

*** CONTRIBUTIONS TO THE QUEENSLAND FLORA, No. 9. ***

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(Received 27th June, 1945; tabled before the Royal Society of Queensland, 26th November, 1945; issued separately, 9th October, 1946.)

The present paper contains additions to the flora of Queensland since the publication of the previous Contributions (these Proceedings Vol. lv, pp. 59-83: 1944).

Family DILLENIACEAE.

Hibbertia cistifolia R. Br. in DC. Syst. Veg. i, 431.

Cook District: 10 miles north-east of Iron Range, in grassy parkland forest, *H. Flecker* (buds) 14-4-1944 (N.Q. Nat. Club, No. 8691).

A Northern Territory species not previously recorded for Queensland.

Hibbertia cistoidea n. comb.

Pleuranda cistoidea Hook. in Mitchell's Tropical Australia 363 (1848).

H. stricta R. Br. var. *canescens* Benth. Fl. Austr. i, 27 (1863) in parte.

N.S. WALES.—New England, *Stuart*.

QUEENSLAND.—Maranoa District, Camp XXI, *Drysdale* (Mitchell's Expedition: TYPE). Darling Downs: near Wallangarra, *Mrs. M. S. Clemens* (fls.) Oct. 1944; Bald Mountain, *Mrs. M. S. Clemens* (old fls.) Nov. 1944. Burnett District: Eidsvold, *Dr. T. L. Bancroft*.

Family FLACOURTIACEAE.

Baileyoxyton C. T. White in Journ. Arn. Arb. xxii, 143, pl. 1 (1941).

Flores foemini: Staminodia 5, petalis alterna. Ovarii placentae 3, 1-ovulatae; stigmata 3, libera, sessilia vel subsessilia, crenato-dilatata.

B. lanceolatum C. T. White l.c.

Flos foem.: Petala maris. Staminodia linearia, subcrassa, leviter applanata. Ovarium globosum, glabrum; stigmata libera, sessilia vel subsessilia, crenato-dilatata.

Cook District: Boonjee, nr. Malanda, in rain forest, alt. ca. 2,600 ft., *S. T. Blake* 15224 (fls.) 27-8-1943 (shrub 10 ft., leaves dull green, paler beneath, corolla yellow, petal-appendages orange).

Female flowers were previously unknown. As surmised by Dr. I. W. Bailey on anatomical grounds, *Baileyoxyton* has close affinities to *Trichadenia* Thw. Female flowers in both genera are remarkably alike except that the calyx is calyptrate in *Trichadenia* and there are no staminodia.

Family RUTACEAE.

Acronychia pauciflora sp. nov.

Arbor parva, partibus novellis pubescentibus mox glabris. Folia opposita, unifoliolata; petiolus 1-1.5 cm. longus; lamina elliptica, acuta, subobtusata vel raro obtusa, basi cuneata, utrinque reticulata, nervis

praecipuis ca. 10 in utroque latere, 5-10 cm. longa, 2.5-5 cm. lata. Cymae paucae simplices et 3-florae vel ad florem singulum reductae, axillares saepe ex axillis foliorum delapsorum orientes; pedunculus validus 2-3 mm. longus; pedicellus validus, costatus, breviter pubescens, cum calyce 2 mm. longus. Calycis lobi subrotundi, minuti. Petala linearia 5 mm. longa, in parte inferiore pilis albis brevibus paucissimis obsita. Stamina 3 mm. longa, filamentis in parte inferiore applanatis et pilis albis longis dense obsitis. Discus carnosus, glaber, stylo basin versus hirsuto. Fructus carnosus, in sicco vix 1 cm. diam.

Moreton District: Mt. Glorious, *Mrs. M. S. Clemens* (TYPE: fls.), Jan. 1945. *F. Bray* (very young fts.), May 1943; Samford Creek, *C. T. White* 12638 (fls.), 1-4-1945 (small tree 5 m., flowers greenish white, scanty). Wide Bay District: Imbil, *Mrs. M. S. Clemens* (fts.), Dec. 1943.

Closest affinities of the present species are with *A. laevis* Forst., but the two species can easily be distinguished as follows:—

Leaves very obtuse, cymes once or twice branched, peduncles and pedicels slender, glabrous, common peduncle 0.7-2.5 cm. long ..	<i>A. laevis</i> .
Leaves mostly subacute, cymes reduced to 1-3 flowers, peduncles and and pedicels stout, pubescent, peduncle 2-3 mm. long ..	<i>A. pauciflora</i> .

Lunasia amara Blanco Fl. Filip. 783 (1837).

Cook District: Iron Range nr. Portland Roads, in rain forest, *H. Flecker* (buds) 13-4-1944 (tree) (N.Q. Nat. Club No. 8542).

Though the specimens are in bud only, I have no hesitation in referring them to the above plant, previously, so far as known, confined to the Philippines.

Family VITACEAE.

Cayratia eurynema B. L. Burtt in Kew Bulletin 1939, p. 179.

Moreton District: Mt. Glorious, *Mrs. M. S. Clemens* (fls.), January, 1945.

Not previously recorded for Queensland.

Family LEGUMINOSAE.

Acacia aulacocarpa A. Cunn. ex Benth. in Hook. London Journ. Bot. i, 368 (1842).

N.S. WALES.—Richmond River to Queensland border.

QUEENSLAND.—All round the coast up to 75 miles inland.

NORTHERN TERRITORY.—Darwin.

NORTH-WEST AUSTRALIA.—Kimberley.

One of the most widely distributed species of the genus in Australia.

Acacia aulacocarpa A. Cunn. var. **macrocarpa** Benth. Fl. Austr. ii, 410 (1864).

A. crassicarpa A. Cunn. ex Benth. in Hook. Lond. Journ. Bot. i, 369 (1842).

QUEENSLAND.—Tropical coast from Keppel Bay to Cape York Peninsula (Temple Bay).

Acacia aulacocarpa A. Cunn. as understood by Australian botanists is one of the most widely distributed of wattles. Unfortunately, I have not seen any types and have placed *A. crassicarpa* A. Cunn. as a synonym of Bentham's variety *macrocarpa* following his description and a drawing of the pod of the type of *A. crassicarpa* A. Cunn. by Maiden (Proc. Roy. Soc. Queensl. xxx, pl. VII: 1918). In the field this variety can generally be distinguished by its larger broader phyllodes up to 5 cm. wide, but this is not an invariable character, the only true distinction being the very broad and woody pod. It has not been found outside the tropics.

***Acacia aulacocarpa* A. Cunn. var. *fruticosa* var. nov.**

Frutex 0.75-3 m. altus, ramulis validis acute triangularibus; phyllodia ad 9 cm. longa, 1.5-2.5 cm. lata, 3-5-plo longiora quam lata; spicae 2.5-4 cm. longae, floribus aurantiacis; legumen ca. 5 cm. longum et 1 cm. latum, valvis crassis subligneis lineis obliquis valde elevatis notatis.

Moreton District: Ngun Ngun, Glasshouse Mts., alt. 800 ft., common on top and rocky slopes of the mountain, *C. T. White* 7651 (TYPE: fls. and old pods), 20-3-1931 (shrub or small tree up to 3 m. high, fls. deep orange); Mt. Coolum, on the summit, *Mrs. M. S. Clemens* (very young fl. spikes and old pods), April 1945 (shrub 2 ft.); Wide Bay District: Mt. Cooroora, alt. abt. 800 ft., *C. T. White* 1889 (fls.), March 1923 (small bushes 3-4 ft. high with very bright flowers).

This variety is distinguished by its shrubby habit, strong acutely triangular branchlets, deep yellow flowers, as opposed to the very pale yellow of typical *A. aulacocarpa* A. Cunn., narrow pods with somewhat more woody valves and the oblique lines or costae on them thicker and in consequence more prominent.

As I understand the three varieties they can be distinguished as follows:—

Trees, phyllodes including the petiole 7-18 cm. long, 1-5 cm. wide, 4½-9 times as long as broad, spikes with the peduncle 2.5-7 cm. long, flowers pale yellow.

Pods usually about 1.5 cm. wide but varying from 1-2 cm., valves rather thin, scarcely woody *A. aulacocarpa*.

Pods usually about 2.5 cm. wide but varying from 1.5-3 cm., valves thick and woody *A. aulacocarpa*
var. *macrocarpa*.

Shrub or at most a small tree 3 m. high, phyllodes including the petiole 5-9 cm. long, 1.5-2.5 cm. wide, 3-5 times longer than broad, spikes with the peduncle 2.5-4 cm. long, flowers bright yellow. Pods about 1 cm. broad, valves woody or almost so *A. aulacocarpa*
var. *fruticosa*.

***Bossiaea microphylla* Sm. in Trans. Linn. Soc. ix, 303 (1808).**

Darling Downs District: Nr. Ballandean, *Mrs. M. S. Clemens* (fls.), Oct. 1944.

A very common shrub in N.S. Wales and Victoria, not previously recorded for Queensland.

***Maniltoa* sp.**

Cook District: Chilli Creek, 5 miles S.W. of Portland Roads, *Capt. W. L. Scott* (leaves and leaf-buds), 10-4-1944.

The above specimens are sterile and therefore cannot be accurately identified specifically, but they are recorded here as the genus is new to Australia.

Pultenaea dentata Labill. Pl. Nov. Holl. i, 103, t. 131 (1804).

Darling Downs District: Eukey via Stanthorpe, Mrs. E. Goebel (old pods), Nov. 1944.

Not previously recorded for Queensland. The specimen is a small one and far advanced in pod but agrees well with southern material.

EUGENIA L.

(Sect. *Syzygium*.)

Though the three following species have the general appearance of an *Acmena*, they would come under *Syzygium* as outlined by Merrill and Perry (Mem. Am. Acad. Arts and Sciences xviii, pt. 3, 135-202: 1939). These authors restrict *Eugenia* to the New World and a few Old World species. Most of the Australian species come under *Syzygium*, a few under *Acmena* and one under *Cleistocalyx*. Dr. H. E. Dadswell, the well-known Australian wood technologist of the Council for Scientific and Industrial Research, informs me that the woods of these, at least as far as Australian species are concerned, are indistinguishable generically but are all totally different from the American species of *Eugenia*. The woods of our peculiar *E. carissoides* F. Muell. and *E. macrohila* White & Francis have so far not been studied. These probably belong to *Jossinia* Comm., if we recognise that genus. It seems that *Eugenia* must eventually be removed from the Australian flora, though the name among foresters and horticulturists has become just as much a vernacular as Eucalyptus, Dahlia, Cosmos etc. Until a critical examination of all the Australian species is made I am retaining *Eugenia* in the present paper.

Eugenia oleosa F. Muell. Fragm. Phytogr. Austr. v, 15 (1865); Benth. Fl. Austr. iii, 287 (1866); Bailey, Queens. Fl. ii, 664 (1900); C. T. White Contr. Arn. Arb. iv, 80 (1933).

Cook District: Rockingham Bay, *Dallachy*; Bellenden Ker, *Bailey*; Gadgarra, common along rain-forest creeks, *Kajewski*; Head of Wild River, *J. F. Bailey*.

Eugenia Coolminiana C. Moore, Handbk. Fl. N.S. Wales 207 (1893).

E. cyanocarpa F. Muell. ex Maid. & Betcher, Proc. Linn. Soc. N.S. Wales xxix, 740 (1905); Francis, Austr. Rain For. Trees 8, 293 (1929); Harris, Wild Fl. Aus. 50, 110, tab. 48 (1932); C. E. Hubbard Bot. Mag. tab. 9602 (1940).

QUEENSLAND AND N.S. WALES.—This species is very common in coastal Eastern Australia from Port Jackson District (N.S. Wales) to Keppel Bay (Port Curtis District, Queensland). It is doubtfully distinct as a species from *E. oleosa* F. Muell. and apart from the calyx-tube I have failed to find any valid distinctions between *E. Coolminiana* C. Moore and *E. cyanocarpa* F. Muell., in which case Moore's name has priority, though his description was meagre in the extreme. Specimens named by him are in the National Herbarium, Sydney and have been distributed by that institution. Maid. and Betcher, i.e., regarded *E. cyanocarpa* F. Muell. and *E. Coolminiana* C. Moore as distinct but evidently changed their opinion later, for they omitted the latter name from their Census of N.S. Wales Plants, 1916.

Eugenia crebrinervis* sp. nov.E. cyanocarpa* F. Muell. var. *montana* C. T. White herb.

Arbor magna, cortice lamellato, ramulis subvalidis; folia elliptica, elliptico-lanceolata vel lanceolata, apice acuminata vel caudato-acuminata basi cuneata, supra atro-viridia nitida, subtus opaca, pallidiora, nervis lateralibus crebris numerosis subtus prominulis, e costa media angulo ca. 60° orientibus, lamina 6-7.5 cm. longa 1.5-3.5 cm. lata, petiolo ca. 0.6-1 cm. longo. Inflorescentiae terminales trichotome ramosae ca. 3-4 cm. longae, ramulis quam in *E. oleosa* et *E. cyanocarpa* rigidioribus et validioribus. Calyx turbinatus vel anguste turbinatus basin versus in pedicellum distinctum gradatim angustatus cum pedicello ca. 6 mm. longus; petala 4 (raro 5) fere orbiculata vel oblata; stamina numerosa tenuissima deinde patentia, ca. 6 mm. longa. Bacca globosa vel leviter depresso-globosa, ad 2.5 cm. diam., carne farinacea, subacidula, semine plerumque solitario.

NEW SOUTH WALES.—Tooloom Scrub, common in rain forest, C. T. White 12549 (fts.) 16-3-1944 (large tree buttressed at the base, bark scaly, leaves dark glossy green above, paler and opaque beneath, fruits purple slightly depressed globular up to 2.5 cm. diam., flesh mealy, very slightly acidulous, with a single very depressed seed, usually very badly grub-infested).

QUEENSLAND.—Moreton District: Lamington National Park, alt. 3,000 ft., D. A. & L. S. Smith (TYPE: fls.), 31-12-1943 (tree in rain forest); Roberts Plateau, Lamington National Park, C. T. White (fls.), 27-2-1920 (very large tree with scaly bark); Mt. Mistake, Mrs. M. S. Clemens (young fts.), Jan. 1944; Mt. Glorious, Mrs. M. S. Clemens (young fts.), Jan. 1945.

I had at first regarded this as a variety of *E. Coolminiana* C. Moore (*E. cyanocarpa* F. Muell.) and named it up as such in the Queensland Herbarium. I quote my herbarium name as it is possible some specimens may have been distributed under it. The tree has long been known to us in the field and is represented in the Queensland Herbarium by several sheets other than those quoted above, but the material in all cases is only fragmentary. It is difficult to draw a sharp line between the three species, but the outstanding features of *E. crebrinervis* C. T. White are the close arrangement of the lateral nerves and the apparently constant terminal inflorescence. They can be keyed out as follows:—

Small or medium sized trees, lateral nerves 3-4 mm. apart, inflorescence axillary or terminating short lateral branches.

Calyx narrowly turbinate markedly tapering towards the base into a pedicel. A tropical species

E. oleosa.

Calyx broadly turbinate, sessile or more or less abruptly tapering towards the base into an exceedingly short pedicel. Port Jackson to Tropic of Capricorn ..

E. Coolminiana.

Large tree, lateral nerves 1-2 mm. apart, inflorescence terminal, calyx turbinate to narrow-turbinate tapering into a distinct pedicel, sometimes abruptly so. A mountain species of Northern N.S. Wales and Southern Queensland

E. crebrinervis.

C. E. Hubbard, l.c., describes the flowers of *E. Coolminiana* C. Moore (*E. cyanocarpa* F. Muell.) as borne on pedicels of 2-4 mm., but after a close examination of a number of Australian specimens I would call them sessile or nearly so unless we regard the ultimate branches of the inflorescence as pedicels—which is sometimes done in *Eugenia*.

***Leptospermum minutifolium* sp. nov.**

L. flavescens Sm. var. *minutifolium* F. Muell. ex Benth, Fl. Austr. iii, 105 (1866).

Frutex glaber vel partibus novellis sericeis. Folia elliptica vel fere spathulata, crassiuscula, patentia vel deinde leviter recurva, supra leviter concava subtus convexiuscula, utrinque punctata vel subtus fere tuberculata, 2-3 mm. longa, 1-2 mm. lata. Flores brevissime pedicellati; calyx glaber, late campanulatus 4 mm. diam., lobis 5 oblongis albis fere membranaceis tubum aequantibus mox deciduis; petala alba suborbicularia 2 mm. diam., basi in unguem latum brevem angustata. Stamina petala aequantia. Ovarium 5-loculare apice planum. Capsula semisupera ca. 7 cm. diam.

N.S. WALES.—New England District: New England, *C. Stuart*; Guyra, *Rev. E. Norman McKie* 44 (a, b, & c), 45, 46 & 47 (all in Nat. Herb. Sydney); Moredun Creek, N.W. of Guyra, on the western slopes, *Rev. E. Norman McKie* W. 27 (Herb. Brisbane); Tungston via Deepwater, *T. D. Lynch*; Hanging Rock, via Nundle, *E. Julius* 5; Wilson's Downfall, *R. H. Cambage* 2825; Tenterfield, *J. H. Maiden* (all in Nat. Herb. Sydney).

QUEENSLAND.—Darling Downs District: Base of Mt. Norman, via Wallangarra, *Mrs. M. S. Clemens* (TYPE: fls.) Nov. 1944; Eukey via Stanthorpe, *Mrs. E. Goebel per M. S. Clemens* (fts.), Nov. 1944; Ballandean, *J. E. Young*.

Mr. E. Cheel, the well known authority on *Leptospermum* and allied genera, informed me in a letter that he had sorted this variety out as a distinct species in the folders at the National Herbarium, Sydney, but had not published anything on it. I am indebted to him for most of the New South Wales localities. The present species has a very limited geographical distribution so far as known, being confined to the New England Tableland of New South Wales and the "granite belt" of south-east Queensland.

It comes close to *L. flavescens* Sm. var. *microphyllum* Benth. and *L. Liversidgei* Bak. & Sm., but the three can be distinguished as follows:—

Only the very young parts sericeous, leaves without any citron odour, spreading shrubs of sandy forest lands.

Leaves flat, 5-7 mm. long, 2 mm. broad, midrib clearly visible (almost prominent) on the lower surface, smooth, epunctate and faintly 3-nerved above, black punctate beneath. Coastal sandy lands of N.S. Wales and Queensland

L. flavescens var.
microphyllum.

Leaves slightly concave above and convex beneath, 2-3 mm. long, 1-2 mm. broad, midrib not visible on either surface, punctate above, almost tuberculate-punctate beneath. New England Tableland extending to Queensland granite belt

L. minutifolium.

Branchlets pubescent even in the older stages, leaves strongly citron-scented, upright shrub of peat swamps.

Leaves flat or slightly concave above, about 5 mm. long, 2 mm. broad, midrib not visible but leaves sometimes indistinctly 3-nerved, oil glands not always very distinct and leaves frequently almost epunctate. Coastal N.S. Wales from Port Macquarie to Wide Bay District (Bundaberg), Queensland

L. Liversidgei.

Myrtus sericocalyx sp. nov.

Arbor ad 15m. alta, cortice atrobrunneo aliquanto laminato, partibus novellis pilis sericeis longis dense obsitis deinde glabris; folia elliptico-lanceolata, longe acuminata basi cuneata, supra nitidula, subtus opaca crebre punctata, nervis supra indistinctis, subtus invisibilibus, lamina 4-5 cm. longa, 1.5-2 cm. lata, petiolo 5-6 mm. longo. Flores albi, fragrantés, in cymas racemiformas 5-9-floras dispositi; cymae 2 cm. longae, pedicellis parce sericeis tenuibus 4-5 mm. longis, bracteis sub calyce lineatis. Calyx dense sericeus, 5-lobatus, tubo late urceolato 1.5 mm. lato, lobis acuminatis late triangularibus 1 mm. longis; petala 5, orbicularia, ciliolata, 4 mm. diam; stamina petalis breviora; ovarium 4-loculare; bacca globosa limbo coronata, pisiformis, in sicco 6 mm. diam.; semina 2-3.

N.S. WALES.—Acacia Plateau near the Queensland border, common in rain forest, *C. T. White* 12552 (TYPE: fls. and fts.), March 1944 (tree up to 15 m. high, 0.33 m. diam., bark brown, rather flaky, leaves very glossy above, flowers white, fragrant).

QUEENSLAND.—Moreton District: Mt. Glorious, *Mrs. M. S. Clemens* (fls.) Jan. 1945.

I am indebted to Mr. R. H. Anderson for comparing this species with others from New South Wales. I thought it may be a form of *M. fragrantissima* F. Muell., a species very poorly represented in Australian herbaria. It differs in several characters, however, e.g.,

Leaves subacute, rounded or obcordate; veins discernible on lower surface, calyx 4-merous	<i>M. fragrantissima.</i>
Leaves long acuminate, veins not visible on the lower surface, calyx 5-merous	<i>M. sericocalyx.</i>

From the raceme-like inflorescence Mr. Anderson considers *M. sericocalyx* C. T. White to come closest to *M. Bidwillii* Benth. but this differs in the leaves being broader, the veins clearly discernible on both surfaces and the calyx being quite glabrous. I have never been able to distinguish satisfactorily *M. Bidwillii* Benth. from *M. racemulosa* Benth. and *M. acmenioides* F. Muell.

Family AIZOACEAE.

Macarthuria ephedroides sp. nov.

Caules numerosi, ramosi, 0.5-0.75 m. alti, suffrutices densos ca. 1 m. diam. formantes, ramulis glabris complanato-quadrangularibus. Folia sparsa squamiformia lineari-lanceolata, 3-7 mm. longa. Flores apetalis, singuli vel pauci apicibus ramulorum dispositi, pedicellis 1 mm. longis. Sepala 5, libera, virescentia, ovata, acuta, 2.5 mm. longa, 1.5 mm. lata. Stamina 8, filamentis tenuibus in parte inferiore late expansis et in cupulam membranaceam connatis, antheris 2-locularibus. Ovarium triloculare, glabrum, ovulo in loculis 1. Capsula submembranacea, seminibus nigris vix 2 mm. longis dense et minute concentrice ruguloso-punctatis.

Mitchell District: Enniskillen, in rocky sandstone hills, moderately common in small patches, *C. T. White* 12417 (fls. and capsules), Nov. 1943 (subshrub, numerous stems—many of them dead—from a common stock, forming dense masses abt. 1 m. diam.).

I had provisionally determined this as *M. apetala* Harv. but submitted specimens to Mr. A. W. Jessep, Government Botanist, National Herbarium, Melbourne, for comparison with West and North Australian material, and he replied: "I do not think your plant is referable to *M. apetala* Harv. although superficially resembling the Northern Territory form of that species, which constantly seems to have terete branches and obtuse calyx lobes. We have nothing in our folders with such strongly angled branches and acutely indurated perianth segments. I am inclined to regard your recent discovery as an entirely new species."

Family COMPOSITAE.

CALOTIS *R. Br.*

Notes on the Genus in Queensland with a Key to the Species.

The genus *Calotis* consists of 26 species, with two exceptions, *C. animitica* Merr. and *C. Gaudichaudii* Gagnep., both from Indo-China, all represented in Australia. Of the 24 Australian species 17 occur in Queensland. The capitula of most species form unpleasant burrs which are a frequent infestation in wool. By means of the barbed awns of the pappus they very easily become entangled in wool or other soft material. They are widely spread and the more objectionable ones—notably *C. hispidula* F. Muell. and *C. squamigera* C. T. White are familiarly known as "Bindi-eye" or Bindie. One species, *C. lappulacea* Benth., is most generally known as the Barwon Flea or Bogan Flea. Burr Daisy is the generally accepted standardised popular name for members of the genus. The finding of three new species among recent collections examined by me, two species described by Domin, one by Maiden and Bette and one by J. M. Black, since the publication of Bailey's "Queensland Flora" make a revision of the Queensland members of the genus desirable. I have removed three and added seven species to that account.

DICHOTOMOUS KEY TO QUEENSLAND SPECIES OF CALOTIS.

- | | |
|---|-----------------------|
| 1. Heads terminal, pedunculate, rays usually conspicuous . | 2 |
| Heads very numerous, sessile in the leaf axils, rays inconspicuous | 16 |
| 2. Pappus composed of barbed spines with or without alternating scales | 3 |
| Pappus composed of long soft plumose hairs | <i>C. inermis</i> |
| 3. Pappus of 1 or more rigid awns free or the reduced ones or scales shortly united at the base, scales or reduced awns present or absent | 4 |
| Pappus of 2-8 awns united in a cup at the base, twiggy perennial | <i>C. erinacea</i> |
| 4. Pappus of several unequal awns distinct at the base without alternating scales, reduced or scale-like awns or setae | 5 |
| Pappus of 1-several awns and 2 or more scales or reduced or scale-like awns or setae | 11 |
| 5. Achenes winged, glabrous or more or less clothed with long hairs, the wings always ciliate | 6 |
| Achenes not winged, glabrous, muricate or clothed with short hairs | 9 |
| 6. Achenes hairy, with wings narrowed downwards | 7 |
| Achenes glabrous, wings dilated at the base and curved upwards | <i>C. ancyrocarpa</i> |

- | | |
|---|--------------------------|
| 7. Pappus awns 4-7 shorter than the achene | 8 |
| Pappus awns 14-18 as long as the achene | <i>C. multicaulis</i> |
| 8. Achenes pubescent all over, ray florets purple | <i>C. porphyroglossa</i> |
| Achenes thinly pubescent in the upper part only, wings
very shortly ciliate, ray florets white | <i>C. pterosperma</i> |
| 9. Radical leaves persistent, stems stoloniferous | 10 |
| Radical leaves soon withering, stems much branched, leafy,
leaves linear, entire or toothed | <i>C. lappulacea</i> |
| 10. Plant glabrous to hispid-hirsute, radical leaves spatulate,
often broadly and shortly so, toothed, fruiting heads
1 cm. or more in diameter; doubtful if distinct from
next species | <i>C. scabiosifolia</i> |
| Plant glabrous or hairy, radical leaves often narrow,
fruiting heads less than 1 cm. in diameter; doubtful
if distinct from the foregoing species | <i>C. scapigera</i> |
| 11. Awns armed at the tip only with a few retrorse barbs .. | 12 |
| Awns smooth or armed with retrorse barbs for their whole
length or at least the upper half or more | 13 |
| 12. Leaves linear lanceolate, oblong, remotely toothed or
pinnatifid, awns 1 or 2 very unequal ones | <i>C. dentex</i> |
| Leaves cuneate or spatulate-cuneate, toothed or lobed at
the end, hispidulous, awns 2 nearly equal ones | <i>C. scabriuscula</i> |
| 13. Leaves cuneate, toothed at the end | 14 |
| Leaves linear, entire or with a single tooth on either side
towards the top | 15 |
| 14. Awns 2 or 3, with 2 broad truncate scales and sometimes
a smaller one | <i>C. cuneifolia</i> |
| Awns 6-8 alternating with free scales | <i>C. xanthosoidea</i> |
| 15. Twiggy much branched plant; leaves hispidulous, entire
or with a tooth on both sides of the margin, ray florets
yellow, awns 2 and numerous much reduced ones shortly
united at the base | <i>C. suffruticosa</i> |
| Stems with few branches; leaves with very few hairs, very
narrowly lanceolate, entire or with a single tooth on
one side of the margin, ray florets white turning to
purple, awns various, 3-5 larger ones gradually merg-
ing into smaller scale-like ones | <i>C. glabrescens</i> |
| 16. Achenes pale coloured, very pubescent, pappus awns 4-6
alternating with small subulate entire or lobed scales | <i>C. hispidula</i> |
| Achenes dark chestnut-coloured when mature, muricate-
hispid, alternating with as many broad, oblong or
rotund scales | <i>C. squamigera</i> |

Excluded Species.

C. breviseta Benth., *C. cymbacantha* F. Muell., *C. microcephala* Benth.

These three species were recorded for Queensland by Ferd. Mueller and F. M. Bailey but are unrepresented in herbaria by specimens actually collected in Queensland territory. Both these authors were in the habit of recording species that occurred in neighbouring States and which they considered must extend over the border and would sooner or later be found in Queensland territory.

Some New or Interesting Species.

Calotis ancyrocarpa J. M. Black Trans. Roy. Soc. South Aus. xlv, 18, pl. iv (1921).

Gregory South District: Birdsville, on alluvial flats, S. T. Blake 12230 (flg. and ftg. heads), July 1936 (bushy green annual to 6 in., ray white, disc yellow).

Not previously recorded for Queensland.

Calotis cuneifolia R. Br. in Bot. Reg. vi, t. 504 (1820).

This species is exceedingly common in Queensland over a wide range. Bentham in the "Flora Australiensis" describes the awns as 3 in number, but in most Queensland specimens examined by me there were only 2. Domin (Bibl. Bot. lxxxix (viii) 1209) describes a variety *biaristata*, but apart from the 2 awns instead of 3 I can see no difference in the specimens examined. Three awns do occur but are rare in Queensland plants.

Calotis cuneifolia R. Br. var. *glabrescens* n. var.

Herba gracilis, pilis sparsis obsita; folia anguste cuneata, plerumque ca. 2 cm. longa et 5 mm. lata; achaenia 2-aristata.

Mitchell District: Torrens Creek, in Eucalyptus forest, sandy soil near Warrigal swamp, C. T. White 8700 (ftg. heads), 20-3-1933 (TYPE of the variety). North Kennedy District: Warrigal, on Great Dividing Range, alt. 1,400-1,500 ft., in Eucalyptus forest on reddish brown sandy soil, C. E. Hubbard & C. W. Winders 7111 (ftg. heads), 2-2-1931; West of Pentland, between Warrigal and Burra, alt. 1,500-1,650 ft., on slopes of Great Dividing Range, on shallow sand overlying sandstone, S. T. Blake 9949 (flg. and ftg. heads), 19-10-1935 (tufted rather spreading and ascending to 1 ft., green, flowers scented, ray white, disc yellow).

Calotis glabrescens sp. nov.

Herba caulibus gracilibus parce ramosis ad 15 cm. altis vel brevioribus et subcaespitosis e caudice subterraneo perenni (rhizomate) orientibus, leviter costatis, pilis albis sparsissime obsitis. Folia angustissime lanceolata integra vel uno latere dente instructa, pilis albis sparsissime obsita, 3-6 cm. longa, 2-3 mm. lata. Capitula pedunculata, sub anthesi plana expansa; involucri phylla lanceolata, pilis strigosis plus vel minus sparse obsita, 3 mm. longa; ligulae numerosae, albae deinde purpureae, 6 mm. longae. Capitula fructifera densissima, sphaerica, diametro (aristis inclusis) 1 cm. lata. Achaenia obovata, lateribus leviter incrassata, aristis 3-5 inaequalibus retrorse barbatis et setis vel aristis reductis pluribus omnibus dense et longe albopilosis terminata.

Darling Downs: Bybera, between Inglewood and Milmerran, moderately common in open forest land, C. T. White 12623 (flg. and ftg. heads), Sept. 1944 (herb, flowers white turning purple when dying).

C. glabrescens is most closely allied to *C. suffruticosa* Domin but can be distinguished by the characters given in Section 15 of the dichotomous key.

Calotis scabiosifolia Sond. & F. Muell. in Linnaea xxv, 471 (1852).

Calotis scapigera Hook. in Mitchell's Tropical Australia 75 (1852).

I have attempted to separate these two species in section 10 of the dichotomous key but failed to make the distinctions at all satisfactory. Several specimens collected by C. E. Hubbard in Queensland have all been distributed from the Royal Botanic Gardens, Kew (Eng.) as *C. scapigera* Hook., though following the key by Bentham in the "Flora Australiensis" and that of J. M. Black in "Flora of South Australia," I would have identified them as *C. scabiosifolia* Sond. & F. Muell. An examination of the types of the two species is highly desirable. It is extremely likely that we are dealing here with one polymorphic species. Bentham in the "Flora Australiensis" noted no less than five named varieties of *C. scabiosifolia* Sond. & F. Muell., an indication of great variability.

Calotis scabriuscula sp. nov.

Herba perennis erecta, scabriuscula, pilis plus vel minus crispis plerumque glandula minuta terminatis dense vestita; caules foliosi. Folia spathulata vel elliptica apice acuta vel subacuta basi sessilia vel in petiolum semiamplexicaulem gradatim angustata, margine in parte superiore dentata vel raro integra, 3-4 cm. longa, 0.7-1 cm. lata. Capitula pedunculata; involucri phylla lanceolata vel anguste ovata, acuta, 7 mm. longa; ligulae numerosae, albae, elongatae; capitula fructifera 1.7 cm. diam. Achaenia plana obovata hispidomuricata, 2.5 mm. longa, aristis 2 fere aequalibus quam achaeniis fere triplo longioribus basin versus leviter dilatis, apicem versus retrorsum barbatis et squamis 2 oblati terminata.

Warrego District: Chesterton, approx. 25° 20' S., 147° 20' E., in *Callitris-Eucalyptus* forest on very sandy soil ca. 1,900 ft., S. T. Blake 11140 (fig. and ftg. heads), 8-4-1936 (erect more or less spreading branched annual up to 6 in., leaves subglaucous above, glaucous beneath, ray white, disc yellow).

The present species comes closest to *C. dentex* R. Br. but the two can be distinguished as follows:—

Pubescent or nearly glabrous; leaves linear or linear-lanceolate, very deeply toothed or almost pinnatifid in the whole length, sessile, base semi-amplexicaul, achene with 1 or 2 awns, in the latter case one markedly smaller than the other; a coastal or near coastal plant

C. dentex.

Densely pubescent; leaves spathulate or elliptic, mostly narrowed at the base into a semi-amplexicaul petiole, toothed in the upper part or sometimes entire or nearly so, achene with 2 nearly equal awns; an inland plant

C. scabriuscula

Calotis scabriuscula C. T. White var. *lobata* C. T. White var. nov.

Folia cuneata vel cuneato-spathulata, apice profunde lobata.

Darling Downs District: Eukey via Stanthorpe, Mrs. E. Goebels (ftg. heads), Nov. 1944.

This variety has the appearance of a large form of *C. cuneifolia* R. Br. but the fruiting heads are twice as large, as in *C. dentex* R. Br. and *C. scabriuscula* C. T. White, and the awns are only barbed at the ends, as in those two species.

***Calotis squamigera* sp. nov.**

Herba annua, caulibus ca. 10 cm. longis plus vel minus decumbentibus paucis obsitis, parce ramosis. Folia anguste spathulata basin versus in petiolum gradatim angustata, pilis albis subtus parce obsita, integra vel plerumque utroque latere dente acuminato instructa, ca. 1.5 cm. longa, 3 mm. lata, sed folia inferiora saepe elongata in petiolum longum attenuata, cum petiolo ad 6 cm. longa, 3 mm. lata. Capitula axillaria, numerosa, sessilia, flores ligulati pauci, 2 mm. longi; involucri phylla sparse hirsuta, lanceolata, 3 mm. longa. Capitula fructifera densissima, sphaerica, diam. cum aristis ca. 1 cm. Achaenia matura atro-castanea, cuneata, muricata, aristis 4 vel interdum 5 squamis oblongis vel fere rotundis 1 mm. latis alternantibus.

NEW SOUTH WALES.—Macintyre River, near Queensland border at Goondiwindi, *C. T. White* 12621 (TYPE: flg. and ftg. capitula), Sept. 1944.

QUEENSLAND.—Maranoa District: Bungeworgorai, nr. Roma, very common in sandy soil, *C. T. White* 9532 in part (ftg. capitula), Oct. 1933 (a common weed, local name "Bindi-eye"). Warrego District: Murweh, *R. Cameron*. North Kennedy District: Charters Towers, weed on race-course, *H. Flecker* (ftg. heads) 6-8-1942 (N.Q. Nat. Club 7925). Burke District: Maxwellton, on grassland, alt. abt. 550 ft., *S. T. Blake* 12650 (flg. heads), August 1936 (shortly creeping, ascending or erect, up to 4 in., green, flowers yellowish). Moreton District: Eight Mile Plains, nr. Brisbane, weed of cultivation introduced with sheep manure, *C. T. White* (flg. and young ftg. heads), 26-10-1930.

The Section *Cheioloma* Benth. Fl. Austr. iii. 501 is characterised by the numerous flower-heads sessile in the leaf axils and the ray florets very inconspicuous. It contains only two species, *C. hispidula* F. Muell. and the present one. They are the true "Bindi-eyes" of inland parts though this term has become rather loosely applied to a number of burr plants. *C. squamigera* *C. T. White* and *C. hispidula* F. Muell. grow together and are difficult to distinguish in the field but can usually be separated at a glance in the dried specimens due to the more glabrous character of the burrs of the former. It is difficult to decide whether we are dealing with a species or variety, but as the characters are constant over a wide range the present plant seems worthy of specific rank. The differences between the two are given in section 15 of the accompanying key to the species of *Calotis*.

***Calotis suffruticosa* Domin** Bibl. Bot. lxxxix (viii), 1209 (1929).

Darling Downs District: Dalby, on open ground on dark brown clay, alt. abt. 1,100 ft., *S. T. Blake* 5921 (flg. and ftg. heads), May 1934 (tufted, more or less erect, flowers bright yellow). Mitchell District: Yalleroi, between Blackall and Jericho, in mixed open forest on reddish sand, alt. abt. 1,160 ft., *S. T. Blake* 6774 (flg. and ftg. heads), July 1934 (diffuse rather glaucous, flowers yellow; local name Bindie); Oakley, north of Longreach, on sparsely timbered low sandy ridge, alt. abt. 600 ft., *S. T. Blake* 11649 (flg. and ftg. heads), June 1936 (base woody, stems numerous, tufted spreading to erect ca. 6 in., plant rather deep green, fls. yellow) (a hispid and robust form). Leichhardt District: Emerald, on open sandy ground, alt. abt. 600 ft., *S. T. Blake* 6915 (flg. and ftg. heads), July 1934 (tufted, more or less spreading perennial (?), flowers bright yellow).

This species was only previously known from the type gathering near Jericho. Superficially it is very close to *C. lappulacea* Benth. but the two species can be distinguished by an examination of the achenes.

Achenes with a pappus of 4-8 unequal free awns *C. lappulacea*

Achenes with a pappus composed of 2 awns and a number of very reduced ones or setae united at the base *C. suffruticosa*

Calotis xanthosoidea Domin Bibl. Bot. lxxxix (viii), 1209 (1929).

Mitchell District: East of Jericho, in mixed open forest on sand, alt. abt. 1,250 ft., *S. T. Blake* 6813 (flg. and ftg. heads), July 1934 (tufted, prostrate, dull green, ray white, disc yellow); same locality and habitat, *S. T. Blake* 6827 (flg. and ftg. heads), July 1934 (tufted, ascending, green, ray lilac, disc yellow); near Lochnagar, in Eucalyptus forest, on fine sand, alt. abt. 1,100 ft., *S. T. Blake* 10278 (flg. and ftg. heads), Nov. 1935 (bushy dull green annual of abt. 6 in., ray white, disc yellow). 20 m. E. of Corinda Station in red sandy soil, *S. L. Everist* 2569 (flg. and ftg. heads), April 1946 (erect herb; leaves pale dull green; ray florets white, disc yellow).

Gregory South District: Tenham Station, abt. 25 miles S.S.E. of Windorah, on stony ridge with *Acacia*, *S. T. Blake* 12033 (flg. and ftg. heads), July 1936 (bushy subglaucous annual of abt. 6 in., ray light mauve, disc yellow).

Only previously known from the type gathering on sandstone hills of the Dividing Range, near Jericho.

Superficially this species is very similar to *C. cuneifolia* R. Br. but on the whole is larger in its parts. The two species, however, can immediately be distinguished by an examination of the achenes.

Achenes with a pappus composed of 2-3 barbed awns and 2 truncate scales *C. cuneifolia*

Achenes with a pappus composed of 6-8 barbed awns and at least 4 smaller scales *C. xanthosoidea*

Coreopsis lanceolata L. Sp. Pl. 908 (1753).

Burnett District: Kingaroy, in grassland about the town, *M. S. Clemens* (old fls. and ripe seed heads), 17-3-1944.

A native of North America, much cultivated as a garden perennial but subsontaneous around towns and settlements.

Helipterum uniflorum J. M. Black Trans. Roy. Soc. South Aus. xli, 651, pl. XLIII (1917).

Warrego District: Offham, on edges and sometimes in clay-pans in patches from a few square ft. up to 15-30 sq. yds. and only on very isolated spots, *N. Geary*, Sept. 1943.

Not previously recorded for Queensland.

Family GOODENIACEAE.

Goodenia subauriculata sp. nov. (Sect. *Eugoodenia*).

Herba humilis probabiliter perennis, pilis longis hispidis plus vel minus sparse obsitis; caulibus in sicco leviter complanatis et sulcatis ad 15 cm. longis. Folia linearia, apice acuta, basi subauriculata, margine irregulariter et distanter dentata vel fere lobata vel in foliis superioribus saepe integra, 3-9 cm. longa, 3-5 mm. lata, costa media supra impressa subtus elevata, nervis secundariis utrinque invisibilibus. Pedunculi

axillares uniflori 1 mm. longi vel sub fructu ad 2 mm. longi. Ovarium oblongum, 2 mm. longum. Sepala lanceolata ovario aequilonga. Corolla flava (Flecker), in sicco in specimine Tatei pallida et purpureo-venosa, extus pilis longis sparsis obsita, ca. 6 mm. longa; lobi 3 inferiores apicem versus alis instructi, lobi 2 superiores profunde separati inaequaliter alati. Stamina filamenta tenuia; antheris oblongis minutis minutissime apiculatis. Capsula oblonga, 5 mm. longa, sepalis 2 mm. longis coronata; semina in quoque loculo 1, rugulosa, margine valde incrassata instructa.

NORTHERN TERRITORY.—Pine Creek, *R. Tate* (TYPE: National Herbarium, Melbourne).

QUEENSLAND.—Cook District: Iron Range, *H. Flecker* (fls.), April 1944 (herb, fls. yellow) (N.Q. Nat. Club No. 8565).

According to Krause's Monograph of the Goodeniaceae (Pflanzenr. IV. 277) the present plant comes nearest to *G. sepalosa* F. Muell. and between that species and *G. hispida* R. Br. The three can be distinguished as follows:—

Herbs, more or less densely hispid, not at all glandular.

Leaves usually dentate, tapering into a petiole at the base,
peduncles shorter than the leaves or almost as long;
sepals leafy, longer than the ovary

G. sepalosa

As above, but peduncles very short or flowers sessile

G. sepalosa
var. *brachypoda*

Leaves usually dentate or lobed, sessile, base subauriculate;
peduncles short, 1-2 mm.; sepals lanceolate as long as
the ovary

G. subauriculata

Leaves usually entire, lower ones petiolate, upper ones
sessile; peduncles exceeding the cauline leaves; sepals
subulate, barely as long as the ovary

G. hispida

Dr. Flecker's specimen was forwarded to the National Herbarium, Melbourne, for comparison with type material of *G. sepalosa* F. Muell. and its variety *brachypoda*. The Director, Mr. A. W. Jessep, reported that it differed from *G. sepalosa* F. Muell. in the stem-clasping foliage, much smaller flowers and smaller calyx, not large and "leafy", but that it was identical with an unnamed specimen in the National Herbarium from Pine Creek, Northern Territory, and collected by R. Tate. This was kindly sent me on loan with permission to name and describe it if I thought fit.

Family CONVULVULACEAE.

Merremia hederacea (Burm. f.) Hallier f. in Engl. Bot. Jahrb. xviii, 168 (1894).

Evolvulus hederaceus Burm. f. Fl. Ind. 77, t. 30 f. 2 (1768).

M. convolvulacea Dennst. Schl. Hort. Malabar 39 (1818).

Cook District: Green Hill, near Cairns, *S. E. Stephens* (fls.) 19-5-1944 (herb, fls. yellow) (N.Q. Nat. Club No. 8713).

A common weed of S.E. Asia and the Malay Archipelago, not previously recorded from Queensland.

Family SCROPHULARIACEAE.

Limnophila fragrans (Forst. f.) Seem. Fl. Vit. 180 (1865).

Ruellia fragrans Forst. f. Prodr. 44 (1786).

Limnophila serrata Gaudich. Bot. Freyc. Voy. 448, t. 57, fig. 2 (1826); Benth. Fl. Austr. iv. 490 (1869).

Cook District: Hammond Islands, *F. M. Bailey* 127, June 1897 (herb with strong peppermint odour) (detd. and recorded as *L. gratioloides* R. Br.); Thursday Island, *F. J. C. Wildash*; nr. Clayton's Creek, growing in swamp among *Axonopus compressus*, *H. Flecker* 3-9-1944 (N.Q. Nat. Club No. 8841) (herb with highly aromatic odour).

Not previously recorded for Queensland.

***Limosella aquatica* L. Sp. Pl. 631 (1753).**

Darling Downs District: Wallangarra, *M. S. Clemens* (nearly ripe fts.), Nov. 1944.

Not previously recorded for Queensland.

Family PROTEACEAE.

***Conospermum longifolium* Sm. Exot. Bot. ii, 45, t. 82 (1806).**

Darling Downs District: Eukey via Stanthorpe, *Mrs. Goebels per M. S. Clemens* (fls.) Nov. 1944; Ballandean, *J. E. Young*.

Not previously recorded for Queensland.

***Grevillea linearis* R. Br. in Trans. Linn. Soc. x, 170 (1811).**

Darling Downs District: Eukey, nr. Ballandean, *Mrs. M. S. Clemens* (fls.), Nov. 1944.

Not previously recorded for Queensland. These specimens agree well with those from the type locality—Port Jackson.

***Grevillea arenaria* R. Br. in Trans. Linn. Soc. x, 172 (1811), var. *canescens* (R. Br.) Benth. Fl. Austr. v, 443 (1870).**

G. canescens R. Br. Prot. Nov. 18 (1830).

Moreton District: Murphy's Creek, *E. A. R. Lord* (fls.) March (few fls. and fruits—not quite mature) April 1944.

Mr. Lord writes: "The shrub is common in our ranges and blooms for the greater part of the year. It grows in the form of a spreading shrub and the average height is abt. 5 ft."

The present specimens are an excellent match for the illustration in Botanical Magazine tab. 3185 quoted by Bentham l.c. There are several small Grevilleas in the section *Ptychocarpa* and the distinctions between many are very meagre. The specimens quoted above and the illustration in the Botanical Magazine show one of the most outstanding of them and to my mind one of the most worthy of specific rank. An examination of recent abundant material with types is highly desirable, however, before making any changes from the arrangement by Bentham in the "Flora Australiensis," adopted by subsequent botanists.

Family LILIACEAE.

***Stypandra grandis* sp. nov.**

Caules ad 1 m. alti, parte inferiore infra inflorescentiam simplici ad 0.5 m. alta. Folia pauca ad 1 m. longa et 4 cm. lata, dimidio inferiore carinata, basi vaginante caules amplexentia et parte vaginale ad 10 cm. longa; folia caulina ad vaginas gradatim redacta. Inflorescentia laxa dichotoma in panicula terminali ad 30 cm. longa et 25 cm. lata disposita, bracteis sub ramulis praecipuis foliaceis et vaginantibus

superioribus gradatim redactis eis sub pedicellis 3-5 mm. longis. Pedicelli tenues 1.5-3 cm. longi. Perianthii segmenta cyanea 1 cm. longa, vix 5 mm. lata, intus lineis 5 elevatis longitudinaliter notata. Stamina petalacea. duplo breviora, filamentis tomento aureo dense vestitis. Capsula oblonga, 8 mm. longa; semina opaca, rugosa.

Darling Downs District: Stanthorpe, *F. M. Bailey* (fts.), Dec. 1875 (detd. as *S. caespitosa* R. Br.); Thulimbah, *C. Schindler*; Mt. Norman via Wallangarra, *Mrs. M. S. Clemens* (TYPE: fls.), Nov. 1944.

The present plant was previously recorded for Queensland as *S. caespitosa* R. Br. but differs in being very much larger. The two can be distinguished as follows:—

Plant under 0.5 m. high, leaves under 0.25 m. long and abt. 5 mm. wide, perianth segments blue, yellowish or white inside; seeds smooth and shining	<i>S. caespitosa</i>
Plant 1 m. high, leaves 4 cm. wide, perianth segments deep blue, yellowish or white inside, seeds dull, rough	<i>S. grandis</i>

Mr. R. H. Anderson, to whom I submitted specimens of the new species, thinking it might occur in the New England country, states that he has not seen the plant in New South Wales and considers it quite distinct from *S. caespitosa* R. Br., which is a common plant about Port Jackson. This latter species should be deleted from the Queensland Flora until authentic material has been gathered.

Family CENTROLEPIDACEAE.

Centrolepis strigosa Roemer & Schultes Syst. Veg. i, 43 (1817).

Darling Downs District: Near Wallangarra and Eukey, *Mrs. M. S. Clemens* (fts.), Nov. 1944.

Not previously recorded for Queensland. The closely allied *C. fascicularis* Labill. grows in the same area.



White, C. T. 1947. "Contributions to the Queensland Flora. No. 9." *The Proceedings of the Royal Society of Queensland* 57, 21–36.

<https://doi.org/10.5962/p.351708>.

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