

TAXONOMIC STUDIES OF RAIATEAN
PLANTS

By

JOHN WILLIAM MOORE

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BOTANICAL NAME OF THE POLYNESIAN AVA

Specimens of the ava, awa, kava, or kawa and other *Pipers* were brought back by J. R. and G. Forster on their return at the end of the second voyage of Captain James Cook. The first Latin name of the ava was *Piper methysticum*. A description was given by Georg Forster (3, p. 76)*:

P. foliis cordatis acuminatis multinerviis: spicis axillaribus solitariis brevissimis, pedunculatis, patentissimis.

This is a good description of the plant, and *Piper methysticum* was undoubtedly the valid name for the ava until the recent change in the rules of nomenclature, ruling out homonymns. The difficulty is that the same binomial had been used five years earlier by the younger Linnaeus for a different plant, and if it can be shown that Linnaeus' name was then validly published it becomes unavailable for further use for any other plant.

The younger Linnaeus (6, p. 91) apparently had received specimens of a *Piper* from the Forsters and published his observations. He described the plant as *Piper methysticum* with the following diagnosis:

P. foliis cordatis multinerviis petiolatis, spicis axillaribus pedunculatis plurimis.

This appears on the surface to be a perfectly valid publication and it would undoubtedly be such were it not for an entry among the "emendanda" at the end of the same work (6, p. 468, not numbered): "Pag. 91. *Piper methysticum* lege *Piper latifolium*." This raises the question of the right of an author to change a name by means of an emendation published simultaneously with the original description. As the rules do not recognize page priority, it seems that the work must be considered as a whole and that the emendation must be applied before reading the emended paragraph. Linnaeus' "*Piper methysticum*", then, disappears entirely, and his description (6, p. 91) reads "*Piper latifolium*. *P. foliis cordatis*, etc.", and leaves the way clear for Forster's use of the name *P. methysticum*.

* Numbers in parentheses refer to Literature Cited, p. 8.

Forster himself was aware of Linnaeus' use of the name *Piper methysticum*, for in his discussion of the ava (3, p. 76) he makes the caustic comment:

Species caute distinguenda a Pipere latifolio quod in Supplem. plantar. 91, nescio quo casu Piper methysticum vocatur. Etenim non solum notis botanicis plurimis a vero Pipere methystico, latifolium illud discrepat, sed etiam toxica qualitate caret, neque in hunc usum ab incolis unquam adhibetur, sponteque nascit per omnes fere insulas oceani australis intra tropicos sitas.

If this line of reasoning is correct, *P. methysticum* G. Forster remains as the valid name; otherwise there appears to be no valid name to date.

In 1917, Farwell (2, p. 230) tried to clear the nomenclature of ava. In his article he proposed that the name *Piper methysticum* Linnaeus f. (6, p. 91) be applied to the plant called *Piper latifolium* by Linnaeus f. and by G. Forster and most subsequent authors, and that the name *Piper esculentum* (Rafinesque) Farwell be used for the ava plant. Such a procedure would not only result in utter confusion, but it is strictly contrary to the rules of nomenclature. Even if one assumes that *Piper methysticum* was validly published by Linnaeus f., so also was *Piper latifolium*, for the reference in the "emendanda" refers to a diagnosis under another name. As there is here no priority of publication, it remained for the first author who combined them to choose which name he would use. Probably Linnaeus himself did this in the "emendandum," and certainly Forster did five years later in no uncertain terms. It is apparent from the quotation already cited that G. Forster in 1786 by chance or otherwise used the name *P. latifolium* for the same species as that published by Linnaeus f.

Forster's description (3, p. 76; 4, p. 5) is essentially the same as Linnaeus' description (6, p. 91). There is no reason therefore for not accepting *Piper latifolium* Linnaeus f., as emended (6, p. 468), as the first valid publication of a name for the plant in question. Before leaving the name *Piper latifolium*, however, an examination of the use of the binomial by subsequent authors is highly desirable.

Piper latifolium Lamarck: Illustr., vol. 1, p. 81, 1791, is *Piper subpeltatum* Willdenow: Sp. Pl., vol. 1, p. 166, 1798.

Piper latifolium Hunter: in As. Res., 9, p. 390, 1809, is *Piper sarmentosum* Roxburgh: Flora Indica, vol. 1, p. 160, 1820.

Piper latifolium Jacquin is an erroneous citation of Haworth in his Syn.

Pl. Succ., p. 3, 1812. This error was carried on by Steudel in his Nomenclator, ed. 1, pp. 624, 626; ed. 2, vol. 2, pp. 303, 341. There exists no publication of the binomial *Piper latifolium* Jacquin.

Farwell's grounds for the name *Piper esculentum* (Rafinesque) Farwell for the ava are also not well founded. An examination of Rafinesque's *Methysticum esculentum* (9, p. 85) shows the name was not there validly published. Rafinesque's statements are as follows:

500. CARPUPICA Raf. probably another G. type of *C. odorata* Raf. Piper carpupija RP. tree of Peru with fragrant leaves—Piper methysticum and Churumaya are also probably types of other Genera ? to be called *Methysticum esculentum* Raf. and *Churumaya arborea* Raf. Is not Piper betel another? to be called *Betela mastica* Raf.

There is no reference to a previous publication of *Piper methysticum* as no author is cited. Two different plants—*Piper methysticum* Georg Forster and *Piper methysticum* Roxburgh (Flora Indica, vol. 1, p. 159, 1820, which is *Piper majusculum* Blume Verh. Bot. av. Gen., XI, p. 210, 1826)—had been published under the name *Piper methysticum* at the time Rafinesque's Sylva (9) appeared. One can only say that the Rafinesque name is a *nomen nudum* and that its application is very uncertain if at all intelligible. Other names of interest for the sake of completeness may be mentioned. Miquel (7, p. 36) gives the name *Piper inebrians* Bertero: Mss. The name applies to the ava but was placed under synonymy by Miquel, and this does not constitute publication. Miquel also cites as a synonym "*Piper spurium* Forst. in Mus. Paris herb."

Royale (10, p. 333) uses the name *Piper inebrians* in his discussion of Piperaceae. The name is merely mentioned without description and is a *nomen nudum*. Kew Index also makes mention of the fact that *Piper kava* is found in the index of Royale's work, but this name, of course, has no standing.

The above review of the literature leads to the conclusion that the valid name for the ava plant is none other than *Piper methysticum* Georg Forster.

I am grateful for the transcripts of certain descriptions furnished me during the preparation of this note by members of the Gray Herbarium staff, and to John Hendley Barnhart of the New York Botanical Garden for the information concerning the name *Piper latifolium* Jacquin.

NOMENCLATORIAL TRANSFERS

Bonnierella reflexa (John W. Moore), combinatio nova.

Polyscias reflexa John W. Moore: B. P. Bishop Mus., Bull. 102, p. 35, July 20, 1933.

I followed Harms (1, p. 45) in placing the Raiatean species in the genus *Polyscias*, as it is unquestionably a near relative of *Polyscias tahitensis* (Nadeaud) Harms (1, p. 45) (*Aralia tahitensis* Nadeaud) (8, p. 63).

The genus *Bonnierella* to which the congeneric species from Tahiti belongs was described by Viguier (11, p. 314). He segregates the Tahitian species as the type of a new genus, *Bonnierella*, upon what appears to be sufficient grounds, and his genus is accepted by Krause (5, p. 220). As the two species are undoubtedly congeneric, the transfer of the Raiatean species is necessary.

Inga Ynga (Vellozo), combinatio nova.

Mimosa Ynga Vellozo: Florae fluminensis, t. 3, p. xi, 1825.

Inga edulis Martius: Flora, vol. 20, Beibl. 2, p. 113, 1837.

The plant called *Inga edulis* by Martius was originally published as *Mimosa Ynga* by Vellozo. Martius first rightly placed the species in the genus *Inga*, but changed the specific name to *edulis*, supposedly because he did not wish to establish a nearly duplicate name. According to the international rules the generic and specific names can not be absolute duplicates. The rulings at the last meeting of the international Botanical Congress upheld this stand. The specific name *Ynga* can in no sense be construed as identical with *Inga*. It therefore becomes necessary to restore the original specific epithet of Vellozo.

Boerhaavia acutifolia (Choisy), species nova.

Boerhaavia diffusa Linnaeus varietas *acutifolia* Choisy: in De Candolle, Prodrömus, pars 3, sect. post., p. 453, May 5, 1849.

Choisy in his treatment of *Boerhaavia* in the Prodrömus construed the Linnaean species in a very broad sense. The elements which he included under *Boerhaavia diffusa* and listed as varieties are altogether inharmonious. The broad- and obtuse-leaved, large-fruited plant of Linnaeus from India can not well be combined with the common Polynesian species with its lanceolate, acute, sharply apiculate leaves,

more slender peduncles, and smaller fruits. The acute-leaved species occurs also in tropical Australia and Java.

NEW SPECIES

Ascarina raiateensis, species nova.

Frutex 1 m. altus, rami crassiusculi glabri patentes teretes rufo-fusci internodiis 1-3 cm. longis instructi, laminae 4-5½ cm. longae 2½-3 cm. latae obovatae apice rotundatae submarginatae ad basin cuneatae in petiolos 2-3 mm. longos connatos et poculum truncatum 2-2½ mm. altum facientes attenuatae supra virides nitidae infra pallidiores parte 2/3 superiore crenatae paribus nervorum secundariorum 10 instructae, inflorescentia staminifera ignota, inflorescentia pistillifera racemosa cum spica solitaria terminali et spicis axillaribus binis divaricatis e nodis superioribus, spicis omnibus ad 4 cm. longis robustis, bractee inferiores foliaceae superiores in poculum redactae, pedunculi plerumque haud ramosi, flores singuli in axillis bractearum late ovatarum obtusarum 3-dentatarum lati bracteolis binis parvis subquadratis instructi, ovarium 1¼ mm. longum 1 mm. latum ovoideum, stigma plagiotropum 2-labiatum persistens, fructus (immaturus) 1¾ mm. longus 1½ mm. latus ellipsoideus.

Raiatea: Temehani Plain, in moist soil, altitude 400 meters, October 7, 1926, J. W. Moore, no. 178. Endemic.

Ascarina raiateensis differs from *Ascarina polystachya* J. R. and G. Forster in having smaller leaves with shorter petioles, stouter, shorter spikes with the fruits closely aggregated, not distantly placed, and a distinctly bilobed stigma.

Loranthus raiateensis, species nova.

Frutex glabrus ad 1 m. altus in ramulis arborum parasiticus, caules teretes cortice castaneo instructi, rami teretes arcuati lignei fusco-virentes, folia opposita petiolata, laminibus 6-7 cm. longis 3-4 cm. latis ovatis obtusis integris subaequilateralibus ad basin cuneatis coriaceis flavo-viridibus laevibus obscure nervatis nervis secundariis 6-7 utro latere costae instructis, petiolis 4-5 mm. longis teretibus supra canaliculatis, inflorescentiae axillares solitariae cymosae dimidiatae, pedunculus communis 7-17 mm. longus teres erectus, rachis 5-10 mm. longa, ramuli secundarii 2 mm. longi utrinque linea decurrente instructi, flores ternos ferentes quorum medius sessilis est, bini laterales in ramulis 1¼ mm. longis tolluntur floribus omnibus singulis singula bractea laterali 1½ mm. longa 1¼ mm. lata late ovata obtusa carnosae instructis, corolla in alabastro 24-26 mm. longa ad basin conspicue angulata 3 mm. lata supra expansa clavata subterete 2 mm. lata, calyx 5 mm. longus infra 2 mm. latus in parte libera expansa 2½ mm. latus truncatus dentibus 5 minutis instructus, pars libera 1 1/3 mm. longa tubulata, petalae 5 infra sulphureae supra aurantiacae apicibus subacutis vel rotundatis primum sub parte patente vel reflexa leviter cohaerentes in tubo 18 mm. longo mox liberae, petala singula ad basin 2 mm. lata in parte angustissima 1¼ mm. lata in parte patente vel reflexa 1 1/3 mm. lata, stamina

5 filamentis 20-23 mm. longis de 3 mm. superioribus liberis, antheris 3 mm. longis $\frac{1}{2}$ mm. latis linearibus acutis erectis flavis, stylus 27 mm. longus filiformis stigmate simplice obtuso obscure lobato ovarium $2\frac{1}{2}$ mm. longum 1 mm. latum obovatum vel ellipsoideum, fructus ignotus.

Raiatea: parasitic on branches of trees, ridge, upper end of third valley south of Faaroa Bay, altitude 140 meters, January 13, 1927, J. W. Moore, no. 526. Endemic.

Loranthus raiateensis differs from *Loranthus Forsterianus* Presl ex Schulte in having broader, nearly equilateral leaves, larger and more closely aggregated flowers with a longer calyx and corolla.

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