

ADDITIONS TO THE FLORA OF ARNHEM LAND

BY C. T. WHITE, Government Botanist, Brisbane.

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I recently had the pleasure of examining the rich ethno-botanical collections made in Arnhem Land, Northern Territory of Australia, by Dr. Donald F. Thomson in 1935-6-7 and in 1941-2-3. The specimens are preserved in museum jars in the Department of Anthropology at the University of Melbourne, and in many cases in addition as dried specimens. In making the determinations I found several species which, so far as I know, had not previously been collected in Arnhem Land or other parts of the Northern Territory and two which seem previously undescribed. A classified account of these new records is offered herewith. Types of the proposed new species have been deposited in the Queensland Herbarium.

Family PALMAE

Corypha elata Roxb. Fl. Ind. ed. 2, 2 ; 176 (1832).

Arnhem Land : Glyde River, *D. F. Thomson* (photograph only) June, 1937, only seen growing on watercourses in the valley of the Glyde River, north-central Arnhem Land (palm 50-60 ft.).

This palm, a native of Bengal and Burma, is widely cultivated throughout tropical south-east Asia and the Malay Archipelago. It has been recorded from the lower Gilbert River, Cape York Peninsula, Queensland (Beccari ex Ewart and others in Proc. Roy. Soc. Vict. n.s. 24, pt. II.: 256 (1911)) but not previously so far as I know from Arnhem Land. It is probably of Malayan introduction. The determination is based on a photograph only. It is undoubtedly a *Corypha* and I have determined it as above rather than as *C. umbraculifera* L., the Talipot palm, firstly because, as mentioned above, *C. elata* Roxb. has already been recorded for Australia and, secondly, because the photograph shows the spiral furrows on the stem that Blatter (Palms of British India p. 70) says at once distinguish this species from *C. umbraculifera* L.

Family ARACEAE

Amorphophallus galbra F. M. Bail. in Dept. Agric. Brisbane Bull. 21 (Bot. Bull. 7) : 68 (1893); Queensl. Fl. 5 : 1696, Pl. LXXVI (1902).

North-West Arnhem Land : *D. F. Thomson* 49, in dry jungle associations which occur sporadically in suitable pockets near water and among hills (aroid, approx. 2 ft. high ; fruit orange and bright red in colour ; very astringent and regarded by natives as poisonous).

Typhonium angustilobum F. Muell. Fragm. Phytogr. Austr. 10 : 66 (1876).

North-Central Arnhem Land, near Cape Stewart : *D. F. Thomson* 39 bis, savannah forest, preferably in fairly damp locations (aroid, 6-12 in. high ; rootstock eaten by the natives).

This was included in the same jar (*No.* 39) as the more widely spread and better known *T. Brownii* Schott. of which, when better known, it may prove to be only a form or variety.

Family ZINGIBERACEAE

Curcuma australasica Hook. Bot. Mag. t. 5620 (1867).

Arnhem Land : *D. F. Thomson* 12, jungle associations generally near water and in sandy soil (flowers during wet season about January, colour of flower, tinged purplish).

Family LEGUMINOSAE

Tephrosia arnhemica sp. nov.

Herba perennis, caulibus paucis humifusis debilibus ca. 0.5 m. longis simplicibus vel pauciramosis tenuiter pubescentibus. Folia petiolata, 19-21-foliolata, rachi cum 1-1.5 cm. petiolo 5-8 cm. longa ; foliola linearia vel lineari-lanceolata, subtus tenuiter pubescentia, apice apiculata, basi leviter cuneata, breviter petiolulata, nervis praecipuis ca. 5. Racemi gracillimi, elongati, remotiflori, ad. 18 cm. longi ; flores pedicellati, pedicellis 2-3 mm. longis, dense strigoso-pubescentibus ; calyx 2 mm. longus, dense albido-pubescent, lobis acutis ; vexillum extus dense albido-hirsutum, unguiculatum, 7 mm. longum et 5 mm. latum ; alae glabrae 5 mm. longae et 2 mm. latae ; carina aequilonga ; ovarium albido-hirsutum. Legumen (immaturum) rectum 3.3 cm. longum, dense albido-hirsutum.

North Arnhem Land : *D. F. Thomson* 15, open savannah especially in sandy soil (herb, 12 in. high ; flowers small, pink or purplish in colour ; rootstock about the size of a small parsnip, used to poison fish).

Very close to *T. remotiflora* F. Muell. ex Benth., but the two can be distinguished as follows :

Upright shrub or subshrub, leaflets 7-11, oblong-cuneate, lateral veins numerous and close together	<i>T. remotiflora</i>
Herb or subshrub, several weak diffuse stems from a common stock, leaflets 19-21, linear or linear lanceolate, lateral nerves distant about 5 on each side of the midrib	<i>T. arnhemica</i>

Family ANACARDIACEAE

Buchanania arborescens Blume Mus. Bot. Lugd. Bat. 1 : 183 (1850).

North-East Arnhem Land : *D. F. Thomson* 113, chiefly in higher rainfall areas where the vegetation has a rain-forest appearance (tree 15-20 ft.).

Distribution : Burma, Malay Archipelago, Philippine Islands and tropical Australia.

Buchanania obovata Engler in DC. Monogr. Phan. 4 : 187 (1883).

Far-eastern Arnhem Land : South of Melville Bay and vicinity of Port Bradshaw ; *D. F. Thomson* 2, 20 and 81.

Distribution : Confined to Australia.

There has been considerable confusion regarding the species of *Buchanania* in Australia. *B. arborescens* Bl. as I understand the species is common in Queensland. According to Dr. Thomson, in Arnhem Land it grows in the jungle (monsoon forest or light rain-forest) whereas *B. obovata* Engl. is a savannah-forest tree. It is rare in Queensland.

Family SAPINDACEAE

Ganophyllum falcatum Blume Mus. Bot. Lugd. Bat. 1: 230 (1850).

Arnhem Land : North coast, *D. F. Thomson* 4, on raised area above sand beach on fringe of dry jungle (tree 30-35 feet, fruit reddish orange, matures in December, eaten by natives).

Distribution : Andaman Islands, Philippines, Java, New Guinea and tropical Australia.

Family COMBRETACEAE

Terminalia carpentariae sp. nov.

Arbor 10-13 m. alta, ramulis densissime velutino-pubescentibus. Folia subchartacea oblonga vel rarius elliptico-oblonga plerumque obtusissima et interdum leviter emarginata, rarissime breviter acuminata, basi obtusa vel rarissime brevissime cuneata, utrinque dense et molliter pubescentia, nervis praecipuis ca. 7 in utroque latere, reticulatione utrinque prominulo vel subtus interdum plus vel minus prominenti ; petiolus 2-4 cm. longus ; lamina 8-12 cm. longa, 6-9 cm. lata. Spicae fructiferae 6-8 cm. longae, densissime velutino-pubescentes. Drupae dense velutino-tomentosae, 3 cm. longae, 1.7 cm. latae, 1 cm. diam., ellipsoideae, rostratae compressae vel plano-convexae, lateribus acute angulatis.

NORTHERN TERRITORY : Arnhem Land : north coast, Crocodile Islands, *D. F. Thomson* 111 (TYPE), chiefly in zone fringing the sea-front (tree 30-40 feet, cambium layer used for caulking canoes). Settlement Creek, *L. J. Brass* 236, October, 1922, hill country (small tree, fruit said to be excellent eating when stewed. Local name " Plum Tree ").

QUEENSLAND : Burke District : Gulf of Carpentaria, Mornington Island : *J. F. Bailey*, June 1901 ; *E. W. Bick* 236, October, 1922 ; Lawn Hill : *H. I. Jensen* 94, May, 1940.

This tree grows in several parts of the " Gulf " country of Queensland and is apparently common and widely spread in the Northern Territory, as in addition to the specimens quoted above it is represented by several sheets in the Blake (Northern Australia Regional Survey) and Specht (Australian-American Arnhem Land Expedition) collections. It is undoubtedly very closely allied to *T. platyphylla* F. Muell., with which it has been confused in the past. Another very closely allied species is *T. aridicola* Domin.

The Australian species of *Terminalia* are notoriously difficult to delimit, but I think we are dealing with three distinct species here which can be keyed out or rather summarised as follows :

Leaves mostly cuneate, rarely subobtus at the base, more or less densely pubescent on both surfaces, petiole 1-2 cm. long, lamina 4-8 cm. long, 2-5 cm. wide, lateral nerves about 6 on each side of the midrib ; drupe broadly and shortly ellipsoid, not rostrate, not compressed but with sharp angles almost developed into lateral wings in the younger stage, disappearing and only remaining as a sharp edge in the mature fruit, densely pubescent, $2.5 \times 2 \times 1.5$ cm. *T. aridicola*

Leaves mostly cuneate, very rarely obtuse at the base, glabrescent above or at most thinly pubescent, petiole 2-3 cm. long, lamina 10-17 cm. long, 6-10 cm. wide, lateral nerves 8-10 on each side of the midrib ; drupe rostrate, narrowly ellipsoid without any angles or wings, not compressed nor inclined to be plano-convex, thinly pubescent, $3 \times 1 \times 1$ cm. *T. platyphylla*

Leaves mostly obtuse, very rarely indistinctly and very shortly cuneate at the base, densely velvety pubescent on both faces, petiole 2-4 cm. long, lamina 8-12 cm. long, 6-9 cm. wide, lateral nerves 7 on each side of the midrib; drupes rostrate, ellipsoid, more or less compressed or plano-convex (or at least very slightly convex on one face and markedly so on the other), acutely angled on the sides, densely tomentose, $3 \times 1.7 \times 1$ cm. *T. carpentariae*

Family THYMELAEACEAE

Phaleria blumei Benth. var. **latifolia** Benth. Fl. Austr. 6: 38 (1873).

Arnhem Land: Caledon Bay, *D. F. Thomson* 57, August 1936, near the beach (shrub, used as a fibre plant).

Distribution: Malay Archipelago, tropical Australia.

Family RHIZOPHORACEAE

Bruguiera parviflora (Roxb.) Wight & Arn. Prodr. 311 (1834).

North Arnhem Land: Crocodile Islands, *D. F. Thomson* 28, September 1935, mangrove zone (tree 20-25 feet, wood used by natives for canoe paddles).

Distribution: India, Malay Archipelago, tropical Australia.



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