

and particularly in regard to the position of the intra-marginal vein, which is much more removed from the leaf-edge in *E. Brownii*.

2. With *E. bicolor*, A. Cunn. The differences appear to be the duller colour of the foliage of *E. bicolor*, that of the new species being a vivid green, its less spreading venation, and less conoid fruits. *E. Brownii* has not the weeping habit of *E. bicolor*.

There is a specimen in the Melbourne Herbarium labelled "near Mount Elliott, Queensland, Fitzalan and Dallachy" which appears to be *E. Brownii*. The late J. G. Luehmann has a note "Placed by Bentham with *E. largiflorens* (*bicolor*) seemingly with injustice F. v. Mueller."

NOTES ON EUCALYPTUS, (WITH DESCRIPTIONS OF NEW SPECIES) No. II.

By J. H. MAIDEN, F.L.S.

[Read before the Royal Society of N. S. Wales, December 3, 1913.]

I have the honour to submit the following proposed new species :—

1. *E. hæmatoxylon*, Maiden;
2. *E. Jacksoni*, Maiden;
3. *E. Mooreana* (W. V. Fitzgerald) Maiden;
4. *E. mundijongensis*, Maiden;
5. *E. penrithensis*, Maiden;

a new variety:—*E. marginata*, Sm. var. *Staerii*; together with some miscellaneous notes referring to the genus.

As regards No. 3, Mr. Fitzgerald collected it and indicated that it was new, but he did not describe it. I am responsible for the description.

No. 1. *EUCALYPTUS HÆMATOXYLON*, nov. sp.

Arbor parva altitudinem 20' et trunci diametrum 18" attinens, "Mountain Gum" nominata. Bloodwood typicus. Cortex stratis mollibus rubris secedens. Lignum rubrum, gummi venis. Folia petiolata lanceolata ad lato-lanceolata, coriacea, 8 – 9 cm. longa, 2 – 3 cm. lata. Venæ secundariæ tenues et fere paralleles. Flores in corymbo irregulare. Filamenta alba. Fructus ovoidei vel fere sphaerici, aliquando orificio constricti, urceolati, 3 cm. longi, 2.5 cm. lati. Orificium 1 cm. latum.

A small tree, attaining a height of 20 feet and a trunk diameter of 18 inches. "Much resembling *E. calophylla*, R. Br., the "Red Gum," in general appearance." Known as "Mountain Gum." It is a typical "Bloodwood."

Bark. In soft reddish flakes, typically that of a "Bloodwood."

Timber. Red, with gum-veins, stated to be "very soft"; a typical Bloodwood timber, hence the specific name suggested.

Juvenile leaves. Broadly lanceolate, thin-membranous, reddish-purple, petiolate, margin thickened, secondary veins very fine and nearly parallel to each other. Containing caoutchouc.

Mature leaves. Petiolate, lanceolate to broadly-lanceolate, symmetrical or somewhat oblique, apex attenuate-acuminate, coriaceous and of medium thickness, equally green on both sides, margin thickened, intramarginal vein not far removed from the edge. Secondary veins fine and nearly parallel to each other. Length say 8 or 9 cm. and breadth 2 – 3 cm.

Buds. In an irregular corymb, not seen in a young state; after the opercula have fallen off the calyx-tube is somewhat urceolate.

Flowers not seen by me, but stated to have white filaments.

Fruits. Ovoid to nearly spherical, sometimes constricted at the orifice, thus taking on an urceolate shape. Large, 3 cm. long and 2.5 cm. broad with an aperture of 1 cm. and less. Tips of valves well sunk. Seeds large, wing rudimentary.

Habitat. Happy Valley, Jarrahwood Railway, Western Australia. Generally in poor sandy country. Forest Ranger W. Donovan, July, 1912.

Affinity.

The affinity at once suggested is *E. ficifolia*, F.v.M., but the filaments of the new species are white, and the fruits are of a different shape, viz., smaller and more spherical, those of *E. ficifolia* being somewhat cylindroid. The seeds of the latter species also are winged, its bark is more fibrous and its timber paler; it lacks the rich cedar-coloured timber of the present species.

NO. 2. EUCALYPTUS JACKSONI, nov. sp.

Arbor magnifica sylvae, altitudinem 200' attinens, et 15' diametro. "Red Tingle Tingle" vocata. Cortex "Stringybark" similis sed fragiliuscula. Lignum rubrum, durum. Folia juvenilia fere orbicularia vel lato-lanceolata. Folia matura petiolata, lato-lanceolata, acuminata, pleraque 9 cm. longa, 3—4 cm. lata. Venae visibiles, non conspicuae. Alabastros floresque non vidi. Fructus fere sphaerici, plerique 8 mm. ad 1 cm. diametro. Orificium parvum, 3 mm. diametro. Valvarum apices sub orificio valde depressi.

A noble forest tree up to 200 feet high, erect in habit, with a long trunk, which attains a diameter of fifteen feet

(measured at four feet from the ground). Another measured tree was 7 ft. 6 in. in diameter and 80 feet high (Mr. Saw). It reached a height of quite 200 feet; one tree measured was 45 feet round the base, 38 feet round six feet from the ground, and about 50 feet to the first branch (Mr. Brockman). Known locally as "Red Tingle Tingle."

Bark fibrous, reddish, thick, of a stringybark character, but somewhat brittle, covering the trunk and branches.

Timber. Bright red, reminding one, in that respect, of the Forest Mahogany of New South Wales (*E. resinifera*, Sm.). It is fissile and tough, and I believe it to be a most valuable timber for economic purposes.

Juvenile leaves. Nearly orbicular to broadly lanceolate, somewhat oblique, paler on the under side, not specially thin, venation distinct but fine, lateral veins nearly parallel, intramarginal vein well removed from the edge. Oil dots abundant. Average dimensions about 1 dm. long by 6 to 8 cm. wide.

Mature leaves. Equally green on both sides, petiolate, broadly lanceolate, acuminate, slightly curved, slightly inequilateral, veins obvious, but not very conspicuous, lateral veins parallel, intramarginal vein well removed from the edge, well besprinkled with fine oil dots, and apparently moderately rich in oil. Average size of leaves 9×3 to 4 cm.

Buds and flowers not seen.

Fruits. Almost spherical, with an average diameter of 8 mm. to 1 cm. with a small orifice of say 3 mm. in diameter. Tips of valves well sunk below the orifice.

Hab. Deep River, Nornalup Inlet, Bow River, Irwin's Inlet, South West Australia. (The type collected by Sidney Wm. Jackson). Found also on the hills along the Frankland River, where it predominates and extends about ten miles up. (Inspecting Ranger H. S. Brockman, to the Inspector General of Forests, W.A.)

Affinities.

1. With *E. Guilfoylei*, Maiden. Although there are precedents, I hesitate to describe a species in absence of inflorescence, and without this, the description must be incomplete. But I have no doubt as to the validity of the species. It is closely allied to the Yellow Tingle Tingle (*E. Guilfoylei*, Maiden),¹ the wood of which is pale, of a yellow colour and heavy, that of the present species being red, and lighter in weight.

The Red Tingle Tingle is a much larger and thicker tree than the Yellow Tingle Tingle, the latter having been observed only up to five feet in diameter.

As regards the adult leaves, those of *E. Guilfoylei* are always symmetrical or nearly so; those of the new species are more or less oblique, shorter and broader.

The oil dots in *E. Guilfoylei* are a greater distance apart than in the case of the new species, over the leaves of which they are evenly and abundantly diffused, while the secondary veins are further apart and ramify more in the case of the leaves of *E. Guilfoylei*.

2. With *E. patens*, Benth. Mr. H. S. Brockman says that "in general appearance the trees resemble very much the Blackbutt," (*E. patens*). Reference may be made to the original description of *E. Guilfoylei*, where there are some comparative references to *E. patens*.

No. 3. *EUCALYPTUS MOOREANA*, (W. V. Fitzgerald) Maiden,
nov. sp.

Arbor parva, contorta, glauca. Ramuli teretes. Folia juvenilia ovato-cordata vel lato-lanceolata, amplexicaula vel perfoliata, crassa, pleraque 10 cm. longa, 8 cm. lata. Venæ patentiores, venis secundariis fere parallelibus, vena peripherica a margine remota. Folia matura ampliora et acuminatiora. Opercula conica,

¹ *Journ. W. A. Nat. Hist. Soc.*, III, 180,

et longitudine et diametro 1 cm. metientia. Fructus hemisphærico-cylindroidei, valvarum apicibus conspicue exsertis.

In honour of Newton J. Moore, Minister for Lands, subsequently Premier, and now Agent-General in London for the State of Western Australia.

A small crooked tree, glaucous all over, branchlets round. Notes on bark and timber not available.

Juvenile leaves. Ovate-cordate or bluntly and broadly lanceolate, stem-clasping or perfoliate. Thick, somewhat undulate, uniform colour on both sides, venation somewhat spreading, the secondary veins roughly parallel. Intramarginal vein distant from the edge. Average size say 10×8 cm.

Mature leaves. These do not differ essentially from the juvenile leaves except that they are larger and more acuminate. Average size say 15×9 cm.

Buds. Four to seven on a sessile or nearly sessile head with a thick common peduncle of about 1 cm. Symmetrical, the operculum bluntly conical, about 1 cm. long and of equal diameter, the calyx-tube of equal length and with one or two angles.

Flowers. Pale yellow when fresh, drying orange red. Anthers long and creamy in colour, opening in parallel slits, large gland at the back, filament attached to the middle, versatile.

Fruits. Hemispherical-cylindroid with a thin, sharp, slightly domed rim, the tips of the valves very prominently protruded. Diameter at rim scarcely 1 cm.

Habitat. Summits of Mounts Broome, May; Leake, July; Rason, September, 1905; and Bold Bluff, all Lady Forrest and King Leopold Ranges, Kimberley, North-west

Australia (W. V. Fitzgerald). Collected during the Kimberley Survey Expedition.

Affinities.

1. With *E. perfoliata*, R. Br. Both have thick perfoliate leaves which generally resemble each other, but those of *E. perfoliata* are longer. The flowers and inflorescence are different, while the very large fruits which belong to the section *Corymbosæ*, and have sunk valves, are totally different.

2. With *E. alba*, Reinw. The fruits have something in common and also the juvenile leaves, which are however, petiolate in *E. alba*. The buds are very different. The mature leaves of *E. alba* are never so lanceolate as those of *E. Mooreana*. *E. alba* is a glabrous, soft large gum of moist flats, *E. Mooreana* is a crooked glaucous tree of mountain tops.

APPENDIX.—The name was used by Mr. Fitzgerald in the "Western Mail," Perth, W.A., of 2nd June, 1906. No description of the plant was ever published. A small scale photograph was accompanied by the following words:—"*Eucalyptus Mooreana*, W.V.F. is a new species occurring on the summits of Mounts Broome, Rason, Leake and Bold Bluff. It forms a small crooked tree, with usually mealy-white leaves and pale yellow flowers. It has been named out of compliment to the present Minister for Lands."

No. 4. *EUCALYPTUS MUNDIJONGENSIS*, nov. sp.

Early in 1909, Dr. J. B. Cleland gave me a photograph of a tree and a few fragments of fruits and leaves from Jarrahdale, Western Australia. His label was "near Jarrahdale. Fine adherent bark at base, top clean. Near Jarrahdale Forest."

I recognised the specimens as identical with leaves and fruits given me by the late Mr. J. G. Luehmann of the National Herbarium, Melbourne, many years ago, when I intended to visit Western Australia, a trip which was postponed. This specimen bore the label "Close to the inn near Jarrah Dale, about 28 miles from Perth, (Sir) John Forrest, 22nd March, 1882."

The locality is near Mundijong Railway Station. I have been in communication with Mr. C. R. P. Andrews of Perth on the subject, both before and since my visit to the Western State in 1909. Although I planned to visit the tree, and actually got as far as the Railway Station, I was compelled to return to Perth without inspecting it.

Mr. Andrews kindly communicated with the local teacher and the following are extracts from two of his letters:—

"The teacher (Mr. Stephen Wallace) states that the tree grows about five miles from Jarrahdale, and he therefore wrote to Mr. R. Cowen, on whose property the tree stands, for particulars. In forwarding the specimens, Mr. Cowen remarked, 'Suckers are not obtainable. As far as I know, the tree is the only one of its kind in the district, and it seems to me to be a great age. The diameter is about five feet, and the tree grows on poor shallow soil. The sub-soil is nearly pure pipe-clay, and it is in a very wet place, both in summer and winter. Local opinion generally classes it as a Tuart.'

"The teacher states that it is a difficult tree to get specimens from, except when high winds blow the branches off. He also states that it appears to be in danger of destruction from white ants."

Mr. Wallace, has kindly forwarded small sections of one of the smaller branches and also some twigs at Mr. Andrews' suggestion. For additional material, I am indebted to Mr. H. M. Giles of South Perth.

When a tree is isolated, or very rare, there is a temptation to look upon it as hybrid, and I have considered that view in the present case. It may be a correct one, but I do not know enough about its parents to emphasise the point. I believe it should have a name, and although I have a fair knowledge of Western Australian Eucalypts, it seems quite distinct from any, imperfect as my material is. I propose the following name and description:—

E. mundijongensis, sp. nov.

Arbor alta. Cortex basi trunci dura et secedens. Rami teretes. Lignum pallidum. Folia circiter 15 cm. longa et 2 cm. lata, angusto-lanceolata, leniter falcata, nitentia, concoloria, crassa, coriacea, petiolata, penniveniis parum conspicuis. Alabastri in apicem acutati, clavati. Operculum in apicem acutatum circiter dimidio calycis tubo æquilongum. Flores non vidi. Fructus fere sessiles, cylindroides, circiter 1.5 cm. longi et .75 cm. diametro, margine angusta et sulcata. Valvarum apices sub orificio valde depressi.

A tall tree, about 80 – 100 feet high, and 5 feet in diameter about 4 feet from the ground. The trunk of the only specimen known at present leans somewhat and divides into two main branches of approximately equal diameter at about 25 feet from the ground.

Bark. “Fine adherent bark at base, top clean” (Dr. Cleland). Specimens of the bark forwarded by Mr. H. M. Giles and also by Mr. Wallace, are hard flaky, breaking off in long woody strips. Bark of smaller branches smooth, but exhibiting exfoliation. It has a good deal in common with the Peppermint barks of the Eastern States (e.g. *E. piperita*, Sm.)

Timber. Pale coloured.

Juvenile leaves. Coarse, thick, coriaceous, moderately shiny, equally green on both sides, petiolate, venation not very prominent, somewhat spreading at the base in some

specimens, in others at an angle of about 60 to the midrib and roughly parallel. Intramarginal vein not conspicuous, and somewhat removed from the edge. Size of leaves seen by me about 12 cm. long and 5 broad.

Mature leaves. Narrow lanceolar, somewhat falcate, shiny, equally green on both sides, thickish, coriaceous, petiolate, venation inconspicuous and penniveined, margins thickened, and the fine intramarginal vein not close to the edge. Leaves seen by me about 15 cm. long and 2 broad.

Buds. Not seen perfectly ripe. Pointed clavate, slightly angular, the operculum pointed, very slightly exceeding the calyx-tube in diameter, and about half as long as the same. Each half ripe bud about 1 cm. long, with a pedicel of half that length, apparently 3 to 7 buds in the umbel, with a strap shaped peduncle of 1.5-2 cm. Flowers not seen.

Fruits. With short peduncles to nearly sessile, cylindroid, about 1.5 cm. long and about half that in diameter, with a thin, grooved rim, valves 3 or 4, and the tips well sunk below the orifice.

Habitat. This has been already stated.

Affinities.

1. With *E. incrassata*, Labill. Mueller suggested this affinity on a label on Sir John Forrest's specimen.

The affinity is there, no doubt. We have it in the cylindroid fruits, but I know of none quite so cylindrical as those of the present species. As regards the buds, the operculum is shorter than the calyx-tube in some forms of *E. incrassata* also, but there is an absence of multiple ribbing in the present species. The juvenile leaves are somewhat different and the mature leaves are very different to those of any form of *E. incrassata* I know. The proposed species is a large tree, far exceeding in size that of any form of *E. incrassata* I ever heard of.

2. With *E. gomphocephala*, DC. "Local opinion generally classes it as a Tuart," (correspondent of Mr. Andrews). Figures of *E. gomphocephala* can be seen in the "Eucalyptographia" and at Plate 92, Part xxiv, of my "Critical Revision of the Genus Eucalyptus" in the press. The affinities are not close, the swelling of the operculum in *E. gomphocephala* is a very prominent character, and there is only the trace of a swelling observable in the buds of the new species (they are, however, unripe). Occasionally, e.g. at fig. 2 f. of the plate quoted, the rim of the fruit of *E. gomphocephala* may be reduced, in which case the fruit bears some resemblance to that of the new species. But it would appear that the fruit of *E. gomphocephala* always has exerted valves. The resemblance of the leaves is not specially close.

When I get flowers I will again raise the question of the affinities of this tree; in the absence of them, any conclusions must be of a provisional nature.

NO. 5. EUCALYPTUS PENRITHENSIS, n. sp.

Arbor mediocris, "Bastard Stringybark" vocata. Cortex trunci dura et subfibrosa. Rami teretes. Folia matura crassiuscula, venis nitentibus, distinctis, patentibus, vena peripherica a margine remota. Alabastri stellulati, juvenes angulatusculi, maturi clavatiore. Operculum conicum. Flores paniculati 4-10 in umbella quaque. Antherae reniformes. Fructus hemisphaerici ad fere pilulares diametro circiter 5 mm. margine laevo et conspicuo. Fructus a pedicello filiforme acute disjuncti.

"Bastard Stringybark" or "Peppermint."

Two miles east of Penrith, N.S.W. (J.L. Boorman, January 1900). A tree of medium height and very scarce locally.

Bark hard fibrous on the trunk, branches smooth, intermediate in character between a "Stringybark" and a "Peppermint."

Timber reddish-brown and with concentric though not abundant gum-veins.

Intermediate leaves petiolate, falcate, acuminate, mostly unsymmetrical, rather coriaceous, equally green on both sides, venation prominent, spreading, intramarginal vein well removed from the edge. Average size say 13 cm. by 3 cm. broad.

Mature leaves much smaller, say 9 cm. by 1 cm. broad, rather thick, shiny, plentifully besprinkled with black dots, venation the same, resembling those of intermediate leaves.

Buds stellulate and somewhat angled when very young, more clavate as maturity approaches. Operculum conical, the calyx-tube tapering into a short pedicel.

Flowers. Paniculate, 4 to 10 in the individual umbel, which has a slightly flattened common peduncle under 1 cm. long. Anthers kidney-shaped.

Fruit hemispherical to nearly pilular, diameter about 5 mm. with a well defined smooth rim, tips of the valves either sunk, or not protruding beyond the orifice. The fruit is sharply separated from the filiform pedicel.

Habitat. As stated. The tree is said to also occur in the Liverpool district, but I have been unable to verify this.

Affinities.

This is an anomalous, rare and apparently local species, and one naturally looks upon it as a hybrid. At the same time hybridism is difficult to prove. Of course it is not necessary to prove that the assumed parents are to be found, at the present time, in close juxtaposition to the individuals from which one obtained material in the present case. The parents may be some distance away and the seed of the tree may have been conveyed in a number of ways. Possibly the parents are *E. eugenioides*, Sieb. and *E. haemastoma*, Sm. var. *micrantha*, Benth. Let us consider these in detail.

1. With *E. haemastoma*, Sm. var. *micrantha*, Benth. (A "White Gum"). The affinities lie in the smoothness of the branches, the fruits and the young (intermediate) leaves.

2. With *E. eugenioides*, Sieb., (A "Stringybark"). The bark indicates some affinity to the Stringybark, and there is also affinity in the foliage (as also with the White Gum). There is some (not close) resemblance, in the fruits, while the pedicellate fruit is seen in the White Gum.

In 1903 I received from Mr. R. H. Cambage "a form of *E. eugenioides*, Sieb." from between Tingha and Guyra, and in the following year visited the tree. I labelled it on 1st April, 1905, and again on 30th March 1906, "probably a *eugenioides-stellulata* hybrid," and I put it with my collection of reputed hybrids to be dealt with collectively in my "Critical Revision."

During the present year,¹ Mr. R. T. Baker has described it as a new species (*E. Laseroni*) and says it bears the local reputation of being a cross between *E. laevopinea* and *stellulata*.

We have also a species *E. oblonga*, DC., in "Prod. iii, 217," the type being Sieber's "Pls. Exs., No. 583." I have identified this with plants attributed to *E. eugenioides*, Sieb., in N.S.W. The buds are stellulate and the plant resembles that of *E. Laseroni*, and, to a less extent, in this respect, *E. Penrithensis*. There is no doubt that *E. eugenioides* may simulate *E. stellulata* and the facts that I have accumulated should be added to and the taxonomic meaning of these affinities carefully gone into.

The question of the recognition of *E. oblonga*, DC., as a species distinct from *E. eugenioides*, Sieb., will require to be dealt with.

¹ *Proc. Linn. Soc. N.S.W.*, xxxvii, 585.

3. With *E. piperita*, Sm. Penrith is not in *E. stellulata* country, and the relations of the proposed new species with *E. piperita* may be examined. The barks resemble each other a good deal. The pointedness and curvature of the young buds reminds one of those of *E. piperita*. The resemblance of the foliage and anthers would apply more or less to *E. eugenioides*, *haemastoma* and *piperita*.

It is not possible to submit illustrations in the present case, and they are especially necessary when we make postulations about tree-hybrids; I can only say that they will be fully illustrated in those parts of my "Critical Revision of the Genus *Eucalyptus*" to be devoted to hybridisation.

Proposed New Variety.

E. marginata, Sm, var. *Staerii*, var. nov.

King River Road, near Albany, W.A. (J. Staer, August, 1911).

The fruits of the normal species, as figured by Mueller in the "Eucalyptographia," are depicted as 1.5-2 cm. long and 1.7 cm. broad and tapering somewhat into the thickened pedicel. I have received from Mr. J. Staer, specimens of *E. marginata* with fruits in the well-dried state rather more than 2 cm. long and broad, and not tapering into the pedicel. Some of the fruits have a well-defined rim. The foliage is coarser than that of the type, and this handsome, large fruited form is evidently a product of special environment.

Miscellaneous Notes.

(a) *E. aggregata*, Deane and Maiden (Black Gum).

This is conspecific with a Tasmanian tree, *E. Rodwayi*, Baker and Smith, "Papers and Proc. Roy. Soc. Tas.," 139, 1913. These gentlemen were partly misled by a statement made by me in 1902, working on imperfect material, that

the Tasmanian tree was identical with the allied *E. Macarthuri*, Deane and Maiden, which is incorrect. So far as we know, at present, *E. Macarthuri* does not exist in Tasmania.

(b) *E. decipiens*, Endl., and *E. concolor*, Schauer.

Not specifically different.

I have dealt with *E. decipiens* at p. 149 and *E. concolor* at p. 153, Part xiv of my "Critical Revision." At p. 154, I stated that I had not seen the type of *E. concolor*, and at p. 155 I drew attention to the unsatisfactoriness of the situation, so far as the relations of this species and *E. decipiens* are concerned. Schauer in Lehmann, "Plantæ Preissianæ," i, 129, gives the habitat etc., of the type of *E. concolor* as "In colle calcareo prope coloniam Freemantle December 1838 florens, Herb. Preiss. No. 225."

A specimen of the type, which seems to be excessively rare, is before me, kindly lent by Dr. Fischer von Waldheim, Director of the Imperial Botanic Garden of St. Petersburg. It bears the label "225, *Eucalyptus concolor*, Schauer, arbuscula 8—12 pedalis. In colle calcarea prope urbisculum Freemantle, Decbr. 24, 38, L. Preiss legit."

This typical *E. concolor* (from Fremantle of course) is identical with the specimens from the same locality enumerated in the last paragraph of p. 151 (*op. cit.*) with the exception that Mr. Fitzgerald's specimens are not so typical as the others. Continuing the examination further, I cannot find any important difference between these typical specimens of *E. concolor* and those enumerated by me at pp. 150, 151, under *E. decipiens* (I will refer to var. *angustifolia* presently).

Turning now to the specimens of *E. concolor* enumerated at p. 154, the specimens I there recorded as having been seen by me, are coarser and have the leaves somewhat thicker than those of the type.

To sum up, the variety *latifolia* of *E. decipiens* (see p. 149, *op. cit.*) is the specimen that I have seen as the type (of *E. decipiens*). It is figured at 1, Plate 63, and it includes all the *E. decipiens* (except var. *angustifolia*) together with all the *E. concolor* that I have seen.

I, therefore, propose to amalgamate the two species, and *E. decipiens*, Endl., is the older name (1837); *E. concolor*, Schauer, was described in 1844.

The only point in any way unsettled, in my opinion, is the anthers, which I described (as regards *concolor*) at p. 153, and commented upon at p. 155 (*op. cit.*). It would appear that the anthers in *E. concolor* are rather larger and with longer slits than in *E. decipiens*, and not so globular in shape, but in view of the more ample material now available, I believe it will be found that the variation in the anthers of *E. decipiens* is greater than was formerly believed to be the case.

The var. *angustifolia* of *E. decipiens* comes from Cape Riche, and in its typical form is certainly narrow leaved, but Endlicher himself says that the leaves are variable, and that is my experience. I refer to this form at p. 150 (*op. cit.*).

In Preiss' label on the specimen of No. 241 received from Dr. von Waldheim, the locality Wuljenup (see p. 149 "Crit. Rev.") is crossed out, and the locality "Konkoberup" (also at Cape Riche) substituted. For a note on this locality see p. 244, Part xviii, "Crit. Rev."

(c) *E. goniantha*, Turcz, and *E. diversicolor*, F.v.M.

Bentham (B. Fl. iii, 248) records *E. goniantha*, Turcz., from "Franklin (Frankland) River, Maxwell (in fruit only with rather broad leaves)." Mueller ("Eucalyptographia" under *E. diversicolor*) says that this specimen belongs to *E. diversicolor*.

(d) "A species in the making"—akin to *E. melanophloia*,
F.v.M.

The making of species is going on all around us, but in regard to large trees, which do not produce seed until after the lapse of years, it is very rarely that we have the opportunity of tracing the parents except by inference.

I invite your attention to specimens of an Ironbark, Warialda, N.S.W., W. A. de Benzeville, 28th May, 1913.

Its foliage is pale coloured but not glaucous. Its juvenile foliage is of a paler green, with short petioles, broadly lanceolate, but very different to that of *E. melanophloia*.

We have been of course aware for many years how variable is the foliage of *E. melanophloia*, lanceolate leaved forms being well known. Particulars may be found in my "Critical Revision," Part xii, p. 71. But the present form is different to any that I have previously seen.

Although *E. melanophloia* is abundant in the district, Mr. de Benzeville reports that this form does not appear to grow in association with that species, but appears to be always associated with *E. crebra*. He also states that the timber is extremely brittle, and the bark is not furrowed as deeply as is usual with Ironbarks. The specimen forwarded to me shows a *crebra* looking bark and timber apparently not abnormal, but Mr. de Benzeville doubtless speaks of its local reputation. This form, as far as general morphological characters go, is intermediate between *E. melanophloia* and *E. crebra*, and it may have arisen from cross-pollination, but that is surmise.

Owing to changes of environment, it is very often the case that we have "breaks," and in the present case, we may have a break from *E. melanophloia* in the direction of narrower, more petiolate leaves, with other minor differences.

Mr. de Benzeville's statement that "it does not appear to grow in association with *E. melanophloia*, but appears to be always associated with *E. crebra*," would seem to indicate that the plant is getting established as an independent entity, and being in unstable equilibrium itself, it may produce progeny still further departing from typical *E. melanophloia*.

I do not think the departure from type in the present case has proceeded far enough for me to indicate a new species, but we certainly have indications of a new species in the making, and these aberrant forms can only be usefully dealt with in a collective manner.

(e) *E. piperita*, Sm.

Upper Meroo, between Mudgee and Hill End, A. Murphy. Compare the western localities given in Part x, of my "Crit. Rev." p. 302. It is very scarce in the district. Less urn-shaped fruits than normal, leaves thicker. Timber of comparatively good quality, less veined than on the coast.

(f) *E. Planchoniana*, F.v.M.

Supplementing the notes of this not well-known species at p. 66, Part xxiv of my "Forest Flora of New South Wales," I desire to add "I have found it growing from Coff's Harbour to close to South Grafton, the range seems to be extensive. I have not found it growing off the gravelly (ironstone) ridges, and never on flat country. It attains a height of 60 to 70 feet, straight trunks; the matured trees are very unsound (large pipes). The average length of logs 24', the girth 6' 6". There is no abundant supply of good trees, though they grow in clumps. I have seen the logs sold for W. Mahogany when barked. On one occasion a hauler had the audacity to dispose of a log as Blackbutt, which was converted and sold on the Sydney market as such." (A. H. Lawrence, Forest Guard.)

It is generally classed in the *Renantheræ*, but I would point out that it may be more fittingly termed *renantheroid* and that its anthers are more closely allied to those of *E. diversicolor*, F.v.M.

(g) *E. virgata*, Sieb., var. *fraxinoides*, Maiden, *E. fraxinoides*, Deane and Maiden. (White Ash.)

See p. 278, Part ix of my "Crit. Rev." It is there recorded from Tantawanglo Mountain near Cathcart (County Wellesley). It is desirable that additional localities should be recorded for this (at present) rare form, and I, therefore, record it from Ph. Colombo, Co. Auckland, (Assistant Forester Harrison and Dist. Forester Clulee); 20 miles east of Nimitybelle, east of Great Dividing Range, north-east of head of Kybean River (R. H. Cambage. No. 1923.)

(h) *E. oleosa*, F.v.M., New for Queensland.

In my "Crit. Rev. Genus Eucalyptus," Part xv, p. 169, I note that this species has been collected in all the States except Tasmania and Queensland. It is a dry country species and has now to be recorded for Queensland, having been found near Jericho by J. L. Boorman. It is a Mallee, and it would appear that Mallee is rare in the Northern State. It grows in masses on red stony ridges around the black soil of the flats, up to 10 feet high as seen. Gidgee (*Acacia Cambagei*, R. T. Baker) and *Gastrolobium grandiflorum*, F.v.M. grow in the immediate neighbourhood.



Maiden, J. H. 1913. "Notes on Eucalyptus, (with descriptions of new species) No. 2." *Journal and proceedings of the Royal Society of New South Wales* 47, 217-235. <https://doi.org/10.5962/p.359642>.

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