

1. MARSILEA, Linn.

Rhizome creeping and rooting at the nodes. Barren fronds with a long petiole or stipes, the lamina divided into 4 digitate leaflets, with numerous forked veins radiating from their base. Involucres sessile or stipitate, their stipes often but not always combined at the base with those of the barren fronds as in *Ophioglossæ*. Sori linear, on transverse veins proceeding from the upper side or midrib of the involucre, the indusia often more or less combined, dividing the involucre into 2 series of transverse cells. Each sorus consisting of few macrosporangia, each one surrounded by several microsporangia.

The genus has a wide range in the northern hemisphere and one of the Australian species does not appear to be distinct from the common northern one. The others are probably endemic.

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| Whole plant glabrous. Leaflets obovate. Involucres on stipes not exceeding $\frac{1}{2}$ in. and often very short . . . | 1. <i>M. quadrifolia</i> . |
| Leaflets narrow-oblong. Involucres hirsute, sessile or nearly so . . . | 2. <i>M. angustifolia</i> . |
| Leaflets obovate usually hirsute. Involucres hirsute, sessile or nearly so . . . | 3. <i>M. hirsuta</i> . |
| Leaflets obovate, often crenate; silky-villous underneath. Involucres on stipes of 1 to nearly 2 in. . . | 4. <i>M. Drummondii</i> . |

2. **M. angustifolia**, *R. Br. Prod.* 167.—Leaflets narrow-oblong, very obtuse truncate or slightly toothed at the end, the stipes slender, filiform, 2 to 3 in. long in Brown's specimens, above 1 ft. in F. Mueller's, glabrous or nearly so. Involucres hirsute and nearly sessile as in *M. hirsuta*, but in the few specimens seen solitary at the nodes.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Victoria River, *F. Mueller*.

3. **M. hirsuta**, *R. Br. Prod.* 167.—Young ends of the rhizome densely rusty-villous. Leaflets obovate or broadly cuneate, sparingly or densely hirsute underneath, the stipes usually long and slender. Involucres small, usually clustered, sessile at the base of the barren fronds or on a stipes shorter than the involucre.—A. Br. in *Berl. Monatsber.* 1870, 732.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Victoria River, *F. Mueller*.

Queensland. Broad Sound, *R. Brown*; Brisbane River, Moreton Bay, *F. Mueller*; South Queensland, *Hartmann*.

N. S. Wales. Port Jackson, *R. Brown*.

Victoria? Ballarat, *Bacchus*. The specimens not in fruit and therefore doubtful.

A. Braun had distinguished some small-leaved specimens as a variety which he afterwards published as a species, *M. exarata*, A. Br. in *Berl. Monatsber.* 1870, 732. Some specimens show both large and small leaflets.

1. **M. malabathricum**, Linn. Spec. Pl. 559, var. *polyanthum*. A shrub of a few feet in height, more or less clothed with hairs or bristles, often very rigid and scale-like on the branches, rigid and strigose on the upper side of the leaves, longer and softer on the under side, but sometimes nearly all rigid and scale-like, or nearly all long and soft. Leaves petiolate, from ovate almost cordate and 6 in. long, to oblong-lanceolate and 3 in. long, with 3 or 5 nerves besides a fine intramarginal one. Flowers usually about 5 to 11 in terminal almost sessile cymes. Bracts very deciduous, from large and broadly ovate to small and narrow-lanceolate. Calyx-tube ovoid-globular, 2 to 3 lines long,

densely covered with appressed chaffy scales or bristles; lobes usually 5, from ovate to lanceolate, more or less acuminate, longer and sometimes much longer than the tube or rarely rather shorter, alternating with 5 small subulate or short chaffy scales or accessory lobes. Petals large, pale purple or white. Fruit nearly globular, 3 to nearly 4 lines diameter. Seeds imbedded in a purple pulp. — *M. polyanthum*, Blume, Mus. Bot. i. 52. t. 6; *M. denticulatum*, Labill. Serl. Austr. Caled. i. 65. t. 64; *M. Nova-Hollandia*, Naud. in Ann. Sc. Nat. ser. 3. xiii. 290.

N. Australia. Between Providence Hill and M'Adam Range, and Adelaide river, F. Mueller; Port Essington, Armstrong.

Queensland. Endeavour river, Banks and Solander, A. Cunningham; Brisbane river, Moreton Bay, A. Cunningham, and others; Mount Elliott, Dallachy.

N. S. Wales. Clarence river, Wilcox.

The typical *M. malabathricum* is usually distinguished by its larger flowers, with the bracts and calyx-lobes larger in proportion, but some of the Moreton Island specimens have them nearly as large as the Indian ones. Many Australian specimens correspond exactly either with those of *M. polyanthum* from the Archipelago, or with those of *M. denticulatum*, from New Caledonia, and it is probable that the species should include the whole of the twenty-four adopted or proposed by Naudin, Ann. Sc. Nat. ser. 3. xiii. 283 to 293, as "Species magis ad *M. malabathricum* vergentes ideoque difficilius distinguendæ," besides several of the "Species addendæ," p. 294, not seen by him. The characters are generally most trifling.

MARSILEACEAE

Marsilea mutica
mett.

1. *M. umbellatum*, *Burm. Fl. Ind.* 87. A bushy or divaricately-branched shrub, quite glabrous. Leaves shortly petiolate, from broadly ovate to ovate-lanceolate, obscurely and obtusely acuminate, 1 to 2 in. long, of a dark green and shining above, paler or sometimes yellowish underneath, the veins usually quite inconspicuous. Peduncles axillary, very short, bearing an umbel-like or shortly racemose cluster of small flowers, on slender pedicels of 1 line or rather more. Adnate part of the calyx-tube very short, the free part broadly campanulate, less than 1 line diameter, broadly and shortly 4-lobed. Petals ovate, acute, about 1 line long. Stamens exceeding the petals. Fruit green, smooth, nearly globular, about 3 or rarely 4 lines diameter, crowned by the small persistent calyx-limb; pericarp slightly fleshy. Seed

solitary, globular; cotyledons fleshy and very much contortuplicate.—Thwaites, *Enum. Ceyl. Pl.* 111; *M. ramiflorum*, *Lam. Dict.* iv. 88, DC. *Prod.* iii. 6 (at least as to the Indian plant); Wight, *Illustr.* i. 214. t. 93 (*M. tinctorium*, Koen. on the plate); *Myrcia? Australasiae*, F. Muell. *Rep. Burd. Exped.* 7.

N. Australia. North-west coast, *A. Cunningham*.

Queensland. Estuary of the Burdekin, *Fitzalan*; Mount Elliott, Edgecombe and Rockingham Bays, *Dallachy*, Cleveland Bay, *Bowman*.

The species is common in Ceylon and the Indian Peninsula, and perhaps also in the Mauritius.

Specimens of a tree from the Clarence river, *Bookler and Wilcox*, and from Richmond river, *C. Moore*, in fruit only and bearing F. Mueller's MSS. name of *Nelivris (?) ingens*, may possibly belong to a *Memecylon*, although unlike any species known to me. The leaves are penniveined, not unlike those of *Eugenia myrtifolia*, but rather larger and not dotted. The fruits are in cymes, either terminal or in the upper axils, globose, very hard, about 1 in. diameter, marked with the scar of the calyx-limb. Seed 1 only, globular. Embryo thick and hard, the cotyledons very complicately folded and contortuplicate as in *Memecylon*.