solitary or twin, with several or many flowers; bracteoles solitary, or the lower ones opposite, lanceolate or linear subulate, several times shorter than the pedicels; the latter twice to four times as long as the calyx, and about as long or not much longer than the capsule; calyx deeply five-cleft, with linear-subulate segments; tube of the corolla nearly cylindrical, almost three times as long as the calyx; faux closed; sterile stamens totally adnate, forming two slightly prominent carinas; anthers of the two fertile stamens one-celled, coherent; capsules linear-elliptical, rather acute, longer than the style; seeds black, nearly ovate, angulate, transversely streaked.

On sand-plains, subject to occasional inundations, on the Victoria River and its tributaries.

An annual herb, generally less than one foot high. Largest leaves $\frac{1}{2}$ inch long. Bracts measuring in length about one line, broader than the bracteoles. Corolla purple, hardly half an inch long; the upper lip nearly semiorbicular, slightly emarginate, half as long as the lower one; middle lobe of the latter round-cordate, lateral ones orbicular-ovate. Sterile stamens white, enclosed. Anthers one-celled, but perhaps only by the confluence of divaricate lobes, but certainly not so clearly two-celled as in *Vandellia scapigera*, which bears to *V. clausa* the greatest resemblance, still is furnished with 4 fertile stamens, as an examination of specimens collected at Macadam Range has proved; two of the filaments in *Vandellia scapigera* are furnished at the base with a short filiform glandulous appendage. Its corolla is white. The anthers are coherent in pairs. Lamels of the stigma sometimes unequal. Capsule 3-4 lines long, about three times longer than the calyx.

Vandellia lobelioides.

(Sect. Bonnaya.)

Glabrous; stem simple, erect, provided with leaves only at the base, but towards the middle with one or two distant pair of bracts; leaves broad-ovate, repand or quite entire, the lowest the smallest; racemes few-flowered, the terminal one solitary, in addition to which sometimes a lateral one, shortened to a corymb and occasionally reduced to a single flower; bracteoles all opposite, linear-subulate, many times shorter than the pedicels; the latter four to six times longer than the calyx; tube of the corolla upwards widened, twice as long as the calyx; sterile stamens totally adnate, forming two very prominent carinas; faux open; fertile stamens with coherent one-celled anthers; capsule ovate, shorter than the style; seeds brown-yellow, angular, transversely wrinkled.

A companion of *Vandellia clausa*, to which it stands in close affinity.

An annual herb, with the habit of a *Lobelia*, from a finger to a span long. Bracts narrow-lanceolate, 1-1 $\frac{1}{2}$ line long, never missing, broader than the bracteoles. Segments of the calyx linear-subulate. Corolla nearly half an inch long, blue, rarely pink or white; its upper-lip semiovate, with two short and acute teeth, or emarginate, plicate, often whitish, three

times shorter than the lower one; lateral lobes of the lower-lip round-ovate, middle one round kidney-shaped, near the faux with a white spot. Sterile stamens white, like those of *V. clausa* without anthers; their apex exserted, yellow and bent outward into a very short lobe. Lamels of the stigma equal. Capsule about 2 lines long.

Vandellia plantaginea.

(Sect. Bonnaya.)

Leaves all radical, glabrous, narrow- or spathulate- or ovate-lanceolate, slightly repand or entire; scape rather long, furrowed, with prominent angles, bractless, or about the middle with a solitary pair of bracts; raceme short, terminal dense, almost forming a spike, glandulous-downy; bracteoles longer than the pedicles; the latter shorter than the calyx; capsule ovate, acute, of the length of the calyx, shorter than the style.

In moist meadows near Macadam Range.

The root short, thick, and fibrillous, possibly perennial. Scape one foot or less high. Leaves $\frac{1}{2}$ - $2\frac{1}{2}$ inches long, generally short-stalked. Raceme measuring $\frac{1}{2}$ - $2\frac{1}{2}$ inches. Corolla blue. Capsule about 2 lines long.

This species is extremely rare, and the only flowering specimen which was found is deposited in Sir Wm. Hooker's herbarium, at Kew. It may possibly not be a congener, in the strictest sense of the two preceding ones. In the botanical collections of the North Australian Expedition, I referred all three to Bonnaya, combining at the occasion with it the genus *Ilysanthes*. I proceed now a step further, and unite these plants and all the species of *Lindernia*, *Ilysanthes*, and Bonnaya to *Vandellia*, because on the same grounds as those which led to the separation of the above genera, others also of this order (for instance, *Gratiola*) ought then to be divided.

Mimulus debilis.

Annual, glabrous; stem slender, decumbent, quadrangular; leaves small, distant, lanceolate-linear, entire, somewhat scabrous, gradually pointed; pedicels thin-filiform, four or many times longer than the calyx; flowers yellow.

In humid meadows and around swamps at Macadam Range, Providence Hill, and the M'Arthur River.

A flaccid herb, about a span long. Leaves 3-4 lines long. Pedicels measuring between one and two inches, the corolla about half an inch.

LENTIBULARINÆ.

Utricularia fulva.

Vesicles and radical leaves wanting; stem simple, erect, with distant bractlike-scales; racemes with remote flowers, flexuose; bracts almost cordate; bracteoles setaceous; sepals round, acuminate, longer than the pedicels; upper lip of the corolla bluntly bi-lobed, lower one indistinct three-lobed; palate bearded; spur horizontal, subulate, not compressed, capsule globose.

Around stagnant water near Macadam Range; rare.

An herb, from a span to a foot high. Corolla fulvous, except the palate, which is yellow and dotted with red spots.

The *U. chrysantha*, which occurs in grassy flats on the Victoria River, is a much taller plant, with bright yellow flowers, and a differently shaped lower lip.

ART. IX.—*Mr. J. T. Gellibrand's Memoranda of a Trip to Port Phillip in 1836. Addressed to His Excellency the Lieutenant-Governor. From a MS. Copy presented to the Philosophical Institute of Victoria by the HON. CAPT. CLARKE, R.E.**

[Read before the Institute, 8th September, 1858.]

Campbell Street, April 18th, 1836.

SIR—I have much pleasure in transmitting to your Excellency, conformably with my promise, a transcript of the memoranda of my late trip to Port Phillip

document that it was only intended for the information of the parties immediately interested, and was not intended as an official document, but your Excellency is at perfect liberty to make such use of it as you may consider the public interests of the aborigines may require.

* The MS. was unfortunately injured by a fire at the printers. Portions which were quite illegible are left blank; doubtful words are marked with a ?—J. M., ED.

21. Nov. 1933

TRANSACTIONS

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