
XVIII. *Specific Characters of the Decandrous Papilionaceous Plants of New Holland.* By James Edward Smith, M.D. F.R.S. P.L.S.

Read February 16, 1808.

IN the first volume of Dr. Sims and Mr. König's *Annals of Botany*, p. 501, I attempted a discrimination of the genera of this intricate tribe, merely enumerating the species of each genus that were already described by authors, and giving specific characters of new ones only. It has been suggested that the uniformity of my plan required characters of all the species, those already extant being mostly useless, in consequence of the previously unfixed state of the genera; for Linnæus well observes that a specific name or character without an established generic one, is "like a clapper without a bell." I the more readily undertake to supply the above-mentioned deficiency, because the liberality of my much-valued friend Mr. Menzies has enabled me to enrich my catalogue of species with several new ones. I regret that from the discontinuance of the very useful work in which my first essay on this subject appeared, the sequel must be destined to a different publication; still this can be but of small moment to those few botanists who may be expected to look deeply into the matter, and who, most assuredly, will be furnished with both. I think it best here to repeat the essential characters of each genus, more especially as some of them may receive improvement or correction in consequence of subsequent
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observations. Under the definition of each species I confine myself to a citation of figures, omitting other synonyms already given, either in that part of the *Annals* above quoted, or by Mr. Dryander in the second volume of the same publication, p. 518—520. A great portion of these plants indeed require to be illustrated by plates, particularly the many new species which I am here, for the first time, about to describe. But as they probably have fallen in the way of Mr. Brown and Mr. Bauer, in their botanical examinations of New Holland, they will unquestionably be delineated, in the work which the public so eagerly expects from these gentlemen, in a manner which would supersede any other attempts of the kind, especially from dried specimens. I shall therefore confine myself to specific definitions, with such short remarks as may serve merely to assist in distinguishing the genera and species, or to clear up any errors or defects that I may have discovered in my former paper. The new species not mentioned in that paper are distinguished by an asterisk.

1. PULTENEA. *Bot. of N. Holl.* 35.

Calyx quinquefidus, bilabiatus, utrinque appendiculatus! *Corolla* papilionacea: alis vexillo brevioribus. *Stylus* subulatus. *Stigma* simplex, acutum. *Legumen* uniloculare, dispermum.

1. *P. stipularis*, foliis linearibus mucronulatis planis subciliatis rectis, stipulis solitariis binervibus laceris patentiusculis.

P. stipularis. *Bot. of N. Holl.* t. 12. *Curt. Mag.* t. 475.

This plant, like all those mentioned, without any particular place of growth, in the following pages, is found near Port Jackson,

son, New South Wales. It is conspicuous for its large heads of handsome yellow flowers, its long, narrow, straight, ciliated, and densely imbricated, leaves, and its very long, tawny, lacinated stipulas, which spread a little from the branches, or, if sometimes pressed to them, are too narrow to embrace or sheathe them like those of the next species.

2. *P. paleacea*, foliis linearibus mucronulatis revolutis apice recurvis, stipulis solitariis binervibus vaginantibus membranaceis laceris.

Much smaller and more branched than the preceding; with small, but very numerous, heads of flowers. The leaves are revolute, silky beneath with close-pressed hairs, but not ciliated, and their points are recurved. The stipulas are dilated, thin, membranous and white, with two brown ribs. They embrace the stem and are very conspicuous, though liable to be injured, and partly obliterated, by time and weather. The long and pointed bractees reach much higher than the tops of the flowers, which is not so evident in the foregoing.

- * 3. *P. elliptica*, foliis ellipticis concavis pilosiusculis, stipulis solitariis binervibus villosis imbricatis.

The leaves of this species differ from all other known *Pultenææ* with simple stipulas, in their elliptical form, which nearly approaches that of *P. villosa* hereafter described, and they are also, as in that species, concave above, convex and rough with prominent points beneath. A few long loose white hairs are observable on some of them, chiefly at the margin. The stipulas are, as in the 2 first species, intrafoliaceous, simple, closely pressed to the branches, and so long as to lap over each other; they are elliptical, shaggy with white hairs, furnished with 2 ribs and an inter-

intermediate furrow. Flowers for the most part so clustered about the tops of the branches as to seem terminal and capitate, but they are really axillary, and some of them are evidently so from the first. By the elongation of the branches all the fruit is lateral. The petals are of a deep yellow. Appendages attached to the base of the calyx, whose teeth are long, slender and hairy.

4. *P. linophylla*, foliis linearibus retusis mucronulatis pilosis, stipulis geminis minutis, bracteis ovatis calyce brevioribus.

P. linophylla. Schrad. Sert. Hannov. 28. t. 18.

This flowered in Kew garden in January 1791, for the first time probably in Europe. It has a more upright wand-like habit than *P. paleacea*, with leaves somewhat angular and dilated at their apex, as well as slightly pointed. The minute separate stipulas, and the ovate blunt bractees, which, instead of surmounting the flowers, are shorter than the calyx, abundantly distinguish it.

5. *P. retusa*, foliis linearibus retusis muticis glabris, stipulis geminis minutis, bracteis ovatis vix longitudine pedunculorum.

Very like the last in habit; but the abrupt, often emarginate, perfectly smooth leaves, not dilated at their apex, mark it at first sight, and the very small bractees confirm the specific difference. This also was among the very first New Holland plants ever raised in England.

6. *P. daphnoides*, foliis obovatis mucronulato-pungentibus glabris, stipulis geminis minutis, bracteis ovatis calyce brevioribus.

P. daphnoides. Andr. Repos. t. 98.

In size, and beauty of its flowers, this equals or excels the first

first species; in habit and botanical characters it more accords with the two last, as will appear on a comparison of their specific definitions. The name, which more particularly alludes to its resemblance in general form to the beautiful *Daphne collina*, was given by me many years ago, and transmitted by our nurserymen to Germany.

7. *P. flexilis*, foliis obovato-linearibus mucronulatis calycibusque glaberrimis, stipulis petiolo longioribus, racemis terminalibus subfoliosis.

The perfectly smooth-sided calyx distinguishes this species from all the rest. The flowers are not capitate as in nearly all the foregoing, but grow in short terminal *racemi*, more or less accompanied by leaves, and always by real stipulas, at the insertion of their partial stalks, though quite destitute of bracteas. The presence of stipulas, and sometimes of leaves, proves the *racemi* to be but of a spurious kind, approaching to the axillary, and perfectly lateral, inflorescence of the following.

8. *P. villosa*, foliis ellipticis concavis cauleque pilosis, floribus axillaribus solitariis.

P. villosa. *Curt. Mag. t. 967.*

A dense bushy shrub, with numerous short leafy branches, and copious axillary solitary flowers of an uniform yellow. The leaves are short, elliptical, concave, pointless, clothed with prominent hairs, and the branches are more densely villous. The stipulas are longer than the footstalks, and often connate. No bracteas are observable. The appendages grow from towards the base of the calyx, and are longer than its tubular part, having a more leafy appearance than in any other species of *Pultenaea*.

2. AOTUS.

2. *AOTUS.* *Ann. of Bot.* v. 1. 504.

Calyx quinquefidus, bilabiatus, simplex. *Corolla* papilionacea: alis vexillo brevioribus. *Stylus* filiformis. *Stigma* obtusum. *Legumen* uniloculare, dispermum.

1. *A. villosa.* *Curt. Mag.* t. 949.

Pultenæa villosa. *Andr. Repos.* t. 309.

P. ericoides. *Ventenat Jard. de la Malmaison,* t. 35.

I have hitherto met with no other species of *Aotus* than this. The genus itself has, since its publication, received the sanction of the most able botanists, and, amongst others, of the present intelligent editor of the *Botanical Magazine*. I need not here repeat the reasons which first led me to establish it, nor do they require to be supported by any new ones. The calyx is two-lipped in *Aotus* as well as in *Pultenæa*.

3. *GOMPHOLOBIUM.* *Tr. of Linn. Soc.* v. 4. 220.

Calyx campanulatus, simplex, quinquepartitus. *Corolla* papilionacea. *Stigma* simplex. *Legumen* ventricosum, sphaericum, uniloculare, polyspermum.

1. *G. grandiflorum,* foliis ternatis linearibus mucronatis rectis, ramulis angulatis glabris, carinâ imberbi.

G. grandiflorum. *Exot. Bot.* t. 5.

The leaflets are extremely narrow, rigid, with a straight pungent point. Flowers large and handsome, of a bright uniform yellow.

2. *G. latifolium,* foliis ternatis obovato-oblongis planis venosis, ramulis angulatis glabris, carinâ fimbriatâ.

G. latifolium. *Ann. of Bot.* v. 1. 505. v. 2. 519.

G. fimbriatum. *Exot. Bot.* t. 58.

G. psoraleæfolium. *Salisb. Parad.* t. 6.

The flowers of this are even more large and handsome than those of the preceding, and their strongly fringed keel affords an excellent specific character. The leaflets also are much broader, truly *obovato-oblonga* though varying in bluntness, and veiny on both sides. They are tipped with a minute straight point. I gladly accede to the decision of Mr. Dryander, who has adopted my original name *latifolium*, in preference to *fimbriatum*, given on the report of a much broader-leaved species in Kew garden, which perhaps is erroneous.

*3. *G. scabrum*, foliis ternatis linearibus scabris subaduncis muticis, ramulis teretibus pubescentibus.

Found by Mr. Menzies near King George's Sound on the west coast of New Holland. Its leaflets are rough with minute callous points, and not above half an inch long. Flowers axillary, situated towards the summits of the branches, about half the size of the first species, with a somewhat downy-edged, but not fringed, keel. Their colour in the dried specimen is purplish, the wings and keel being of a darker redder hue than the standard; but I dare not from thence judge of their colour when living, as some flowers of this tribe are subject to very extraordinary changes in drying. The *Daviesia* in general lose all the yellow of their petals by that process, retaining only a rich purple hue, which is crimson in the fresh plant. The same thing may happen in this *Gompholobium*.

The *G. maculatum* of Andrews's *Repository*, t. 427, seems most akin to this species, though apparently sufficiently distinct. Not having seen a specimen, I decline attempting a definition of it from the drawing only.

4. *G. mi-*

4. *G. minus*, foliis ternatis linearibus lævibus aduncis mucronatis, ramulis teretibus hirtis, carinâ nudâ.

This has the habit of the last, and is nearly of the same size. Its flowers are unquestionably yellow. The recurved points of the leaves mark it at first sight. The flowers are terminal and handsome.

5. *G. pinnatum*, foliis impari-pinnatis multijugis lævibus, caule tereti flexuoso glabro.

I have seen but one specimen of the present species, gathered by Dr. White near Port Jackson, and that has only flower-buds and ripe fruit. I can therefore say nothing of the corolla. The plant is small, and seemingly annual; its stem branches from the bottom, and the species is distinguished from all the rest of its genus, and indeed of the whole tribe under consideration, as far as I have any information, by its pinnated leaves, which, nevertheless, evidently and strictly accord in habit with those of the other species of *Gompholobium*.

The name of this genus applies to the tumid shape of the legume, which swells, from a narrow base, upward; according to the primary signification of *γυμφος*, a word thence used to express a club, a wedge, or any thing formed on a similar principle.

4. CHOROZEMA. *Labillardiere's Voyage*, v. 1. 405.

Calyx quinquefidus, bilabiatus. *Corolla* papilionacea. *Stigma* simplex. *Legumen* oblongum, ventricosum, uniloculare, polyspermum.

1. *C. ilicifolium*, foliis alternis oblongis pinnatifido-dentatis spinosis, racemis terminalibus.

C. ilicifolium. *Labillard. Voy.* v. 1. 405. t. 21.

2 κ 2

C. nanum.

C. nanum. *Curt. Mag. t. 1032.*

Pultenæa nana. *Andr. Repos. t. 434.*

M. Labillardiere originally discovered this plant on the southwest coast of New Holland, at the foot of the mountains, in a loamy soil, near a spot where, after being tantalized with finding many salt springs, his party had just met with an ample supply of fresh water. This welcome refreshment, of which he speaks feelingly in his book, seems to have suggested a name for his plant, which he had properly determined to constitute a new genus. He called it *Chorizēma*, evidently, as I presume, from *χορος* a dance, or joyful assembly, and *ζέμα* a drink, in allusion to the circumstance just mentioned. This occasioned me to take the liberty of changing the gender of the name, which he had made feminine, and I have taken the further liberty of changing the *i* for an *o*, an alteration which the derivation seems to authorize, and indeed to render indispensable. I trust I shall now be justified in the eyes of my friend Dr. Sims, see *Curt. Mag.* 1032, whose ingenious derivation of the word in question from *ζημία* a mischief or punishment, "from the inconvenience its spinous leaves must occasion to the naked-footed dancers of that country," would have seemed very probable, had there been nothing to guide us to the other; but in that case the name must have been *Chorozēmia*, as well as of the feminine gender.

I have never seen a specimen of *Chorozema nanum*, but from the figures and descriptions I find no solid specific distinction between that and the *ilicifolium*. If I am wrong, I shall be glad to be corrected. My specimens of the latter were gathered by Mr. Menzies, near King George's Sound, on the west coast of New Holland, latitude 35 south.

2. *C. tri-*

2. *C. trilobum*, foliis suboppositis hastato-trilobis integris dentatisve spinosis, racemis axillaribus folio brevioribus.
Pultenæa ilicifolia. *Andr. Repos. t. 320.*

This species, brought from Port Jackson, New South Wales, is evidently nearly akin to the preceding, both in characters and habit. The leaves indeed are generally, but not very strictly, opposite, nor can any generic difference be presumed from such a circumstance in a New Holland plant. The spinous stipulas of a *Chorozema* can never be mistaken, nor can any genus be more natural. The leaves of all the known species are simple, and reticulated with numerous veins, being on the whole broader than those of any other genus of this family.

3. *C. scandens*, foliis suboppositis ellipticis indivisis, racemis terminalibus elongatis, calyce pilosiusculo.

The stem is twining; its branches terminated by loose pendulous bunches of yellow flowers, variegated with red, whose calyx is slightly besprinkled with short close-pressed hairs. The leaves are, as in the last, not constantly nor strictly opposite; they are smooth above, and nearly so beneath; their margin wavy and somewhat crenate. I received specimens of this species from Dr. White at Port Jackson, but have never seen it in any garden, nor is it, I believe, any where figured.

- *4. *C. sericeum*, foliis subalternis ellipticis, racemis axillaribus longitudine foliorum, calyce sericeo, vexillo angustato.

Gathered at King George's Sound by Mr. Menzies. The twining stem is like the last, but the leaves are more decidedly alternate, except at the extremities of some short lateral branches: they are also rather more coriaceous and wavy, and more silky at the back. The flowers are widely different, thrice as large,
growing

growing 3 or 4 together in slender loose axillary clusters, on silky stalks, each cluster not longer than its corresponding leaf. The calyx is large, campanulate, and beautifully silky with innumerable close-pressed hairs. The shape of the petals can but imperfectly be determined by my specimen, and their proper colour not at all, they being at present of an uniform brown; but the standard seems unusually small and narrow, and the keel proportionably large, which may in this case assist the specific distinction, but not interfere with the generic character, so clearly stamped in every other part. I have not seen the fruit either of this or of *Chorozema scandens*; but their germens are clothed with dense bristles, longer than the silky hairs observable in the two first species.

*5. *C. coriaceum*, foliis elliptico-subrotundis retusis coriaceis sparsis, umbellis axillaribus pedunculatis, calyce hirsuto.

Found also by Mr. Menzies at King George's Sound. This is a stout, upright, firm and rigid shrub, whose branches appear to be ternate, and whose leaves are peculiarly thick and coriaceous. Their apex is deeply emarginate, with a scarcely perceptible blunt point; their margin cartilaginous, somewhat inclined to be revolute; their under side finely silky; their upper smooth, beautifully reticulated with innumerable interbranching veins, more prominent than in the two last species. The flowers grow in dense axillary umbels, on silky stalks, much shorter than the leaves. The calyx is densely clothed with long loose hairs. The style is somewhat dilated and flattened, which circumstance is, though less conspicuously, observable in the last. The stigma however is not at all dilated, but of the simple form proper to the genus. A reconsideration of this part in all the species has induced me to leave out the word *acutum* in the generic characters

acters of *Chorozema* and *Gompholobium*, as applying less correctly to these genera than to *Pultenæa* and *Daviesia*. The more we study any *papilionaceous* plants, the more we shall be aware of the importance of this part, on which Linnæus has so much depended, in defining their generic characters.

5. DAVIESIA. *Tr. of Linn. Soc. v. 4. 220.*

Calyx angulatus, simplex, quinquefidus. *Corolla* papilionacea. *Stylus* subulatus. *Stigma* simplex, acutum. *Legumen* compressum, monospermum.

1. *D. acicularis*, foliis linearibus revolutis pungentibus strictis denticulato-scabris, floribus axillaribus solitariis.

A hard rigid branching shrub, with very numerous scattered spinous leaves, about an inch long, all linear, rough to the touch, narrow, revolute, except a few of the first upon seedling plants, which are lanceolate and nearly flat. The flowers are copious, axillary, solitary, on very short stalks with a few concave smooth bracteas. Calyx bell-shaped, divided half way down into 5 teeth. Corolla yellow variegated with crimson, but, in drying, the yellow changes to white, and the crimson becomes purple, as appears to be the case in this whole genus. The pods are remarkable, of a semiovate form, pointed, chesnut-coloured, and so highly polished as to seem varnished; they are twice as large as the flowers. On a careful examination a pair of minute awl-shaped stipulas are found, one on each side of the insertion of the leaf, which I had hitherto overlooked, nor can I find any, except in one species, besides.

- *2. *D. incrassata*, foliis cuneato-linearibus compressis verticalibus obliquis incrassatis spinosis, floribus axillaribus solitariis.

This most singular, and hitherto nondescript, species was discovered

covered by Mr. Menzies near King George's Sound. Its whole habit is thick and clumsy, its leaves and young branches being apparently succulent when fresh. The insertion of the former is peculiar, their base being perfectly decurrent, and, as it were, incorporated with the branch, without any traces of a footstalk, or any other mark of separation. They are scattered, vertical, compressed, recurved, linear, more or less dilated upward into a sort of protuberance or angle on the upper edge, the lower running in a straight line to the spinous point. The surface is every where rough to the touch, but not hairy nor denticulated. Flowers few, axillary as in the foregoing, apparently yellow. The stem is woody and very much branched.

3. *D. ulicina*, foliis lanceolatis planis pungentibus strictis lævibus, floribus axillaribus solitariis.

D. ulicifolia. *Andr. Repos. t.* 304.

A very bushy shrub, with sessile, not decurrent, small lanceolate smooth leaves. The flowers, with their stalks and bracteas, are similar to those of the first species, but rather smaller. The branches are roughish.

*4. *D. reticulata*, foliis lanceolatis pungentibus utrinque reticulato-venosis, stipulis intrafoliaceis geminis, floribus axillaribus solitariis.

A branching shrub, seemingly of humble growth, found by Mr. Menzies at King George's Sound, and very remarkable at first sight for its beautiful leaves, which are prettily reticulated on both sides with yellow interbranching veins, disposed with peculiar neatness and regularity. It is however far more remarkable, when accurately examined, for the presence of a pair of small intrafoliaceous stipulas, resembling those of *Pultenea linophylla*

phylla and its more immediate allies, which are of so much importance in the present case, that I feared, at first discovering them, they might, in some measure, invalidate the genus of our plant. The bracteas also resemble those of a *Pultenæa*, being silky at their backs, and closely imbricated round the base of the almost sessile flower. The calyx however is simple, and best agrees with *Daviesia*, as does the aspect of the leaves and of the corolla. The stipulas moreover connect this species with *D. acicularis*, the only species besides in which I can find traces of such appendages. The stigma is perfectly acute; and the germen, in the only flower I have been able to dissect, so small and round, that it evidently accords better with the present genus, than with the oblong many-seeded fruit of *Chorozema*, to which I have had some suspicion that this plant might belong. Those who may have an opportunity of ever seeing the ripe fruit, must finally settle the point. The germen is so beset with bristles, that nothing can be discovered concerning its structure or contents.

5. *D. squarrosa*, foliis cordatis pungentibus reflexis margine scabris, pedunculis axillaribus unifloris subsolitariis.

The slender compound wand-like branches of this shrub are furrowed and rough, densely clothed from top to bottom, with small, scattered, sessile, reflexed, rigid, heart-shaped leaves, having a thickened rough edge, and a spinous point. Almost every leaf is accompanied by one, rarely two, slender, axillary, smooth, simple flower-stalks, each about as long as the leaf, with a few concave round bracteas at its base, and bearing one little flower, variegated, as it appears, with yellow and red. The calyx is obscurely two-lipped, inasmuch as there is rather less distance between the two upper teeth than between any other

two. I have not seen the ripe legume, nor any living specimen of this or the five following species.

6. *D. umbellulata*, foliis lanceolatis planis pungentibus, pedunculis axillaribus solitariis umbellatis subquadrifloris, calyce truncato.

Akin to the last in habit, but the leaves are much longer and not reflexed; they are also nearly, if not quite, smooth. Each is accompanied by one axillary flower-stalk, shorter than the leaf, clothed with a few minute scattered bracteas, and bearing an umbel, with several larger bracteas at its base, of generally 4 flowers, much like the foregoing, except that the upper lip of the calyx is singularly truncated and not cloven.

7. *D. corymbosa*, foliis lineari-oblongis planis muticis, pedunculis axillaribus geminis corymbosis multifloris, calyce regulari.

The leaves are 5 or 6 inches long, resembling those of several simple-leaved New Holland *Mimosa*, somewhat oblique, smooth, entire, acute, but without any terminal spine. I am not very clear whether there be any rudiments of stipulas or no. Flower-stalks axillary, in pairs, corymbose, rather unequal, one being earlier than the other, neither of them so long as the adjoining leaf. They bear a few scattered concave bracteas, as well as one under each partial stalk, and they terminate in 10 or 12 such single-flowered stalks, somewhat scattered, a few of the uppermost only being umbellate, and all together forming a sort of *corymbus*. The flowers are, in a dry state, white variegated with purple; but their original colours are, probably, like those of other species of *Daviesia*, yellow and crimson. The calyx-teeth are short, and all as nearly equal and regular as they can be in a papilionaceous flower. This plant was found by Col. Paterson,
near

near Hawksbury river, New South Wales, and I received it from Sir Joseph Banks's collection.

- *8. *D. cordata*, foliis cordatis amplexicaulibus reticulato-venosis, pedunculis axillaribus aggregatis corymbosis multifloris, calyce truncato.

The large heart-shaped leaves, 3 or 4 inches long, clasping the very angular stem, and strongly reticulated on both sides with innumerable veins, sufficiently distinguish this species, which was found by Mr. Menzies at King George's Sound. Four or five corymbose flower-stalks, shorter than the leaf, grow from each *axilla*. The bractees at the bottom of each *corymbus* are broad, and often heart-shaped; the rest oblong. The 2 upper teeth of the calyx are combined and truncated, as in *D. umbellulata*, and the edge of the calyx, betwixt the teeth, is minutely downy.

- *9. *D. alata*, caule aphylo alato, umbellis lateralibus, calyce bracteisque fimbriatis.

In this singular species, found by Dr. White near Port Jackson, the stem has the habit of a *Genista*, being, at least in the adult state of my specimen, destitute of leaves, and winged throughout in 3 directions; the wings smooth, entire, about a line in breadth, tapering down to the base of each branch, and interrupted here and there by buds, scattered, in an alternate manner, sparingly along the branches. Several of the upper buds produce small solitary umbels, of about 5 flowers each, on short stalks, whose base bears a few small concave bractees, and whose upper part, at the umbel, is furnished with several much larger ones, curiously jagged or fringed. The calyx-teeth, which are elongated and taper-pointed, all nearly equal and regular,

are fringed at their sides precisely in the same manner. Their edges seem to be deeply coloured with red or purple.

*10. *D. juncea*, caule aphylo tereti sulcato nudo, umbellis lateralibus, calyce bracteisque imberbibus.

Related to the last in habit, but very distinct. The adult stem is leafless, much and alternately branched, rushy, round, longitudinally furrowed, roughish to the touch. Umbels from a few lateral buds towards the ends of the branches, solitary, simple, nearly sessile, each of about 4 flowers. Bracteas remarkably concave, pale brown, ribbed or furrowed; the uppermost largest, the lower ones closely imbricated; all destitute of a marginal fringe. Calyx nearly regular, with 5 short teeth, whose edges, seen under a microscope, are finely downy, but not jagged nor fringed. This was discovered at King George's Sound by Mr. Menzies. The colour of the petals in these two last species seems nearly to accord with all the foregoing.

It cannot but be very satisfactory to the author of any genus to find it confirmed by the acquisition of new species, especially when its name commemorates a meritorious friend. Five hitherto unknown species of *Daviesia* are here added to the original five whence the characters were taken, and they all together form a most natural assemblage. Linnæus observes, *Philos. Bot. sect.* 170, "rarò observatur genus in quo pars aliqua fructificationis non aberrat." Of this the calyx in the genus before us affords a striking exemplification, being in several species deeply and equally five-toothed, and almost perfectly regular; in others as distinctly 2-lipped, the upper lip singularly truncated, and either cloven with a rounded *sinus*, or only slightly emarginate. These differences occur in species otherwise most akin to each other.

6. VIMINARIA. *Annals of Bot.* v. 1. 507.

Calyx angulatus, simplex, quinquefidus. *Corolla* papilionacea. *Stylus* capillaris. *Stigma* simplex, acutum. *Legumen* coriaceum, farctum, evalve, monospernum.

1. *V. denudata.* *Exot. Bot.* t. 27.

Daviesia denudata. *Ventenat Choix,* t. 6.

Sophora juncea. *Schrad. Sert. Hannov.* t. 3.

On reconsidering this genus, of which only one species is known, I think the capillary style affords an additional mark of discrimination. The calyx-teeth are short, all nearly equal and uniform. The legume is clearly distinct from all others of this tribe.

7. SPHÆROLOBIUM. *Annals of Bot.* v. 1. 509.

Calyx quinquefidus, bilabiatus. *Corolla* papilionacea. *Stigma* carinatum, membranaceo-dilatatum! *Legumen* pedicellatum, turgidum, obliquum, subdispermum. *Stamina* duo suprema distantia!

1. *S. vimineum.* *Ann. of Bot.* v. 1. 509. *Sims in Curt. Mag.* t. 969.

Dr. Sims, the first scientific botanist who had an opportunity of examining this plant alive, found that the young branches, before they flower, are clothed with small, scattered, lanceolate leaves; and I have since detected the rudiments of such a branch among my specimens. The same gentleman found 2 seeds usually in each legume, and I have corrected the generic character accordingly. I need not repeat my original remarks on the genus, of which this is the only known species.

8. DILL-

8. DILLWYNIA. *Annals of Bot.* v. 1. 510.

Calyx quinquefidus, bilabiatus. *Corolla* papilionacea. *Stylus* recurvus, germine brevior. *Stigma* obtusum, pubescens! *Legumen* ventricosum, uniloculare, dispermum.

1. *D. ericifolia*, foliis linearibus tortis punctulato-scabris, floribus subterminalibus.

D. ericifolia. *Exot. Bot. t.* 25.

A rigid shrub, with copious clustered branches, covered when young with dense prominent pubescence, and clothed with numerous, scattered, spreading leaves, on short footstalks, with a pair of obsolete gland-like stipulas at the base of the stalk. Each leaf is about half an inch long, linear, twisted half round, rough all over with minute points, acute and somewhat pungent; the under side convex, but not keeled; the upper marked with a longitudinal furrow. Flower-stalks clustered about the summits of the branches, rarely lateral, with several concave bracteas at their base, and a pair towards the middle of each. Calyx bell-shaped, two-lipped, angular at the base, fringed at the edge: its upper lip of 2 divaricated, oblique, deflexed segments; its under of 3, nearly equal, rather smaller ones, of which the 2 lateral have hooked deflexed points. Petals of a full permanent yellow; the standard very broad, short and cloven, with a crimson, radiating, central spot. Legume ovate, turgid, rather hairy, terminated by the thick permanent style, about a quarter as long, which is also hairy at the base, smooth and recurved towards the end.

2. *D. floribunda*, foliis linearibus subtortis tuberculato-scabris, floribus lateralibus axillaribus.

D. floribunda. *Exot. Bot. t.* 26.

The leaves are less spreading than in the former, as well as
rather

rather broader, and essentially different in being covered with coarse callous tubercles. We have what seems a variety, in which the leaves are much thicker, so convex beneath as to be almost cylindrical, and scarcely twisted at all. No stipulas are discernible in this species. The flowers are copious, lateral, axillary, solitary, on short bracteated stalks, and resemble the foregoing, except that the standard is not quite of so broad a proportion. Legume very hairy, crowned with the smooth hooked style.

3. *D. glaberrima*, foliis linearibus rectis carinato-triuetris lævibus, floribus terminalibus confertis.

A slender humble shrub, with rather longer leaves, which are very smooth, marked, like both the former, with a furrow on the upper side, but distinguished by their triangular keel. Two minute awl-shaped stipulas are just discernible at the base of each foot-stalk. The flowers in the dried specimens much resemble those of *D. ericifolia*, and are likewise clustered about the tops of the branches. I have never seen them fresh. These three species are all brought from Port Jackson, and all strictly agree in habit as well as fructification.

*4. *D. myrtifolia*, foliis decussatis obovatis concaviusculis subquinenervibus lævibus, floribus axillaribus.

This species, found by Mr. Menzies at King George's Sound, differs from all the foregoing in its foliage, but strictly agrees in the parts of the flower. The branches are smooth and angular. The leaves opposite, crossing each other in pairs, like those of *Veronica decussata*, with which they nearly agree in size, but are obovate, with a straight pungent point, smooth, entire, somewhat concave, with 3 tolerably conspicuous, and 2 less evident, longitudinal

longitudinal ribs. Their upper side, in a dry state, is of a palish opaque green; the under of a dark purplish hue, almost black, but in some degree shining. Footstalks broad and very short. Stipulas very small, ovate, minutely fringed. Flowers axillary, solitary, on shortish stalks, with 2 or 3 pair of oblong bracteas. Calyx precisely like that of all the foregoing. Petals apparently deep yellow, with a pale lemon-coloured spot, surrounded with red, at the base of the standard. I have not seen the fruit.

* 5. *D. glycinifolia*, foliis ovatis linearibusque revolutis reticulatis, floribus racemosis.

Some difficulties attend the determination of the genus of this plant, which is one of those from King George's Sound given me by Mr. Menzies. In habit it accords with none of the foregoing genera nor species, but might rather be taken for a simple-leaved *Glycine*. The stems are weak, seemingly decumbent, about a foot long, branched, smooth, angular upwards. Leaves scattered, on short thick footstalks, coriaceous, reticulated, pungent, revolute, entire, paler and often hairy beneath; the upper ones linear, an inch or more in length and a line in breadth; the lower much broader, shorter and ovate. Stipulas minute, awl-shaped, rigid. Flowers in longish, loose, terminal clusters, often accompanied by similar axillary clusters from 2 or 3 of the uppermost leaves. Bracteas small, scattered, ovate. Flowerstalks and calyx clothed with scattered, white, close-pressed hairs. Calyx bell-shaped, very slightly angular at the base, its teeth nearly as long as the tube, lanceolate, almost equal and uniform, but the 2 uppermost are united half way up, rendering the calyx distinctly 2-lipped, and they are moreover so divaricated and oblique, as to indicate the character of a *Dillwynia*. The dried petals are purplish; the standard short and broad,
pale

pale at the base. Germen bristly. Style so recurved as almost to form a circle, not straight at the base, and then suddenly hooked, as in the genuine *Dillwynia*. Stigma capitate, downy. I have not seen the fruit. It is to be suspected the legume may prove different from that of a *Dillwynia*, and in conjunction with the peculiarity above mentioned in the style, as well as in the habit, may establish this plant as a new genus. Its leaves and stipulas approach those of a *Chorozema*.

9. MIRBELIA. *Annals of Bot.* v. 1. 511.

Calyx quinquefidus, bilabiatus. *Corolla* papilionacea. *Stylus* recurvus, basi crassissimus, germine brevior. *Stigma* capitatum. *Legumen* ventricosum, biloculare! dispersum.

1. *M. reticulata*. *Ann. of Bot.* v. 1. 511. *Ventenat Malmais.* t. 119. *Pultenæa rubiæfolia*. *Andr. Repos.* t. 351.

This, the only species hitherto discovered of its genus, has a much-branched spreading stem, opposite or ternate leaves about an inch long, and neatly reticulated. Its blueish flowers, growing in short axillary clusters, are no less peculiar in this tribe. But, above all, the essential generic character of the 2-celled legume is remarkable. These cells are formed, as M. Ventenat has recently observed, by membranous partitions, equally originating from each suture, and not, as in *Astragalus*, by an imperfect extension of one suture only. Nevertheless, even *Mirbelia* forms no exception to the rule that a *legumen* has never any separate and distinct longitudinal partition, like that of a *siliqua*: from which such spurious partitions, produced by the inflexion of the valves, are materially different, as the celebrated Jussieu has shown in the characters of his *Rhodorceæ* and *Ericineæ*. See *Annals of Bot.* v. 2. 561.

10. CALLISTACHYA. *Ventenat Malmais.* 115.

Calyx quinquefidus, bilabiatus. *Corolla* papilionacea. *Stigma* simplex. *Legumen* pedicellatum, lignosum, multiloculare & polyspermum.

- *1. *C. lanceolata*, foliis lanceolatis acutis, racemo terminali.
C. lanceolata. *Ventenat Malmais. t.* 115.

This new genus, which I am happy to add to my list on the authority of M. Ventenat, appears clearly distinguishable from all the rest by its fruit, which according to that writer is a woody legume, opening only at its summit, and separated by membranous transverse partitions into several cells, each containing 1 seed. I have presumed to change the termination of the name, to avoid the fault, always, if possible, to be guarded against, of compounding it of one already established, *Stachys*; see *Introduction to Botany*, 387, and *Linn. Philos. Bot. sect.* 225.

I have never seen a specimen of this plant, any more than of the second species mentioned by the same learned author, of which he gives the following specific character only, having never seen the flowers.

- *2. *C. elliptica*, foliis ellipticis obtusis. *Vent. loc. cit.*

Both plants are natives of New Holland, and would doubtless have been taken by superficial botanists for *Crotalaria*. The plate and description in M. Ventenat's work have helped me to understand another plant, brought by Mr. Menzies from King George's Sound, and which I venture to propose as a third species of *Callistachya*.

- 3. *C. cuneifolia*, foliis cuneiformibus emarginatis, pedunculis axillaribus solitariis folio longioribus.

This is a dwarf herbaceous plant, 2 or 3 inches high, apparently

rently annual, with somewhat of the habit of a *Lotus*. The leaves are alternate, on long footstalks, wedge-shaped, slightly hairy, entire, except at the summit, where they are emarginate, with a minute intermediate point, and rounded. Stipulas in pairs attached to the base of the footstalk, lanceolate, pointed, membranous, recurved, exactly agreeing with those figured and described by M. Ventenat in the above species. The inflorescence however is different, but that leads in this tribe not even to a suspicion of a generic distinction; witness *Pultenæa* and *Daviesia*. The flower-stalks in the plant before us are axillary, solitary, very long, much exceeding their correspondent leaves, hairy and single-flowered, with a pair of lanceolate hairy bracteas near the calyx. Flowers large and handsome. Calyx hairy, its upper lip cloven, not half way down, into 2 rounded lobes; its lower deeply divided into 3 lanceolate acute segments. Standard rounded, large, apparently yellow like the wings, streaked with red or purple; the keel seems to be entirely purple, slightly fringed with white. Germen long and very hairy. Style ascending like the stamens, and all together filling the cavity of the keel. Stigma obtuse, rather more inclined to be capitate than M. Ventenat represents it in his plant. I have seen nothing of the fruit, and therefore should never have ventured to describe this plant as a new genus, though unable to reduce it to any known one, had not M. Ventenat elucidated the subject by his publication of the other species.