REINWARDTIA
Published by Herbarium Bogoriense, Bogor, Indonesia
Volume 6, Part 4, p.p. 42ft — 442 (1963)

REORGANIZATION OF GENERA WITHIN TRIBE INGEAE OF THE MIMOSOID LEGUMINOSAE

ROBERT H. MOHLENBROCK *)

Members of Tribe Ingeae of the mimosoid Leguminosae are characterized by their numerous, indefinite stamens which are connate for a portion of their length. Flower structure within the tribe is essentially uniform. The calyx is generally 5-lobed and cupular or tubular. The corolla likewise is usually 5-lobed and tubular. The ovaries vary from one to fifteen per flower, although unicarpelly predominates. Leaves are usually bipinnate, although once-pinnate leaves occur in a few species. Glands are frequently present along the winged or unwinged rachis. Stipular spines may or may not be present. The legumes, which are widely diversified in tribe Ingeae, offer the most reliable and, hence, most diagnostic characters in segregating the genera. The legumes may be flat, terete, or moniliform; coriaceous, ligneous, fleshy, or papery; dehiscent, elastically dehiscent, or indehiscent and breaking irregularly and transversely between the seeds.

Linnaeus (1764) recognized only the genus *Mimosa* in the Mimosoideae. After him, the subdivision of *Mimosa* into several distinct genera was first proposed by Willdenow (1805), based on characters of the legume, de Candolle (1825) and Martius (1829, 1837) essentially followed Willdenow's classification. Bentham (1875) broke away from Willdenow's system, considering characters of the androecium to be of prime importance. His subdivision into Eumimoseae, Acacieae, and Ingeae still is accepted generally.

After Bentham's monograph, there have been two trends in classifying the genera belonging to the Ingeae. One has been to recognize few genera, the other to segregate numerous small genera. F. von Mueller (1872) and Kurz (1876) combined *Albizzia* and *Pithecellobium.* 0. Kuntze (1891) went still further and united all the unicarpellate genera of Ingeae, reviving for this group the oldest name *Feuilleea.*

More conservative botanists adhere to Bentham's classification. These include Baker (1878), Prain (1897), Merrill (1910), Standley (1927), Macbride (1943), and Woodson and Schery (1950).

*) Southern Illinois University, Carbondale

In 1928, Britton and Rose completely broke away from Bentham's classification and produced a revolutionary revision of American Mimosaceae. They consistently split up Ingeae into many smaller genera. Their example has been followed by Britton and Killip for Colombia (1936), Kleinhoonte for Surinam (1940), and Kostermans for Malesia (1954). Britton and Rose's trend to create small genera was not. without precedent. Hasskarl had established *Cathormion* in 1855, Merrill had described *Samanea* in 1916, and Pittier had recognized *Abarema* in 1927.

This paper is an attempt to re-evaluate the genera of tribe Ingeae, and to present a reorganization of the group on what is hoped to be a more consistent and natural basis.

Inga was the name used by Willdenow for those species of tribe Ingeae with simply pinnate leaves. By the time Bentham made his revision of the Mimoseae (1875), enough material was known so that the simply pinnate-leaved species were divided into two genera —• *Inga,* in which the flowers possessed a single ovary, and *Affonsea,* in which the flowers possessed two or more ovaries. Thus, since the time of Bentham, *Ing a* has been defined as a genus with simply pinnate leaves and a single ovary. It has been observed later by Pittier (1916) and Britton and Rose (1928) that a few simply pinnate species actually occur in other genera. That *Ing a* is made up of species with rather diverse fruits cannot be denied, and it may seem inconsistent on the part of this writer to keep *Inga* in tact while dividing up other Benthamian genera later in this paper on fruit differences. In *Inga,* however, there is gradual transition from the flat, thin legume found in § Pseudinga to the tetragonous legume of § Tetragonae to the rope-like legume of § Sulcatae (= § Inga). *Inga* is a huge genus, with perhaps 300 valid species, all confined to Central and South America and the West Indies.

Affonsea of St. Hilaire (1833) has been used traditionally for those simply pinnate species with flowers bearing two or more ovaries. Kuntze, regarding pluricarpelly as decisive, combined *Archidendron,* another pluricarpous genus, with *Affonsea,* calling it by the latter name. There is little to merit this union of Kuntze, and no worker has followed it. Bentham (1875) knew three species. Presently, about eight species are recognized, all confined to southern Brazil and Paraguay. Other than the number of pistils, there is little difference between *Inga* and *Affonsea.* With the discovery of *Inga grandiflora,* a species with both uni-pistillate and pluri-pistillate flowers, the only valid barrier between *Inga* and *Affonsea* has been broken down. Thus, *Affonsea should* not be considered distinct from *Inga,* but its members should be treated as a distinct section

of *Inga.* The transfer of species with their correct combinations will appear in a subsequent paper in this series.

Martius originally published *Pithecellobium* in 1829, then knowingly or unknowingly changed this to *Pithecollobium* in 1837. Bentham corrected this latter spelling to *Pithecolobium* in 1844. Martius' original name, which is the valid one, is derived from two Greek words meaning "monkey" and "earring".

Martius listed three entities under his *Pithecellobium — cyclocarpum, inundatum,* and *unguis cati.* Since the apparent type is P. *cyclocarpum,* which is really an *Enterolobium, P. unguis-caii* was subsequently adopted as the type species for *Pithecellobium.*

There have been many and diverse genera segregated from *Pithecellobium.* These have been based upon manner of legume dehiscen'ce, presence or absence of spines, presence or absence or arils, and even, in one case, on strictly characters of the leaf.

Bentham's treatment of *Pithecellobium* in 1875 was the first extensive publication of the genus. The 108 species recognized by Bentham have legumes of all diversity of texture, shape, and means of dehiscence. There is little doubt that this is an unnatural group, but the best way to divide it has resulted in considerable disagreement among botanists.

Bentham, in his broad *Pithecellobium,* described the legume found in the genus as compressed, coriaceous, hard, or subfleshy, arcuate, circinate, or rarely suberect, with the valves after dehiscence often twisted, but not elastic. It might be pointed out that Bentham included species with indehiscent legumes in *Pithecellobium,* also.

Bentham divided *Pithecellobium* into seven sections and six series, based primarily on legume differences. Most of these segregates have been elevated to generic level by one worker or another. Britton and Rose (1928) and Kostermans (1954) divided Bentham's *Pithecellobium* drastically. A more conservative and hopefully consistent view is taken in this paper. Both Britton and Rose and Kostermans limit *Pithecellobium* to include only § Unguis-cati of Bentham. This would include species with spinescent stipules, with legumes which become contorted after dehiscence, and with arillate seeds. The periodic occurrence of spines throughout the Ingeae seems to indicate that this is not a reliable generic character. The presence of arillate seeds may seem valid at first, but to separate otherwise nearly identical species into different genera on a character such as this seems unwise. The overall nature of the legume and its method of dehiscence seem to be the most reliable characters in the entire Mimosoideae. Even though fruits are lacking from an unreasonable number of species,

this should be no reason for rejecting the fruit as providing the most valid taxonomic characters and a better understanding of the natural relationships involved.

The writer takes a more expansive view of *Pithecellobium* than either Britton and Rose or Kostermans, but a narrower view than that of Bentham. This results in defining *Pithecellobium* to include those species which the legume, after dehiscence, becomes contorted. This encompasses both armed and unarmed species, species with either arillate or exarillate seeds, and species with one or more than one ovary. These latter characters give excellent bases for natural sectional groupings. Under this new alignment, *Pithecellobium* includes Bentham's § Unguis-cati, § Clypearia, and § Abaremotemo. It also contains the segregate genera *Abarema* Pittier, *Jupunba*, *Punjuba*, and *Cojoba* of Britton and Rose, *Klugiodendron* Britton & Killip, and *Morolobium* Kostermans. In addition, *Archidendron*, separated traditionally by its apocarpous condition, is made a section of *Pithecellobium* because of its identical method of dehiscence. This seems further desirable since in the writer's current monograph of *Archidendron*, one species has been found which regularly produces both unipistillate and bipistillate flowers.

Abarema was published by Pittier in 1927 to include those species which Bentham assigned to *Pithecellobium*, § Abaremotemo. Kostermans (1954) expanded the genus *Abarema* to include Bentham's *Pithecellobium*, § Clypearia. The species of *Abarema* differ from "'typical" *Pithecellobium* by being unarmed and having exarillate seeds. The legumes of both *Pithecellobium* and *Abarema* are identical, however, in that the valves contort following dehiscence. In view of this, it does not seem wise to maintain *Abarema* as a separate genus.

Jupunba was the name given by Britton and Rose in 1928 for essentially the same species assigned by Pittier to *Abarema* a year earlier. The genus is referable to *Pithecellobium.*

Britton and Rose segregated *Punjuba* from *Jupunba* in 1928 on leaflet shape and a longer racemose inflorescence. It is seemingly unwise to split out genera on such tenuous characters. *Punjuba* should be included in *Pithecellobium.*

Cojoba was created by Britton and Rose in 1928 to include those species in which the valves become contorted after dehiscence but in which the legumes are moniliform. Method of dehiscence suggests that *Cojoba* should be reduced to *Pithecellobium*, although the moniliform nature of the legume would merit sectional status. Some species of this group bear simply pinnate leaves.

Klugiodendron was named by Britton and Killip for species with arillate seeds, leaves reduced to a single pair of leaflets, and legumes which contort following dehiscence. This last characteristic relates it to *Pithecellobium,* with which it should be united, even though *Klugiodendron* is unarmed.

Archidendron was created as a genus by F. von Mueller in 1865. The genus has been segregated traditionally by the presence of two or more ovaries per flower, de Wit (1942) has indicated the nearness of *Archidendron* to *Pithecellobium,* including the fact that the legumes of both genera contort following dehiscence. While studying *Archidendron,* the present writer discovered a species which had half the flowers with a single ovary and half the flowers with two ovaries. Thus the only barrier separating *Archidendron* from *Pithecellobium* has been broken down. Thus *Archidendron* is being treated as a section of *Pithecellobium* in the writer's forthcoming revision.

Hansemannia was established by Schumann in 1887 for New Guinean (Irian) shrubs with more than one ovary per flower. Later, Schumann transferred some species to *Archidendron.* de Wit (1942) transferred the remainder in his first monograph of *Archidendron.*

Cedrelinga was created by Ducke in 1922 for a large handsome species from Brazil with pendulous legumes which are very flattened, submembranaceous, indehiscent, and twisted between the articles. There would seem to be little doubt as to the validity of *Cedrelinga* as a genus.

Ebenopsis was created by Britton and Rose in 1928 for species with woody, dehiscent legumes. The legumes are several-seeded and contain no pulp. Only one species assigned to this genus was known to Bentham, and he placed it in *Acacia.* The united staminal tube would seem to indicate this species belongs to tribe Ingeae.

Closely related to *Ebenopsis* is the monotypic Indonesian genus *Parasamanea* Kostermans, established in 1954. Like *Ebenopsis,* the legume of *Parasamanea* is woody and dehiscent, but contains only a single seed and pulp. The legume indicates the valid segregation of *Parasamanea.*

Following the establishment of *Zygia* in 1789 by P. Browne, various workers have accorded different treatments for it. Britton and Rose essentially followed Browne's circumscription of the genus by including within it North American species with flat, coriaceous, dehiscent legumes. Some species are cauliflorous. Kostermans recognized four Malesian species in the genus, all of which are cauliflorous. Of these four species, two are known in fruit. These have the valves contorted following dehiscence, a character of true *Pithecellobium.* In as much as *Archidendron,* a genus some-

times exhibiting cauliflory, is better treated as a section of *Pithecellobium*, there should be no objection to transferring Kostermans' *Zygia* species to *Pithecellobium.*

Paralbizzia was described by Kostermans in 1954. The legumes in the genus are dehiscent (but not twisting), coriaceous, and flattened. The only difference separating this genus from *Zygia* P. Browne is that the species of *Paralbizzia* are not cauliflorous. Several species of *Zygia*, too, are not cauliflorous. Thus *Paralbizzia* justifiably should not be recognized as distinct from *Zygia.*

Britton and Rose described *Painteria* from North America in 1928, and the name was taken up again by Kostermans for a Ceylon species in 1954. The presence of short, stipular spines and the absence of cauliflory are the only differences *Painteria* shows from *Zygia.* Both genera have dehiscent, coriaceous, flattened legumes. *Painteria* would best be treated as a section of *Zygia.*

Cylindrokelupha Kostermans (1954) is a genus with most peculiar fruits and seeds. The coriaceous, terete legumes split along both sutures at maturity. The seeds are cylindrical and truncate. The species comprising this genus have been attributed in the past to *Inga, Pithecellobium, Abarema,* and *Albizzia.*

Gagnepain attempted to establish the genus *Ortholobium* in 1952, but failed to provide a Latin diagnosis. It seems best to treat those species assigned by him to *Ortholobium* as members of *Cylindrokelupha,* as has been done by Kostermans (1960).

Perhaps the most elusive genus to circumscribe is *Chloroleucon,* described as a section of *Pithecellobium* by Bentham and recognized as a genus by Britton and Rose in 1928. The fleshy legume is flat or subterete. Dehiscence is considerably delayed, with some species perhaps being essentially indehiscent. The genus is confined to the New World.

Cathormion was segregated by Hasskarl from *Pithecellobium,* in 1855. It has been taken up since by Merrill (1916) and Kostermans (1954). The genus is equivalent to Bentham's *Pithecellodium* § Samanea series Subarticulatae and is characterized by the legume which is indehiscent, flattened, moniliform, and breaking at the joints.

Enterolobium Martius (1837) is differentiated by the legume which is indehiscent, flat, more or less woody, and circinate. Bentham (1875) remarks that *Enterolobium* would better be treated as a section of *Pithecellobium,* but the indehiscent nature of the fruit rules out this possibility. Nearest relationship seems to be with *Samanea,*

Parenterolobium is used by Kostermans (1954) for a single Asiatic species with flat, indehiscent, circinate pods. Kostermans (1954) comments that "the genus takes the same position, compared with *Par albizzia* Kosterm., as *Enterolobium* Mart., compared with *Samanea* Merr." The legume, which is segmented superficially, does not have true septae.

Samanea was described by Merrill in 1916 as a genus with flattened, indehiscent, coriaceous, or fleshy legumes. This may be expanded to include moniliform, indehiscent, fleshy legumes. Thus, *Samanea* is equivalent to Bentham's § Samanea, series Carnosae, Coriaceae, and Parviflorae. All are American in their natural distribution. *Samanea* would seem to be a natural genus.

Arthrosamanea was established by Britton and Rose in 1936 for a species of northern South America with compressed, linear legumes which were septate between the seeds and ultimately broke transversely. The closest relationship is with the indehiscent *Samanea.*

Serialbizzia Kostermans (1954) is a perplexing genus because of the nature of the fruit. The legume has thin, flat valves such as those found in *Albizzia,* yet the irregular cracking of the legume suggests *Serianthes.* Two species were recognized by Kostermans for *Serialbizzia.* In one of these, the legume was unknown to Bentham. The second species was listed by Bentham (1875) as a synonym for *Xylia dolabriformis,* undoubtedly because of the similar inflorescence, but apparently Bentham did not observe mature fruits. The genus occurs in the Malesian area.

Serianthes was created by Bentham for unarmed species in which the more or less woody, flattened legume was indehiscent, but cracked irregularly at maturity. The relationship of *Serianthes* with *Wallaceodendron* has been discussed by Fosberg (1960).

Wallaceodendron was named by Koorders from the Celebes (Sulawesi) in 1898 for a species with woody, dehiscent legumes with a parchment-like endocarp which separates into transverse rectangular segments. It is intermediate between *Serianthes* and *Albizzia.* Fosberg (1960) entertained the idea of combining *Wallaceodendron* with *Serianthes* because of their rather similar fruits.

Havardia Small (1901) seems intermediate between *Zygia,* with its coriaceous, dehiscent legumes, and *Albizzia,* with its thin, tardily dehiscent or indehiscent legumes. *Havardia* has thin-valved legumes which are promptly dehiscent. The members of this genus were included by Bentham *(1875) in his Pithecellobium* § Ortholobium. It seems to be desirable to *recognize ffavardia as a valid genus.*

Albizzia is the oldest genus in the group, Durazzini having named it in 1772. The valves of the legume are thin and often papery. Dehiscence is delayed, or not at all. The legume of *Havardia* is similar, except that it is promptly dehiscent. A. Richard had created *Besenna* for Abyssinian representatives.

Pseudosamanea Harms was created in 1930 for species in which the legume is papery as in *Albizzia,* but the flowers are umbellate. Inflorescence types are inconstant in tribe Ingeae (see *Inga,* for example) so that it does not seem wise to separate *Pseudosamanea* from *Albizzia.*

Macrosamanea was segregated from *Albizzia* in 1936 by Britton and Killip on the tenuous characters of calyx shape and length and corolla length. This does not appear to be valid grounds for recognizing *Macrosamanea.*

Pseudalbizzia was created by Britton and Rose in 1928. The only species, from the West Indies, has thin, papery valves as in *Havardia* and *Albizzia,* but the legume eventually breaks transversely between the seeds.

Calliandra is an exceptionally large genus of the New World. The name dates back to Bentham (1840), although *Anneslia* Salisb. is thirty-three years prior. *Calliandra* has been conserved. The genus is well characterized by the legume which is elastically dehiscent from the apex. The segregate genera *Clelia* Casar. and *Codonantha* Karst. have been proposed.

Lysiloma was created by Bentham in 1844 for New World species with flat legumes in which the valves separate from the continuous margins at maturity. The genus is well-defined, with the result that no splitting-up has occurred within the genus.

The generic name *Fevillea* dates back to Linnaeus (1737), but Linnaeus later abandoned this name. It was not until 1891 that the name, spelled *Feuilleea,* was revived by Kuntze for all monocarpellate genera of Ingeae. The writer does not concur with Kuntze's views.

Several other generic names need be mentioned which have been proposed in tribe Ingeae. *Spiroloba* was used by Rafinesque in 1838 for *Pithecellobium unguis-cati.* Rafinesque also put *Albizzia julibrissin* in his *Sericandra.* He also created the genus *Ingaria* in 1838 for species now known to belong to *Inga. Anneslia* was created by Salisbury in 1807 for what is now *Calliandra,* the latter name being conserved.

Siderocarpus was described by Small in 1901. However, Pierre in 1888 had called a different genus *Siderocarpus.* Small's genus is now called *Ebenopsis.*

NATURAL KEY TO THE GENERA OF TRIBE INGEAE

A. Leaves simply pinnate; legume various, but not moniliform. . . . . 1. *Inga*
A. Leaves bipinnate (if simply pinnate, the legume moniliform).
  B. Margins of legume-valves not separating.
    C. Legume not elastically dehiscent from apex.
      D. Legume very flattened, twisted between the articles. . 2. *Cedrelinga*
      D. Legume flattened, terete, or moniliform, not twisted before dehiscence.
        E. Legume woody, fleshy, or coriaceous.
          F. Legume dehiscent (some very tardily dehiscent fruits may be found in *Chloroleucon* and *Wallaceodendron*).
            G. Legume-valves twisting after dehiscence. . 3. *Pithecellobium*
            G. Legume-valves not twisting after dehiscence.
              H. Legume woody.
                I. Legume several-seeded, without pulp.
                  J. Legume compressed . . . . . 4. *Ebenopsis*
                  J. Legume terete. . . . . 5. *Cylindrokelupha*
                I. Legume 1-seeded, with pulp. . . . 6. *Parasamanea*
              H. Legume coriaceous.
                K. Legume compressed; plants sometimes cauliflorous. . . 7. *Zygia*
                K. Legume terete; plants never cauliflorous. . . . . 5. *Cylindrokelupha*
          F. Legume indehiscent or very tardily dehiscent.
            L. Legume regularly tardily dehiscent. . . . 8. *Chloroleucon*
            L. Legume indehiscent (occasionally very tardily dehiscent in *Wallaceodendron*).
              M. Legume moniliform, breaking at the joints. . . . . 9. *Cathormion*
              M. Legume flattened.
                N. Legume circinate in one plane.
                  O. Legume not divided into segments. . . . . 10. *Enterolobium*
                  O. Legume superficially septate between the seeds. . . 11. *Parenterolobium*
                N. Legume straight or arcuate.
                  P. Legume subcoriaceous or fleshy.
                    Q. Legume septate between the seeds, breaking transversely. . . . . 12. *Arthrosamanea*
                    Q. Legume without septations.
                      R. Legume indehiscent. . . . . 13. *Samanea*
                      R. Legume cracking irregularly. . . . . 14. *Serialbizzia*
                  P. Legume woody.
                    S. Legume breaking irregularly. . . 15. *Serianthes*
                    S. Legume separating into transverse rectangular segments. . . . . 16. *Wallaceodendron*

E. Legume thin, papery.
T. Legume promptly dehiscent. . . . . 17. *Havardia*
T. Legume tardily dehiscent or indehiscent.
U. Legume indehiscent or dehiscent along sutures. . . . . 18. *Albizzia*
U. Legume indehiscent, but breaking transversely between the seeds. . . . . 19. *Pseudalbizzia*
C. Legume elastically dehiscent from apex. . . . . 20. *Calliandra*
B. Margin of legume-valves separating. . . . . 21. *Lysiloma*

1. INGA Scop. Introd. 289. 1777.

Affonsea St. Hil., Voy. Diam. 1: 387. 1833.
Ingaria Raf., Sylva Tell. 119. 1838.

Unarmed. Leaves once-pinnate, the petiole and rachis often winged. Flowers capitate, umbellate, racemose, or spicate. Ovaries one to several per flower. Legume flat, subterete and sulcate, or tetragonous, indehiscent, usually with pulp.

TYPE: *Inga vera* Willd.

2. CEDRELINGA Ducke, *in* Arch. Jard. Bot. Rio de Jan. 3: 70. 1922.

Unarmed. Leaves bipinnate. Flowers capitate. Ovary one per flower. Legume very flat, submembranaceous, indehiscent, twisted between segments.

TYPE: *Cedrelinga catenaeformis* Ducke.

3. PITHECELLOBIUM Mart. Hort. Monac. 188. 1829.

Spiroloba Raf., Sylva Tell. 119. 1838.
Archidendron F. Muell., Fragm. 5: 59. 1865.
Hansemannia K. Schum. *in* Bot. Jahrb. 9: 201. 1887.
Abarema Pittier, Arboles & Arbustos Legum. 56. 1927.
Jupunba Britt. & Rose, N. Am. Flora 23 (1): 24. 1928.
Punjuba Britt. & Rose, N. Am. Flora 23 (1): 28. 1928.
Cojoba Britt. & Rose, N. Am. Flora 23 (1): 29. 1928.
Klugiodendron Britt. & Killip *in* Ann. N.Y. Acad. Sci. 35: 125. 1936.
Morolobium Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11): 11. 1954.
Zygia sensu Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11): 24. 1954, *non* P. Browne (1789).

Unarmed, or with spinescent stipules. Leaves bipinnate, rarely once-pinnate (and then the legumes moniliform). Flowers capitate, racemose, or spicate, sometimes cauliflorous. Ovaries one to several per flower. Legume flat or turgid or terete and moniliform, straight, curved, or circinate, the valves twisting after dehiscence, without pulp. Seeds with or without an aril.

TYPE: *Pithecellobium unguis-cati* (L.) Mart.

4. EBENOPSIS Britt. & Rose, N. Am. Fl. 23 (1): 33. 1928.

Siderocarpus Small *in* Bull. N.Y. Bot. Gard. 2: 91. 1901, *non* Pierre (1888).

Armed with stiff, stipular spines. Leaves bipinnate. Flowers capitate or spicate. Ovary one per flower. Legume turgid, woody, dehiscent, several-seeded without pulp.

TYPE: *Ebenopsis flexicaulis* (Benth.) Britt. & Rose.

5. CYLINDROKELUPHA Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11) : 20. 1954.

Ortholobium Gagnepain *in* Bull. Soc. Bot. France 99: 36. 1952, without Latin.

Unarmed. Leaves bipinnate. Flowers pseudo-umbellate, rarely cauliflorous. Ovary one per flower. Legume terete, coriaceous or subligneous, dehiscent, not twisting upon dehiscence. Seeds cylindrical, truncate.

TYPE: *Cylindrokelupha bubalina* (Jack) Kosterm.

6. PARASAMANEA Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11) : 11. 1954

Unarmed. Leaves bipinnate. Flowers pseudo-umbellate. Ovary one per flower. Legume flat, woody, nearly straight, dehiscent, one-seeded, provided with pulp.

TYPE: *Parasamanea landakensis* (Kosterm.) Kosterm.

7. ZYGIA P. Browne, Hist. Jamaica 279. 1789.

Painteria Britt. & Rose, N. Am. Fl. 23 (1) : 35. 1928.
Paralbizzia Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11) : 23. 1954.

Unarmed. Leaves bipinnate. Flowers capitate or spicate, occasionally cauliflorous. Ovary one per flower. Legume flattened, coriaceous, dehiscent, not twisting upon dehiscence.

TYPE: *Zygia latifolia* (L.) Fawcett & Rendle.

8. CHLOROLEUCON (Benth.) Britt. & Rose, N. Am. Fl. 23 (1): 36. 1928.

Pithecellobium § *Chloroleucon* Benth. *in* Lond. Journ. Bot. 3: 221. 1844.

Usually with stipular spines. Leaves bipinnate. Flowers capitate. Ovary one per flower. Legume fleshy, flat or turgid, dehiscent at length.

TYPE: *Chloroleucon vincentis* (Benth.) Britton & Rose.

9. CATHORMION Hasskarl, Retzia 1: 231. 1855.

Stipules spinescent. Leaves bipinnate. Flowers pseudo-umbellate. Ovary one per flower. Legume flattened, moniliform, indehiscent, but breaking at the joints.

TYPE: *Cathormion umbellatum* (Vahl) Kosterm.

10. ENTEROLOBIUM Mart. *in* Flora 20: Beibl. 117. 1837.

Unarmed. Leaves bipinnate. Flowers capitate or pseudo-umbellate. Ovary one per flower. Legume flat, fleshy or woody, curved into nearly a complete circle, indehiscent.

TYPE: *Enterolobium contortisiliquum* (Vell.) Mohl., *comb. nov.*

11. PARENTEROLOBIUM Kostermans *in* Bull. Org. Sci. Res. Indonesia. 20 (11): 19. 1954.

Unarmed. Leaves bipinnate. Flowers capitate or pseudo-umbellate. Ovary one per flower. Legume flat, woody, curved into nearly a complete circle, indehiscent, appearing septate, but without any cross-partitions.

TYPE: *Parenterolobium rosulatum* (Kosterm.) Kosterm.

12. ARTHROSAMANEA Britt. & Rose *in* Ann. N.Y. Acad. Sci. 35: 128. 1936.

Unarmed. Leaves bipinnate. Inflorescence racemose. Ovary one. Legume compressed, linear, septate between the seeds, breaking transversely at maturity.

TYPE: *Arthrosamanea pistaciaefolia* (Willd.) Britt. & Rose.

13. SAMANEA Merrill *in* Journ. Wash. Acad. 6: 46. 1916.

Unarmed. Leaves bipinnate. Flowers capitate or umbelliform. Ovary one per flower. Legume coriaceous or fleshy, flattened or terete, moniliform or continuous, indehiscent.

TYPE: *Samanea saman* (Jacq.) Merrill.

14. SERIALBIZZIA Kostermans *in* Bull. Org. Sci. Res. Indonesia 20 (11): 15. 1954.

Unarmed. Leaves bipinnate. Flowers pseudo-umbellate. Ovary one per flower. Legume subcoriaceous, compressed, indehiscent, but cracking irregularly.

TYPE: *Serialbizzia acle* (Blanco) Kosterm.

15. SERIANTHES Benth. *in* Hook. Lond. Journ. Bot. 3: 225. 1844.

Unarmed. Leaves bipinnate. Flowers spicate. Ovary one per flower. Legume more or less woody, flattened, indehiscent, but cracking irregularly.

TYPE: *Serianthes grandiflora* Benth.

16. WALLACEODENDRON Koord. *in* Meded. 'S Lands Plantent. 19: 630. 1898.

Unarmed. Leaves bipinnate. Flowers capitate. Ovary one per flower. Legume flat, woody, tardily dehiscent, with a parchment-like endocarp which separates into transverse rectangular segments.

TYPE: *Wallaceodendron celebicum* Koord.

17. HAVARDIA Small *in* Bull. N.Y. Bot. Gard. 2: 91. 1901.

Stipules spinescent. Leaves bipinnate. Flowers capitate or umbellate. Ovary one per flower. Legume flat, promptly dehiscent, with thin valves.

TYPE: *Havardia brevifolium* (Benth.) Small.

18. ALBIZZIA Durazz. *in* Mag. Tosc. 3: 11. 1772.

Sericandra Raf., Sylva Tell. 119. 1838.
Zygia Walp., Rep. 1: 928. 1842, *non* P. Browne (1789).
Besenna A. Rich., Tent. Fl. Abyss. 1: 253. 1847.
Pseudosamanea Harms *in* Notizbl. 11: 54. 1930.
Macrosamanea Britt. & Rose *in* Ann. N.Y. Acad. Sci. 35: 131. 1936.

Unarmed. Leaves bipinnate. Flowers capitate, umbellate, or spicate. Ovary one per flower. Legume flat, indehiscent or tardily dehiscent, the valves thin.

TYPE: *Albizzia julibrissin* Durazz.

19. PSEUDALBIZZIA Britt. & Rose, N. Am. Fl. 23 (1): 48. 1928.

Unarmed. Leaves bipinnate. Flowers paniculate or racemose. Ovary one per flower. Legume flat, thin, indehiscent, but breaking transversely between the seeds.

TYPE: *Pseudalbizzia berteriana* (Balbis) Britt. & Rose.

20. CALLIANDRA Benth. *in* Hook. Journ. Bot. 2: 138. 1840 (nomen conservandum).

Anneslia Salisb., Parad. Lond. t. 64. 1807.
Clelia Casar., Nov. Stirp. Dec. 83. 1842.
Codonandra Karst., Fl. Colomb. 2: 43. 1862.

Unarmed or with stipular spines. Leaves bipinnate. Flowers capitate or racemose. Ovary one per flower. Legume flattened, straight or nearly so, elastically dehiscent from the apex, with stiff valves raised along the margins.

TYPE: *Calliandra houstonii* Benth.

21. LYSILOMA Benth. *in* Lond. Journ. Bot. 3: 82. 1844.

Unarmed. Leaves bipinnate. Flowers racemose, capitate, or spicate. Ovary one per flower. Legume flat, the valves separating from the continuous margins.

TYPE: *Lysiloma bahamensis* Benth.

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