CHAPTER I.

NEW AND CRITICAL SPECIES.

MALPIGHIACEAE.

Niedenzu in his monograph of the Malpighiaceae includes the diagnostic characters of the varieties in his description of the species. In this paper however the description of the species is based exclusively on the var. typica. The presence or absence of glands on the sepals has been used by Niedenzu as a varietal diagnostic and before him even new species had been based on this character. In the course of this study it appeared however that glandular and eglandular sepals may be found even in the flowers of the same tree (see: *Byrsonima coriacea*). Consequently no great taxonomic value can be attached to the presence or absence of these glands and in the enumeration of the specimens I have indicated the two forms therefore merely as: glandless and gland bearing.

Mascagnia anisopetala (Juss.) Griseb. in Fl. Bras. XII, 1(1858), p. 95.

In my opinion *M. macrodisca* (Tr. et Pl.) Niedenzu is a variety only of *M. anisopetala*. The sole difference lies in the tomentum, which is sericeous in *M. macrodisca* and tomentose in *M. anisopetala*. The difference in the form of the leaf, to which Niedenzu draws the attention, viz. leaves usually cuspidate-acuminate in *M. macrodisca*, acuminate or obtuse-apiculate in *M. anisopetala* are of fluctuating nature. Of still

less importance is the diameter of the wings and I have not been able to confirm his statement that the glands of the sepals of *M. macrodisca* are less free than those of *M. anisopetala*. Niedenzu did not see flowers of *M. macrodisca*. A specimen with flower buds from Bolivia (Buchtien n. 1799) shows that the flowers too are exactly the same as those of *M. anisopetala*.

Mascagnia anisopetala (Juss.) Griseb., var. **macrodisca** (Tr. et Pl.) Kosterm. nov. var.

Frutex scandens. Pube sericea appressa. Folia ovata apice pleraque cuspidato-acuminata. Samarae ala 6—8 cm diametro.

Mascagnia multiglandulosa Niedenzu, var. **surinamensis** Kosterm. nov. var.

Ramuli teretes, dense lanuginosi. Folia oblonga vel elliptica basi rotunda vel subcordata margine subrevoluta apice breviter acuminata vel apiculata supra glabrescentia nervis majoribus exceptis subtus dense persistenter lanuginosa. Inflorescentiae floresque ferrugineo-lanuginosi.

Surinamo, Brownsberg (v. Emden s. n., fl. m. Sept.; typus in Herb. Utrecht).

Tetrapteris mucronata Cav., Diss. IX (1790), p. 434, emend. Kosterm.

I have united the two species *T. mucronata* Cav. and *T. crebriflora* Juss., because they merge into each other. The var. *dubia* Griseb. of *T. crebriflora* can hardly be distinguished from *T. mucronata*. To get a better survey of the different varieties I have divided the species into two subspecies: *eumucronata*, covering *T. mucronata* s.s. and *crebriflora*, consisting of *T. crebriflora*.

Tetrapteris discolor (G. F. W. Meyer) Niedenzu, var. **brownsbergensis** Kosterm. nov. var.

Folia glabra obovato-oblonga vel oblonga basi acuta apice breviter acuminata obtusa petiolis usque ad 15 mm longis. Inflorescentiae (fructiferae) usque ad 20 cm longae.

Surinamo, Brownsberg (B.W. n. 658, fr. m. Sept.; v. Emden s. n., fr. m. Sept.; typus in Herb. Utrecht).

This variety links *T. discolor* with *T. ovalifolia Griseb.* from which it differs by the thinner and smaller leaves.

Tetrapteris puberula Miq. in Tijdschr. Nat. Gesch. X (1843), p. 84; id. in Linnaea 18 (1844), p. 56.

The type specimen of this species: Focke n. 330, lower Suriname R., is identical with *T. discolor* (G. F. W. Meyer) Niedenzu. The error may be explained by the fact that this specimen consists of an inflorescence only, the inflorescence leaves always being smaller and somewhat different in shape from the normal ones.

Heteropteris nervosa Juss. in St. Hil., Fl. Bras. mer. III (1832), p. 26.

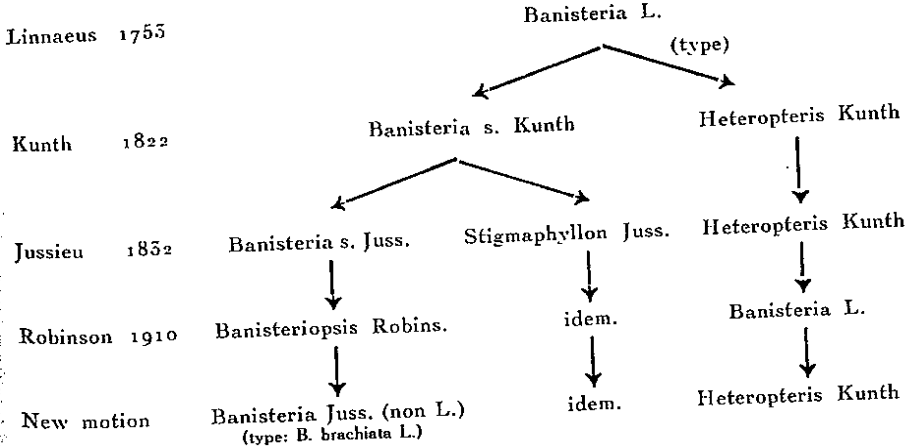
According to Macbride in Field. Mus. Nat. Hist. VIII, 2 (1930), p. 120, this name must supplant: *H. suberosa* (Willd.) Griseb, the name of Willdenow being a nomen nudum. I have combined this species with *H. anoptera* Juss. Neither the length of the inflorescence, nor the thickness of pedicels and peduncles, nor the shape of the top of the styles of *H. anoptera* are sufficiently distinct from those of *H. nervosa*. In the shape and the length of the wings of the samaras there is no difference at all.

Heteropteris multiflora (D. C.) Hochreutiner in Bull. N.-York Bot. Gard. VI, (1910), p. 277.

This species has first been described by Poiret as *Malpighia reticulata* (1816). In Flora Bras. XII, I (1858), p. 71 Grisebach described another species as *Heteropteris reticulata* Griseb. Niedenzu altered the name illegally into *H. Grisebachiana*. The name *H. reticulata* has to be kept for the species described by Grisebach and *M. reticulata* Poir. should be altered into *H. multiflora*, the name of D.C. being the oldest synonym.

Banisteria Juss. (non Linn.).

De Jussieu (St. Hil., Fl. Bras. merid. III, 1832, p. 27) and after him several other authors, including Niedenzu, have employed the name *Banisteria* in another sense than Linnaeus did. As the name: *Heteropteris* Kunth, based on the type specimen of Linnaeus' genus *Banisteria*, belongs to the nomina conservanda and *Banisteria* Linn. has been rejected (Intern. rules, ed. 3, 1935, p. 135), it appears advisable to make *Banisteria* Juss. (non Linn.) a nomen conservandum and *Banisteriopsis* Robinson ex Small (N. Amer. Fl. XXV, 2, 1910, p. 131) a nomen rejiciendum. In this way the renaming of the numerous species mentioned by Niedenzu in his monograph under the name: *Banisteria* sensu Juss. will be avoided. See for the discussion of the generic names: *Heteropteris* Kunth and *Banisteria* L.: Niedenzu in Engl., Pfl. reich IV (1928) p., 386; Fawcett and Rendle, Fl. Jam. IV (1920), p. 232, and the following scheme:



Banisteria calocarpa Miq. in Linnaea 18 (1844), p. 53.

Niedenzu's monograph merely refers to the diagnosis given by Miquel. Miquel did not describe the flowers. He stated that this species is nearly related to *B. lucida* Rich., but that

it differs from the latter in the shape of the leaves, in the inflorescence and in the flowers. Of this species I have only seen the specimen: Focke n. 329, which bears the determination of Miquel. The same specimen was labeled: *B. lucida* by Niedenzu. It is very incomplete, having samaras only, the latter are not different from those of *B. lucida*, and a few leaves, one of the leaves has a slightly cordate base, the others do not differ in the least from those of *B. lucida*.

Banisteria leptocarpa Benth. in Lond. Journ. Bot. VII (1848), p. 13.

B. elegans Tr. et Pl. is a very polymorphous species. By some of its forms it is connected with *B. leptocarpa*. I have removed the var. *ciliata* Ndz. of *B. elegans* to *B. leptocarpa*. But it is better perhaps to unite the two species. In both the underside of the leaf is provided with glands on either side of the midrib and in both calyx glands occur. Niedenzu points rightly to the following differences: *B. leptocarpa* has pseudo-alternate leaves, differing in shape from those of *B. elegans* and with glands along the margin. The tomentum too of this species differs from that of *B. elegans*.

Banisteria cristata Griseb. in Linnaea 22 (1849), p. 16.

The specimen: Wullschlägel n. 183, mentioned by Niedenzu in Pulle, Enumer. Pl. Surin. was collected in Venezuela.

Brachypterys Juss.

This genus is closely related to *Stigmaphyllon*, but differs so widely in its general habit, its inflorescence and its fruit, that there is no sufficient reason for uniting it with *Stigmaphyllon*, as Niedenzu has done.

Byrsonima crassifolia (L.) Rich. ex A. L. de Jussieu in Ann. Mus. Paris XVIII (1811), p. 481.

A. L. de Jussieu in Ann. Mus. Paris XVIII (1811), p. 481 says: „D'autres.... (Malpighiacées), telles que les *M. spicata*, *lucida*, *crassifolia*, *verbascifolia*, etc....., formeroient un second genre que Mr. Richard nomme *Byrsonima*, ..." As the name *Byrsonima* of Richard is accepted, there is no reason why the names of the species, above mentioned, should not be accepted as valid combinations, though Jussieu himself was not convinced, that they belonged to the genus *Byrsonima*. The combinations of Richard should therefore have the priority above those of Kunth.

Small includes *B. cotinifolia* Kunth also in this species. This may be advocated on the ground of the polymorphy of this species, but the shape of the leaves and their tomentum make it preferable to keep them separated. The forms: *Kunthiana* Niedenzu, *ferruginea* (Kunth) Griseb., and more or less *cubensis* (Juss.) Niedenzu are merging into each other. The differences in the pilosity of ovaries, anthers and leaves are of little value, as this character often changes in the process of maturing.

Byrsonima coriacea (Swartz) Kunth in H.B.K., Nov. gen. V (1821), p. 113 (col. ed.).

Kunth states in a note in H.B.K., Nov. Gen. V (1821), p. 113 (col. ed.): „(Byrsonima Rich.) Hujus generis sunt: *M. crassifolia* Aubl., *M. moureila* Aubl., *M. spicata* Cav., *M. altissima* Aubl., *M. verbascifolia* Aubl., *M. lucida* Swartz, *M. coriacea* Swartz, et *M. rufa* Poir". I consider these names, for so far as they had not yet been published by Richard, as valid combinations made by Kunth. Sandwith (Kew Bull. 5, 1935, p. 312) is of a different opinion. The case is rather dubious, but in my opinion no difficulty can arise as to what was the meaning of Kunth.

Byrsonima Aerugo Sagot in Ann. sc. nat. 6e sér. XII (1881), p. 178.

According to Sandwith (Kew Bull. 5, 1935) this species is identical with *B. altissima* Auct. (not of Aubl.). The name *Malpighia altissima* Aubl. Guia. I (1775), p. 455 is of younger

date than *Malpighia altissima* Jacquin, Observ. Bot. I (1764), p. 40 and must therefore be rejected. I propose for *Malpighia altissima* Aubl. the name **Byrsonima Aubletii** Kosterm. nom. nov.

Byrsonima densa (Poir.) D.C., Prodr. I (1824), p. 580.

I have united this species with *B. amazonica* Griseb. The differences according to Niedenzu are: Leaves glabrous (or puberulous at the margin) and shining beneath; *B. amazonica*: leaves glabrous, dull beneath but in the latter species the var. *lucidula* (Huber) Niedenzu has a shining lower surface. Poiret (Enc., Suppl. IV, 1797, p. 7) states that the leaves of *B. amazonica* are shining on both surfaces, but less so beneath. The shape of the leaves is in both practically the same. I could not confirm Grisebach's statement, that the lower leaf surface is sparsely covered with black dots: in Grisebach's material the leaves may have been infected by fungi. It is possible, that *B. punctulata* Juss. also should be included in the above mentioned species: the description of Jussieu accords very well with this supposition, there is only a slight difference in the shape of the leaves. Unfortunately I could not find this specimen in the Paris herbarium.

Byrsonima densa var. **emarginata** Kosterm. nov. var.

Folia oblanceolata apice emarginata, apice ramuli brevissime congesta. Internodia 1—5 mm longa.

Surinamo, Dalgerberg (Pulle n. 395, fr. m. Sept.; typus in Herb. Utrecht).

Alcoceratothrix Niedenzu.

In Arb. Inst. Lyc. Braunsb. I (1901), p. 45 Niedenzu founded a new genus: *Alcoceratothrix* on the 2 species: *Byrsonima rugosa* Benth. and *B. stipulacea* Juss. The name of the genus is derived from the antler shaped hairs (the author introduces here the name Elk-horn shaped hairs, probably under the influence of the Elk reserve in the vicinity of his residence;

I did not use this name, as it may give a false impression of the shape of these hairs: the branches of the latter namely are not flattened like those of the antlers of the Elk; usually they are more or less stellate or antler-shaped). Antler shaped hairs however also occur in *Byrsonima Poeppigiana* Juss., *B. nitidissima* Kth. and *B. laurifolia* Kth., where they can even be 6-branched. Other species of *Byrsonima* moreover show hairs differing from the ordinary compassneedle type, e.g. *B. verbascifolia* (L.) Rich. where they appear to be simple, one of the branches being reduced. Therefore not too much significance should be attributed to this character. On the other hand the large deciduous stipules, the sepals already recurved in bud and the rectangular nervation of the leaves also serve to distinguish *Alcoceratothrix* from *Byrsonima*. In the opinion of Sandwith and myself, however, these characters are not so important as to necessitate the separation of the two genera, especially because the general appearance of the various species is very similar. (see also Gleason and Smith in Bull. Tor. Bot. Cl. 60, p. 361 and Sandwith in Kew Bull. 1935, p. 311). Other differences, mentioned by Niedenzu are still more dubious, e.g. the bullate leaves of *Alcoceratothrix* and its climbing habit. More or less bullate leaves also occur in other species of *Byrsonima* and *Alcoceratothrix stipulacea* Juss. is, according to v. Emden (on label), a tree.

I have combined *Byrsonima rugosa* and *B. stipulacea* Juss. The principal difference, according to Niedenzu and already mentioned by Bentham in Lond. Journ. Bot. VII (1848), p. 118, is the presence of glands in *B. rugosa*. As previously remarked, this character has no specific value. Neither could I confirm the presence of a difference in the shape of the hairs, as indicated by Niedenzu, viz. the presence of trimorphous hairs in *B. stipulacea* and of hairs of one kind only in *B. rugosa*, nor that the tertiary nerves are parallel in *B. rugosa* only. The sole difference I could find lies in the stipules, which

in *B. rugosa* are longer and provided with longer hairs; the poor state of the specimens of *B. stipulacea* makes it however very doubtful, whether this difference is of any value.