

THE FAMILIES OF CYCADS AND THE ZAMIACEAE OF AUSTRALIA.
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(Four Text-figures.)

[Read 25th March, 1953.]

6. M. DIPLOMERA (F. Muell.) L. Johnson, stat. nov.

Basionym: *Encephalartos spiralis* (Salisb.) Lehm. var. *diplomera* F. Muell., *Fragm. Phytogr. Austral.*, 5 (1866), 172 (in part, as to lectotype, see below).

Typification: ". . . ab amico Carolo Moore in montibus Wambungle Mountains ad flumen Castlereaghii detectam." In point of fact these collections were made by

Moore's collector W. Carron, but Moore sent duplicates to Mueller. The type sheet is in herb. MEL labelled: Castlereagh River at the Wambungle [sic] mountains [New South Wales], [W.] Carron (before 1866). This is a mixed collection: the sheet bears three pieces of fronds, of which two belong to the species here defined as *M. diplomera* (these I choose as LECTOTYPE) and one belongs to the species here defined as *M. heteromera* C. Moore (which was of similar mixed typification, see below). Mueller's description and epithet ("two-parted") clearly fit the former species better. The actual locality, of course, is the Warrumbungle Mountains, in the eastern sandstone foothills of which this species is found.

Synonymy: See Johnson in Anderson, *Flora of N.S.W.*, part 1 (in press).

Since Mueller's original description in varietal rank is very brief and rather informal (though valid), I now provide a new Latin description (for English description, see Johnson in Anderson, l.c.):

Caudex plerumque subterraneus, 20(?)–40 cm. diametro. Frondes in corona usque ad 50 (?), sed saepe pauciores, 60–120 cm. longae, petiolo (basi lanata expansa exclusa) 10–20 cm. longo; rhachi non torta, plus minusve applanata, ad pinnas infimas 8–12 mm. lata, supra concaviuscula vel convexa (proxime saepe plus minusve carinata), sulcis duobus lateralibus angustis e basibus pinnarum decurrentibus instructa, infra subangulato-convexa. Pinnae 70–120, valde patentes, angulo acuto prorsum directae, plurimae arctae sed infimae 2–4 cm. distantes, rigidiusculae, omnes paucis apicalibus exceptis angulo acutissimo in segmentis duobus vix divergentibus dichotome divisae (plerumque versus basin pinnae sed in pinnis subapicalibus versus medium, rare segmento uno pinnarum nonnullarum infimarum ipso diviso vel sub apice unidentatae), cae longissimae 15–20 (–25?) cm. longae, nonnullae infimarum gradatim abbreviatae spiniformesque, 5–10 mm. latae (segmentis 2.5–5 mm. latis), infra 6–13 nervis (in segmentis 3–7 nervis) vix prominule striatae, (pinnae segmentave) ad apicem pungentem sensim angustatae, basi pallida flavescente constricta et in axillis callosae rugosaeque (in sicco), sinu furcae pinnarum etiam saepe calloso rugosiusculoque, supra virides non nitentes (in sicco saepe flavescentes), paginis utrisque stomatibus instructis. Coni non certe noti, probabiliter illis minoribus *M. communis* similes, axe conigero femineo fide auctorum ferrugineo-tomentoso [cataphylla juniora in speciebus plurimis tomentosa sunt. L.J.].

Distribution: New South Wales: Southern part of North-west Slopes, around Coonabarabran and the eastern foothills of the Warrumbungle Mountains and east to the Mooki River, in dry sclerophyll forest on sandy or stony siliceous soils.

Specimens and further discussion: See Johnson in Anderson, l.c.

This species, of which cones are unfortunately unknown, is noteworthy for its divided pinnae. This character and the amphistomatic fronds clearly distinguish it from *M. communis*, the smaller inland forms of which it otherwise resembles. It is remarkable that its range corresponds in part with that of *M. heteromera*, which also has divided and amphistomatic pinnae, but which is as clearly a member of section *Parazamia* as *M. diplomera* is of section *Macrozamia*. Hitherto, most collectors and systematists have failed to distinguish *M. diplomera* from *M. heteromera*, usually including also a third species, *M. stenomera* (sect. *Parazamia*), which has divided but hypostomatic pinnae and is found to the north-east of this area. These facts of distribution suggest causal correlation of some kind: probably plants with divided pinnae possess some selective advantage, or at least are certainly not at a disadvantage, in the regional environment, but it is further possible that there has been introgressive gene-flow between populations belonging to the two rather diverse sections. A detailed study of these populations and their genetics should be of interest. In the field I have only once seen *M. diplomera*, in passing, and have been able to study *M. heteromera* only in areas where *M. diplomera* is absent. An apparent hybrid between the two was once grown in the Sydney Botanic Gardens from seed from the Coonabarabran district. The various distinctions between *M. diplomera* and *M. heteromera* are discussed by Johnson in Anderson, l.c.