

JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.



Vol. LXVI. Part II.—NATURAL SCIENCE.

No. II.—1897.

Noviciæ Indicæ XV. *Some additional Leguminosæ.*—By D. PRAIN.

[Read February 3rd, 1897.]

The present paper contains descriptions of species that are new to India in the sense that they are not included in the account of this Order prepared in 1876 by Mr. J. G. Baker, F.R.S., the distinguished Keeper of the Herbarium, Royal Gardens, Kew, for Sir Joseph Hooker's *Flora of British India*, Vol. II. Some of the species are new to science or at all events are not to be traced in any of the works in the library of the Calcutta garden and are not provided with names either in the Calcutta Herbarium or in that at Kew. Others are species already described elsewhere but not included in the *Flora of British India* because they had not been reported from within the limits of the Indian Empire up to the time when Mr. Baker's account of the *Leguminosæ* was being prepared. And in order that these contributions may preserve the character of being in substance, as well as in form, supplementary to the *Flora*, definitions of species of both kinds have been given in the hope that they may prove helpful to members of our Society who use the *Flora* itself in the field.

In the *Flora of British India* Mr. Baker has indicated points that were doubtful to him and has urged the attention of Indian botanists to these points, in the hope that the difficulties may be removed by the supply of more adequate material. Some of these difficulties it has been possible from the possession of more recent and more adequate suites of specimens to satisfactorily settle; naturally, too, the more ample material at our disposal now, has indicated other difficulties where

formerly all seemed clear. And in this paper allusion is made to both these kinds of difficulties, wherever they have been detected.

From the present review the writer regrets to have had to exclude the large genus *Astragalus*; many species belonging to that genus have been added to the Indian Flora owing to the extension of the Indian Empire during recent years along its north-western frontier. It is his hope however to present to the Society at another time a separate review of the Indian species of *Astragalus* and of the closely allied genus *Oxytropis*, which has also for the present been omitted from consideration.

1. PIPTANTHUS D. DON.

1. PIPTANTHUS NEPALENSIS *D. Don.*

Add to localities of *F. B. I.*:—ASSAM; Khasia; at Lailankote, etc., *C. B. Clarke!* *G. Gammie!* Jaintea; *Prain!* Manipur, on a hill north-east of Chingsow, *Watt!* BURMA; Chin Hills, *C. R. Dun!* .

2. THERMOPSIS R. BR.

3. THERMOPSIS LANCEOLATA *R. Br.* in *Ait. Hort. Kew.* ed. ii. iii. 3; finely downy, leaflets ovate-oblong, corolla yellow, pod narrowly oblong-linear. *DC. Prodr.* ii. 99; *Ledeb. Flor. Alt.* ii. 112; *Flor. Ross.* i. 510. *Sophora lupinoides Linn. Sp. Pl.* 374.

EASTERN TEMPERATE HIMALAYA; Phari; *King's Collectors!* **DISTRIB.** Siberia, China.

General habit of the other Himalayan species. *Rootstock* woody. *Leaves* petioled, petioles short $\frac{1}{2}$ – $\frac{1}{4}$ in., leaflets glabrous above, downy below, $1\frac{1}{2}$ in. long, $\frac{1}{2}$ in across, apex obtuse base cuneate. *Stipules* like leaflets and almost as large. *Flowers* verticillate 3-nate, stalks $\frac{1}{2}$ – $\frac{1}{4}$ in. *Calys* finely downy, the three lower teeth hardly as long as tube. *Pod* distinctly stalked, 6–8-seeded, thin, flat, $2\frac{1}{2}$ in. long, $\frac{1}{2}$ in. across from suture to suture.

An extremely interesting addition to the Himalayan Flora. In general appearance it much resembles the other species but is easily distinguished by its long narrow pods and its petioled leaves.

4. ARGYROLOBIUM ECKL. & ZEYH.

2. ARGYROLOBIUM ROSEUM *Jaub. & Spach.*

This species is said in *F. B. I.* to be 'nearly or quite glabrous' with leaflets truncate or emarginate and with corollas yellow tinged with red. The result has been that this species has been frequently sent to Calcutta, after comparison with the *F. B. I.* description, with the suggestion that it is either a new species or the one next to be described. Sometimes, but very rarely, it is nearly glabrous and occasionally all the leaflets are truncate or emarginate: much more usually, however, the leaflets are mucronate. The flowers are "rose" (*Jacquemont*) or "purplish"

tion that it is a wild species in India. This it most certainly is not; even as an escape it is of rare occurrence. In connection with this it may be mentioned that in one of the few unequivocal instances of 'escape' among Herb. Calcutta examples, (specimens collected by Mr. Kurz on the banks of the Ganges at Sahobganj) the plant, instead of having suberect, has long trailing stems; but for their greater hispidity the specimens might well pass as representing the wild *G. ussuriensis*. Very probably, therefore, Mr. Maximowicz' suspicion that the Soy is only a cultivated variety of the Ussuri plant may be correct.

59. TERAMNUS Sw.

2. TERAMNUS FLEXILIS Bth.

Add to synonyms of *F. B. I.*:—*Glycine oxyphylla* *Grah.* in *Wall. Cat.* 5522. *Galactia?* *oxyphylla* *Bth.* in *Plant. Jungh.* 233. *Teramnus oxyphylla* *Kurz* in *Journ. As. Soc. Beng.* xlv. pt. 2. 254.

60. MUCUNA ADANS.

The genus *Mucuna* Adans. is admittedly the same as the genus *Stizolobium* Pers.; the name given by Adanson in 1763 is therefore much older than that used by Persoon in 1807. By Persoon's own showing, however, the name *Stizolobium* did not originate with him but was first used by P. Browne in his *History of Jamaica* in 1756. There seems then, at first sight, as Dr. Otto Kuntze remarks (*Rev. Gen. Plant.* v. 206) no reason why the name *Stizolobium* should be suppressed. Dr. Kuntze has therefore proposed to recognise our genus *Mucuna* as *Stizolobium* P. Br.; this gives him the opportunity of enumerating all the species hitherto known, except those described by Persoon, as Kuntzean species.

But the subject bears closer examination. It is to be noted that the name *Stizolobium* was applied by Browne exclusively to species with seeds that have a small hilum. The only species of *Mucuna* (as now understood) with seeds having a large annular hilum, that Browne knew, was treated by him as the type of a distinct genus which he named *Zoophthalmum*. Adanson, it is true, in his generic description ascribes to the genus as a whole the seeds characteristic only of Browne's *Zoophthalmum*, but his citations show that he included in it one plant belonging to *Zoophthalmum* and another plant belonging to *Stizolobium*. There is therefore no doubt that the oldest name for the genus as a whole is, as De Candolle in *Prodr.* ii. 404 has indicated, the name *Mucuna* Adans. Persoon used the name *Stizolobium*, not in the sense of P. Browne, but as the precise equivalent of *Mucuna* Adans. And Kuntze's remark, that Bentham and Hooker in the *Genera Plantarum* "incorrectly" attribute the name *Stizolobium* to Persoon is, to say the least, disingenuous. If the two "genera" of P. Browne are to be considered, as Kuntze apparently agrees to consider them, only parts of one genus, then the oldest name for that conjoint genus is *Mucuna* Adans. To quote as the name of the enlarged genus the word *Stizolobium* and to give as the authority for the name in this sense the reference by P. Browne, is to say and to claim something quite other than was said or claimed by the author of the name. Persoon can be quoted as the authority for the word in precisely this sense, but when quoted on Persoon's authority the name is not so old as the name *Mucuna*.*

* One may ask why, while he was about it, Dr. Kuntze did not try to revive the name *Parrana* of Rumphius, which is, no doubt, an older name for a species of *Mucuna* than any that Kuntze mentions.

If this hunting for prior names is to be made a pastime, which it appears to have become with a number of botanists who, if the truth must be told, mostly hold appointments wherein they are paid to do work far other and far more useful, then let the game be played, as games should,—fairly. When priority-mongers cease to be disingenuous,—when they cease to put into the mouths of authors expressions of opinion that the authors themselves did *not* utter, and would probably most strongly repudiate,—serious botanists, who are content to use nomenclature as a working-tool and not as a plaything, will be able to meet them halfway and to help in the task of bringing order out a chaos that, after all, is largely of their own making. This much, however, is certain; if good is to be done, it must be done by men of greater judgment than any who as yet have taken it upon themselves to criticise the nomenclature codified in De Candolle's *Prodromus*, in the *Genera Plantarum* of Bentham and Hooker, or in Asa Gray's *Manual*.

Turning from this profitless discussion to the species of *Mucuna* themselves, one finds that various groupings of these have been proposed from time to time. There are two very natural groups within the genus, readily determined by the nature of the seeds. In one group, which exactly corresponds to *Stizolobium* P. Br., the small oval seeds have a small lateral oblong-linear hilum; in the other, which equally exactly corresponds to *Zoophthalmum* P. Br., the large discoid seeds are provided with a large hilum that extends round from two-thirds to three-fourths of the periphery of the disc. So very natural is the distinction between the two groups that the writer, though he does not here venture to formally propose the step, is quite convinced that, were the genus adequately monographed, it would be found necessary to recognise in them two separate genera; when this happens the bibliographical discussion will end, of its own accord, in the restoration of both the generic names proposed by P. Browne.

In *Prodromus* ii. 405, De Candolle has practically recognised the groups in question but has only treated them as separate sections; he has used to designate them, in a *sectional* sense, the two generic names of P. Browne. M. De Candolle did not, however, note the error into which M. Adanson had fallen regarding the seeds; like Adanson, he has attributed to all the species a circumferential hilum. He has thus been led to use, in distinguishing his two sections, a purely external and, as we now know, a somewhat variable character,—the presence or absence of plaits and furrows on the sides of the pods. This has led to his inclusion in *Stizolobium* of one species (*M. gigantea*) that most certainly does not belong to the section.

In the *Genera Plantarum*, for the first time, Bentham and Hooker made full use of the natural character derived from the seeds. At the same time, however, they continued to employ the character used by M. De Candolle. They have consequently been led to recognise three sections:—

1. *Citta*; including those species with a circumferential hilum and with plaits across the face of the pods.
2. *Stizolobium*; including all species with a small lateral hilum.
3. *Carpopogon*; including those species with a circumferential hilum but without plaits across the face of the pods.

This arrangement has obviously the great disadvantage of intercalating the very distinct and very natural group *Stizolobium* between two artificially separated portions of another equally natural group, similar in rank and importance to *Stizolobium*.

The name *Citta* is one that had been used generically by Loureiro, but it is not

clear why its use is preferred to that of *Zoophthalmum*; the limits of § *Zoophthalmum* DC. and § *Citta* Bth. & Hk. f. are exactly the same. The name § *Stizolobium* is used as in DC. *Prodr.*, except that the species *Mucuna gigantea* is very properly excluded from the section; one of its varieties is placed in § *Citta*, while another variety of the same species forms, along with *M. macrocarpa*, the § *Carpopogon* of Bth. & Hk. f. The name *Carpopogon* is one that had been used in a generic sense by Roxburgh as the exact equivalent of *Mucuna* Adans. or *Stizolobium* Persoon. Of the convenience of the *Genera Plantarum* arrangement there can be no question, and the writer would only propose to deviate from it to the extent of treating *Stizolobium*, in the meantime, as a subgenus rather than as a section; the other two sections may be considered as together forming a second subgenus *Zoophthalmum* which, like *Stizolobium*, will probably at an early date be once more treated as generically distinct.

In the *Flora of British India* the arrangement advocated by Messrs. Bentham and Hooker has been rejected entirely. The genus is subdivided into four groups, to each of which is given the rank of a subgenus, and though, for three of the proposed subgenera, the sectional names used by Bentham and Hooker are retained, the definition and the limits of each of the three are altered. The section *Citta* is divided into two subgenera, AMPHIPTERA Bak. and CITTA "Lour." The first of these is distinguished by having wings down the sutures as well as plaits across the pods, while the second has plaits but no wings. This subdivision does not possess the advantage of being natural. *Mucuna monosperma*, placed in CITTA, instead of being wingless down the suture as is postulated in the definition given of that subgenus, has wings that are sometimes as broad as those of *M. imbricata* which is the type of AMPHIPTERA. The only actual difference between the wings in the two species is that in *M. monosperma* the plaits extend from the surface of the body of the pod quite across the wings; in *M. imbricata* the plaits do not extend quite across the wings. The difference then, in place of being a subgeneric one, is so slightly a difference of degree as to be, if taken alone, barely specific. The pods of *M. atropurpurea* and also of *M. biplicata*, which is included in *M. atropurpurea* in the *F. B. I.*, do appear, when cursorily examined, to be wingless. But closer inspection shows that they are winged, exactly as in *M. monosperma*, with the transverse plaits continued across the wings, only the wings are here laced to their bases between each pair of plaits.

The subgenus CARPOGON is confined to species broadly winged down both sutures, thus limiting the subgenus to the single species *M. gigantea*. The *Genera Plantarum* section of this name includes species that are no more than ribbed down each side of the suture and thus, naturally enough, includes *M. macrocarpa*, which has long woody pods and has seeds with a circumferential hilum. But *M. macrocarpa*, in spite of its circumferential hilum, is put in *Stizolobium* by the *F. B. I.* thus again rendering the definition given in the *Genera Plantarum* inapplicable, since that restricts to the section *Stizolobium* those species that have a small hilum to the seeds. Most unfortunately Mr. Taubert, in the authoritative *Natürlichen Pflanzfamilien*, has adopted the quite untenable divisions proposed in the *F. B. I.* For not only is there no doubt that Bentham and Hooker are right in accommodating *M. macrocarpa* and *M. gigantea* in the same natural group, there is now equally no doubt that *M. gigantea* cannot be separated from the natural group containing *M. imbricata* and *M. monosperma*. The writer has collected, in the Andamans, specimens of *M. gigantea*, some of the pods of which have ridges across the face in exactly the position of the plaits in the other species.

Mr. Baker quotes Persoon as the author of his subgenus *STIZOLOBIUM*. But to Persoon *Stizolobium* was a genus including *all* Baker's subgenera. So he quotes Roxburgh as the author of the subgenus *CARPOGON*; the same objection applies here. The citation of Loureiro as the authority for *CITTA* is however particularly unhappy, for it is in the highest degree probable, from a study of Loureiro's description and from the knowledge we now possess of its distribution and characters, that *Mucuna imbricata*, which is the basis of *AMPHITEEA*, is the species described by Loureiro as *Citta nigricans*; specimens of what is undoubtedly *M. imbricata*, noted as having white flowers with purple spots, have recently been sent from the Shan Hills to Herb. Calcutta; there is, therefore, not one character now left which militates against the identification of Loureiro's plant with *M. imbricata*. In any case since Loureiro's plant had 3-seeded pods, it cannot possibly have been either *M. monosperma* or *M. atropurpurea*, which constitute the *CITTA* of the *F. B. I.*

Subgen. I. *ZOOPHTHALMUM*. Perennial climbers; seeds large flat, with a large hilum extending round the greater portion of their circumference.

§. *CITTA*. Pods plaited across their faces.

1. *MUCUNA IMBRICATA DC.*

Add to localities of *F. B. I.*:—NORTH-WEST HIMALAYA; *Vicary!* *A. O. Hume!* *King!* MANIPUR; *Watt!* BURMA; Pegu, *Brandis!* SHAN HILLS; "flowers white and purple," *King's Collectors!* ANDAMANS; common, *King's Collectors!*

Bracteoles at base of calyx in bud similar to bracts but many times smaller and more deciduous.

Nearest to this is perhaps *Mucuna Junghuhniana* [*Stizolobium Junghuhnianum* Kuntze (*Rev. Gen. Pl.* i. 208)] from Java, which differs in being strigosely hirsute and in having pods with plaits extending partly across the wings. The plant referred to by Kurz (*Journ. As. Soc. Beng.* xlv. pt. 2, 246) as a new species near *M. atropurpurea* is *M. imbricata*; Mr. Kurz has himself made the reduction in Herb. Calcutta.

2. *MUCUNA MONOSPERMA DC.*

Add to localities of *F. B. I.*:—ANDAMANS; very common everywhere in the interior jungle. *DISTRIB.* Sumatra,

Bracts at base of pedicels small triangular, much smaller and much more early deciduous than the linear bracteoles exceeding the bud. One of the Calcutta examples of Wall. Cat. 5623 is *Mucuna imbricata*, the other is a mixture of *M. imbricata* and *M. macrocarpa*; there is no *M. monosperma* whatever on either sheet. Wall. Cat. 5622 must be equally confused; Mr. Baker finds that the plant represented is *M. monosperma*; at Calcutta on the other hand 5622 is *M. gigantea*.

3. *MUCUNA ATROPURPUREA DC. Zoophthalmum atropurpureum Prain MSS.*

Delete from localities of *F. B. I.*:—MALACCA.

The Malacca plant referred to *M. atropurpurea* in the *F. B. I.* belongs to a distinct species and proves to be *M. buplicata* Teysm. & Binnend.

3a. *MUCUNA BPLICATA Teysm. & Binnend.* in *Cat. Hort. Bog.* 261; leaflets glabrous, racemes short-peduncled close, upper calyx-lip very

short truncate, pod two-seeded twice as long as broad, plaits with reflexed double-margins. *Prain, Journ. As. Soc. Beng.* lvi. 2. 66. *M. atropurpurea* Bak. in *Flor. Brit. Ind.* ii. 186 (as to the Malayan plant only). *Zoophthalmum buplicatum* Prain MSS.

MALACCA; *Maingay*. PERAK; very common, *Kunstler! Scortechini! Wray!* PENANG; *Curtis!* DISTRIB. Sumatra (*Forbes*). Borneo (*Teysmann*).

A slender woody climber 30-40 feet long, with glabrous branches. *Leaflets* papery, dull-green, ovate-oblong cuspidate, 6-8 in. long, 5 in. across. *Racemes* 2 in. long, usually branching at the very base, occasionally further up; bracts and bracteoles much as in *M. monosperma* but the latter much smaller and shorter than the buds. *Calys* greenish-brown, .35 in. long, all the teeth minute densely bristly. *Corolla* dark-purple, 1.75 in. long, keel abruptly incurved at end, wings 1.25 in. long, standard .75 in. wide. *Pod* hardly stipitate, 3.5 in. long, 1.75 in. wide; plaits very close; bristles pungent, abundant, brown.

§ CARPOGON. *Pods* not plaited across their faces.

3b. *MUCUNA ACUMINATA* *Grah.* in *Wall. Cat.* 5621; *Prain, Journ. As. Soc. Beng.* lvi. 2. 67. *Zoophthalmum acuminatum* Prain MSS.

Add to localities of *F. B. I.*:—PERAK; Kinta, *Kunstler!* SINGAPORE; Chan Chu Kang, *Ridley!* DISTRIB. JAVA (*Forbes*).

This species is referred to in the *Flora of British India* under *M. imbricata*. Its pod has now been reported and is like that of *M. gigantea*; the species is therefore a member of § *Carpogon* Bth. & Hk. f. It further resembles *M. gigantea* in having a pale-green corolla. From *M. gigantea* it is however easily distinguished by its short corymbose inflorescence, its long calyx-teeth, its much larger flowers, and its large boat-shaped floral bracts.

4. *MUCUNA GIGANTEA* DC. *Zoophthalmum giganteum* Prain MSS.

Add to localities of *F. B. I.*:—BENGAL; Sundribuns, very common, *Kurz! Heinig!* CEYLON; *Walker!* TENASSERIM; Tavoy, *Gomez* (*Wall. Cat.* n. 5622)! MALAY PENINSULA; Pahang, *Ridley!* PERAK; *Scortechini!*

This species is very common in the Andamans where it has been collected not only by *Kurz* but by *Liebig*, *E. H. Man*, and the writer, who has obtained it on outlying islands like Narcondam, the Coco Group and Little Andaman, as well as on the main island. The locality "plains of Western Peninsular," given in the *F. B. I.*, the writer has been unable to authenticate. The only locality mentioned by *Rheede*, whose figure of the plant is excellent, is one near the sea in Malabar; he says it occurs "in other places" than the one mentioned but does not say they are inland ones. The only place where *Wight* gathered it was at Negapatam on the Cormandel Coast; in *Hooker's Botanical Miscellany* it is said to grow only near the sea.

The writer, who has given some attention to the various *Mucunas* in the field, has always found *M. gigantea* a strictly littoral species elsewhere and more evidence is necessary before its inland occurrence in the Indian Peninsula can be credited. *Mr. E. H. Man* notes on a specimen that this, which the Andamanese know as *chikan-da*, is always found on the borders of salt-creeks and is in this respect quite unlike *M.*

monosperma, which the Andamanese know as *pûled-da* and which never grows near salt-creeks but always in the interior jungle. The lianes of *M. gigantea* form indeed one of the most striking features of the muddy margins of our Indian Mangrovo-swamps. The writer when in the Great Coco was at pains to obtain one entire plant, the following were its measurements:—*Diameter* of main stem, close to the mud, 5 in.; at 4-6 feet from the mud there issued, from latent buds, 4 of the characteristic umbelliform pendent racemes of the species, with slender peduncles 8-15 in. long. The first branch was at a distance of 50 feet from the root, the first leaf was at a distance of 205 feet from the mud, about 200 feet from the only flowers on this particular plant; the leafy branches, only 15 in. in diam., extended 25-30 feet further. This feature of flowering from old wood has been met with in *Mucuna monosperma* as well.

During another journey the writer collected, on Little Andamans, specimens of *M. gigantea* with pods ridged, though not plaited, across the face, thus unfortunately invalidating the distinction between the "subgenera" *Amphiptera* and *Carpopogon* of the *F. B. I.*

5. *MUCUNA MACROCARPA* Wall.

Add to synonyms of *F. B. I.*:—Wall. *Pl. As. Rar.* i. 41. t. 47; *Kurz in Journ. As. Soc. Beng.* xlv. pt. 2. 245. *Mucuna* sp. *Coll. & Hemsl. in Journ. Linn. Soc.* xxviii. 47. *Zoophthalmum macrocarpum* Prain MSS.

Add to localities of *F. B. I.*:—UPPER BURMA; Poneshee, *J. Anderson!* Shan Hills plateau, 4000 feet, *Collett!* Pegu; in pine forests on the Bookee ridge, common, *Kurz!*

The Burmese plant always has the lowest calyx-tooth longer than in the Nepal and Sikkim plant. In specimens collected by the writer in the Khasia hills, however, the calyx is exactly as in those collected by Dr. J. Anderson at Poneshee and by Sir Henry Collett in the Shan hills. The pod is so exactly alike in the Burmese and in the Himalayan plants that the writer, instead of being able to adopt the suggestion of Sir Henry Collett and Mr. Hemsley that the Burmese one may be a new species, is not inclined to treat it as even varietally distinct.

The perennial stems and the large circumferential hilum of the seed, mark the species as undoubtedly a *Zoophthalmum* not a *Stizolobium*.

Subgen. II. *STIZOLOBIUM*. Stems above ground annual; seeds small ovoid with a small lateral hilum.

6. *MUCUNA BRACTEATA* DC. *Stizolobium bracteatum* Kuntze *Rev. Gen. Plant.* i. 208.

The Assam specimens recently issued by Mr. Clarke as *M. exserta* belong to this species.

8. *MUCUNA CAPITATA* W. & A. *Stizolobium capitatum* Kuntze *Rev. Gen. Plant.* i. 207.

This is not confined to the foot of the Himalayas; though found in that area it is less common there than in the forests of Central India and Chota Nagpur. The racemes of this are not always short, nor are the racemes of *M. pruriens* always elongated; the species are only distinguishable by their pods. These last are, however, as Mr. Baker points out, very different.