

## *Eucalyptus foecunda* revisited and six related new species (Myrtaceae)

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### Abstract

Brooker, M.I.H. *Eucalyptus foecunda* revisited and six related new species (Myrtaceae). Nuytsia 6(3): 325-334 (1988). *Eucalyptus foecunda* Schauer is recognised as being restricted to coastal Western Australia from Yalgorup National Park to Lancelin. Six new species in the informal "*Eucalyptus* series *Foecundae*" Pryor & Johnson are described, viz. *E. hypochlamydea*, *E. salicola*, *E. perangusta*, *E. latens*, *E. dissimulata*, and *E. kumarlensis*. The identity and location of *E. leptophylla* F. Muell. var. *floribunda* Blakely are discussed. The new species are characterised by habitat, habit, bark, juvenile leaves, and to a lesser extent the flower buds.

### Introduction

The taxonomy and variation in the widespread informal "*Eucalyptus* series *Foecundae*" Pryor & Johnson were treated in a revision of the series (Brooker 1979). The results of this study were obtained from the examination of herbarium specimens and from, what is clear now, an inadequate field assessment, particularly of *E. foecunda* Schauer itself. Since that time numerous field trips in the southern half of Western Australia have been made. A number of new species in the series has been found and re-evaluation has been possible of at least two forms previously considered ambiguous.

Of considerable value in the re-assessment of the series has been the recognition of the importance of habitat, habit, and bark characters, data which are often absent or indeterminate on herbarium labels.

In the revision (Brooker 1979) two atypical forms were retained in what was then believed to be *E. foecunda*: (1) the salmon gum-like tree with narrow-leaved seedlings found south of Norseman, and (2) the extremely narrow-leaved mallee from west, north, and north-east of Ravensthorpe and the Lake King area. Subsequent field-work shows that these forms are deserving of taxonomic status and are described in this paper as *E. kumarlensis* and *E. perangusta*.

Another taxon treated in the earlier paper, *E. leptophylla* F. Muell. var. *floribunda* Blakely, was synonymised with *E. foecunda*. Since then, a search has been made by the author and S. D. Hopper at and near the type locality, south-east of Mt Churchman, for plants that might be this variety. In November 1986 L. A. S. Johnson, D. F. Blaxell and K. Hill also searched in the type area. No populations of any "*E. series Foecundae*" trees or mallees were found by either party and the geographically nearest species in the series is a northern wheatbelt mallee which lacks the "subglaucous branchlets" of the description given by Blakely. This northern wheatbelt form is readily identifiable in the field by its characteristic butt of rough bark and is here described as *E. hypochlamydea*. A seedling of *G. M. Chippendale* 245, illustrated in Brooker (1979), is typical of this taxon and was wrongly attributed to *E. foecunda*. Matching the type of *E. leptophylla* var. *floribunda* will have to await further field exploration in an area difficult of access. The nearest species in "*E. ser. Foecundae*" to the south-east of the presumed type area is *E. salicola* referred to below.

Only recently have I become aware of another salmon gum-like tree, but with glaucous, ovate seedling leaves. It is widespread in the central and northern wheatbelt east to the Great Victoria Desert, and occurs characteristically around the edges of salt lakes. It is described here as *E. salicola*.

In 1985 my attention was drawn by I. Rotheram of the Western Australian Department of Conservation and Land Management to a population of mallees in the jarrah forest of the Darling Range near North Bannister. This is another species in the "*E. series Foecundae*". It is characterised by the short, linear-oblong, glaucous juvenile leaves seen readily in the population as stem coppice. The North Bannister area is notable for the scattered occurrence of five species of mallee occurring in relatively dense, more or less pure stands in natural "clearings" in the jarrah forest, namely *E. decurva* F. Muell., *E. falcata* Turcz., *E. drummondii* Benth., an as yet unnamed species (*E. series Subulatae* Blakely) and that described here as *E. latens* (*E. series Foecundae*).

Another new mallee has been recently recognised in the Pingrup, Lake Magenta and Lake Grace areas. This is described as *E. dissimulata* and its distribution overlaps that of *E. albida* Maiden & Blakely.

A single specimen collected in 1970 near Cundelee, *M.I.H. Brooker* 2599 (PERTH), which consisted of only foliage and fruit was not treated in the 1979 study as it lacked buds to confirm its affinity. On a recent field trip (May 1984) to the Great Victoria Desert made by the author and S. D. Hopper, an extensive population of this form was found, again only in fruit, but I have no doubt of its belonging to the "*E. series Foecundae*". It has seedlings similar to those of the new species in the Ravensthorpe-Lake King area referred to above, but the adult leaves are consistently broader. Further determination must await the finding of buds. Its geographic remoteness precludes early resolution of this problem.

Of fundamental importance in this discussion has been the re-examination of a population from which the type of *E. foecunda* is believed to have been taken. The type is [*J.A.*] *L. Preiss* 231 from the Fremantle area where only few plants are known to survive (August 1984), the nearest well known populations being in the dunes facing Perry Lakes, 20 km to the north. The surviving plants, which were earlier only appraised from a hand specimen, could be mistaken for one of the widespread forms attributed to *E. foecunda* (sensu *Brooker* 1979), which extends as far as central New South Wales, when adult leaves, buds and fruits alone are considered. However, the stems of the Fremantle plants are now known to be completely rough-barked and the juvenile leaves are lanceolate and green, not ovate to elliptical and glaucous as are those of the taxon of south-eastern Australia. Populations apparently identical to the presumed remnant of the typical stand and the others referred to above occur as far south as the Yalgorup National Park, on Wabling Hill north of Yanchep, and at various localities further north towards Lancelin. *E. foecunda* s. str. is not known to overlap with any other species of the "*E. ser. Foecundae*". Those specimens previously attributed to *E. foecunda* (*Johnson* 1962, *Brooker* 1979), occurring in the mallee scrubs of southern Australia as far as central New South Wales which are smooth-barked mallees having seedlings with ovate to elliptical glaucous leaves (to 2.5 x 1.5 cm), should now be referred to *E. leptophylla* F. Muell. [type—"Murray scrub" collected by H. Behr].

Considering the number of new species in the series recognised in the last few years it is not unlikely that more will be found. Also the Cundelee species will need confirmation and taxonomic treatment. For the present I have restricted this paper to the publication of six new species while providing a key for the whole series as it is known to date.

The new species have been recognised largely by field assessment. They have been confirmed by close examination of herbarium specimens and inferences from label data on the sheets in PERTH and to a lesser extent in FRI. Juvenile leaf characters, which can usually be seen in stem coppice of some species in the field, e.g. *E. salicola*, were observed in glasshouse trials on the progeny of many individual parent-plants of each new species and compared with various related taxa, including *E. foecunda* s. str.

Key to taxa of "*E. series Foecundae*" (new species enumerated)

1. Tree
  2. Juvenile leaves orbicular to ovate, glaucous [around salt lakes in wheatbelt and Great Victoria Desert] .....2. *E. salicola*
  2. Juvenile leaves narrow (to 0.6 cm wide)
    3. Bark rough [north of Southern Cross] .....*E. formanii*
    3. Bark smooth [south of Norseman] .....6. *E. kumarlensis*
1. Mallee
  4. Juvenile leaves connate [southern, coastal and subcoastal].....*E. uncinata*
  4. Juvenile leaves free
    5. Juvenile leaves ovate to orbicular or elliptical, glaucous; buds to 0.7 x 0.3 cm
      6. Bark rough over part or whole of stems.
        7. Mature crown with many juvenile leaves [south of Shark Bay to Exmouth] .....*E. fruticosa*
        7. Mature crown with adult leaves [northern wheatbelt to north of the Murchison River] .....1. *E. hypochlamydea*
      6. Bark smooth
        8. Style bent; juvenile leaves usually white [southern wheatbelt, north and north-west of Badgingarra] .....*E. albida*
        8. Style straight; juvenile leaves blue-green to glaucous [eastern goldfields, South Australia, Victoria, New South Wales] .....*E. leptophylla*
    5. Juvenile leaves linear to lanceolate, if elliptical, then buds to 1.1 x 0.5 cm.
      9. Bark rough
        10. Juvenile leaves lanceolate, green [coastal from Yalgorup National Park to Lancelin] .....*E. foecunda*
        10. Juvenile leaves linear, mealy white [north of Southern Cross] .....*E. formanii*
      9. Bark smooth
        11. Adult leaves linear [west, north and north-east of Ravensthorpe] .....3. *E. perangusta*
        11. Adult leaves narrowly lanceolate to lanceolate
          12. Juvenile leaves linear-oblong or narrowly elliptical, glaucous [North Bannister] .....4. *E. latens*
          12. Juvenile leaves elliptical or lanceolate, green or grey-green
            13. Operculum rounded, much shorter than hypanthium [east and north-east of Esperance] .....*E. discreta*
            13. Operculum conical,  $\pm$  equal to hypanthium
              14. Juvenile leaves lanceolate, to 7 x 1.5 cm, flat, green [wheatbelt to Great Victoria Desert] .....*E. rigidula*
              14. Juvenile leaves elliptical, to 4.5 x 1.5 cm, slightly concave above, blue-green to greyish green [Pingrup to Lake Grace area] .....5. *E. dissimulata*

It will be seen from the key and species' accounts that the taxonomy and field identification are based strongly on habitat, habit, bark, and juvenile leaf characters. The stamen and seed characters are common to all six species and are diagnostic for the series. For description of these, reference can be made to the earlier study (Brooker 1979).

For many of the taxa the bud and fruit distinctions are not great, but bud shapes are shown in Figure 2 for comparison. In Figure 3, seedlings of the various species are shown for comparison.

## New Taxa

### 1. *Eucalyptus hypochlamydea* Brooker, sp. nov. (Figures 1, 2a, 3a)

Frutex "mallee" *Eucalypto leptophyllae* F. Muell. affinis a qua caulibus cortice fibroso ad basin, foliis juvenilibus majoribus orbicularioribusque (ad 3 x 2.8 cm) et operculis semper rostratis differt.

*Typus*: 13.8 km E of Mullewa towards Pindar, 24 January 1984, M.I.H. Brooker 8412 (holo: PERTH; iso: FRI, NSW, MEL).

A mallee to 7 m tall with rough basal bark to 1-2m. *Juvenile leaves* sessile, opposite for many pairs, ovate to orbicular, to 3 x 2.8 cm, dull, glaucous. *Adult leaves* petiolate, alternating, narrowly lanceolate to lanceolate, to 9 x 1 cm, concolorous, glossy, green. *Inflorescences* axillary, unbranched, 7 to 11-flowered; peduncles flattened, 0.4-0.9 cm long. *Buds* pedicellate, fusiform, to 0.7 x 0.3 cm; operculum beaked. *Fruit* pedicellate, cupular barrel-shaped, to 0.5 x 0.5 cm; rim thick; disc obliquely descending, whitish; valves 3(4), to rim level or enclosed.

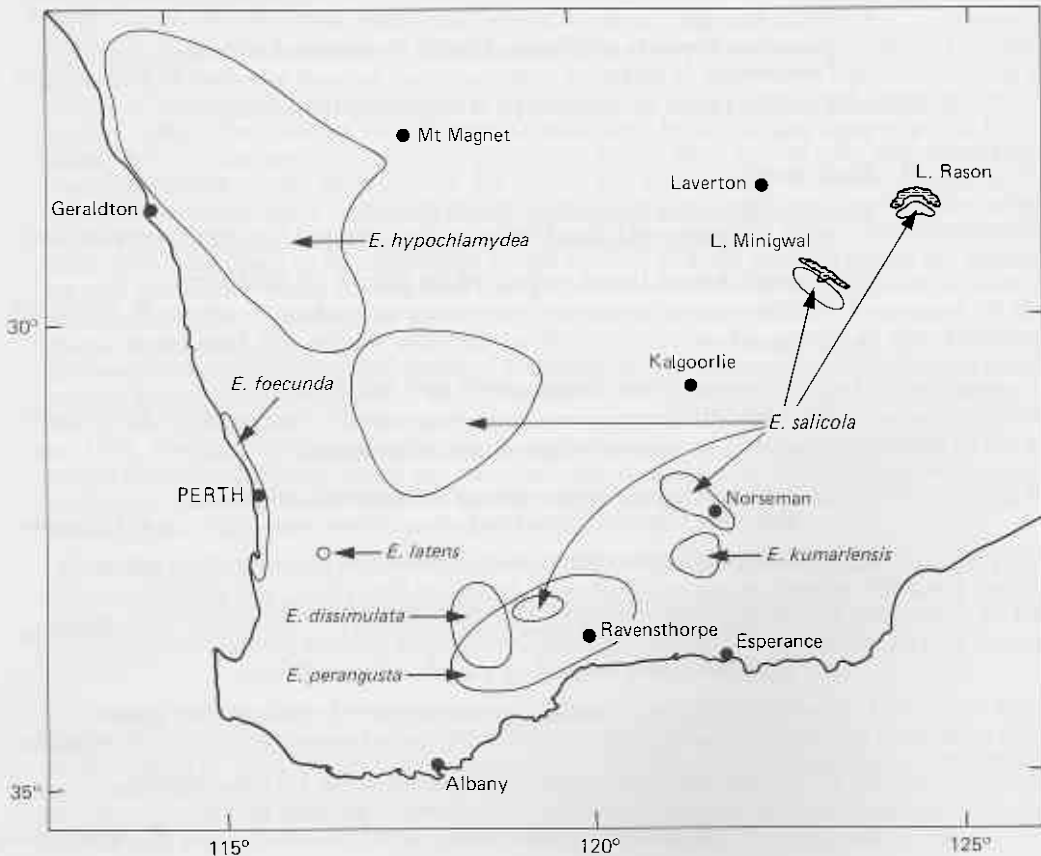


Figure 1. The distribution of the six new species and of *E. foecunda*.

*Selection of specimens examined.* WESTERN AUSTRALIA: 6.4 miles N of Marchagee, *G.M. Chippendale* 34 (FRI, PERTH); 11.7 miles ENE of Mulleway, *G.M. Chippendale* 245 (FRI); 12 km SW of 'Nalbarra' *P.G. Wilson* 8599 (PERTH); 14 km E of Wilcock's road along N side of Watheroo National Park, *M.I.H. Brooker* 7523 (FRI, PERTH); Gutha; *S.D. Hopper* 3132 (PERTH); 7.5 km E of Mt Adams Reserve on Yandanooka road, *M.I.H. Brooker* 8405 (FRI, PERTH, NSW); type locality, *M.I.H. Brooker* 8411, 8413 (FRI, PERTH, NSW); 36.6 km S of Pindar via Regan's, William's and Kelly's roads, *M.I.H. Brooker* 8418 (FRI, PERTH, NSW); E of Binnu, *M.I.H. Brooker* 8726 (FRI, PERTH, NSW); 61 km E of Mullewa, *M.I.H. Brooker* 8728 (FRI, PERTH, NSW); between Northampton and Binnu, *M.I.H. Brooker* 9035 (FRI, PERTH); 5 km E of Trayning, *M.I.H. Brooker* 9166 (FRI, PERTH, NSW); c. 20 km S of Mingenew on Eneabba road, *M.I.H. Brooker* 9203 (FRI, PERTH, NSW); 77 km NE of Wubin, *M.I.H. Brooker* 9229 (FRI, PERTH, NSW); 1 km N of Dalwallinu, *M.I.H. Brooker* 9263 (FRI, PERTH, NSW); 15.7 km S of Red Bluff turn-off S of Kalbarri, *M.I.H. Brooker* 9402 (FRI, PERTH, NSW).

*Distribution.* Northern wheatbelt and to north of the Murchison River, Western Australia, usually on relatively flat country on red sandy soils; on coastal limy sand south of Kalbarri. Despite the abundance of specimens available for examination, label data provide little information on associates, but *E. brachycorys* Blakely, *E. eudesmioides* F. Muell. and *E. obtusiflora* DC. have been recorded.

*Flowering period.* November-February.

*Etymology.* The name alludes to the basal rough bark (Gk. *hypo*—below, *chlamydos*—mantle).

*Notes.* This species is easily recognised in the field by the stocking of rough bark. The operculum of the bud is beaked, not rounded as is *E. leptophylla*.

## 2. *Eucalyptus salicola* Brooker, sp. nov. (Figures 1, 2b, 3b)

Arbor *Eucalypto leptophyllae* F. Muell. affinis a qua habitu arboreo, foliis juvenilibus orbicularioribus, operculis acutis et habitatione saline differt.

*Typus:* 14.6 km east of Kulja Central road on Mollerin North road, 24 January, *M.I.H. Brooker* 8433 and *S.D. Hopper* (holo: PERTH; iso: FRI, NSW).

A tree to 15 m tall with powdery white, grey or salmon pink, smooth bark. *Juvenile leaves* sessile, opposite for many pairs, orbicular to ovate, to 2.5 x 2 cm, dull, glaucous. *Adult leaves* petiolate, alternating, narrowly lanceolate to lanceolate, to 9 x 1 cm, concolorous, glossy, green. *Inflorescences* axillary, unbranched, 7- to 11-flowered; peduncles slightly angular, 0.4-0.9 cm long. *Buds* pedicellate, fusiform, to 0.8-0.3 cm; operculum beaked. *Fruit* pedicellate, cupular (sometimes slightly urceolate), to 0.5 x 0.4 cm; rim thick; disc descending, whitish; valves 3(4), to rim level or enclosed.

*Specimens examined.* WESTERN AUSTRALIA: c. 6 km S of Cunderdin Hill, *M.I.H. Brooker* 8245 (FRI, PERTH, NSW); 34 and 80 km W of Coolgardie-Norseman road on Hyden track, *M.I.H. Brooker* 8352, 8354 (FRI, PERTH, NSW); 2.8 km E of Sanderson road on Glamoff road east of Wubin, *M.I.H. Brooker* 8430 (FRI, PERTH, NSW); 18.5 km S of Beacon on Bencubbin road, *M.I.H. Brooker* 8437 (FRI, PERTH, NSW); S side of Lake Wallambin, NW of Trayning, *M.I.H. Brooker* 8439 (FRI, PERTH, NSW); S side of Cowcowing Lakes, *M.I.H. Brooker* 8441 (FRI, PERTH, NSW); S side of Lake Rason, 152 km NW of airstrip, Great Victoria Desert, *M.I.H. Brooker* 8578 (FRI, PERTH, NSW); 6.4 km N of PNC road towards Lake Minigwal, *M.I.H. Brooker* 8596 (FRI, PERTH, NSW); Lake Minigwal, south side, 24 km W of approach track from S, *M.I.H. Brooker* 8600 (FRI, PERTH, NSW); 36.7 km N of Bullfinch towards Die Hardy Range, *M.I.H. Brooker* 8692 (FRI, PERTH, NSW); Wilson-Brooker road intersection with Newdegate-Ravensthorpe road, *M.I.H. Brooker* 8896 (FRI, PERTH, NSW); road to Dundas Rocks, S of Norseman, *M.I.H. Brooker* 8903 (FRI, PERTH, NSW).

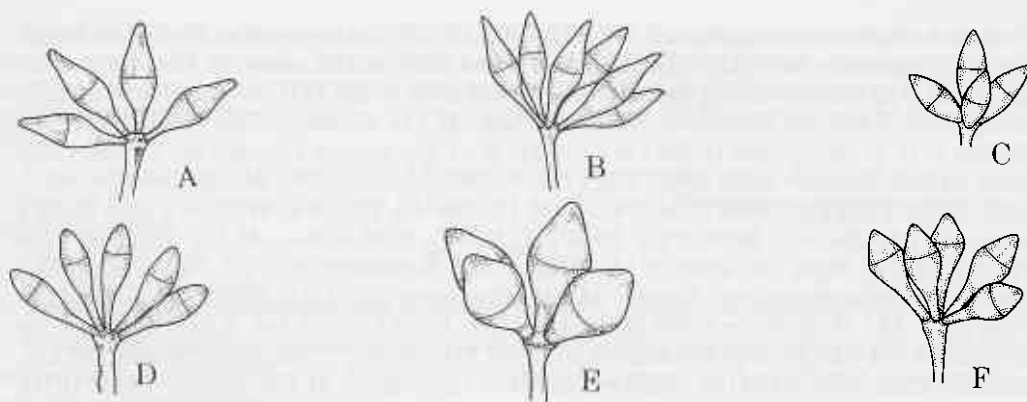


Figure 2. Buds of the new species of the "*E. series Foecundae*" (x 1.5).

A—*E. hypochlamydea* (MIHB 8412). B—*E. salicola* (MIHB 8439). C—*E. perangusta* (MIHB 8672). D—*E. latens* (MIHB 9046). E—*E. dissimulata* (MIHB 8768.) F—*E. kumarlensis* (MIHB 8905).

*Distribution.* Around salt lakes in the northern and southern wheatbelts, eastwards to at least Lake Minigwal and Lake Rason in the Great Victoria Desert, Western Australia. *E. salicola* may be the only eucalypt at some sites, at others it is associated with *E. salubris* F. Muell., *E. kondininensis* Maiden & Blakely, *E. sheathiana* Maiden and *E. melanoxylon* Maiden.

*Flowering periods.* February-April.

*Etymology.* The name is descriptive of the distinctive habitat (L. *salis*—salt, *cola*—dweller).

*Notes.* This species has the appearance of *E. salmonophloia* F. Muell., being a grey or pink smooth-barked tree to 20 m tall and 0.8 m dbh. Not all of the numerous salt lakes in its area of distribution have been checked but it seems likely that it will be found around many of them. Because it occurs in the western part of the Great Victoria Desert it will be of interest to seek it in similar situations of the South Australian part of the desert.

The sessile, orbicular to ovate, glaucous stem coppice leaves are frequently present and distinguish it readily from salmon gum which belongs in another series and on which stem coppice is not conspicuous (seedling and juvenile leaves are petiolate). The operculum of the bud is beaked.

Because of its size, form and adaptation to saline sites, *E. salicola* is likely to be a useful species for reclamation and fuelwood production.

### 3. *Eucalyptus perangusta* Brooker, sp. nov. (Figures 1, 2c, 3c)

Frutex "mallee" *Eucalypto formanii* Gardner affinis a qua habitu parviore multicauli, cortice laevi et foliis juvenilibus minus glaucis differt.

*Typus:* Oldfield's road east of Young River crossing, 9 April 1983, M.I.H. Brooker 8076 and S.D. Hopper (holo: PERTH; iso: FRI, NSW).

A mallee to 2 m tall with light grey to pinkish grey, smooth bark. *Juvenile leaves* sessile, opposite for many pairs, linear, to 7 x 0.5 cm. *Adult leaves* petiolate, alternating, linear, to 9 x 0.5 cm, concolorous, glossy, green. *Inflorescences* axillary, unbranched, 7-flowered; peduncles flattened, 0.2-1 cm long. *Buds* shortly pedicellate, fusiform, to 0.8 x 0.3 cm; operculum conical. *Fruit* pedicellate, cupular, to 0.5 x 0.4 cm; rim thick; disc descending, whitish; valves 3(4), enclosed.

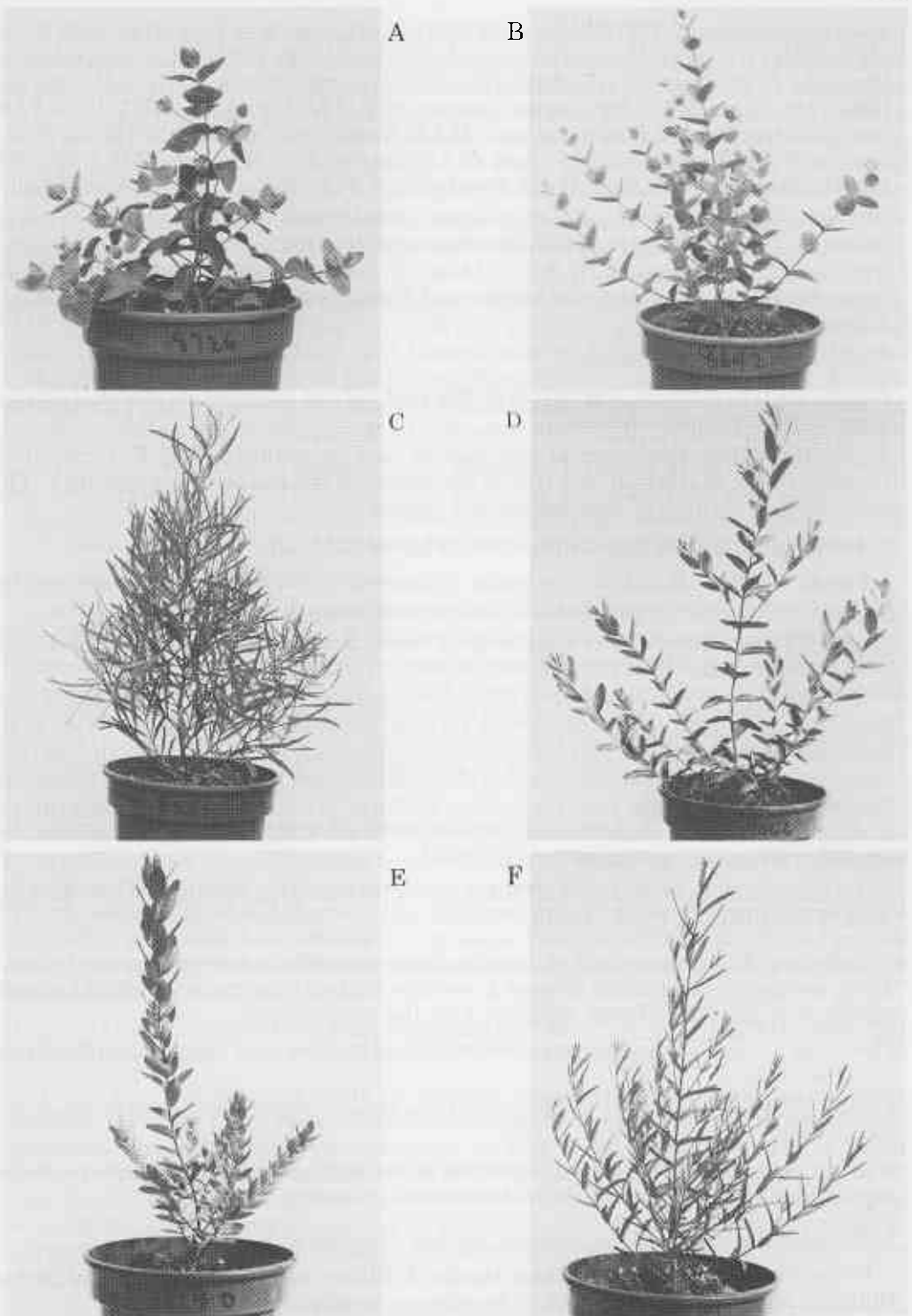


Figure 3. Seedlings of the new species of the "*E. series Foecundae*". A—*E. hypochlamydea* (MIHB 8726). B—*E. saticola* (MIHB 8692). C—*E. perangusta* (MIHB s.n. D—*E. latens* (MIHB 9046). E—*E. dissimulata* (MIHB 9140). F—*E. kumarlensis* (MIHB 8905).

*Specimens examined.* WESTERN AUSTRALIA: 11 miles S of Lake King, *R.D. Royce* 4164 (PERTH); prope Ravensthorpe, *C.A. Gardner* 13655 (PERTH); 2 miles NW of Ongerup, *K. R. Newbey* 125 (PERTH); Jerramungup, March 1967, *A.H. Bee* s.n. (PERTH); 35 km SW of Newdegate, January 1978, *J.M. Koch* s.n. (PERTH); 23.4 km from Rockhole road on Rawlinson road, *M.I.H. Brooker* 8077 (FRI, PERTH, NSW); 13 km N of Rolland's road on Field's road, *M.I.H. Brooker* 8672 (FRI, PERTH, NSW); 8.6 km N of North Kuendar road, *M.I.H. Brooker* 9106, 9107 (FRI, PERTH, NSW, MEL).

*Distribution.* From the Jerramungup region to north-east of Ravensthorpe, Western Australia, usually on white or yellowish white sand. It grows with a variety of other eucalypts including *E. tetragona* (R. Br.) F. Muell., *E. loxophleba* subsp. *gratae* Brooker, *E. leptocalyx* Blakely, *E. flocktoniae* Maiden and *E. spathulata* subsp. *grandiflora* (Benth.) Johnson & Blaxell.

*Flowering period.* January-April

*Etymology.* The name is descriptive of the very narrow leaves at all stages (*L. per*—exceedingly, *angustus*—narrow).

*Notes.* Herbarium specimens of this species may be confused with *E. formanii* C. Gardner which, in contrast, is a tree or few-stemmed tall mallee with rough bark. The operculum of the bud of *E. perangusta* is conical.

#### 4. *Eucalyptus latens* Brooker, sp. nov. (Figures 1, 2d, 3d)

Frutex "mallee" *Eucalypto foecundae* Schauer affinis a qua habitationi silvaticae, cortice laevi et foliis juvenilibus parvioribus glaucisque differt.

*Typus:* 0.6 km south of Pike's road north of North Bannister, 10 October 1985, *M.I.H. Brooker* 9046 (holo: PERTH; iso: FRI, NSW).

A mallee to 4 m tall with grey or coppery, smooth bark. *Juvenile leaves* sessile, opposite for many pairs, linear-oblong, to 4 x 0.8 cm, or narrowly elliptical and <1 cm wide, dull, glaucous. *Adult leaves* petiolate, alternating, narrowly lanceolate, to 9 x 0.7 cm, concolorous, glossy, green. *Inflorescences* axillary, unbranched, 7- to 11-flowered; peduncles flattened, 0.4-0.7 cm long. *Buds* pedicellate, fusiform, to 0.6 x 0.2 cm; operculum conical to slightly rounded. *Fruit* pedicellate, cupular, to 0.4 x 0.4 cm; rim thick; disc descending, whitish; valves 3(4), to rim level or enclosed.

*Other specimens examined.* WESTERN AUSTRALIA: type locality, *M.I.H. Brooker* 9344 (FRI, PERTH, NSW, MEL).

*Distribution.* *E. latens* consists of a single, almost pure stand of several hundred stems. There are two or three young trees of *E. wandoo* Blakely growing in the stand and one specimen of *E. falcata* Turcz. abutting it on the northern side.

*Flowering period.* Not known, but a few individual mallees were beginning to flower on 5th June 1986.

*Etymology.* The name refers to the populations being "hidden" in the jarrah forest (*L. latens*—hidden).

*Notes.* The linear-oblong, glaucous juvenile leaves distinguish it from other species in the series. The operculum of the bud is conical to slightly rounded.

#### 5. *Eucalyptus dissimulata* Brooker, sp. nov. (Figures 1, 2e, 3e)

Frutex "mallee" *Eucalypto albidae* Maiden & Blakely affinis, a qua foliis juvenilibus ellipticis, non glaucis, stylo recto, et fructibus cupulatis differt.

*Typus:* 30.3 km N of Needilup just S of Rabbit Proof Fence road, 30 November 1984, *M.I.H. Brooker* 8748 (holo: PERTH; iso: FRI, NSW, MEL, AD).



A mallee to 4 m tall with dark grey and light grey, smooth bark. *Juvenile leaves* sessile, opposite for many pairs, elliptical, slightly concave above, 3-4.5 x 1-1.5 cm, dull, blue-green to greyish green. *Adult leaves* petiolate, alternating, lanceolate, to 11 x 1.3 cm, concolorous, glossy, green (less glossy than leaves of *E. albida*). *Inflorescences* axillary, unbranched, 7-flowered; peduncles flattened, widening at top, to 0.8 cm long. *Buds* shortly pedicellate, rhomboidal to ovoid, to 1.1 x 0.5 cm; operculum conical, brilliant red near flowering. *Style* straight or only slightly bent. *Fruit* shortly pedicellate, cupular, often with a sharp rib continuing from the pedicel, to 0.6 x 0.6 cm; rim moderately thick; disc prominently raised on its outer perimeter and finally descending, whitish; valves 3, to rim level or enclosed.

*Other specimens examined.* WESTERN AUSTRALIA: 3.8 km N of railway at Burngup, M.I.H. Brooker 8752 (FRI, PERTH, NSW); 48 km E of Pingrup, M.I.H. Brooker 8757 (FRI, PERTH, NSW); 11.3 km N of Reserve road on Magenta road, M.I.H. Brooker 8784 (FRI, PERTH, NSW); 10 km E along East Road, E of Pingrup, M.I.H. Brooker 8849 (FRI, PERTH, NSW); 29.1 km N of Needilup, M.I.H. Brooker 9124 (FRI, PERTH, NSW); c. 25 km NE of Pingrup, M.I.H. Brooker 9140 (FRI, PERTH, NSW, MEL).

*Distribution.* Needilup, Pingrup, Lake Magenta, Burngup areas, often on white sandplain with laterite. It occurs with a variety of other eucalypts including *E. calycogona* Turz., *E. perangusta* Brooker, *E. scyphocalyx* Maiden & Blakely, and *E. conglobata* (R. Br. ex Benth.) Maiden and an undescribed species (*E. ser. Subcornutae*).

*Flowering period.* December-January.

*Etymology and notes.* The name (*L. dissimulatus*—pretending) alludes to the superficial similarities of *E. dissimulata* to *E. albida* from which it can be distinguished by the less glossy adult leaves, the elliptical juvenile leaves, the bright red opercula just before flowering, and the cup-shaped fruits which often have a sharp rib continuing from the pedicel and a prominent raised outer edge to the disc. The operculum of the bud is conical and contrasts with the usually slightly constricted operculum of *E. albida*. The fruit contrast with the somewhat obconical fruit of *E. albida*.

## 6. *Eucalyptus kumarlensis* Brooker, sp. nov. (Figures 1, 2f, 3f)

Arbor parva ad 10 m alta cortice laevi. Folia juvenilia sessilia, decussata, linearia, ad 5 x 0.6 cm. Folia adulta petiolata, alternantia, angusto-lanceolata, supra concava, ad 12 x 1 cm, nitentia, viridia. Inflorescentiae, axillares, 7, 9, 11-florae. Alabastra pedicellata, fusiformia vel rhomboidea, ad 0.6 x 0.3 cm, saepe quadrangulata basin versus. Opercula conica vel leviter rostrata. Stamina inflexa, fertilia. Fructus pedicellati, cupulati vel obconici, ad 0.4 x 0.4 cm.

*Typus:* 18 km W of highway on Lake King road (32° 41' S, 121° 22' E), 12 February 1985, M.I.H. Brooker 8843 (holo: PERTH; iso: FRI, NSW, MEL).

A tree to 10 m tall with white or coppery, smooth bark. *Juvenile leaves* sessile, opposite for many pairs, linear, concave above, to 5 x 0.6 cm, pale green. *Adult leaves* petiolate, alternating, narrowly lanceolate, to 12 x 1 cm, concolorous, glossy, green. *Inflorescences* axillary, unbranched, 7, 9, or 11-flowered; peduncles angular, to 1.2 cm long. *Buds* pedicellate, fusiform to rhomboidal, to 0.6 x 0.3 cm, often quadrangular towards the base; operculum conical to slightly beaked. *Fruit* pedicellate, cupular to obconical, to 0.4 x 0.4 cm; rim moderately thick; disc level to descending, whitish; valves 3(4), to rim level.

*Specimens examined.* WESTERN AUSTRALIA: 4 miles S of Salmon Gums, R.D. Royce 4055 (PERTH); 2.3 miles W of Norseman-Esperance road on Lake King road, M.I.H. Brooker 2510 (PERTH); 4.4 km W of Norseman-Esperance road on road to Lake

King, *M.I.H. Brooker* 5661 (FRI, PERTH, NSW); 18 km W of highway on Lake King road, *M.I.H. Brooker* 8843 (FRI, PERTH, NSW); 4.6 km W of Kumarl on Peak Charles road, *M.I.H. Brooker* 8905 (FRI, PERTH, NSW).

*Distribution.* South and south-west of Norseman, not associated with the numerous salt-lakes in the vicinity. West of Kumarl, the new species is associated with *E. eremophila* (Diels) Maiden.

*Flowering period.* January-March.

*Etymology.* The name refers to the district in which the species is most abundant.

*Notes.* The species has the appearance of a small salmon gum. The seedling leaves are very distinctive in the series, being linear and green. The operculum of the bud is conical to slightly beaked.

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