Bull. Mus. natl. Hist. nat., Paris, 4e sér., **18**, 1996,
section B, *Adansonia*, nos 1-2 : 75-83.

The genus Meiogyne (Annonaceae) in New Caledonia: four new combinations

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Summary: Four new combinations in *Meiogyne* (Annonaceae) are presented, all species from New Caledonia: *Meiogyne baillonii*, *M. dumetosa*, *M. lecardii*, and *M. tiebaghiensis*. A key to the New Caledonian species of *Meiogyne* is given.

Résumé : Quatre nouvelles combinaisons sont présentées pour des espèces néocalédoniennes de *Meiogyne* (Annonaceae) : *Meiogyne baillonii*, *M. dumetosa*, *M. lecardii*, et *M. tiebaghiensis*. Une clef de détermination est donnée pour les espèces de *Meiogyne* de Nouvelle-Calédonie.

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After my revision of the genus *Meiogyne* (Annonaceae) (VAN HEUSDEN 1994) four more species, all from New Caledonia, were discovered that should be transferred to *Meiogyne*. In the "Flore analytique et synoptique de la Nouvelle-Calédonie", GUILLAUMIN (1948) placed these species in *Uvaria* and *Unona*. Later, FRIES (1955) transferred the two *Unona* species to *Desmos*. However, both *Desmos* and *Uvaria* are lianas, while the New Caledonian specimens are shrubs or trees. Moreover, *Uvaria* is characterized by stellate hairs, whereas the New Caledonian species assigned to *Uvaria* have simple hairs. The flower structure of these New Caledonian species is like that of *Meiogyne* s.l. (VAN HEUSDEN 1994): the inner side of the inner petals is glabrous and usually grooved and warty, and the apical shield of the inner whorl of stamens is generally elongated. It was not previously realized that the New Caledonian *Desmos* and *Uvaria* species have close affinities to the genera *Ancana* F. Muell. (from Australia), *Oncodostigma* Diels (New Guinea, New Hebrides, Philippines, Malaysia), and *Polyaulax* Backer (New Guinea, Indonesia). These three genera are now united with *Meiogyne* (VAN HEUSDEN 1994).

At the time of revision of the genus *Meiogyne* only one New Caledonian collection was known: *McPherson 5220*, which was described as *Meiogyne spec. 1*. The present study of the New Caledonian *Meiogyne* species is mainly based on material from the herbaria of Nouméa (NOU) and Paris (P). Additional collections from the herbaria of St. Louis (MO), Utrecht (U), and Zürich (Z) were studied.

It is clear now that *Meiogyne* is well represented in New Caledonia, being one of the four native genera of Annonaceae. The other native genera are *Polyalthia* [one species: *P. nitidissima* (Dun.) Benth.], *Richella* (possibly congeneric with the Asian genus *Goniothalamus*), and *Xylopia*. *Polyalthia nitidissima* differs from *Meiogyne* in the linear petals and the small ellipsoid monocarps, which contain one, basally attached seed. *Richella* differs from *Meiogyne* in the flowers, in which the inner petals are connivent and much smaller than the outer petals. *Xylopia* differs from *Meiogyne* in the connate, almost cup-shaped sepals, the septate anthers, and dehiscent monocarps.

The four species of *Meiogyne* are all endemic to New Caledonia. The greatest species diversity within *Meiogyne* is now found in New Caledonia. Two species, *M. baillonii* and especially *M. tiebaghiensis*, also show intraspecific diversity, strongly related to the locality where they occur. *M. tiebaghiensis* has the widest ecological range, occurring in both maquis and rain forests, and growing on ultrabasic and non-ultrabasic substrates.

TABLE 1: List of nomenclatural changes on genus and species level with the situation before (1) and after (2) revision of the genus **Meiogyne** (VAN HEUSDEN 1994, and present paper).

(1)	(2)
Ancana hirsuta	**Meiogyne stenopetala** subsp. **stenopetala**
Ancana stenopetala	**Meiogyne stenopetala** subsp. **stenopetala**
Chieniodendron hainanensis	**Meiogyne hainanensis**
Desmos lecardii	**Meiogyne lecardii**
Desmos palawensis	**Meiogyne mindorensis**
Desmos tiebaghiensis	**Meiogyne tiebaghiensis**
Fissistigma punctulatum	dubious species
Guamia mariannae	**Meiogyne cylindrocarpa**
Meiogyne pannosa	**Meiogyne pannosa**
Meiogyne ramarowii	**Meiogyne pannosa**
Meiogyne virgata	**Meiogyne virgata**
Meiogyne lucida	**Meiogyne virgata**
Meiogyne philippinensis	**Meiogyne virgata**
Meiogyne montana	**Meiogyne vigata**
Meiogyne eriantha	**Meiogyne virgata**
Meiogyne subsessilis	**Meiogyne virgata**
Meiogyne monogyna	**Meiogyne virgata**
Melodorum? baillonii	**Meiogyne baillonii**
Oncodostigma leptoneura	dubious species
Oncodostigma mindorense	**Meiogyne mindorensis**
Oncodostigma monosperma	**Meiogyne monosperma**
Oncodostigma wilsonii	**Meiogyne cylindrocarpa**
Polyalthia insularis	**Meiogyne stenopetala** subsp. **insularis**
Polyaulax cylindrocarpa	**Meiogyne cylindrocarpa**
Uvaria dumetosa	**Meiogyne dumetosa**

MEIOGYNE Miq.

Ann. Mus. Bot. Lugduno-Batavum 2: 12 (1865).

Shrubs or trees. Young twigs densely pubescent to glabrous, older twigs glabrous, sometimes numerous (conspicuous) lenticels present. Leaves coriaceous to chartaceous, glabrous on both sides or densely pubescent beneath, lateral veins generally faint.

Flowers axillary, ramiflorous, terminal, or cauliflorous, solitary, in pairs, or in many-flowered clusters. Bracts 2-4, at the base of the pedicel, usually minute. Bud (broadly) (triangular-)ovoid to narrowly conical-ovoid, 3-15 mm long. Sepals free or shortly connate. Petals valvate or slightly imbricate at the apex, usually subequal, inner whorl concave on the inside of the base, glabrous, and usually grooved and/or warty. Stamens numerous, not septate, apical shield usually elongated in inner whorl. Carpels (3?)6-20; ovules up to 9, in one series.

Monocarps free, 1-12, cylindrical and (slightly) constricted between the seeds, subglobose, ellipsoid-oblong, or rarely depressed ellipsoid, densely pubescent to glabrous, sessile or stipitate. Seeds 1-9, in one series.

Key to the species

1. Leaves glabrous on both sides.
    2. Leaves chartaceous; petals lanceolate; monocarps subglobose, some what squarish in outline, apex rounded ..... **M. lecardii**
    2'. Leaves coriaceous to membranous; petals narrowly to broadly ovate(-oblong); monocarps subglobose or cylindrical and more or less constricted between the seeds, apex apiculate or not. ..... **M. tiebaghiensis**

1'. Leaves densely pubescent beneath, pubescent to glabrous above.
    3. Young twigs, lower side of the leaves, and petioles covered with a dense brown indument, hairs not minute ..... **M. baillonii**
    3'. Young twigs, lower side of the leaves, and petioles covered with a dense indument of greyish, minute hairs ..... **M. dumetosa**

Meiogyne baillonii (Guillaumin) Heusden, *comb. nov.*

Uvaria baillonii Guillaumin, Bull. Mus. Natl. Hist. Nat. 26: 254 (1920).—*Melodorum*? *baillonii* (Guillaumin) Guillaumin, Bull. Soc. Bot. France 79: 689 (1932).

LECTOTYPE.—*Balansa 1173* (P!, designated here; iso-, P!).

Shrub or tree up to 15 m high. Young twigs densely pubescent with brown hairs, older twigs glabrous. Leaves membranous to subcoriaceous or chartaceous, pubescent or glabrous above, densely pubescent beneath, lamina (narrowly) (ob)ovate to oblong, 4-14(-22) cm long, 1.5-7 cm wide, base rounded to slightly cordate, apex acute to acuminate, obtuse, or retuse, midrib flat

above, densely pubescent to glabrous, prominent beneath, densely pubescent, lateral veins faint above, more distinct beneath. Petiole 2-7 mm long, 1.5-2.5(-4) mm thick, densely pubescent.

Flowers cauliflorous, ramiflorous, or axillary, in many-flowered clusters, solitary, or in pairs. Bracts 3 or 4, up to 3 mm long, densely pubescent outside. Pedicel 3-8(-12) mm long, densely pubescent. Bud (triangular-)ovoid, 3-9 mm long. Sepals free or slightly connate, (broadly) triangular(-ovate), 2-5 mm long, 3-4 mm wide, densely pubescent outside, apex obtuse to acute. Petals valvate, outer whorl ovate to oblong or lanceolate, 8-10(-22) mm long, 4-6 mm wide, densely pubescent on both sides, apex acute or obtuse, inner whorl elliptic-ovate to triangular-ovate or lanceolate, 7-10(-22) mm long, 3.5-6 mm wide, pubescent on both sides except for the glabrous, concave, grooved, and warty base inside, apex acute. Stamens numerous, 1.2-1.5 mm long, apical shield elongated in inner whorl. Torus discoid. Carpels 7-15, ovary densely hairy, stigma globose.

Fruiting pedicel 3-16 mm long. Monocarps 1-11, cylindrical and slightly constricted between the seeds, or ellipsoid-oblong, subglobose, or depressed ellipsoid, 8-50 mm long, 8-18 mm wide, densely brownish pubescent, sometimes verrucose, apex apiculate, stipe 0-6 mm long. Seeds 1-6, uniseriate.

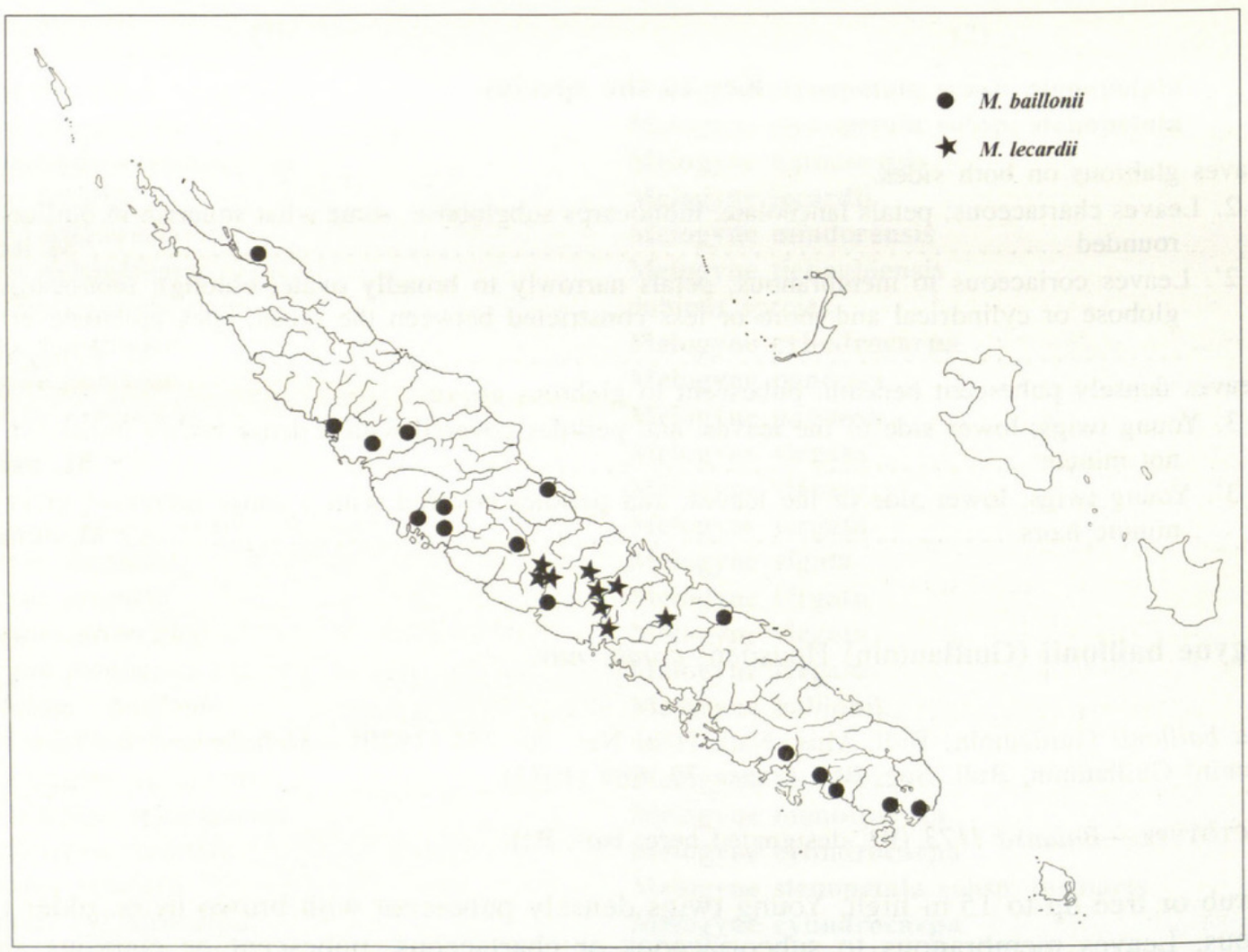

Fig. 1.—Distribution of **Meiogyne baillonii** (Guillaumin) Heusden and **M. lecardii** (Guillaumin) Heusden.

DISTRIBUTION AND ECOLOGY.—Widespread in New Caledonia (Fig. 1), in rain forests, coastal forests, or high maquis, on serpentine or occasionally on schist, up to 600 m altitude.

FIELD NOTES.—Flower buds yellowish green. Flowers brown, yellow, or green outside, yellow inside; very odorous. Fruits brown, or green, later yellow.

NOTE.—The collection *Jaffré 241*, collected at Col de Ho, is the most deviant within this morphologically variable species. It has longer leaves, longer, lanceolate petals, and verrucose fruits like those of the Australian *Meiogyne stenopetala*. Thus far, it is the only collection from this locality.

Meiogyne dumetosa (Guillaumin) Heusden, *comb. nov.*

Uvaria dumetosa Guillaumin, Bull. Mus. Natl. Hist. Nat., sér. 2, 14: 145 (1942).

TYPE.—*Vieillard 2288,* sommet de la montagne de Gomonen, près Gatope (holo-, P!; iso-, P!).

Shrub up to 1.5 m high. Young twigs pubescent with minute greyish (or sometimes brownish) hairs, older twigs glabrous, lenticels sometimes present. Leaves (sub)coriaceous, glabrous or sometimes minutely pubescent above, densely minutely greyish (sometimes brownish) hairs beneath, lamina more or less ovate, sometimes oblong or elliptic, (1.5-)2-8 cm long, (1-)1.5-4 cm wide, base cordate, apex acute to obtuse, midrib flat to slightly elevated above, pubescent or glabrous, prominent beneath, densely pubescent. Petiole 1-2 mm long, 0.5-1 mm thick, densely pubescent.

Flowers axillary, ramiflorous, or terminal, solitary, or in pairs. Bracts 2-4, minute. Pedicel 8-12 mm long, densely pubescent. Bud (broadly) ovoid, 3-4 mm long. Sepals free or sometimes connate, broadly ovate, 1-1.5 mm long, 1.5-2 mm wide, densely pubescent outside, glabrous inside, apex acute. Petals valvate to slightly imbricate at the apex, both whorls 5-6(-7) mm long or outer whorl smaller, 3-4 mm long, outer whorl 2.5-3.5 mm wide, inner whorl 3.5-4 mm wide, pubescent on both sides, inner whorl with glabrous and sometimes warty or grooved base inside, apex acute. Stamens numerous, ca. 1.2 mm long, apex shield-like, occasionally elongated in inner whorl. Torus convex or shortly cylindrical. Carpels 6 or 7, stigma globose.

Fruiting pedicel 9-12 mm long. Monocarps 1 or 2, subglobose or shortly cylindrical, slightly constricted between the seeds, 8-18 mm long, 7-9 mm wide, densely brownish pubescent, more or less verrucose, apiculate, stipe 1-4 mm long. Seeds 1-3, uniseriate.

DISTRIBUTION AND ECOLOGY.—In northwestern New Caledonia (Fig. 2), in low maquis, on serpentine, from 30 to 500 m altitude.

FIELD NOTES.—Flower buds green or brown. Flowers brown, greenish yellow, or yellowish green, or green outside, brown inside, or yellow with dark red inside. Fruits green.

Meiogyne lecardii (Guillaumin) Heusden, *comb. nov.*

Unona lecardii Guillaumin, Bull. Soc. Bot. France 79: 690 (1932).—*Desmos lecardii* (Guillaumin) R.E. Fr., Ark. Bot., n.s., 3: 41 (1955).

LECTOTYPE.—*Lécard 50-73A* (P!, designated here).

Tree or shrub up to 10 m high. Young twigs sparsely pubescent, older twigs glabrous, occasionally a few lenticels present. Leaves chartaceous, glabrous on both sides, lamina ovate to (narrowly) elliptic, 3-8.5(-10) cm long, (1-)1.5-3.5 cm wide, base acute to obtuse, apex acute to slightly acuminate, midrib slightly sunken to slightly elevated above, glabrous, prominent beneath, glabrous, lateral veins faint. Petiole 2-5 mm long, 0.5-1 mm thick, sparsely pubescent to glabrous.

Flowers ramiflorous (or terminal?), solitary. Bracts 3 or 4, minute, pubescent outside. Pedicel 8-16 mm long, slender, sparsely pubescent, verruculose. Bud not seen. Sepals broadly ovate, 1.5 mm long, 1.5 mm wide, sparsely pubescent outside, apex acute. Petals lanceolate, outer whorl 14-40 mm long, 3-5 mm wide, sparsely pubescent outside, pubescent inside, apex acute, inner whorl 11-25 mm long, 3 mm wide, densely pubescent on both sides, inside of base glabrous,

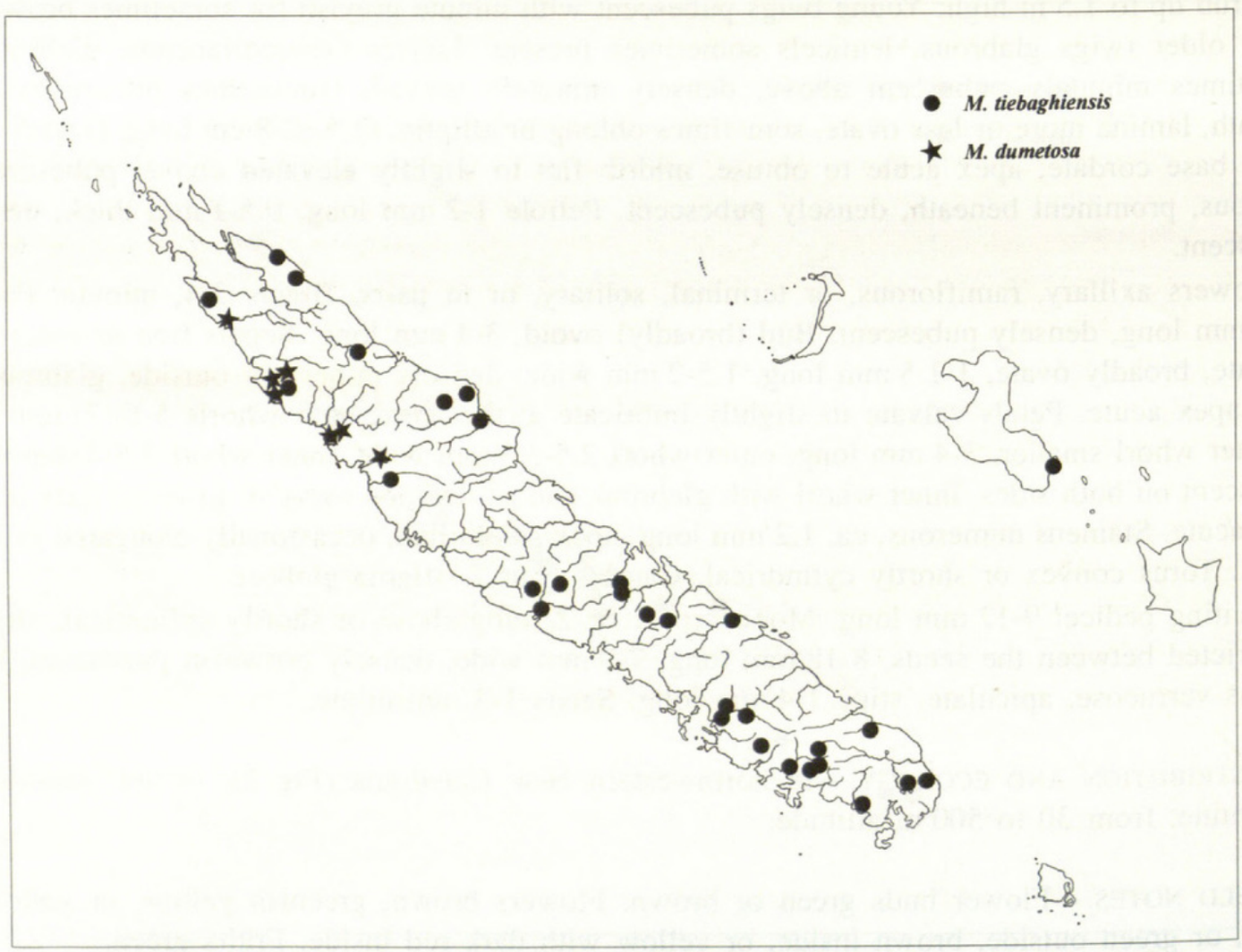

Fig. 2.—Distribution of **Meiogyne tiebaghiensis** (Däniker) Heusden and **M. dumetosa** (Guillaumin) Heusden.

slightly grooved and warty, apex acute. Stamens numerous, apical shield elongated and pointing backwards in inner whorl. Carpels 3?-7.

Fruiting pedicel 8-16 mm long. Monocarps 1-7, subglobose, somewhat squarish in outline, 17-30 mm long, 16-26 mm wide, sparsely pubescent, glabrescent, slightly verrucose, apex rounded, stipe 3-10 mm long. Seeds 2-3?, uniseriate.

DISTRIBUTION AND ECOLOGY.—In central New Caledonia (Fig. 1), in rain forests on schist, from 250 to 1000 m altitude.

FIELD NOTES.—Flowers yellowish green. Fruits green or yellow.

Meiogyne tiebaghiensis (Däniker) Heusden, *comb. nov.*

Unona tiebaghiensis Däniker, Vierteljahrsschr. Naturf. Ges. Zürich 76: 161 (1931).—*Desmos tiebaghiensis* (Däniker) R.E. Fr., Ark. Bot., n.s., 3: 41 (1955).

TYPE.—*Däniker 1431*, New Caledonia, "Am Abhang des Tiebaghi-massivs gegen Nordosten", 14.III.1923 (holo-, Z; iso-, P!).

Shrub or tree up to 10 m high. Young twigs usually pubescent, older twigs usually glabrous, often (conspicuous) lenticels present. Leaves coriaceous to membranous, glabrous on both sides, lamina (broadly) elliptic to (narrowly) (ob)ovate to narrowly oblong, 2.5-23 cm long, 1-7.5 cm wide, base acute to rounded to cordate, sometimes more or less asymmetrical, apex acute to obtuse, sometimes rounded or retuse, midrib flat to slightly elevated above, glabrous, prominent beneath, glabrous, lateral veins faint. Petiole 1-11 mm long, 0.5-2.5 mm thick, glabrous or (sparsely) pubescent.

Flowers ramiflorous, axillary, or terminal, solitary. Bracts 3 or 4, minute, (densely) pubescent outside. Pedicel 3-40 mm long, densely pubescent to glabrous. Bud broadly ovoid to narrowly (conical-)ovoid, 3-15 mm long. Sepals free or connate, (very) broadly (triangular-)ovate, 1.5-3 mm long, 1.5-3 mm wide, densely pubescent to almost glabrous, apex obtuse to acute. Petals valvate or slightly imbricate at the apex, broadly to narrowly ovate(-oblong), outer whorl 7-25 mm long, 2-7 mm wide, inner whorl 5-18 mm long, 2.5-7 mm wide, pubescent on both sides, inner whorl concave, glabrous, and usually warty and/or grooved on the inside of the base, apex (broadly) acute or obtuse in outer whorl, acute in inner whorl. Stamens numerous, 1.2-2.5 mm long, apical shield usually elongated in inner whorl. Torus, discoid, convex, or shortly cylindrical. Carpels 3?-20, ovary densely hairy, stigma globose or ovoid.

Fruiting pedicel 2-50 mm long. Monocarps 1-12, subglobose or cylindrical and (slightly) constricted between the seeds, 10-90 mm long, 8-30 mm wide, densely pubescent with brown hairs to glabrous, more or less verruculose, apex apiculate to obtuse, or sometimes rounded, stipe 0-8 mm long. Seeds 1-9, uniseriate.

DISTRIBUTION AND ECOLOGY.—Widespread in New Caledonia and Lifou (Fig. 2), in rain forest and maquis, on serpentine or sometimes on schist, up to 900 m altitude.

FIELD NOTES.—Flower buds greenish or brown. Flowers brown, yellow-brown, green, or white. Fruits (dark) brown, or green becoming yellow.

DUBIOUS SPECIES

Melodorum punctulatum Baillon, Adansonia 10: 107 (1871).

Fissistigma punctulatum (Baill.) Merr., Philipp. J. Sci. 15: 135 (1919).

TYPE.—*Pancher s.n.* (holo-, P?, not seen).

NOTE.—This species is suspected to be a *Meiogyne*, as well. *Melodorum punctulatum* might be an older basonym for *Meiogyne tiebaghiensis*. However, according to GUILLAUMIN (1932) the type of *M. punctulatum* is lost. The description does not fit exactly any of the "varieties" of *M. tiebaghiensis*, so *M. punctulatum* is considered here as a dubious species.

ACKNOWLEDGEMENTS.—The author wishes to thank Dr. F. ADEMA for valuable comments on the manuscript. Mr. J.H. VAN OS prepared the distribution maps.

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HEUSDEN E.C.H. VAN 1994.—Revision of Meiogyne (Annonaceae). *Blumea* 38: 487-511.

LIST OF COLLECTIONS

1. *Meiogyne baillonii* (Guillaumin) Heusden
2. *Meiogyne dumetosa* (Guillaumin) Heusden
3. *Meiogyne lecardii* (Guillaumin) Heusden
4. *Meiogyne tiebaghiensis* (Däniker) Heusden

Balansa 1173: 1, *1174*, *1777*: 4; *Bergeret 112*, *136*: 4; *Blanchon 984*: 3; *Brinon 1470*: 4; *Brinon et al. 31*: 4; *Däniker 1431*: 4; *Debray 2209*: 1; *Franc 1736*, *1736A*: 1; *Guillaumin & Baumann-Bodenheim 8787*,

10083: 4, *10326*, *10329*, *10375*: 3; *Hoff 1537*: 4; *Hürliman 373*, *410*, *1474*: 4; *Jaffré 241*: 1, *394*, *1861*: 4; *Lécard 50-73A*, *73A*: 3; *MacKee 3656*, *3728*, *8172*, *12026*: 4, *12040*, *12281*: 3, *12391*: 4, *13023*: 3, *14005*, *14458*: 4, *14536*: 1, *14957*, *15045*, *15956*: 4, *16292*: 3, *16661*, *17471*, *17516*: 2, *18325*: 3, *18574*: 4, *18617*: 2, *19068*, *20380*, *20592*: 1, *21402*: 4, *22042*: 2, *22183*: 1, *22386*: 2, *23780*, *24753*: 4, *24799*: 1, *24828*, *24829*: 4, *26265*, *28045*: 1, *28304*: 4, *30580*, *30861*: 2, *33636*: 1, *33695*: 4, *35138*, *35379*: 2, *36471*: 4, *36535*: 1, *37819*, *38941*: 2, *39101*: 4, *41325*: 3, *41424*, *42178*: 1, *42410*, *43306*: 4; *McPherson 4931*: 4, *5080*: 3, *5220*, *5729*: 4, *6563*: 3; *Nothis 108*: 4; *Pusset-Chauvière 653*: 3; *Schmid 1794*: 4; *Sévenet 855*: 4; *Sévenet & Pusset 1569*: 4; *Suprin 1128*: 3; *Veillon 1923*: 1, *1985*: 4, *2999*: 1, *4105*, *4812*, *5711*: 4, *6027*: 3, *6727*, *6967*: 4, *6974*, *7603*: 1, *7656*: 4, *7657*: 1; *Vieillard 99*: 4, *2282*: 4, *2287*: 1, *2288*: 2.