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**N.S.W.
RAINFOREST TREES
PART IX**

FAMILIES:

Euphorbiaceae

Anacardiaceae

Corynocarpaceae

Celastraceae

Siphonodontaceae

Icacinaceae

AUTHOR:

A.G. FLOYD



**FORESTRY COMMISSION OF N.S.W.
RESEARCH NOTE No. 41
Sydney 1980**

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N.S.W. RAINFOREST TREES

PART IX

FAMILIES:

**EUPHORBIACEAE,
ANACARDIACEAE,
CORYNOCARPACEAE,
CELASTRACEAE,
SIPHONODONTACEAE AND
ICACINACEAE**

AUTHOR

A. G. FLOYD

**FORESTRY COMMISSION OF NEW SOUTH WALES
SYDNEY, 1980**

AUSTRALIAN NATIONAL LIBRARY

ISBN 0 7240 4943 6
ISSN 0085-3984

INTRODUCTION

This is the ninth in a series of research notes of the Forestry Commission of N.S.W. describing the rainforest trees of the state.

Current publications by the same author are:

Research Note No. 3 (Second Edition 1979)—

N.S.W. Rainforest Trees.

Part I, Family *Lauraceae*.

Research Note No. 7* (1961)—

N.S.W. Rainforest Trees.

Part II, Families *Capparidaceae*, *Escalloniaceae*, *Pittosporaceae*, *Cunoniaceae*, *Davidsoniaceae*.

Research Note No. 28 (Second Edition 1979)—

N.S.W. Rainforest Trees.

Part III, Family *Myrtaceae*.

Research Note No. 30 (Second Edition 1979)—

N.S.W. Rainforest Trees.

Part IV, Family *Rutaceae*.

Research Note No. 32 (1977)—

N.S.W. Rainforest Trees.

Part V, Families *Sapindaceae*, *Akaniaceae*.

Research Note No. 34 (1977)—

N.S.W. Rainforest Trees.

Part VI, Families *Podocarpaceae*, *Araucariaceae*, *Cupressaceae*, *Fagaceae*, *Ulmaceae*, *Moraceae*, *Urticaceae*.

Research Note No. 35 (1978)—

N.S.W. Rainforest Trees.

Part VII, Families *Proteaceae*, *Santalaceae*, *Nyctaginaceae*, *Gyrostemonaceae*, *Annonaceae*, *Eupomatiaceae*, *Monimiaceae*.

Research Note No. 38 (1979)—

N.S.W. Rainforest Trees.

Part VIII, Families *Mimosaceae*, *Caesalpinaceae*, *Papilionaceae*, *Simaroubaceae*, *Burseraceae*, *Meliaceae*.

* In association with H. C. Hayes

Another work by this author, Research Note No. 27 "Key to Major Rainforest Trees in N.S.W.", identifies species by features in the leaves.

In this part, a further 37 species of rainforest trees in the families *Euphorbiaceae*, *Anacardiaceae*, *Corynocarpaceae*, *Celastraceae*, *Siphonodontaceae* and *Icacinaceae* have been described and illustrated with emphasis on field characteristics. This and future research notes in the series will deal with the families of rainforest trees in the order adopted by the National Herbarium of N.S.W. Diagnostic features are shown in italics. Standard Trade Names used are those in Australian Standard ASO2-1970 "Nomenclature of Australian Timbers".

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The locations in N.S.W. for each species are shown in latitudinal order of the major river systems; and where on State Forests (S.F.), Flora Reserves (F.R.), National Parks (N.P.) and Nature Reserves (N.R.), their location from the nearest large town is listed in the appendix.

FAMILY EUPHORBIACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

Represented by twenty-four species in fifteen genera.

They are usually only small trees (except *Austrobuxus*), often being fast-growing secondary species in disturbed rainforest or on its margins.

None are renowned for ornamental and economic purposes. Whereas the flowers are usually insignificant, *Croton insularis*, *Macaranga tanarius* and *Omalanthus populifolius* could be grown for their ornamental leaves. *Petalostigma* spp. have attractive orange-yellow fruit whilst *Drypetes australasica* has showy red fruit (the latter however is dioecious and requires two trees of opposite sexes).

Buttressing is absent in this family, although *Austrobuxus* and *Baloghia lucida* exhibit some fluting at the base of the trunk.

Outer Bark—Mostly cream, grey or grey-brown, brown (*Bridelia exaltata*, *Croton insularis*, *Croton stigmatosus*, *Croton verreauxii*, *Excoecaria agallocha* and *Glochidion*) or red-black (*Actephila*). Smooth, pimply to flaky (*Austrobuxus*, *Baloghia lucida*, *Croton stigmatosus*, *Drypetes*, *Excoecaria agallocha*, *Glochidion perakensense* and *Macaranga tanarius*) or fissured (*Bridelia*, *Croton insularis*, *C. verreauxii*, *Glochidion ferdinandi* and *Petalostigma*).

Inner Bark—Pink to red or cream to brown (*Baloghia marmorata*, *Claoxylon australe*, *Croton stigmatosus*, *Drypetes australasica* and *Omalanthus*). Exuding a milky sap in *Excoecaria* spp. or a clear sap which turns red in *Baloghia lucida*. Fragrant in *Croton* spp. (except *C. acronychioides* which is reminiscent of fish oil). Very bitter in *Petalostigma* spp., *Drypetes* and *Austrobuxus*.

Leaves—Alternate, opposite (*Baloghia* spp., *Mallotus claoxyloides* and *Austrobuxus*) or grouped (*Baloghia marmorata* and *Croton insularis*). Simple, entire or toothed (*Austrobuxus*, *Croton* spp. except *C. insularis*, *Excoecaria* spp., *Claoxylon*, *Coelebogyne* and *Drypetes*). White or silvery beneath in *Bridelia*, *Cleistanthus*, *Croton insularis* and *C. stigmatosus*, *Macaranga*, *Mallotus discolor* and *M. philippensis*, *Omalanthus* and *Petalostigma*. Hairy in *Croton stigmatosus*, *Mallotus claoxyloides*, *M. discolor* and *Petalostigma* spp. Shoots and young leaf stalks exuding a milky sap in *Excoecaria* spp. and *Omalanthus*, or clear sap in *Baloghia* spp. *Croton* spp. have round scales on the new shoots and leaves, whilst *Mallotus discolor* has yellow glands and *M. philippensis* red glands on the lower side of the leaves when viewed with a lens. Two small glands are present on the stem at the base of the leaf blade in *Claoxylon*, *Croton*, *Excoecaria*, *Mallotus* and *Omalanthus*. *Baloghia* is characterized by the glands being situated about 5 mm from the base of the leaf on its margins.

In *Macaranga* the leaf stalk is inserted into the leaf blade several cm from the edge with nine major lateral veins radiating from this point. In *Mallotus* the basal pair of lateral veins are longer and more prominent than the remainder.

Stipules at the base of the young leaf stalks may be up to 2 cm long in *Macaranga* (pointed) and *Omalanthus* (rounded) or 1–2 cm long in *Glochidion*. In *Actephila* and *Cleistanthus* the stipules are small and quickly shed but the scars remain as thickened lumps on the branchlets.

Flowers—Usually insignificant (except *Baloghia*), white or creamy-green, either male or female located in separate inflorescences or different sections of the same inflorescence (on separate trees in *Coelebogyne*, *Drypetes* and *Mallotus* usually). The female flowers are usually in racemes, spikes or clusters; but are single in *Glochidion ferdinandi*, *Drypetes* and *Petalostigma*. Although mainly in the leaf axils, they may be at the ends of the branchlets in *Baloghia*, *Croton*, *Mallotus* and *Omalanthus*. In *Glochidion perakense* they are on the stem between the axils. Petals are often absent, or if present are four to six (*Actephila*, *Bridelia*, *Cleistanthus*, males only of *Baloghia* and *Croton*). Stamens are generally five to thirty, except *Excoecaria*, *Actephila* and *Glochidion* (two to three) and *Bridelia*, *Actephila* and *Cleistanthus* (five).

Carpels are two to three or more, either united or one to two-celled. The stigma is petal-like in *Petalostigma*.

Fruit—Usually a three-lobed capsule (two-lobed in *Austrobuxus* and *Omalanthus*, but five to seven-lobed in *Glochidion*) which opens explosively leaving behind the persistent axis; less commonly a drupe which does not open (*Drypetes* red with one seed, *Bridelia* orange-brown with two seeds and *Petalostigma* yellow with four to eight seeds).

Habitat—Mainly in dry and littoral rainforests or on the margins of rainforest. Represented in warm temperate rainforest by only *Baloghia lucida*, *Claoxylon* and *Omalanthus*. Absent from cool temperate rainforest.

Distribution—Twelve of the fifteen genera are well represented in tropical south-east Asia from which they may have originated. However, of the remainder, *Coelebogyne* is endemic to the Australian east coast, *Austrobuxus* to Malaysia, New Caledonia, Fiji and a single Australian species restricted to the McPherson-Macleay Overlap of Burbridge whilst *Baloghia* is in New Caledonia, Norfolk Island, Lord Howe Island and eastern Australia with *B. marmorata* restricted to Alstonville in the Richmond Valley and Mt Tamborine to the north of the McPherson Range. Whereas *Baloghia lucida*, *Drypetes australasica* and *Omalanthus populifolius* all occur on Lord Howe Island, none of the N.S.W. rainforest genera are recorded for New Zealand (although a species of *Omalanthus* is endemic to the Kermadec Island to the north-east). Five of the species in N.S.W. also extend across north Australia to the Northern Territory but not further north into New Guinea (*Croton verreauxii*, *Drypetes*, *Glochidion* spp. and *Petalostigma pubescens*.) Only four species extend further south than the Illawarra, namely *Baloghia lucida*, *Claoxylon australe*, *Glochidion ferdinandi* and *Omalanthus populifolius*. The last species alone is found south of Bermagui and into Victoria.

KEY TO THE RAINFOREST TREE SPECIES OF EUPHORBIACEAE IN N.S.W.

A. USING LEAVES AND BRANCHLETS ONLY

- 1. Leaves opposite 2
- 2. Leaves with scattered hairs on both sides *Mallotus claoxyloides*
J. Muell.
- 2. Leaves quite smooth 3
- 3. Leaf margin finely toothed .. *Austrobuxus swainii* (de Beuz. &
White) Airy Shaw
- 3. Leaf margin not toothed 4
- 4. Leaf stalk short, 6-9 mm *Baloghia lucida* Endl.
- 4. Leaf stalk long, 2-4 cm *Baloghia marmorata* C. T. White
- 1. Leaves alternate 5
- 5. Young leaf stalk exuding milky sap 6
- 6. Leaf stalk 2-9 cm long *Omalanthus populifolius* Grah.
- 6. Leaf stalk not exceeding 2 cm long 7
- 7. Leaves rounded or shortly pointed.... *Excoecaria agallocha* L.
- 7. Leaves with a long point *Excoecaria dallachyana*
(Baill.) Benth.
- 5. Young leaf stalk not exuding milky sap 8
- 8. Leaves grey or white beneath 9
- 9. Leaf stalk inserted inside the leaf edge *Macaranga tanarius*
(L.) J. Muell.
- 9. Leaf stalk inserted on or close to the leaf edge 10
- 10. Leaves silvery satin beneath 11
- 11. Midrib scaly beneath, leaves not toothed *Croton insularis*
Baill.
- 11. Midrib hairy beneath, leaves with small teeth
Croton stigmatosus F. Muell.
- 10. Leaves dull grey beneath 12
- 12. Leaves without a pronounced basal pair of veins 13
- 13. Leaf-bearing branchlets hairy to the naked eye 14
- 14. Leaves 2-5 cm long, broad-elliptic to round
Petalostigma pubescens Domin.
- 14. Leaves mostly over 5 cm long, narrow-elliptic,
pointed *Petalostigma triloculare* Muell. Arg.
- 13. Leaf-bearing branchlets smooth 15
- 15. Leaves merging into the leaf stalk, young branch-
lets hairy *Cleistanthus cunninghamii* J. Muell.
- 15. Leaves abruptly tapering into the leaf stalk, young
branchlets smooth *Bridelia exaltata* F. Muell.

12. Leaves with a pronounced basal pair of veins 16
16. Yellow glands visible with a lens on underside of leaves... *Mallotus discolor* (F. Muell.) F. Muell. ex Benth.
16. Red glands visible with a lens on underside of leaves
Mallotus philippensis (Lam) J. Muell.
8. Leaves paler green beneath 17
17. Leaves toothed 18
18. Teeth two to four on each side, prickly
Coelebogyne ilicifolia J. Sm.
18. Teeth more than six 19
19. New shoots with rounded scales 20
20. Teeth numerous, 20-60 per side *Croton verreauxii* Baill.
20. Teeth distant, 10-20 per side .. *Croton acronychioides*
F. Muell.
19. New shoots not scaly 21
21. New shoots and buds with dense long golden hairs
Claoxylon australe Baill.
21. New shoots and buds with short fawn down or
smooth *Drypetes australasica*
(J. Muell.) Pax & K. Hoffm.
17. Leaves entire..... 22
22. New shoots with rounded scales .. *Croton verreauxii* Baill.
22. New shoots without rounded scales 23
23. Two glands on leaf margin about 5 mm above stalk ..
Baloghia marmorata C. T. White
23. Glands as above absent 24
24. Paired stipules at base of leaf stalk conspicuous with
a lens, 1-2 mm long, persistent 25
25. Stipules triangular, pointed 26
26. Leaves in two rows along the branchlets, re-
sembling a pinnate leaf *Glochidion ferdinandi*
(J. Muell.) F. M. Bail.
26. Leaves irregularly arranged
Cleistanthus cunninghamii J. Muell.
25. Stipules broad triangular, rounded
Glochidion perakense Hook. f.
var. *supra-axillare* (Benth.) Airy Shaw
24. Paired stipules absent or not obvious with a lens .. 27
27. Leaf blade quickly tapering into stalk, young
shoots downy *Drypetes australasica*
(J. Muell.) Pax & K. Hoffm.
27. Leaf blade gradually tapering into stalk, young
shoots quite smooth *Actephila lindleyi*
(Stend.) Airy Shaw

B. USING BARK ONLY

1. Sap copious, milky or turning red 2
2. Sap milky 3
 3. Outer bark brown, scaly *Excoecaria agallocha* L.
 3. Outer bark light grey, smooth *Excoecaria dallachyana* (Baill.) Benth.
2. Sap turning red *Baloghia lucida* Endl.
1. Sap meagre, clear..... 4
4. Inner bark yellow to brown without reddish tints 5
 5. Blaze yellow-brown with lateral wavy lines
Drypetes australasica (J. Muell.) Pax & K. Hoffm.
 5. Blaze brown to orange-yellow without lateral lines 6
 6. Blaze pale brown with vertical yellow-brown or white stripes 7
 7. Stripes white, underbark brown *Croton stigmatosus* F. Muell.
 7. Stripes yellow-brown, underbark fawn .. *Claoxylon australe* Baill.
 6. Blaze without vertical stripes 8
 8. Blaze biscuit brown, copious clear sap *Baloghia marmorata* C. T. White
 8. Blaze creamy-yellow, scanty milky sap
Omalanthus populifolius Grah.
4. Inner bark with pink or red tints 9
9. Bark fissured 10
10. Underbark uniform creamy-fawn *Petalostigma triloculare* Muell. Arg.
10. Underbark brown to red-brown 11
 11. Underbark dark brown with lateral cream lines.....
Glochidion ferdinandi (J. Muell.) F. M. Bail.
 11. Underbark without lateral cream lines..... 12
 12. Blaze uniform bright red at first *Bridelia exaltata* F. Muell.
 12. Blaze red or pink with white vertical stripes 13
 13. Underbark pale brown, blaze red with white streaks
Croton insularis Baill.
 13. Underbark chocolate brown, blaze pink with white streaks *Croton verreauxii* Baill.
9. Bark not fissured 14
14. Bark craterous *Austrobuxus swainii* (de Beuz. & White)
14. Bark smooth, pimply or scaly 15
 15. Underbark red-black .. *Actephila lindleyi* (J. Muell.) Baill.
 15. Underbark brown to cream 16

16. Underbark chocolate-brown with a white outer layer
Glochidion perakense
 Hook. f. var. *supra-axillare* (Benth.) Airy Shaw
16. Underbark pale brown to cream without a white outer layer 17
17. Outer layer of live bark dark brown, then red-brown to pink *Croton acronychioides* F. Muell.
17. Outer layer of live bark pink to red 18
18. Blaze with lateral wavy lines or bands 19
19. Underbark cream, bark smooth
Cleistanthus cunninghamii J. Muell.
19. Underbark fawn-brown, bark pimply
Macaranga tanarius (L.) J. Muell.
18. Blaze with vertical lines or streaks only 20
20. Sapwood margin yellow 21
21. Sapwood margin turning brown after ten minutes *Mallotus discolor*
 (F. Muell.) F. Muell. ex Benth.
21. Sapwood margin fading slightly after ten minutes .. *Mallotus philippensis* (Lam.) J. Muell.
20. Sapwood margin pale pink 22
22. Outer surface of live bark bright green
Mallotus claoxyloides (F. Muell.) J. Muell.
22. Outer surface of live bark red-brown and green *Coelebogyne ilicifolia* J. Sm.

ACTEPHILA LINDLEYI (Stend.) Airy Shaw

Synonym—*Actephila grandifolia* (J. Muell.) Baill., *A. mooreana* Baill.

Reference—Kew Bull. 25 (3), 496–9, 1974.

Derivation—*Actephila* from Greek “acte” the sea-shore and “philos” fond, referring to their commonly coastal occurrence; *lindleyi* after John Lindley (1799–1865), professor of botany at University College, London and writer on Western Australian plants.

Common Name—*Actephila*.

Standard Trade Name—None.

A shrub or small tree growing to a height of about 12 m, but generally not so tall. Stem diameter 17 cm.

Trunk—Cylindrical or sometimes slightly angular or buttressed. Crooked.

Outer Bark—Dark reddish-black, smooth often with a finely wrinkled surface and vertical rows of fine lenticels. Underbark dark reddish-black. Outer surface of live bark biscuit with dark red streaks.

Inner Bark—Blaze on a tree 10 cm diameter creamy-brown with red-brown speckles at the outer margin. Inner margin turns a dull green after several minutes exposure. No taste but freshly cut bark has an unpleasant cyanide or onion smell. 3 mm thick.

Branchlets—Thick, brown, smooth, often finely wrinkled, marked by pale lenticels and sometimes with rough protuberances at the nodes. A few leaf scars sometimes visible.

Leaves—Alternate, simple, not toothed, lanceolate or oblong-lanceolate, 7–18 cm long, drawn out into a blunt or fairly fine point at the tip, tapering at the base. Smooth glossy green above, paler green beneath, thick. Leaf stalks 6–25 mm long, channelled above. Stipules inconspicuous, quickly shed, round, brown, smooth.

Venation—Midrib distinct, main veins generally raised on both surfaces.

Flowers—Greenish-yellow, unisexual in axillary clusters with flowers of both sexes in the same cluster. Flower stalks 6–25 mm. Male sepals five or six, about 6 mm diameter, females larger. Petals very small. Stamens three to six. Ovary three-celled with three-forked styles. Flowering period August to November.

Fruit—A dry capsule, red-brown, slightly depressed-globular with three rounded lobes, each lobe splitting in two, 12 mm diameter. The three styles often persist at the apex of the fruit and the calyx at the base. Fruit ripe April to June.

Habitat—Subtropical, riverine, dry and littoral rainforests.

Distribution—From Kiama, N.S.W. to Iron Range, North Queensland. Recorded in N.S.W. from Kiama, Cape Hawke, Bellangry S.F., Carrai S.F., Way Way S.F., Bruxner Park F.R., Kangaroo River S.F., Horton's Creek, Blandford Creek F.P., Chandlers Creek, Cherry Tree S.F., Cambridge Plateau, Toonumbar S.F., Unumgar S.F., Beaury S.F., Koreelah S.F., Mt Lindesay, Roseberry S.F., Lever's Plateau, Wiangaree S.F., Big Scrub F.R., Boatharbour, Wilson's Park, Booyong, Johnson's Scrub, Hayter's Hill, Brunswick Heads N.R., Limpinwood N.R., Upper Crystal Creek and Stott's Island N.R.

Timber and Uses—Wood yellowish-brown, fairly hard and close-grained. Suitable for small turnery.



0 2 4 cm

Plate No. 1

Actephila lindleyi (Stend.) Airy Shaw

AUSTROBUXUS SWAINII (de Beuz. & White) Airy Shaw

Synonym—*Longetia swainii* de Beuz. & White.

Reference—Kew Bull. 25 (3), 508, 1971.

Derivation—*Austrobuxus* from Latin “austro” southern and “buxus” the box tree, referring to the similarity of the type species from Malaysia to that of the box; *swainii* after E. H. F. Swain, forester and botanical collector in the Bellingen district and later Commissioner of Forests in N.S.W.

Common Name—Pink Cherry, Hairybark, Pinkwood.

Standard Trade Name—None.

A large tree up to 37 m high and 100 cm diameter. The crowns often have a few bright red leaves similar to *Elaeocarpus grandis*.

Trunk—Often flanged or irregular in shape, slightly buttressed.

Outer Bark—Light grey to brown, *scaly*, shedding in irregular patches and leaving shallow depressions. Underbark light grey. Outer surface of live bark bright pink.

Inner Bark—Blaze on a tree 95 cm diameter pink to red, becoming paler towards the sapwood, woolly in texture. When cut, numerous fine hair-like processes can be seen imbedded in the bark, hence the common name, “hairybark”. Blaze changes after ten minutes exposure to tan-brown, except for the yellow sapwood margin which turns yellow-brown. Very bitter taste, no distinctive smell. 9 mm thick. The bark and blaze is similar to that of Bolly Gum (*Litsea reticulata*).

Branchlets—Slender, grey to fawn, clothed in numerous whitish lenticels, wrinkled and angular, becoming hairy and flattened toward the tip. Young shoots with fine, brown hairs.

Leaves—*Opposite*, simple, *finely toothed*, lanceolate, 5–10 cm long, drawn out to a long blunt point at the tip, tapering gradually to the base. Green, smooth and shining on both surfaces, Leaf stalks 6–9 mm long, smooth and green.

Venation—Lateral and a few net veins visible and distinct on both surfaces. Midrib raised on both surfaces. Net veins more prominent on the lower surface.

Flowers—Greenish-yellow in panicles up to 25 mm long in the forks of the leaves. Separate male and female flowers on the same branch. Male flowers with four broad rounded concave sepals about 2 mm across. Stamens eight, about 3 mm long including the oval anthers which are about 1 mm long, arising from a small hemispherical disk. Female flowers also with four sepals surrounding an egg-shaped two-celled hairy ovary surmounted by two small gland-like stigmas. Flowering period April to June.



Plate No. 2

Austrobauxus swainii (de Beuz. & White) Airy Shaw

Fruit—A capsule, dark brown, oval, about 13 mm long bearing two thick styles at the apex. Splitting into four equal parts exposing two glossy, brown, oval seeds about 6 mm long suspended from the top of the axis after the outer covering has fallen away. Attached to the top and *draping over the shoulders of each seed is a dense plume of yellow filaments.* Fruit ripe February to March.

Habitat—On the poorer sedimentary soils, generally in association with coachwood.

Distribution—From Bellinger River, N.S.W. to Tallebudgera, South Queensland. Recorded in N.S.W. from Bellinger River S.F., Deervale, Dome Mountain, Bruxner Park, Never Never S.F., Orara West S.F., Orara East S.F., Kangaroo River S.F., Wild Cattle Creek S.F., Black Bull F.R., Moonpar S.F., Wiangaree S.F., Mebbin Rock, Terania Creek, Big Scrub F.R., Whian Whian S.F., Boomerang Falls, Wilson's Creek, Nullum S.F., Numinbah and Couchy Creeks and Bilambil.

Timber and Uses—Wood pink or pinkish-red, moderately soft and close-textured. Has no particular uses but could be used for cabinet work and indoor fittings.

BALOGHIA LUCIDA Endl.

Reference—Prod. Fl. Norf. 84, 1833.

Derivation—Baloghia after Dr Joseph Balogh, author of a book on Transylvanian Plants; lucida from Latin "lucidus" shining, referring to its glossy leaves.

Common Name—Brush Bloodwood, Ivory Birch, Scrub Bloodwood.

Standard Trade Name—Scrub Bloodwood.

A tree attaining a height of 24 m and a stem diameter of 50 cm.

Trunk—Usually cylindrical, but occasionally slightly fluted.

Outer Bark—Creamy-brown, smooth with small square plates, *raised dark brown areas and rusty streaks*. Underbark creamy-brown. Outer surface of live bark mottled green and pink.

Inner Bark—Blaze on a tree 25 cm diameter pale pink with darker vertical streaks. Exuding a *pale sap* when freshly cut which *changes almost instantly to bright red* to turn the cut surface orange-brown. No taste or smell. Sapwood white. 5 mm thick.

Branchlets—Thick, leaf-bearing branchlets green, not hairy; older branchlets grey.

Leaves—*Opposite*, simple, not toothed, oval elliptical, or *oblong*, mostly broader in the upper half, 7–13 cm long. Shortly and bluntly tapering at the tip and tapering at the base. Smooth, green and shining both surfaces, paler beneath, *thick*. On the *margins at the base of the leaf about 6 mm above the stalk are two swollen glands*. Numerous translucent dots visible when viewed with a lens. Leaf stalks 6–9 mm long, smooth, green, slightly channelled on the upper surface.

Venation—Midrib sunken on the upper surface, raised below. Lateral veins numerous, almost at right angles to the midrib and prominent on both sides.

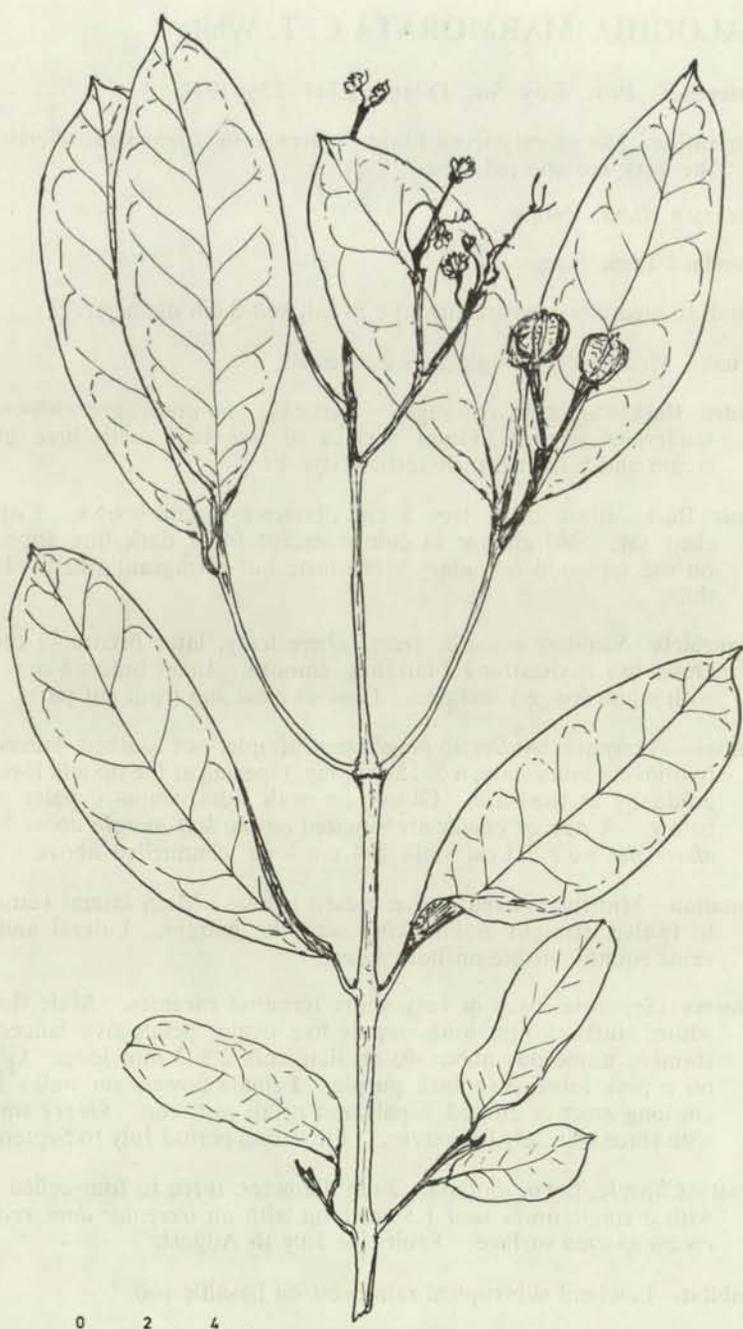
Flowers—White, cream to pale pink, fragrant, in short racemes at the ends of the branchlets. Separate male and female racemes on the same tree. Individual flower stalklets 6–13 mm long. Calyx divided almost to the base into four to five oval lobes about 5 mm long. Petals five, white or cream to pale pink, elliptical, nearly 13 mm long. Male flowers with numerous (over fifteen) slender stamens, about 4 mm long, shortly united at the base where they are surrounded by an irregularly lobed disk. The three-lobed ovary has a two-branched style at the top of each lobe. Flowering period mainly September to October but extending from May to January.

Fruit—A capsule, brown, globular, hard, 12–18 mm diameter, slightly three-lobed and definitely three-celled. The lobes tend to separate at maturity and each splits down the back to expose the single oval seed about 8 mm long in each cell. Fruit ripe mainly in May but through to December.

Habitat—Common in most rainforests except cool temperate (Nothofagus).

Distribution—Well distributed along the coast from Tilba Tilba, N.S.W. to Coen, North Queensland. Also in New Caledonia, Lord Howe and Norfolk Islands. Recorded in N.S.W. from Tilba Tilba, Milton, Cambewarra Mountain, Jamberoo, Kiama, Mt Kembla, Liverpool Range, Upper Williams River, Bulahdelah, Myall Lakes N.P., Seal Rocks, Cape Hawke, Black Head, Saltwater, Harrington, Wingham Brush, Gloucester, Weelah N.R., Boorganna N.R., Black Creek F.R., Middle Brother Mountain, Port Macquarie, Doyle's River S.F., Bellangry S.F., Kunderang Brook, Willi Willi N.R., Wollomombi Falls, Guy Fawkes N.P., Way Way S.F., Oakes S.F., New England N.P., Deervale, Bellinger River S.F., Dorrigo N.P., Orara West S.F., Mt Coramba, Woolgoolga Creek F.R., Conglomerate S.F., Kangaroo River S.F., Wild Cattle Creek S.F., Cloud's Creek S.F., Hyland S.F., Marengo S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Gibraltar Range N.P., Willowee Creek, Rivertree, Mt Pikapene S.F., Toonumbar S.F., Unungar S.F., Yabbra S.F., Beaury S.F., Acacia Plateau, Mt Wilson, Mt Clunie, Nothofagus Mountain F.R., Mt Lindesay, Moore Park, Mt Glennie, Lever's Plateau, Wiangaree S.F., Goonimbar S.F., Terania Creek, Whian Whian S.F., Big Scrub F.R., Minyon Falls F.R., Wilsons Park, Booyong, Victoria Park N.R., Hayter's Hill, Brunswick Heads N.R., Mt Warning N.P., Limpinwood N.R., Couchy Creek, Mt Cougal and Round Mountain.

Timber and Uses—Wood buff to light red-brown, fine and close-grained. Suitable for flooring and small turnery. Weight 650–850 kg per cubic metre. The red sap forms a red indelible pigment.



P. Condon

Plate No. 3
Baloghia lucida Endl.

BALOGHIA MARMORATA C. T. White

Reference—Proc. Roy. Soc. Q'land, L111, 226, 1942.

Derivation—Marmorata from Latin "marmoratus" marbled, referring to the dark red spotted seeds.

Common Name—None.

Standard Trade Name—None.

Small to medium-sized tree up to 8 m tall and 8 cm diameter.

Trunk—Moderately straight, not buttressed.

Outer Bark—Smooth or slightly vertically fissured, greenish-cream. Underbark cream. Outer surface of live bark with lime green, cream and biscuit-brown vertical streaks.

Inner Bark—Blaze on a tree 8 cm diameter biscuit-brown. Copious clear sap. No change in colour except for a dark line appearing on the sapwood boundary. No taste but a fragrant smell. 1 mm thick.

Branchlets—Slender, smooth, green where leafy, later becoming cream. Outer bracts sheathing 2 cm long, smooth. Inner bracts 6 mm long with white fringed margins. *Copious clear sap* from cut parts.

Leaves—Alternate, *tending to be grouped*, simple, not toothed, lanceolate to obovate-lanceolate, 6.5–15 cm long, tapering at the tip and tapering gradually at the base. Glossy on both sides, smooth, paler green below. *A pair of glands are situated on the leaf margin about 5 mm above the stalk.* Leaf stalk 2–4 cm long, channelled above.

Venation—Midrib grooved above, raised below. Main lateral veins ten to twelve, straight and forking near the margin. Lateral and net veins equally visible on both sides.

Flowers—Separate sexes in very short terminal racemes. Male flowers white, stalks 5 mm long, sepals five ovate, petals five lanceolate, stamens numerous about 40 on filaments 2.5–3 mm long. Glands on a pink lobed disc dark purple. Female flowers on stalks 1–1.5 cm long erect or curved, sepals and petals not seen. Ovary smooth with three or rarely four styles. Flowering period July to September.

Fruit—Capsule, fawn, globular, 2 cm diameter, three to four-celled each with a single *ovoid seed* 1.5 cm long with an *irregular dark red and cream spotted surface.* Fruit ripe July to August.

Habitat—Lowland subtropical rainforest on basaltic soil.

Distribution—Victoria Park N.R., N.S.W. and Tamborine Mountain, Queensland only.

Timber and Uses—Too small to be used.



Plate No. 4
Baloghia marmorata C. T. White

BRIDELIA EXALTATA F. Muell.

Reference—Fragm. Phyt. Aust. V 3, 32, 1862–3.

Derivation—Bridelia after Professor S. E. de Bridel, a French worker on mosses; exaltata from Latin “exaltatus” lofty, referring to its height.

Common Name—Scrub Ironbark, Grey Birch, Brown Birch.

Standard Trade Name—Scrub Ironbark.

A medium sized tree attaining a height of 25 m and a stem diameter of 90 cm.

Trunk—Usually cylindrical and without buttresses.

Outer Bark—Dark brown, coarsely fissured with corky plates, very tough. Underbark dark red-brown. Outer surface of live bark deep red.

Inner Bark—Blaze on a tree 45 cm diameter bright red, fibrous, in thin layers. The fibres oxidize to white vertical strands. Astringent, no smell. 15 mm thick.

Branchlets—Green, becoming brown and finely wrinkled, not hairy, dotted with paler scattered lenticels.

Leaves—Alternate, simple, not toothed, elliptical or narrowly elliptical, 5–13 cm long (coppice leaves sometimes very large), drawn out to a blunt point at the tip and rounded at the base, glossy above, hairy on the underside. Green above and waxy grey-green beneath, thin. Leaf stalks 3–5 mm long, finely hairy and purplish or green.

Venation—Midrib, lateral and net veins visible on both sides, but raised below.

Flowers—Greenish-yellow. Separate male and female flowers, but often on the same tree and in the same clusters of about six or less in the forks of the leaves or the scars of fallen leaves. Up to 6 mm diameter on stalks up to 2 mm long. Sepals of four to five triangular lobes. Petals, four to five, toothed, inserted between and shorter than the sepals. A flat circular disk is in the centre of the flower. Male flowers with five stamens about 5 mm long, united at the base and surrounding an abortive ovary; female flowers with an egg-shaped, hairless ovary. Flowering period July.

Fruit—A drupe, shiny orange-brown with small yellow-green spots, globular, 1 cm diameter. The fleshy, sticky, astringent outer coat surrounds an angular “stone” 8 mm diameter, generally two-celled and containing one seed in each cell when ripe. Eaten readily by birds. Fruit ripe March to July.

Habitat—Common in dry rainforest and on its margins. Also in riverine rainforest with black bean (*Castanospermum australe*).



0 2 4 cm

Plate No. 5
Bridelia exaltata F. Muell.

Distribution—Manning River, N.S.W. to Collinsville, Queensland. Recorded in N.S.W. from Black Head, Saltwater, Old Bar, Manning Point, Harrington, Port Macquarie, Point Plomer, Big Hill, Bellangry S.F., Willi Willi N.R., Smoky Cape, Shark Island, Allgomer Creek, Warrell Creek, Bellingen, Bundagen F.R., Madman's Creek F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Glenugie F.R., Rivertree, Mt Pikapene S.F., Iluka N.R., Cherry Tree S.F., Toonumbar S.F., Unungar S.F., Yabtra S.F., Koreelah S.F., Roseberry S.F., Lever's Plateau, Wiangaree S.F., Whian Whian S.F., Boatharbour, Wilson Park, Davis Scrub, Johnson's Scrub, Victoria Park N.R., Hayter's Hill, Broken Head N.R., Brunswick Heads N.R., Tumbulgum and Stott's Island N.R.

Timber and Uses—Wood dark brown, hard and close-grained, resembling walnut. Suitable for flooring, scantling, hard turnery and cabinet work. The leaves are suspected of being poisonous to cattle. Weight 900 kg per cubic metre.

CLAOXYLON AUSTRALE Baill.

Reference—Etud. Euphorb. 493, 1858.

Derivation—Claoxylon from Greek “klaos” to break off and “xylon” wood, referring to the brittle stems; australe from Latin “australis” southern because this species alone extends as far south as N.S.W.

Common Name—Brittlewood.

Standard Trade Name—None.

A shrub or small straggling tree growing to a height of about 9 m and a trunk diameter of about 30 cm.

Trunk—Cylindrical or slightly flanged at the base when large.

Outer Bark—Greyish-brown, smooth, usually marked by numerous paler pustules and lenticels which are sometimes arranged in short vertical rows and also scattered. Underbark fawn. Outer surface of live bark green with a pattern of fine orange lines on the surface.

Inner Bark—Blaze on a tree 20 cm diameter pale brown with yellowish-brown vertical striations and lateral curved concentric rings. Outer margin green, inner margin pale pink. Surface darkens slightly after a few minutes exposure and the surface of the exposed wood sometimes turns bluish. No distinct taste or smell. 5 mm thick.

Branchlets—Thin, pale green turning fawn, not hairy, brittle, marked by pale lenticels. Young shoots often hairy.

Leaves—Alternate, simple, often irregularly toothed, mostly oblong or elliptical, 5–12 cm long, bluntly pointed at the tip, tapering at the base. Thin, green both surfaces, paler beneath. Young leaves sometimes hairy and purple on the underside. Leaf stalks 10–40 mm long, often with *two small glands at the apex*.

Venation—Visible on both surfaces, but raised and more prominent on the underside. Midrib generally paler than the rest of the leaf.

Flowers—Greenish. Male and female flowers on separate plants in axillary racemes, 4–9 cm long. Perianth segments three, 2 mm long. Stamens 20 or over. Ovary three-celled, globular, downy with three free styles. Flowering period mainly October to November.

Fruit—A capsule, *purplish-black, globular, about 6 mm diameter*, consisting of *three rounded lobes* with one round, red, warty seed in each lobe. Fruit ripe January to February.

Habitat—Rainforest of all types.

Distribution—A common species in coastal scrubs from Bermagui, N.S.W. to Bowen, North Queensland. Recorded in N.S.W. from Bermagui, Tilba Tilba, Tuross River, Conjola, Bungonia Gorge, Minnamurra Falls, Bulli, Waterfall, Gosford, Singleton, Muswellbrook, Cedar Brush N.R., Newcastle, Upper William's River, Woko, Gloucester Bucketts, John Gould Island N.R., Myall Lakes N.P., Seal Rocks, Cape Hawke, Black Head, Saltwater, Coocumbac Island, Wingham

Brush, Weelah N.R., Boorganna, N.R. Black Creek F.R., Middlebrother Mountain, Northbrother Mountain, Point Plomer, Big Hill, Doyles River S.F., Bellangry S.F., Kunderang Brook, Wollomombi Falls, Guy Fawkes N.P., Willi Willi N.R., Smoky Cape, Way Way S.F., Oakes S.F., Deervale, Dorrigo N.P., Bellingen, Pine Creek S.F., Bundagen F.R., Bruxner Park F.R., Mt Coramba, Woolgoolga Creek F.R., Conglomerate S.F., Waihou F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Moonpar S.F., Cloud's Creek S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Mt Hyland, Marengo S.F., Gibraltar Range N.P., Willowee Creek, Drake, Rivertree, Mt Pikapene S.F., Iluka N.R., Toonumbar S.F., Unumgar S.F., Yabbra S.F., Mt Clunie, Mt Lindesay, Wiangaree S.F., Terania Creek, Whian Whian S.F., Big Scrub F.R., Minyon Falls F.R., Boomerang Falls, Boatharbour, Victoria Park N.R., Mt Warning N.P. and Couchy Creek.

Timber and Uses—Wood yellowish, medium hard and close-grained, but of no particular merit or use. Could be used in cabinet work.

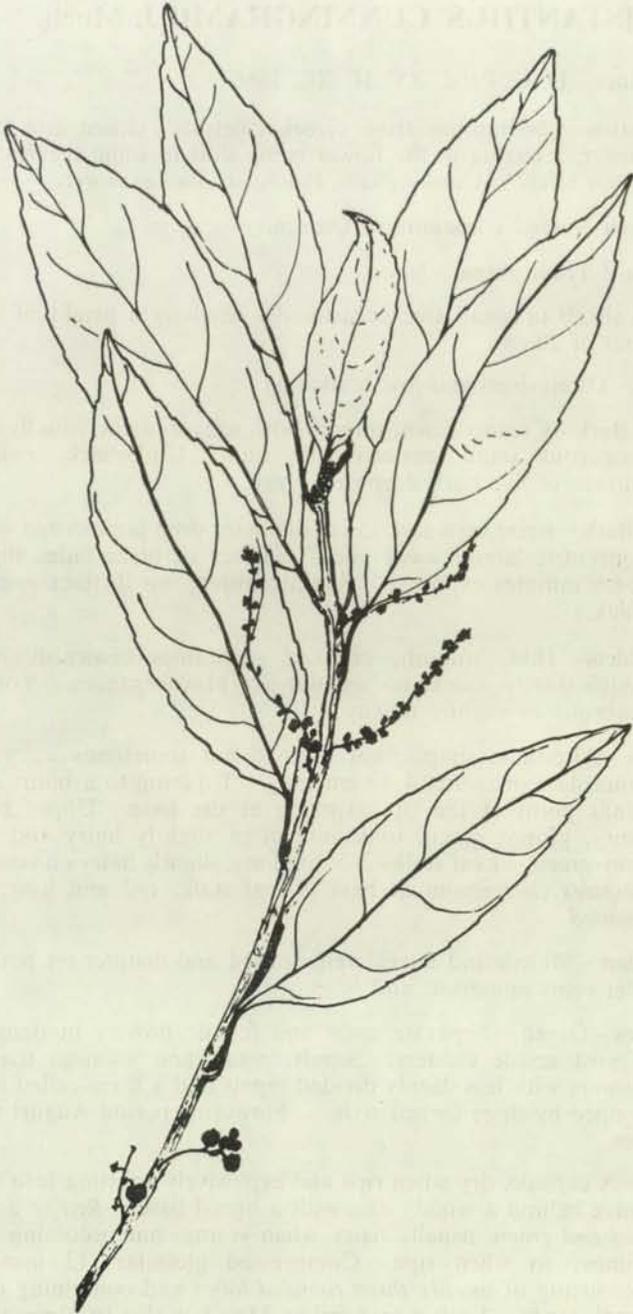


Plate No. 6

Clooxylon australe Baill.

CLEISTANTHUS CUNNINGHAMII J. Muell.

Reference—D. C. Prod. XV. II. 506, 1866.

Derivation—Cleistanthus from Greek "cleistos" closed and "anthos" a flower, referring to the flower being shut in some species; cunninghamii after A. Cunningham, the Australian explorer.

Common Name—Cleistanthus, Omega.

Standard Trade Name—None.

A tall shrub or small tree occasionally reaching a height of 9 m and a diameter of 20 cm.

Trunk—Often short and low branching.

Outer Bark—Creamy-fawn, smooth with square plates, usually marked by numerous small lenticels, very thin. Underbark cream. Outer surface of live bark deep dull green.

Inner Bark—Blaze on a tree 15 cm diameter deep pinkish-red with several concentric lateral wavy lines. Surface of blaze fades slightly after some minutes exposure. Slightly bitter; no distinct smell. 3 mm thick.

Branchlets—Thin, smooth, grey or sometimes brownish. Somewhat rough due to numerous stipular-like protuberances. Young shoots glabrous or slightly downy.

Leaves—Alternate, simple, not toothed but sometimes wavy, elliptical lanceolate or ovate, 4–13 cm long. Tapering to a blunt or medium blunt point at the tip, tapering at the base. Upper surface not hairy, glossy, green, underside often slightly hairy and sometimes grey-green. Leaf stalks 2–5 mm long, slightly hairy on young growth. *Stipules conspicuous* at base of leaf stalk, 1–2 mm long, *triangular pointed*.

Venation—Midrib and lateral veins raised and distinct on both surfaces. Net veins numerous and fine.

Flowers—Green. Separate male and female flowers in dense axillary, almost sessile clusters. Sepals, petals and stamens five. Female flowers with less deeply divided sepals and a three-celled furry ovary topped by three forked styles. Flowering period August to September.

Fruit—A capsule, dry when ripe and explosively splitting into sections to leave behind a woody axis with a broad base. *Red or a mixture of red and green*, usually hairy when young, but becoming smooth or almost so when ripe. Compressed globular, 13 mm diameter, consisting of *usually three rounded lobes* and containing one or two small seeds. Fruit ripe April to May but also to November.

Habitat—Littoral rainforest to dry rainforest on various soil types. It is a common species in the Hoop Pine association on the brown basalt soils of the Richmond River.



Plate No. 7
Cleistanthus cunninghamii J. Muell.

Distribution—From Dungog, N.S.W. to Mackay, Queensland. Recorded in N.S.W. from Dungog, Gloucester, Cape Hawke, Black Head, Weelah N.R., Black Creek F.R., Port Macquarie, Point Plomer, Big Hill, Bellangry S.F., Mt Seaview, Willi Willi, N.R. Georges Creek, Way Way S.F., Coramba, Woolgoolga Creek F.R., Waihou F.R., Kangaroo River S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Rivertree, Mt Pikapene S.F., Cherry Tree S.F., Cambridge Plateau, Toonumbar S.F., Unumgar S.F., Yabbra S.F., Beary S.F., Koreelah S.F., Mt Lindesay, Roseberry S.F., Lever's Plateau, Wiangaree S.F., Big Scrub F.R., Wilson Park, Johnson's Scrub, Hayter's Hill, Broken Head N.R., Brunswick Heads N.R., Mooball S.F., Mebbin S.F., Mt Warning N.P., Limpinwood N.R., Murwillumbah, Stott's Island N.R. and Round Mountain.

Timber and Uses—Wood pale, hard and close-grained.

COELEBOGYNE ILICIFOLIA J. Sm.

Synonym—*Alchornea ilicifolia* J. Muell.

Reference—Trans. Linn. Soc. XVIII, 512, 1841.

Derivation—Coelebogyne from Greek “coelos” hollow and “gyne” a woman, referring to Smith’s erroneous observation that pollination did not occur; ilicifolia from Latin “ilex” holly and “folia” a leaf, because of the holly-like leaves.

Common Name—Native Holly.

Standard Trade Name—None.

A straggling shrub or small tree growing to a height of 6 m with a stem diameter of 10 cm.

Trunk—Usually crooked.

Outer Bark—Greyish-white, smooth with minute scattered pustules and lenticels. Underbark creamy-fawn. Outer surface of live bark reddish-brown with short pale vertical stripes and some faint green tints.

Inner Bark—Blaze on a tree 10 cm diameter pinkish-brown to deep red with broken pale vertical stripes and fine lines, paler at the inner margin. Outer margin is marked by a greenish-brown band. Surface of blaze does not darken on exposure. Astringent taste and no smell. 5 mm thick.

Branchlets—Greenish or fawn towards the ends, not hairy, often dotted with paler and sometimes longitudinally elongated lenticels.

Leaves—Alternate, simple, broadly toothed, with *three to four teeth on each side*, terminating in *prickly points*, ovate or rhomboidal, 4–8 cm long. Tip acutely pointed, base abruptly tapered. Glossy green and not hairy on both surfaces, paler beneath, thick. Leaf stalks up to 3 mm long, not hairy. Stipules minute.

Venation—Midrib, lateral and net veins visible on both surfaces. *Major three or four lateral veins* almost at right angles to the midrib and ending in a sharp point. Slightly raised on the upper surface, more so on the underside.

Flowers—Male and female flowers in axillary racemes on separate plants. Perianth usually four-lobed. Male flowers with eight free stamens. Female flowers with three broad flat styles on a three-celled ovary with one ovule in each cell. Flowering period November.

Fruit—A capsule, brown, depressed globular, usually three-celled or sometimes only two. About 6 mm diameter. Fruit ripe mainly September to November but occasionally in all other months.

Habitat—Dry or semi-dry rainforests or on the sclerophyll forest boundary.

Distribution—From Illawarra, N.S.W. to Atherton, North Queensland. Recorded in N.S.W. from Mt Kembla, Singleton, Scone, Seal Rocks, Cape Hawke, Bundook, Woko, Gloucester Bucketts, Krambach, Black Head, Wingham, Black Creek F.R., Port Macquarie, Bellangry S.F., Kunderang Brook, Willi Willi N.R., Wollomombi Falls, Guy Fawkes N.P., Georges Creek, Way Way S.F., Woolgoolga Creek F.R., Madman's Creek F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Horton's Creek, Blandford Creek F.P., Dalmorton, Grafton, Rivertree, Mt Pikapene S.F., Woodburn, Cherry Tree S.F., Richmond Range S.F., Toonumbar S.F., Unungar S.F., Beaury S.F., Koreelah S.F., Sawpit Creek, Lever's Plateau, Wilson Park, Hayter's Hill, Brunswick Heads N.R. and Mebbin S.F.

Timber and Uses—Wood yellow, tough and close-grained, but has no particular merit or use.



0 2 4 cm

Plate No. 8
Coelebogyne ilicifolia J. Sm.

CROTON ACRONYCHIOIDES F. Muell.

Reference—Fragm. IV, 142, 1864.

Derivation—Croton from Greek “kroton” a tick, because of the resemblance of the seed to a tick; acronychioides from Greek “eidos” resembling, referring to the similarity of the leaves to those of species of *Acronychia*.

Common Name—Large Green-leaved Cascarilla, Thick-leaved Croton.

Standard Trade Name—None.

A shrub or small tree attaining a height of 14 m and a stem diameter of about 15 cm.

Trunk—Short and cylindrical, crooked, not buttressed.

Outer Bark—Fawnish-grey, smooth, sometimes with numerous fine vertical and lateral cracks giving the surface a wrinkled appearance. Texture corky. Underbark creamy-fawn. Outer surface of live bark dark brown with fine cream vertical lines or green and pink vertical stripes.

Inner Bark—Blaze on a tree 15 cm diameter with an outer band 2 mm thick dark brown with fine cream vertical lines, red-brown on the inner margin, cream towards the sapwood with a few curved lateral lines. No rapid change in colour. No taste. The cut bark has a smell resembling that of fish oil. 7 mm thick.

Branchlets—Stout, cream, not hairy, but the tips and young shoots sprinkled with small round fawn scales.

Leaves—Alternate, simple, *usually shallowly and distantly toothed*, mostly elliptic-oblong, 5–13 cm long, usually tapering at the base and to a blunt point at the tip, often glossy above, green and not hairy on both surfaces but paler beneath, thicker than *C. verreauxii*. *Often with two small glands at the base of the leaf*. The leaves when crushed smell like *fish oil*. Leaf stalks 6–15 mm, scaly.

Venation—Midrib and main lateral veins visible on both surfaces, midrib level or slightly sunken on the upper surface, raised beneath with scattered scales.

Flowers—Cream. Separate male and female flowers in each short terminal raceme, 2–5 cm long. Sepals five, broad, 2 mm long. Petals five, narrow, fringed. Stamens five to eight. Ovary densely hairy, three-celled, styles broad, divided into usually two split branches. Flowering period November to April.

Fruit—A capsule, *red-brown with yellowish scales, egg-shaped*, about 11 mm long, separating into three two-valved parts. Seeds solitary, smooth with a fleshy growth at the apex. Fruit ripe November to February.

Habitat The drier types of rainforest.

Distribution—Richmond River, N.S.W. to Townsville, Queensland. Recorded in N.S.W. from Toonumbar S.F., Unumgar S.F., Sawpit Creek, Lever's Plateau, Dunoan, Mooball S.F., Limpinwood N.R. and Murwillumbah.

Timber and Uses—Wood pale, firm and close-grained, but has no known uses.

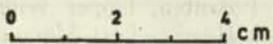
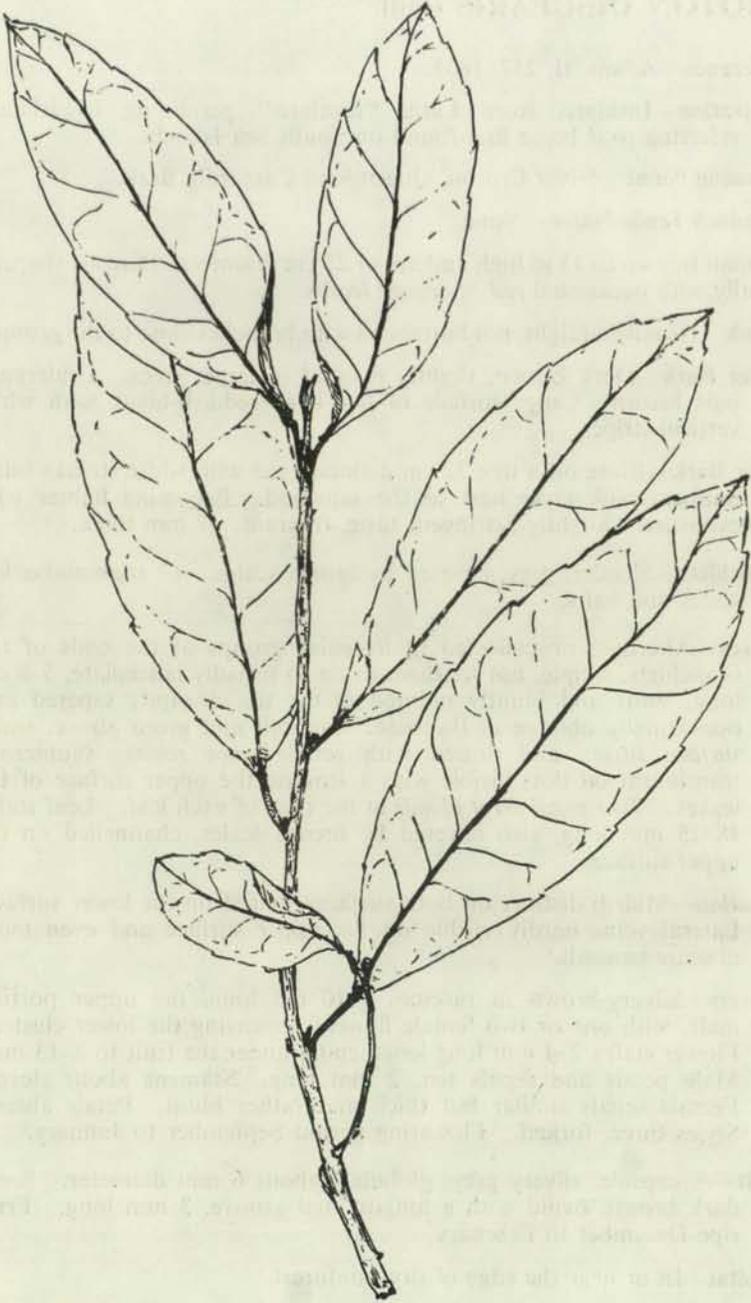


Plate No. 9

Croton acronchioides F. Muell.

CROTON INSULARIS Bail.

Reference—Adans. II, 217, 1862.

Derivation—Insularis from Latin “insularis” pertaining to islands, referring to it being first found on South Sea Islands.

Common Name—Silver Croton, Queensland Cascarilla Bark.

Standard Trade Name—None.

A small tree up to 15 m high and about 25 cm diameter. Crown shapely, usually with occasional *red or orange leaves*.

Trunk—Usually straight, not buttressed with branches close to the ground.

Outer Bark—Dark brown, slightly fissured in larger trees. Underbark pale brown. Outer surface of live bark reddish-black with white vertical stripes.

Inner Bark—Blaze on a tree 22 cm diameter red with white streaks but a uniform pink layer next to the sapwood. Becoming lighter with exposure. Slightly astringent taste, fragrant. 7 mm thick.

Branchlets—Slender, grey, covered by brown scales. *C. stigmatosus* has scales and hairs.

Leaves—Alternate or collected in irregular groups at the ends of the branchlets, simple, not toothed, ovate to broadly lanceolate, 5–8 cm long, short and bluntly pointed at the tip, abruptly tapered and occasionally oblique at the base. Smooth and green above, *under surface silvery* and dotted with *small brown scales*. Numerous translucent oil dots visible with a lens on the upper surface of the leaves. *Two small erect glands* at the base of each leaf. Leaf stalks 18–25 mm long, also covered by brown scales, channelled on the upper surface.

Venation—Midrib distinct on both surfaces, raised on the lower surface. Lateral veins hardly visible on the upper surface and even more obscure beneath.

Flowers—Silvery-brown in racemes 7–10 cm long, the upper portion male, with one or two female flowers occupying the lower clusters. Flower stalks 2–4 mm long lengthening under the fruit to 8–13 mm. Male petals and sepals ten, 2 mm long. Stamens about eleven. Female sepals similar but thick and rather blunt. Petals absent. Styles three, forked. Flowering period September to January.

Fruit—A capsule, silvery grey, globular, about 6 mm diameter. Seeds dark brown, ovoid with a longitudinal groove, 3 mm long. Fruit ripe December to February.

Habitat—In or near the edge of dry rainforest.

Distribution—Blue Mountains, N.S.W. to Cape York, Queensland. Recorded in N.S.W. from Kurrajong, Pokolbin, Upper Williams River, Woko, Gloucester Bucketts, Cape Hawke, Port Macquarie, Kunderang Brook, Willi Willi N.R., Apsley Gorge, Wollomombi



Plate No. 10
Croton insularis Baill.

Falls, Guy Fawkes N.P., Kangaroo River S.F., Horton's Creek, Blandford Creek, Chandler's Creek, Rivertree, Mt Pikapene S.F., Cherry Tree S.F., Toonumbar S.F., Unumgar S.F., Beaury S.F., Mt Lindesay and Lever's Plateau.

Timber and Uses—Wood yellow, hard, very tough and close-grained. Too small to be of use. Cotton and woollen fabrics were dyed reddish-brown with the bark of this tree in Queensland.



PLATE 1
The Queensland Wood

CROTON STIGMATOSUS F. Muell.

Synonym *Croton phebaliioides* var. *hirsuta* F. Muell.

Reference—Fragm. IV, 140, 1864.

Derivation—Stigmatosus from Latin “stigmata” stigma and “osus” pronounced, referring to the conspicuous deeply divided style and stigmas.

Common Name—Broad Silvery Native Cascarilla, White Croton.

Standard Trade Name—None.

A tree attaining a height of 15 m and a stem diameter of 25 cm.

Trunk—Sometimes slightly flanged at the base.

Outer Bark—Brown, the whole surface often pimpled with small pustules and lenticels which open horizontally. Underbark brown. Outer surface of live bark pitted and slightly ridged, light brown with paler vertical stripes.

Inner Bark—Blaze on a tree 20 cm diameter pale brown mixed with almost white vertical stripes, becoming paler at the inner margins. Surface does not darken on exposure. No taste. Pleasant smell, similar to *Croton insularis*. 5 mm thick.

Branchlets—Slender, often pendulous, greyish-brown, more or less hairy towards the ends as well as scaly.

Leaves—Alternate, simple, with very small and irregular teeth, oblong-lanceolate or lanceolate, 8–15 cm long or up to 23 cm young on growth, drawn out into a fairly long and fine point at the tip, narrowly cordate at the base. Green on the upper surface with scattered stellate hairs and numerous small glands, *underside silvery-grey with a close dense felt and scattered long hairs*. Leaf stalks very variable in length from 5–40 mm, hairy, fawn. *Two small stalked glands often present at the tip of the leaf stalk*.

Venation—Midrib and lateral veins visible on both surfaces, raised and more distinct on the underside. Net veins not numerous and scarcely visible.

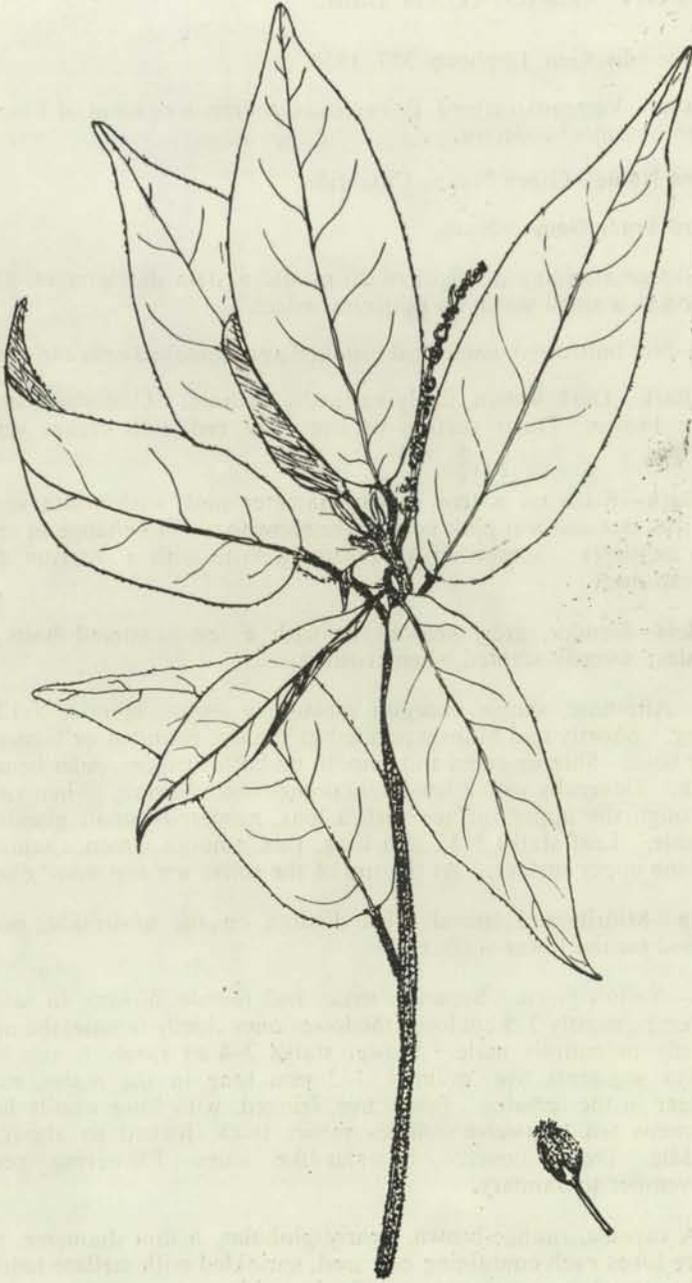
Flowers—Creamy-brown. Separate male and female flowers mixed as clusters in short terminal racemes, 6–14 cm long. Five hairy sepals and five petals, 2 mm long. Stamens ten or eleven. Style divided into four long and narrow segments. Flowering period April to December, with a peak in September.

Fruit—Capsule, grey-brown, round, oblong or slightly three-lobed, 6–8 mm diameter, three-celled, stellate-hairy, rough, with usually one seed in each cell. Fruit ripe December.

Habitat—Dry and semi-dry rainforests.

Distribution—From the Hastings River, N.S.W. to Imbil, Queensland. Recorded in N.S.W. from Hastings River, Kunderang Brook, Guy Fawkes N.P., Bellbrook, Kangaroo River S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Tooloom Range, Sawpit Creek, Lever's Plateau and Wiangaree S.F.

Timber and Uses—Wood yellow, hard and tough but liable to warp and split, close-grained. Suitable for small turnery. Weight 800 kg per cubic metre.



0 2 4 cm

Plate No. 11
Croton stigmatosus F. Muell.

CROTON VERREAUXII Baill.

Reference—Et. Gen. Euphorb. 357, 1858.

Derivation—Verreauxii after J. P. Verreaux, a French resident of Tasmania and botanical collector.

Common Name—Green Native Cascarilla.

Standard Trade Name—None.

A small tree attaining a height of 20 m and a stem diameter of 20 cm. Common as a small shrub on rainforest edges.

Trunk—Not buttressed, somewhat crooked and branched near the ground.

Outer Bark—Dark brown, finely vertically fissured. Underbark chocolate brown. Outer surface of live bark red with cream vertical stripes.

Inner Bark—Blaze on a tree 15 cm diameter pink with white vertical stripes but uniform pink next to the sapwood. No change in colour on exposure. Somewhat astringent in taste with a *fragrant smell*. 3 mm thick.

Branchlets—Slender, grey, smooth or with a few scattered hairs and scales; sweetly scented when crushed.

Leaves—Alternate, simple, *margins toothed or entire*, elliptic, 5–12 cm long. Shortly and bluntly pointed at the tip, rounded or tapered at the base. Shining green and smooth on both surfaces, paler beneath, thin. Generally with a *few bright orange older leaves*. When viewed through the upper surface with a lens, numerous small glands are visible. Leaf stalks 5–13 mm long, thin, smooth, green, channelled on the upper surface. At the top of the stalks are *two small glands*.

Venation—Midrib and lateral veins distinct on the underside, midrib raised on the lower surface.

Flowers—Yellow-green. Separate male and female flowers in slender racemes, mostly 3–5 cm long, the lower ones chiefly female, the upper chiefly or entirely male. Flower stalks 2–4 or rarely 6 mm long. Calyx segments five, pointed, 1–2 mm long in the males, rather longer in the females. Petals five, fringed, with long woolly hairs. Stamens ten to twelve. Styles rather thick, forked to about the middle. Ovary covered by star-like hairs. Flowering period November to January.

Fruit—A capsule, orange-brown, nearly globular, 6 mm diameter, with three lobes each containing one seed, sprinkled with stellate hairs or glabrous when more mature. Seeds red-brown, smooth, angular, 2 mm diameter. Fruit ripe April to September.

Habitat—In dry rainforest and commonly along the boundary between rainforest and eucalypt forest as a pioneer species.



P. Condon

Plate No. 12
Croton verreauxii Baill.

Distribution—From Mt Kaye, Victoria to Gympie, Queensland and at Darwin. Common in most coastal rainforests. Recorded in N.S.W. from Minnamurra Falls, Bulli, Mt Kembla, Kurrajong, Wyong, Ash Island, Upper Williams River, Gloucester, Bulahdelah, Myall Lakes N.P., Wallis Lake, Seal Rocks, Cape Hawke, Black Head, Oxley Island, Weelah N.R., Camden Haven River, Big Hill, Bellangry S.F., Willi Willi N.R., Way Way S.F., Pine Creek S.F., Bruxner Park F.R., Coramba, Waihou F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Cloud's Creek S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Willowee Creek, Ewingar S.F., Mt Pikapene S.F., Toonumbar S.F., Unungar S.F., Yabbra S.F., Beaury S.F., Acacia Plateau, Mt Clunie, Mt Lindesay, Mt Glennie, Lever's Plateau, Wiangaree S.F., Goonimbar S.F., Boatharbour, Wilson Park, Hayter's Hill, Mooball S.F., Limpinwood N.R. and Stotts Island N.R.

Timber and Uses—Wood yellowish-brown, close-grained. Too small to be of use. Weight 650 kg per cubic metre.

DRYPETES AUSTRALASICA (J. Muell.) Pax & K. Hoffm.

Synonym—*Hemicyclia australasica* J. Muell.

Reference—Engl. Pflanzenr. Euphorb., 147, XV: 270, 1922.

Derivation—*Drypetes* from Greek “dryppa” an olive fruit, referring to the similarity in fruit to that of the olive; *australasica* from Latin “australasicum” australian, referring to it being the only species restricted to Australia and Lord Howe Island.

Common Name—Yellow Tulip, Grey Boxwood, White Myrtle, Yellow Tulipwood.

Standard Trade Name—Grey Boxwood.

A tree 25 m high and 60 cm diameter.

Trunk—Often flanged at the base and well up the trunk.

Outer Bark—Grey to brown, *pustular and scaly* on older trees, the scales shedding in irregular pieces *leaving shallow depressions* which gives the bark a spotted appearance like that of Tulipwood (*Harpullia pendula*). Underbark creamy-yellow. Outer surface of live bark yellowish with light and darker green markings.

Inner Bark—Blaze on a tree 30 cm diameter *yellowish-brown, often with lateral undulating bands*. Outer margin greenish. Surface changes to a darker brown after a few minutes exposure. Bitter to taste, no distinct smell. About 5 mm thick.

Branchlets—Slender, grey, smooth, dotted with small numerous pale lenticels. Young shoots sometimes slightly downy.

Leaves—Alternate, simple, *margins wavy with or without teeth* (juvenile leaves are sharply toothed), ovate-oblong or elliptical, 2–10 cm long, rounded or bluntly pointed at the tip, abruptly tapered at the base, green and glossy both surfaces, paler beneath, thick. Leaf stalks 3–6 mm long, not hairy, except on young leaves which are downy.

Venation—Midrib, lateral and net veins distinct and raised on both surfaces, a little more prominent on the underside where the fine net veins are more conspicuous.

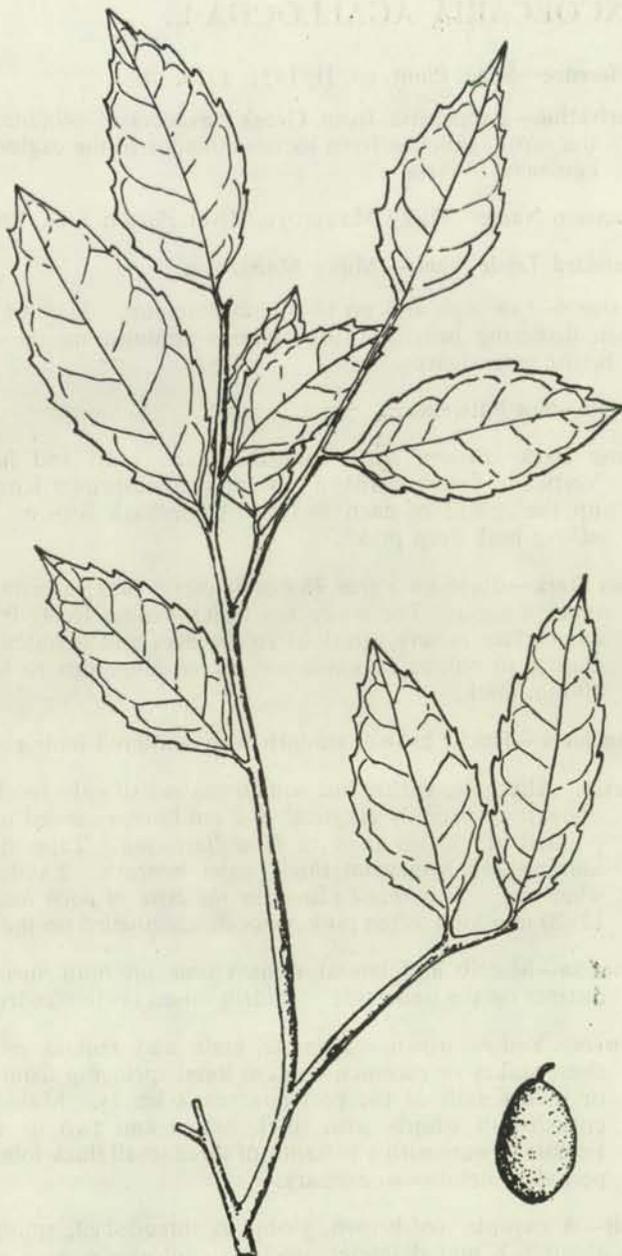
Flowers—Yellow-brown, each sex on separate trees, solitary or a few in clusters in the forks of the leaves, the male flowers sometimes forming short racemes. The individual flowers about 4 mm diameter with four to five oval perianth lobes about 2 mm long. Male flowers with five to ten short stamens. Female flowers on stalks 5–10 mm long with an oval ovary, on top of which is a semicircular stigma. Flowering period November.

Fruit—A drupe, *shiny red, oval, 12–20 mm long*, succulent with *yellow flesh* and a single *oval, bony seed grooved on one side*, about 12 mm long. Fruit ripe February to April.

Habitat—More common in the semi-dry and dry rainforests, but also occurs in littoral and riverine rainforests.

Distribution—From the Hunter River, N.S.W. to North Queensland and extending 160 km inland to the Bunya Mountains. Also on Lord Howe Island and in the Northern Territory. Recorded in N.S.W. from Dungog, Paterson, Woko, Gloucester Bucketts, Myall Lakes N.P., Seal Rocks, Cape Hawke, Black Head, Saltwater, Manning Point, Harrington, Weelah N.R., Black Head F.R., Port Macquarie, Point Plomer, Big Hill, Bellangry S.F., Kunderang Brook, Willi Willi N.R., Wollomombi Falls, Guy Fawkes N.P., Smoky Cape, Shark Island, Way Way S.F., Warrell Creek, Bundagen F.R., Mt Coramba, Woolgoolga Creek F.R., Madmans Creek F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Horton's Creek, Blandford Creek F.P., Chandlers Creek, Glenugie F.R., Willowee Creek, Rivertree, Mt Neville, Iluka N.R., Mt Pikapene S.F., Cherry Tree S.F., Toonumbar S.F., Unungar S.F., Yabbra S.F., Koreelah S.F., Mt Clunie F.P., Sawpit Creek, Wiangaree S.F., Boatharbour, Wilson Park, Hayter's Hill, Ballina, Broken Head N.R., Brunswick Heads N.R., Mooball S.F., Limpinwood N.R., Stotts Island N.R., Terranora, Cudgen Lake and Round Mountain.

Timber and Uses—Wood at first yellow but seasons to greyish-yellow, hard and tough, close-grained. Said to be suitable as a substitute for boxwood rules. Also used for carving, turnery, printers engraving blocks, interior joinery and flooring. The slender, straight young trees were esteemed for bullock whip handles in the Richmond River district in the early days where the trees were known as White Myrtle. Weight 800–900 kg per cubic metre.



E.S. 0 2 4 cm.

Plate No. 13
Drypetes australasica (J. Muell.) Pax & K. Hoffm.

EXCOECARIA AGALLOCHA L.

Reference—Spec. Plant. ed. II, 1451, 1763.

Derivation—Excoecaria from Greek “excoenus” blindness, referring to the sap; agallocha from its resemblance to the eagle-wood *Aquilaria agallocha* of Asia.

Common Name—Milky Mangrove, River Poison Tree, Blind-your-eye.

Standard Trade Name—Milky Mangrove.

A tree 6–9 m high and up to 30 cm diameter. May be almost leafless when flowering heavily. Conspicuous amongst mangroves because of its bright green leaves.

Trunk—Not buttressed.

Outer Bark—*Brown, scaly* with the scales hard and firmly attached. Vertically fissured with a row of reddish-brown lenticels extending up the centre of each fissure. Underbark brown. Outer surface of live bark deep pink.

Inner Bark—Blaze on a tree 28 cm diameter pinkish-brown, paler at the inner margin. The *milky sap* which exudes freely from the freshly cut surface is very injurious to the eyes and irritates the skin. No change in colour on exposure. Too dangerous to taste, no smell. 10 mm thick.

Branchlets—Thick, brown, smooth with scattered lenticels.

Leaves—Alternate, entire, but sometimes indistinctly toothed or waived, obovate or broadly elliptical, 5–8 cm long, rounded or more bluntly pointed at the tip than in *E. dallachyana*. Tapering at the base. Shining and somewhat thick, paler beneath. Exudes a milky sap when cut. *Two small glands at the base of each leaf*. Leaf stalks 12–20 mm long, often pink, smooth, channelled on the upper surface.

Venation—Midrib and lateral veins visible on both surfaces but more distinct on the underside. Midrib raised on the underside only.

Flowers—Yellow-brown. Separate male and female inflorescences of short spikes or racemes, 2–6 cm long, springing from the old nodes or in the axils of the previous year's leaves. Male flowers rather crowded in whorls with thick bracts and two or three stamens. Female flowers with a perianth of three small thick lobes. Flowering period September to January.

Fruit—A capsule, red-brown, globular, three-lobed, smooth and shiny, about 6–8 mm diameter, opening explosively, with a single round brown seed, 2–3 mm diameter in each cell. Fruit ripe December to January.

Habitat—Salt water estuaries in damp or tidally inundated soil. Associated with mangroves and swamp rainforest of palms and *Elaeocarpus obovatus*.

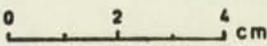


Plate No. 14
Excoecaria agallocha L.

Distribution—From the Hastings River, N.S.W. to Queensland, New Guinea, tropical S.E. Asia and Africa. Recorded in N.S.W. from Limeburner's Creek N.R., South West Rocks, Shark Island, Bundagen Creek, Arrawarra Beach, Yamba, Iluka, Broadwater, Ballina, Brunswick Heads, Stotts Island N.R. and Terranora.

Timber and Uses—Wood white, light in colour, medium soft and close-grained, but has no particular use in Australia. Used for general carpentry purposes, firewood and charcoal in India.



EXCOECARIA DALLACHYANA (Baill.) Benth.

Synonym—*E. agallocha* var. *dallachiana* Baill.

Reference—Fl. Austr. VI. 153, 1873.

Derivation—Dallachyana after J. Dallachy, who collected extensively in Central Queensland.

Common Name—Scrub Poison Tree, Brush Poison Tree, Brown Birch.

Standard Trade Name—Brown Birch.

A slender tree up to 15 m high and 45 cm diameter.

Trunk—Somewhat flanged and often with coppice shoots from the butt.

Outer Bark—Light grey, smooth with lighter raised pimples. Underbark mid-brown. Outer surface of live bark purplish-red.

Inner Bark—Blaze on a tree 45 cm diameter uniform pinkish-brown, copiously exuding a creamy sap when cut which can cause irritation to the skin and eyes. No change in colour of the blaze on exposure. No taste or smell. 15 mm thick.

Branchlets—Slender, grey-brown, not hairy or with pronounced lenticels.

Leaves—Alternate, simple, toothed or wavy, ovate to lanceolate, 4–7 cm long, drawn out into a blunt point at the tip. Quickly tapering at the base. Dark green, shiny above, paler below. Not hairy. Much thinner than *E. agallocha*. Two small glands at the base of each leaf blade. Leaf stalks 8–20 mm long, slender, smooth, brown.

Venation—Midrib and lateral veins visible on both surfaces but more prominent beneath. Midrib sunken above, raised below. The venation is more prominent than in *E. agallocha*.

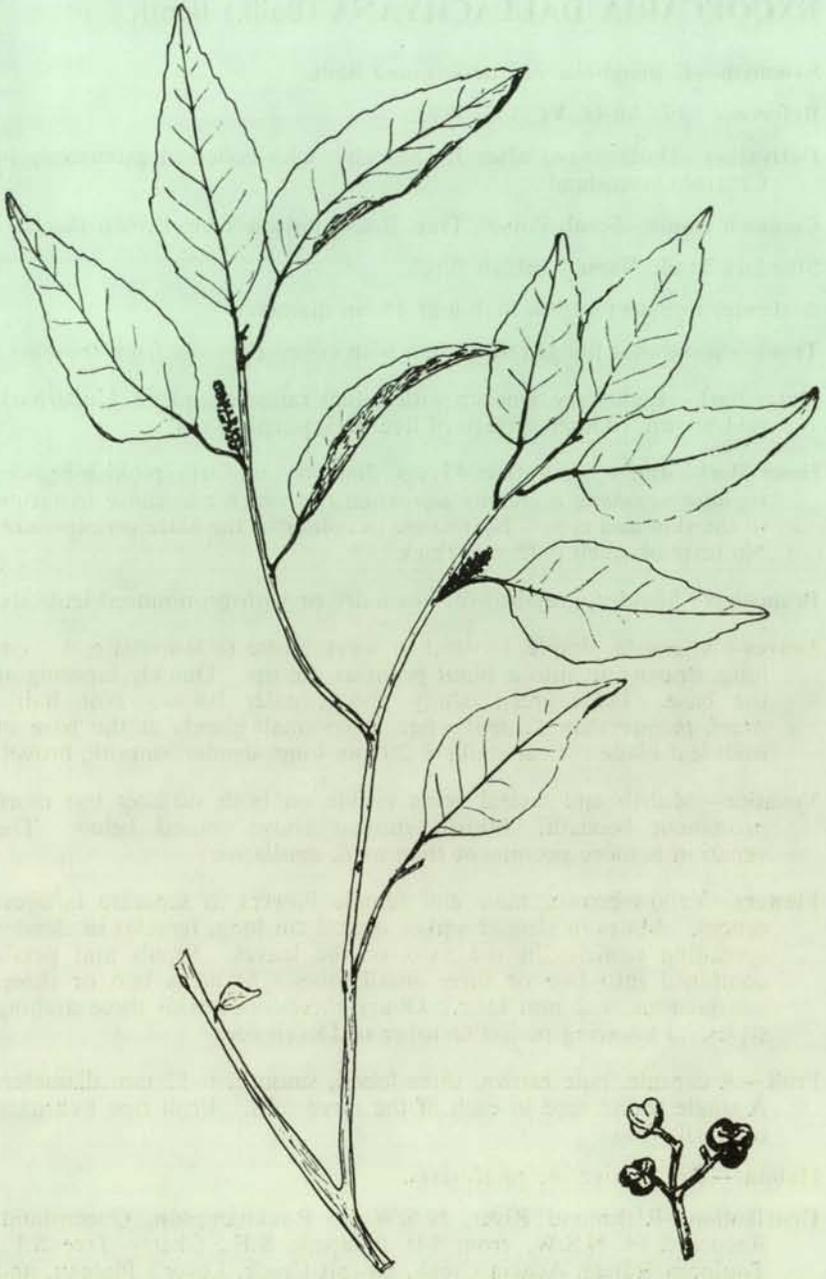
Flowers—Yellow-brown, male and female flowers in separate inflorescences. Males in slender spikes over 2 cm long, females in slender spreading panicles in the axils of the leaves. Sepals and petals combined into two or three small lobes. Stamens two or three, conspicuous, 1–2 mm long. Ovary three-lobed with three arching styles. Flowering period October to December.

Fruit—A capsule, pale brown, three-lobed, smooth, 6–12 mm diameter. A single round seed in each of the three cells. Fruit ripe February to April.

Habitat—Dry or riverine rainforests.

Distribution—Richmond River, N.S.W. to Rockhampton, Queensland. Recorded in N.S.W. from Mt Pikapene S.F., Cherry Tree S.F., Tooloom Range, Acacia Creek, Sawpit Creek, Lever's Plateau, and Tumbulgum.

Timber and Uses—Wood cream with a black heart, very tough and close-grained. Could be suitable for axe handles, scantling and flooring. Weight 850 kg per cubic metre.



0 2 4 cm

0 1 2 cm.

Plate No. 15

Excoecaria dallachyana (Baill.) Benth.

GLOCHIDION FERDINANDI (J. Muell.) F. M. Bail.

Synonym—*Phyllanthus ferdinandi* J. Muell.

Reference—Regensb. Fl. 48, 379, 1865.

Derivation—Glochidion from Latin “glochidium” barb of arrow, referring to the toothed style of some species; ferdinandi after Ferdinand von Mueller, a distinguished Australian botanist.

Common Name—Cheese Tree, Water Gum, Pencil Cedar, Buttonwood.

Standard Trade Name—Buttonwood.

A small, rather ornamental tree attaining a height of 9–12 m with a stem diameter of 40 cm. The tree has a dense, bushy, spreading crown.

Trunk—Often crooked and flanged.

Outer Bark—Brownish-purple, fissured, shedding in longitudinal patches. Underbark dark brown with horizontal cream lines. Outer surface of live bark silvery-pink.

Inner Bark—Blaze on a tree 70 cm diameter rose pink, fibrous, with a pale layer next to the sapwood. Sapwood pale brown and corrugated. No change in colour on exposure. Very astringent taste and a sugar cane smell. 15 mm thick.

Branchlets—Slender, light brown, smooth without lenticels, angular.

Leaves—Alternate, simple, (but *arranged in two rows* so as to appear as a compound leaf) not toothed, elliptic or broadly lanceolate, 5–9 cm long, tapering to a point at the tip, often slightly unequal-sided and tapering at the base. Shining above, smooth and green on both surfaces (except in var. *pubens* which is downy). Leaf stalks 3–5 mm long, jointed at the base. *A pair of small narrow-triangular, acuminate, stipules* are situated *at the base of the stalk*.

Venation—Midrib and lateral veins visible on both surfaces, but more prominent below, midrib raised on both surfaces. Main lateral veins six to eight, curved.

Flowers—Greenish-yellow. Male flowers often clustered into threes, female flowers single in the axils. Flower stalks 4–6 mm long. Male perianth segments six, sometimes nearly 4 mm long but usually smaller. Stamens usually three, with the filaments joined. Female perianth smaller than in the male, with narrower segments. Ovary downy, with five or seven short, erect, thick, more or less united styles, often reddish or yellow and seedless, or seeds abortive. Flowering period October.

Fruit—Capsule, *hairless* or nearly so (except var. *pubens* which is downy), *green turning red, orbicular flattened*, slightly furrowed between the five to seven cells and thus *resembling a miniature pumpkin*. 12–20 mm diameter. Opening by the horny segments detaching from the stalk and arching out and down. Eventually falling to expose the four to six pairs of flattened seeds, 4–5 mm diameter, covered by a bright red aril. Fruit ripe November to February.

Habitat—Common along sheltered creeks and river banks. Also on rainforest margins.

Distribution—From Kioloa, N.S.W. to Carnarvon Gorge, Queensland. Recorded in N.S.W. from Kioloa S.F., Ulladulla, Jervis Bay, Nowra, Cambewarra, Yerrilyong S.F., Berry, Audley, Oatley, Lower Cox's River, Roseville, Kuring-gai Chase, Narara, Mooney Mooney Creek, Olney S.F., Newcastle, Wallsend, Maitland, Karuah, Williams River, John Gould Island N.R., Myall Lakes N.P., Seal Rocks, Wallingat S.F., Cape Hawke, Laurieton, Saltwater, Manning Point, Wingham Brush, Woko, Port Macquarie, Point Plomer, Big Hill, Bellangry S.F., Smoky Cape, Shark Island, Way Way S.F., Warrell Creek, Scotchman S.F., Bellinger River S.F., Pine Creek S.F., Bundagen F.R., Bruxner Park F.R., Woolgoolga Creek F.R., Kangaroo River S.F., Ramornie, Mt Pikapene S.F., Iluka N.R., Tabbimoble S.F., Casino, Moore Park, Wiangaree S.F., Whian Whian S.F., Big Scrub F.R., Boomerang Falls, Boatharbour, Wilson's Park, Davis Scrub, Hayter's Hill, Brunswick Heads N.R., Mooball S.F., Couchy Creek, Murwillumbah, Stott's Island N.R. and Terranora.

Var. *pubens* occurs from Sydney, N.S.W. to Gympie, Queensland.

Timber and Uses—Wood grey, close-grained, easy to work but warps when being dried. Usually too small to use but has been used for cases. Weight 650–750 kg per cubic metre.



Plate No. 16

Glochidion ferdinandi (J. Muell.) F. M. Bail.

GLOCHIDION PERAKENSE Hook. f. **VAR. SUPRA-AXILLARE** (Benth.) Airy Shaw

Synonym—*Phyllanthus ferdinandi* var. *supra-axillaris* Benth., *Glochidion supra-axillare* (Benth.) Domin., *Glochidion ferdinandi* var. *supra-axillaris* Benth.

Reference—Kew Bull. 27, 72, 1972.

Derivation—Perakense from Perak state in peninsular Malaysia where the species was first collected; supra-axillare from Latin "supra" above and "axilla" an arm-pit, referring to the flowers and fruits arising from the branchlet above the leaf axil rather than in it.

Common Name—Umbrella Cheese Tree.

Standard Trade Name—None.

Generally a small branching tree up to 15 m tall but sometimes to 30 m and 45 cm diameter.

Trunk—Somewhat crooked and fluted. Sometimes slightly buttressed.

Outer Bark—Grey on smaller trees, but dark brown with loose grey flakes on larger trees. Becoming scaly. Underbark chocolate brown with a white outer layer. Outer surface of live bark pink with numerous paler fine vertical lines.

Inner Bark—Blaze on a tree 45 cm diameter deep pink with numerous cream fine vertical lines on the outer half but uniformly pink-red nearer the sapwood. Cream at the sapwood margin. Turning slightly paler on exposure. Astringent taste, raw potato smell. 10 mm thick.

Branchlets—Slender, grey or pale green, slightly hairy, angular.

Leaves—Alternate, simple (but arranged in two rows so as to appear as a compound leaf), not toothed, elliptic to broad lanceolate, 7–12 cm long (but up to 20 cm long if juvenile). Tapering to a blunt point, sometimes with a prickle at the tip, often slightly unequal-sided and tapering at the base. Shiny and green on both sides. Leaf stalks 5–6 mm, smooth, jointed where attached to the branch and flanked by two broad-based recurved triangular stipules, 1 mm long which differ from those of *G. ferdinandi* in not being finely pointed.

Venation—Midrib and lateral veins visible on both surfaces, but more prominent below. Midrib raised on both surfaces, furry below. Main lateral veins seven to nine, curved.

Flowers—Yellow-green, male and female flowers in umbels of up to twenty flowers on a common stalk 3–5 mm long above the leaf axils. Flower stalks 3–10 mm long. Sepals three, 2 mm long. Petals three, 1.5 mm long. Stamens three or rarely four. Ovary downy with five to seven short thick styles. Flowering period October to December or as late as March.



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Plate No. 17

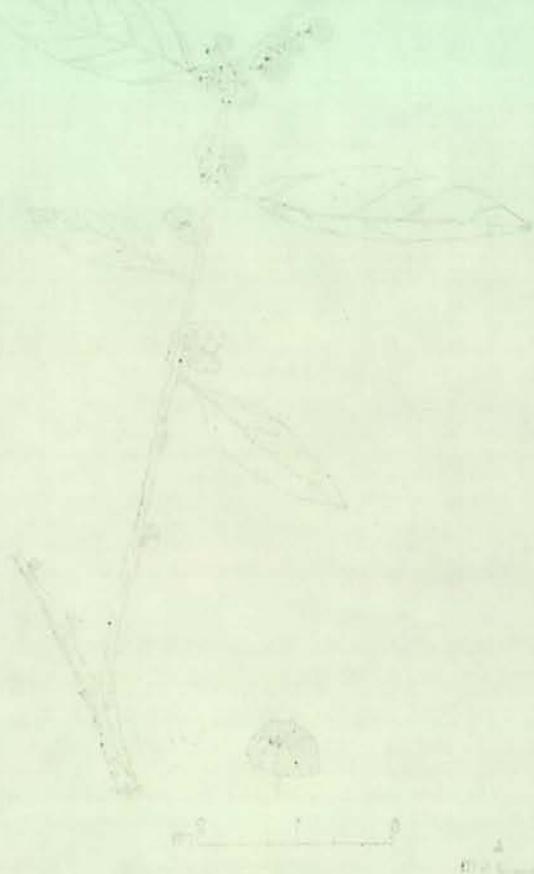
Glochidion perakense Hook. f. var. *supra-axillare* (Benth.) Airy Shaw

Fruit—Capsule, *furry, dusky pink*, orbicular-flattened with ten indistinct lobes like a miniature pumpkin. *Up to five in a cluster* on a common stalk 2–5 mm long. Fruit stalks 5–7 mm long, slender. 6–8 mm diameter, five-celled, splitting centrally to release a single angular seed, 2–3 mm long. Fruit ripe April to May.

Habitat—In or adjoining palm forest or swamp sclerophyll forest.

Distribution—Clarence River, N.S.W. to Iron Range, North Queensland, Northern Territory and Western Australia. Recorded in N.S.W. from Woodford Island, Iluka N.R., Bundjalung N.P., Cherry Tree S.F., Ballina, Broken Head N.R., Byron Bay, Brunswick Heads N.R., Round Mountain and Bilambil.

Timber and Uses—Probably similar to *Glochidion ferdinandi*. Usually too small and heavily branched to be of use.



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MACARANGA TANARIUS (L.) J. Muell.

Synonym—*Ricinus tanarius* L.

Reference—DC. Prodr. XV, 997, 1866.

Derivation—Macaranga from the Madagascan name for the first species of the genus to be described; tanarius, possibly an Amboinese name from whence it was first described.

Common Name—Nasturtium Tree, Blush Macaranga, David's Heart.

Standard Trade Name—Blush Macaranga.

A shrub or low bushy tree attaining a height of about 6 m and a stem diameter of 30 cm.

Trunk—Short and often crooked,

Outer Bark—Grey-brown. In older trees the surface is often roughened by numerous horizontally elongated brown and grey pimples and lenticels. Underbark fawnish-brown. Outer surface of live bark green with paler mottling.

Inner Bark—Blaze on a tree 28 cm diameter pinkish-red with faint undulating brownish horizontal bands, becoming paler towards the sapwood. Fibrous in texture with scattered pale vertical hard fibres, the severed ends of which show on the surface of the blaze as whitish flecks. No change in colour on exposure. Sapwood corrugated. Very astringent taste and a sappy smell. 13 mm thick.

Branchlets—Thick, often blue-grey, smooth, with conspicuous leaf and stipule scars.

Leaves—Alternate, simple, not toothed, *broadly ovate or orbicular* in outline, 8–23 cm long, but drawn out into a fairly fine point at the tip. Upper surface green and almost glossy, *dull grey or greyish-white on the underside*, often finely downy. *Leaf stalks* 8–20 cm long, hairless, often greyish, *inserted* some distance *within the margin of the leaf blade*. *Stipules* ovate-lanceolate, tapering to a point, 12 mm long with broad thin margins.

Venation—*Nine* reddish-brown *main veins radiate* from the junction of the leaf stalk with the blade. Distinct and raised on both surfaces but more conspicuous on the underside. An additional vein forms the slightly thickened leaf margin, often with a small dark gland at its junction with each lateral vein towards the leaf tip.

Flowers—Greenish-yellow. Male and female flowers on separate trees in panicles shorter than the leaves. Male inflorescences often more branched than the females. Flower bracts broad and fringed, 4–6 mm long with the males, 8–12 mm long with the females. Ovary rough and softly spiny. Styles long, warted or fringed with short hairs. Flowering period October to January.

Fruit—A *three-lobed* and three-celled *capsule, yellow, glandular, globular*, about 9 mm diameter with a number of *soft prickles* 3–6 mm long. One seed in each cell. Fruit ripe January to February.

Habitat—A secondary species in disturbed subtropical rainforest on red basalt soil.

Distribution—Richmond River, N.S.W. to Cooktown, North Queensland, Papua New Guinea and South-East Asia. Recorded in N.S.W. from Wyrallah, Wilson Park, Nimbin, Tunstall, Whian Whian S.F., Davis Scrub, Victoria Park N.R., Goonengerry S.F., Nullum S.F., Brunswick Heads N.R., Mt Warning N.P., Couchy Creek, Murwillumbah, Cudgen Lake and Tweed Heads.

Timber and Uses—Wood white, soft and close-grained. Has no commercial uses. Said to have been used by the aborigines as fibre for twine.

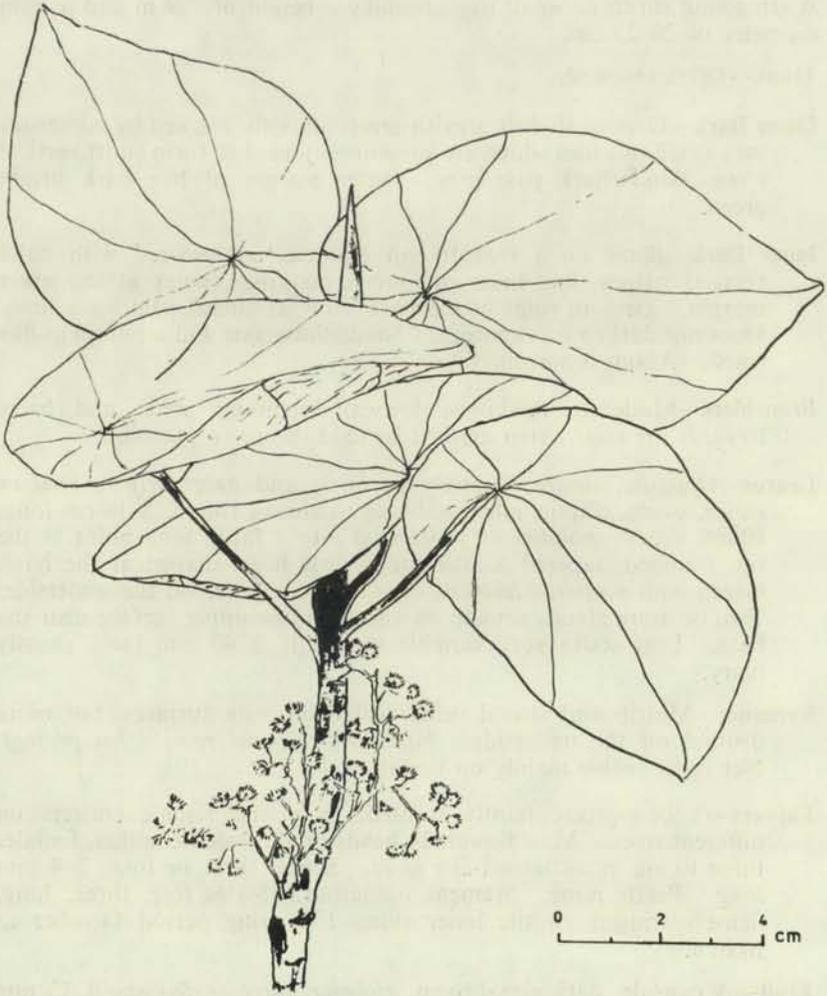


Plate No. 18
Macaranga tanarius (L.) J. Muell.

MALLOTUS CLAOXYLOIDES (F. Muell.) J. Muell.

Reference—Linnaea XXXIV, 192, 1865.

Derivation—Mallotus from Greek "mallotos" lined with wool, referring to the woolly hairs on the leaves and stems of some species; claoxyloides from Greek "eidos" resembling, because of the similarity of the foliage to that of Claoxylon.

Common Name—Odour Bush, Green Kamala.

Standard Trade Name—None.

A straggling shrub or small tree attaining a height of 7-9 m and a stem diameter of 20-23 cm.

Trunk—Often crooked.

Outer Bark—Grey or slightly greyish-green, smooth, marked by numerous very small pustules which are sometimes joined to form short vertical rows. Underbark pale grey. Outer margin of live bark bright green.

Inner Bark—Blaze on a tree 10 cm diameter pinkish-red with paler vertical stripes, fine lines and green markings, paler at the inner margin. Growth rings of the bark show as lateral pale wavy lines. Does not darken on exposure. No distinct taste and a pumpkin-like smell. About 5 mm thick.

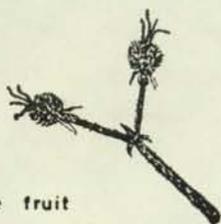
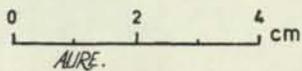
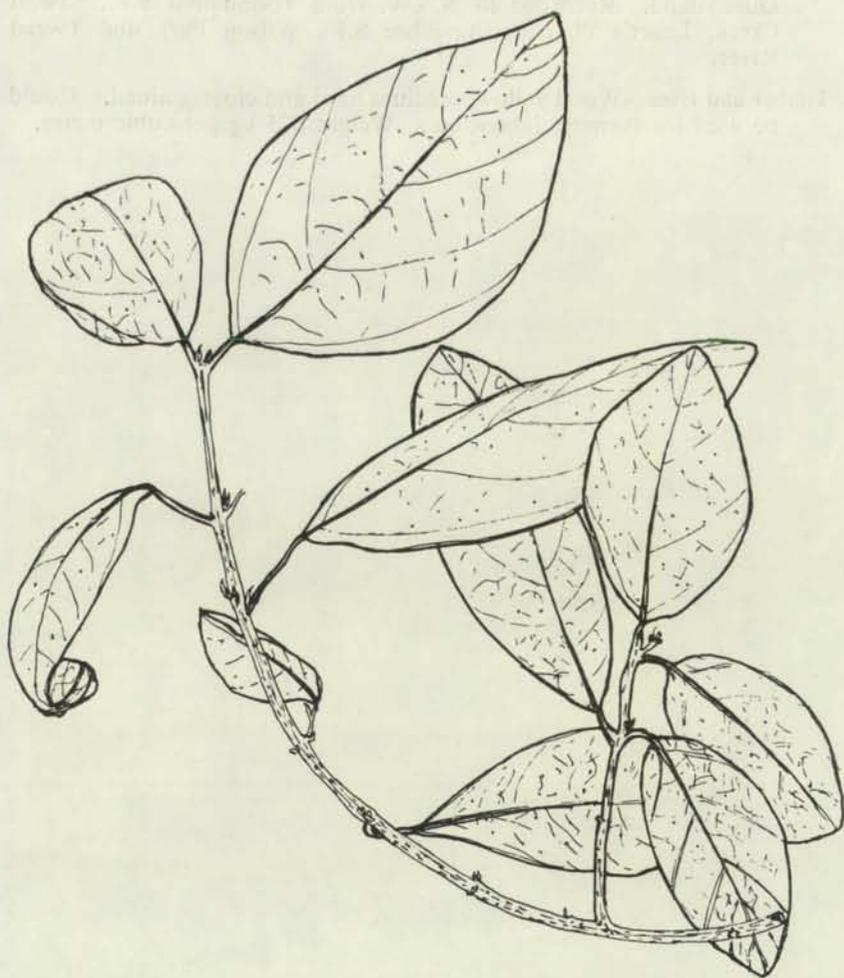
Branchlets—Moderate thickness, brown, becoming green and hairy towards the ends, often marked by reddish-brown pustules.

Leaves—*Opposite*, simple, coarsely or finely and *irregularly toothed or entire*, ovate, elliptic, elliptic-oblong to almost round, 5-18 cm long. Blunt, shortly pointed or protracted into a fairly long point at the tip, rounded, tapered a little, or slightly heart-shaped at the base. Green with *scattered hairs on both surfaces*, paler on the underside. Two or more glands sometimes visible on the upper surface near the base. Leaf stalks very variable in length, 5-40 mm long, shortly hairy.

Venation—Midrib and lateral veins visible on both surfaces, but more distinct on the underside. *Two distinct basal veins often present*. Net veins visible mainly on the underside.

Flowers—Yellow-green, faintly scented, male and female clusters on different trees. Male flowers in heads or short dense spikes, females three to six in an umbel-like head. Sepals three or four, 2-4 mm long. Petals none. Stamens numerous. Styles free, three, long, densely fringed on the inner side. Flowering period October to March.

Fruit—A capsule, dark grey-brown, *globular, three-angled* about 13 mm diameter, bearing *short blunt prickle-like protuberances*. Splitting into two-valved segments each with a single round, grey seed. Fruit ripe February to June.



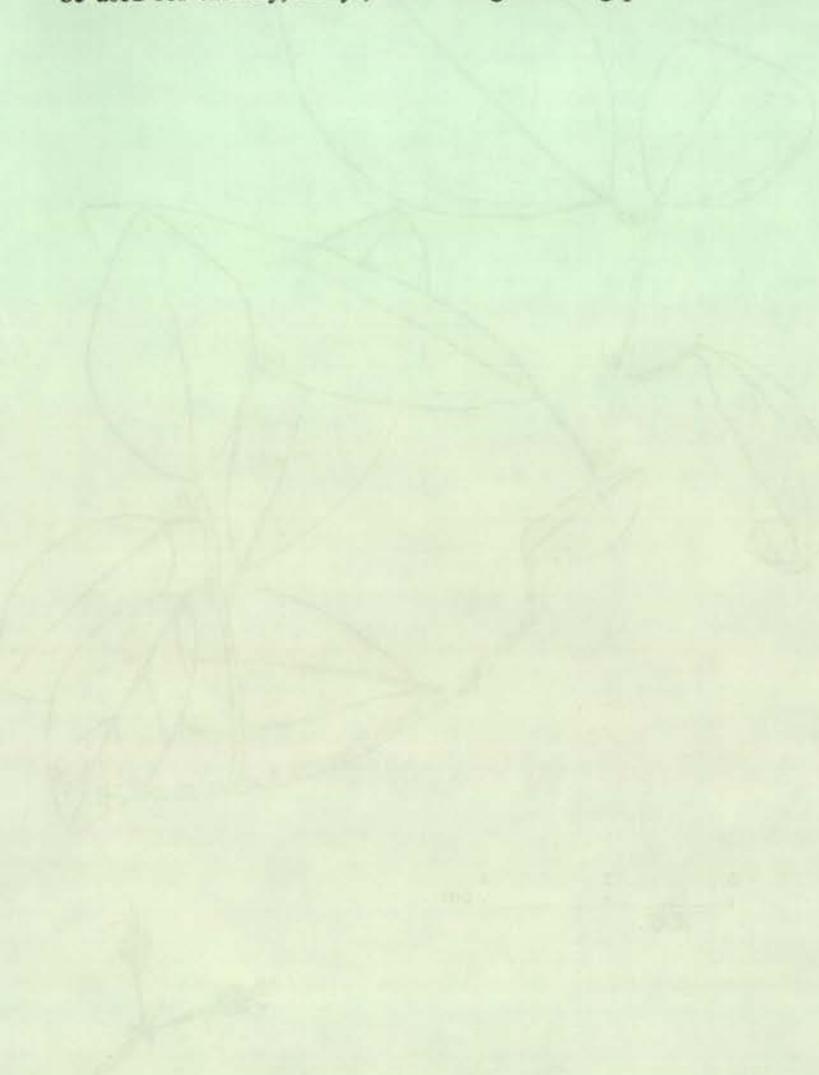
Immature fruit

Plate No. 19
Mallotus claoxyloides J. Muell.

Habitat—Dry or semi-dry rainforests.

Distribution—From the Richmond River, N.S.W. to Iron Range, North Queensland. Recorded in N.S.W. from Toonumbar S.F., Sawpit Creek, Lever's Plateau, Bungabee S.F., Wilson Park and Tweed River.

Timber and Uses—Wood yellow, medium hard and close-grained. Could be used for turnery, inlays, etc. Weight 675 kg per cubic metre.



MALLOTUS DISCOLOR (F. Muell.) F. Muell. ex Benth.

Synonym—*Rottlera discolor* F. Muell., *Macaranga mallotoides* F. Muell.

Reference—Benth. Fl. Austr. VI, 143, 1873.

Derivation—Discolor from Latin “dis”, unlike and “color”, colour to describe the leaves of this species which are green above and white beneath.

Common Name—Yellow Kamala.

Standard Trade Name—Kamala.

A tree up to 15 m high with a stem diameter up to 30 cm.

Trunk—Not buttressed.

Outer Bark—Grey or brown, smooth, or older trees may have a few scales and some fine vertical cracks and fissures. Underbark pinkish-fawn. Outer surface of live bark of green and red vertical stripes.

Inner Bark—Blaze on a tree 25 cm diameter pinkish-brown, with numerous pale vertical stripes and fine lines. Somewhat leathery in texture. Inner margin yellow, changing to brown after about ten minutes exposure. Slightly astringent taste. No smell. 6 mm thick.

Branchlets—Slender, green or brown, becoming brown towards the ends with short rusty down.

Leaves—Alternate, simple, not toothed, lanceolate, ovate-lanceolate or ovate, 4–10 cm long, usually drawn out into a fairly long and fine point at the tip and abruptly tapered at the base. Upper surface hairy when young, becoming smooth and green, underside with numerous minute *yellow glands* visible with a hand lens, *greyish or almost white with a short, close down* and longer pale hairs along the veins. Leaf stalks variable in length from 10–90 mm, rusty hairy, with *two minute glands* where the leaf is attached.

Venation—Midrib and lateral veins visible on the upper surface, raised and more distinct on the underside. The *basal pair of lateral veins* are *more conspicuous*. Tufts of hairs are sometimes in the axils of the major lateral veins and midrib.

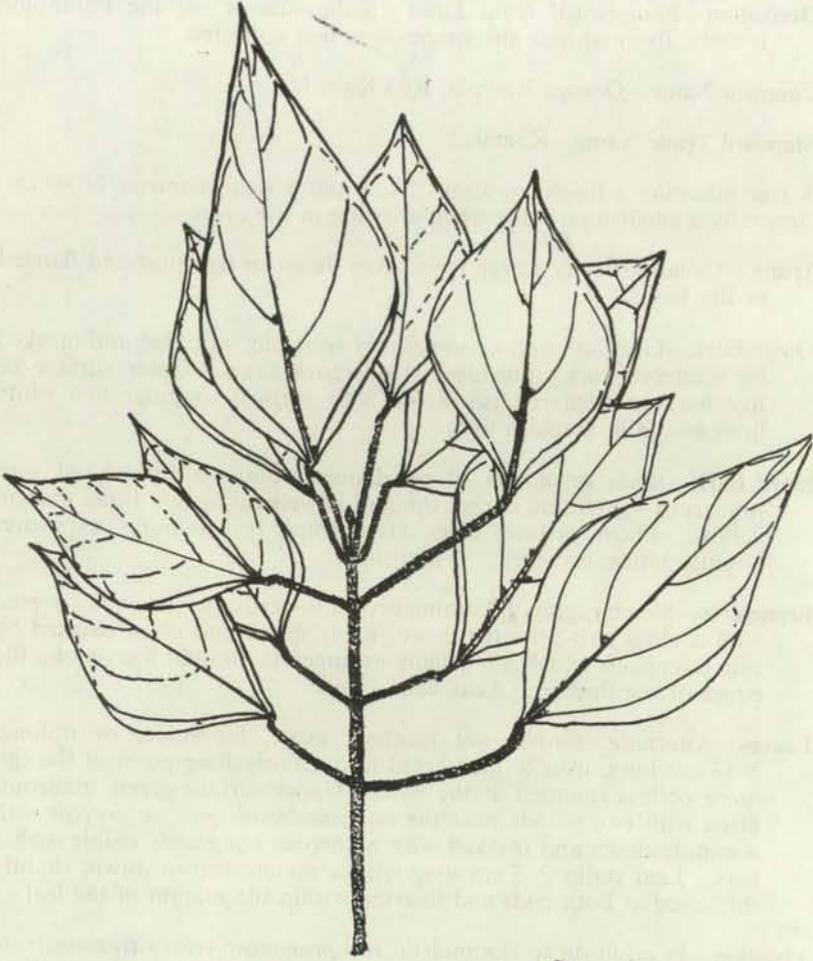
Flowers—Grey, male and female flowers in separate terminal or axillary racemes 7–10 cm long with a short close tomentum. Sepals five, glandular. Stamens numerous. Styles short, three to four, unbranched. Flowering period November.

Fruit—A capsule with a *glandular orange-coloured covering* which produces a bright yellow dye, *two to four lobed*, about 6 mm diameter. A single round seed in each lobe. Eaten by flying foxes. Fruit ripe January.

Habitat—Littoral, riverine and dry rainforests.

Distribution—From the Clarence River, N.S.W. to Townsville, Queensland and New Guinea. Recorded in N.S.W. from Coramba, Woolgoolga Creek F.R., Wild Cattle Creek S.F., Susan Island, Iluka N.R., Toonumbar S.F., Unumgar S.F., Roseberry S.F., Whian Whian S.F., Minyon Falls F.R., Wollongbar, Davis Scrub, Victoria Park N.R., Johnson's Scrub, Hayter's Hill, Tintenbar, Broken Head N.R., Brunswick Heads N.R., Nullum S.F., Stott's Island N.R. and Tweed Heads.

Timber and Uses—Wood white to light yellow when seasoned, soft, tough and close-grained, easily worked, but has no particular uses.



0 1 2 cm.

Plate No. 20
Mallotus discolor (F. Muell) F. Muell. ex Benth.

MALLOTUS PHILIPPENSIS (Lam.) J. Muell.

Synonym—*Croton philippense* Lam.

Reference—Linnaea XXXIV, 192, 1865.

Derivation—Philippensis from Latin “philippinensis” of the Philippine Islands, from whence the species was first collected.

Common Name—Orange Kamala, Red Kamala.

Standard Trade Name—Kamala.

A tree attaining a height of about 25 m and a stem diameter of 40 cm. Generally a small bushy tree when growing in the open.

Trunk—Usually short. Large trees often fluted or irregular and flanged at the base.

Outer Bark—Grey, smooth or sometimes vertically wrinkled and marked by scattered corky pustules. Underbark fawn. Outer surface of live bark mottled reddish-brown with vertical irregular fine white lines and faint greenish tints.

Inner Bark—Blaze on a tree 30 cm diameter pink to pinkish-red with numerous lighter and darker thread-like vertical lines. Inner margin yellow. Blaze surface fades after some few minutes exposure. Slightly bitter, no smell. 6 mm thick.

Branchlets—Slender, grey, becoming brown towards the ends and covered with a close rust-coloured down, finely fluted and often marked by raised lenticels which are usually arranged in straight lines along the edges of the flutings. Leaf scars visible.

Leaves—Alternate, simple, not toothed, ovate, lanceolate or oblong, 5–13 cm long, usually protracted into a fairly long point at the tip, more or less rounded at the base. Upper surface green, glabrous, often with two glands near the base, *underside pale or greyish* with a minute down and marked with numerous *red glands* visible with a lens. Leaf stalks 2–5 cm long with a minute brown down, slightly thickened at both ends and inserted within the margin of the leaf.

Venation—In addition to the midrib, *two prominent veins* originate from the base of the leaf and *run parallel to the margin for over half its length*. Lateral and net veins visible on the upper surface, but raised and more distinct on the underside.

Flowers—Yellow-brown. Male and female flowers on separate trees in rusty racemes up to 6 cm long, terminal or in the upper axils. Male sepals three to four, thin, about 2 mm long. Stamens numerous with short stalks and a red gland between the anthers. Female sepals joined in an egg-shaped tube around the ovary. Styles short and densely fringed on the inner side. Flowering period June to November.

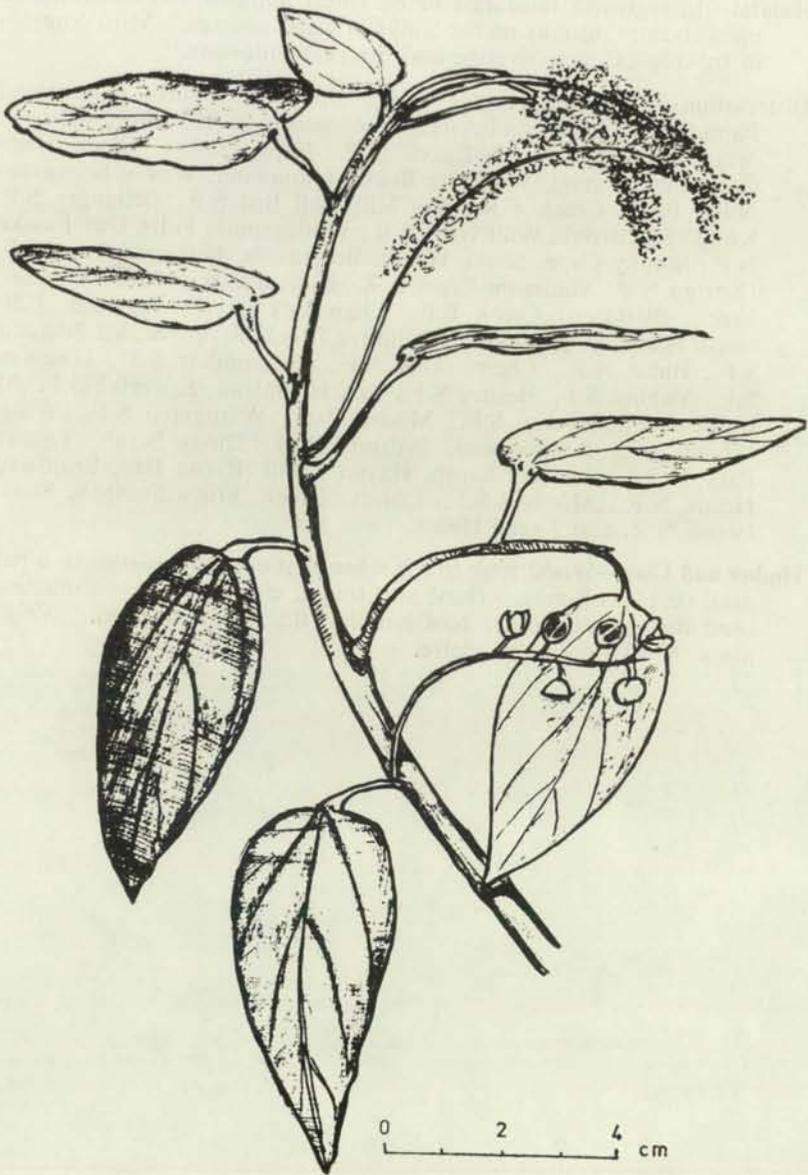


Plate No. 21
Mallotus philippensis (Lam.) J. Muell.

Fruit—A capsule, mostly three-lobed, covered with a *deep red powdery glandular substance*, 6–9 mm broad with one globular seed in each cell. This powdery substance is soluble in alcohol and gives a golden-red dye which is used in India for dyeing silk and is known as "Kamala". Fruit ripe September to February.

Habitat—In regrowth rainforest or on forest margins and sometimes in open country, usually on the banks of water courses. Most common in subtropical, dry, riverine and littoral rainforests.

Distribution—From the Hunter River, N.S.W. to North Queensland, Papua New Guinea and Asia. Recorded in N.S.W. from Muswellbrook, Dungog, Myall Lakes N.P., Cape Hawke, Black Head, Coocumbac Island, Wingham Brush, Gloucester, Woko, Boorganna N.R., Black Creek F.R., Big Hill, Bril Bril S.F., Bellangry S.F., Kunderang Brook, Willi Willi N.R., Wollomombi Falls, Guy Fawkes N.P., Smoky Cape, Shark Island, Bowraville, Bellinger River S.F., Dorrigo N.P., Madmans Creek F.R., Kangaroo River S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Glenugie F.R., Susan Island, Copmanhurst, Willowee Creek, Rivertree, Mt Pikapene S.F., Iluka N.R., Cherry Tree S.F., Toonumbar S.F., Unumgar S.F., Yabbra S.F., Beaury S.F., Acacia Plateau, Koreelah S.F., Mt Lindesay, Roseberry S.F., Moore Park, Wiangaree S.F., Whian Whian S.F., Boatharbour, Wilsons Park, Davis Scrub, Victoria Park N.R., Johnson's Scrub, Hayter's Hill, Byron Bay, Brunswick Heads N.R., Mooball S.F., Couchy Creek, Murwillumbah, Stott's Island N.R. and Tweed Heads.

Timber and Uses—Wood pink to red when first cut, but seasons to a pale pink or pinkish-grey. Hard and tough, close-grained. Sometimes used for axe and other tool handles, flooring and cases. Weight about 800 kg per cubic metre.

OMALANTHUS POPULIFOLIUS Grah.

Reference—Jameson's Edinb. Phil. Journ. Sc. 115, 1827.

Derivation—Omalanthus from Greek "homalos" smooth and "anthos" a flower, relating to the smooth flowers; populifolius from Latin "populus" the poplar and "folius" a leaf, referring to the poplar like leaves.

Common Name—Native Poplar, Native Bleeding Heart.

Standard Trade Name—None.

A shrub or small bushy tree sometimes exceeding 6 m high and 13 cm diameter. The leaves become smaller and more sparse on large and older trees. *Old leaves turn red or crimson, before falling.*

Trunk—Cylindrical.

Outer Bark—Greyish-brown, smooth, but sometimes marked by numerous pimples, very thin. Underbark grey-brown. Outer surface of live bark dull green.

Inner Bark—Blaze on a tree 13 cm diameter outer half green, inner half to the sapwood orange-yellow which changes to a yellowish-brown after a few minutes exposure. Bitter to taste, no distinct smell, 3 mm thick.

Branchlets—Thick, green, red, or a mixture of red, green or purplish tints towards the ends. Pale narrow leaf scars visible. Young shoots enclosed by *large broad stipules up to 2 cm long* which are quickly shed.

Leaves—Alternate, simple, not toothed, *broadly ovate or triangular*, 5–15 cm long, gradually tapering from the broad base to a blunt point at the tip. Upper surface green, *underside more or less greyish*. Not hairy. *Two circular glands at the base of the leaf. Leaf stalks 2–9 cm long*, hairless, exuding a milky sap when young.

Venation—Midrib and lateral veins visible on the upper surface, very distinct on the underside where the net veins are also visible.

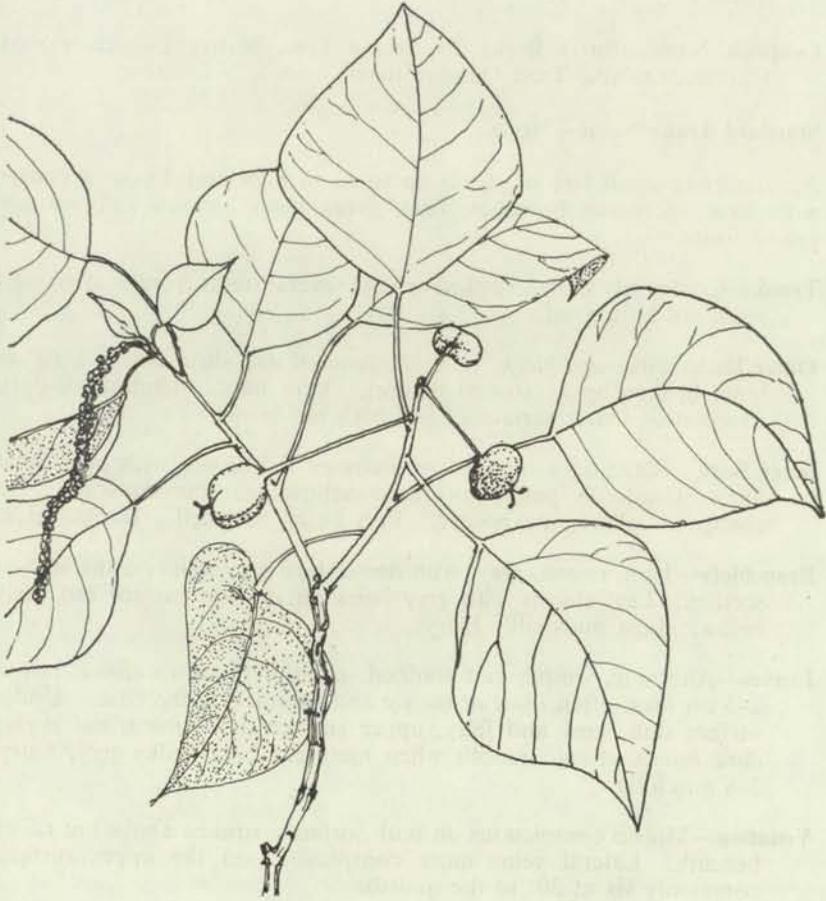
Flowers—Yellow-green to red. Male and female flowers mixed in terminal racemes, 2–10 cm long. The males in small clusters of three to six flowers occupying the greater part of the raceme, with one or a few solitary female flowers at the base of some racemes. Perianth truncated or two-lobed. Stamens six or less. Ovary two-celled. Styles two, not forked. Flowering period September to December.

Fruit—*Two-lobed capsule, bluish-white, somewhat flattened*, 6–9 mm long, two-celled with one seed in each cell, half enclosed in a fleshy aril. Fruit ripe December to March.

Habitat—Margins of rainforest of various types. Sometimes in fairly open country.

Distribution—From East Gippsland, Victoria to Coen, North Queensland, Papua New Guinea, Indonesia, Lord Howe and Norfolk Islands. Recorded in N.S.W. from Eden, Mt Dromedary, Conjola, Nowra, Mt Keira, Sydney, Olney S.F., Cedar Brush N.R. on Liverpool Range, Upper Allyn River, John Gould Island N.R., Myall Lakes N.P., Black Head, Harrington, Boorganna N.R., Port Macquarie, Doyle's River S.F., Guy Fawkes N.P., Styx River S.F., Shark Island, Way Way S.F., Dorrigo N.P., Orara West S.F., Bruxner Park F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Moonpar S.F., Blandford Creek F.P., Glenugie S.F., Gibraltar Range N.P., Iluka N.R., Toonumbar S.F., Unumgar S.F., Beaury S.F., Acacia Plateau, Nothofagus Mountain F.R., Wiangaree S.F., Whian Whian S.F., Big Scrub F.R., Minyon Falls F.R., Davis Scrub, Victoria Park N.R., Hayter's Hill, Mt Warning N.P., Limpinwood N.R. and Couchy Creek.

Timber and Uses—Wood white, soft and non-durable.



0 1 2 cm.

Plate No. 22
Omalanthus populifolius Grah.

PETALOSTIGMA PUBESCENS Domin.

Synonym—*Petalostigma quadriloculare* F. Muell. in part, *Petalostigma quadriloculare* var. *pubescens* Muell. Arg.

Reference—Biblioth. Bot. 22:871, 1927.

Derivation—*Petalostigma* from Latin “petalum” a petal and “stigma” a stigma, referring to the broad flattened petal-like branches of the stigma; *pubescens* from Latin “pubescens” downy, referring to the leaves.

Common Name—Bitter Bark, Strychnine Tree, Native Quince, Forest Quinine, Quinine Tree, Quinine Berry.

Standard Trade Name—None.

An attractive small tree or shrub up to 12 m high and 75 cm diameter with large spreading branches, dark green glossy leaves and orange-yellow fruits.

Trunk—Commonly short, crooked or with several stems from near ground level, not buttressed.

Outer Bark—Grey and black, vertically fissured into short ridges 2–10 cm long, broken by horizontal fissures. Very hard. Underbark dark chocolate. Outer surface of live bark red-brown.

Inner Bark—Blaze on a tree 75 cm diameter red-brown with horizontal lines. Gradually paling to creamy-yellow near the sapwood. No change in colour on exposure. *Very bitter*, no smell. 18 mm thick.

Branchlets—Thin, round, grey, with dense dark grey hairs on the leafless section. Leaf shoots with grey hairs on the top surface but rusty below. Leaf buds silky hairy.

Leaves—Alternate, simple, not toothed, *shortly elliptic to almost round*, 2–5 cm long, often *blunt at the tip* and rounded at the base. Under surface dull, grey and felty, upper surface dark green, *not drying dark brown*, shiny, smooth when mature. Leaf stalks grey, hairy, 3–8 mm long.

Venation—Midrib conspicuous on both surfaces, sunken above but raised beneath. Lateral veins more conspicuous on the upper surface, commonly six at 30° to the midrib.

Flowers—Creamy-fawn, separate male and female flowers, the males in axillary clusters of three to four and the females singly. Both sexes with four to six rounded silky-hairy sepals, 2–4 mm long. Petals absent. Stamens numerous, joined into a hairy cylinder except at the top where free and smooth. Ovary rounded to egg-shaped, silky, four-celled, with three or four styles, each expanding into a large wedge-shaped, dark brown *petal-like stigmatic arm*. Flowering period October to January.

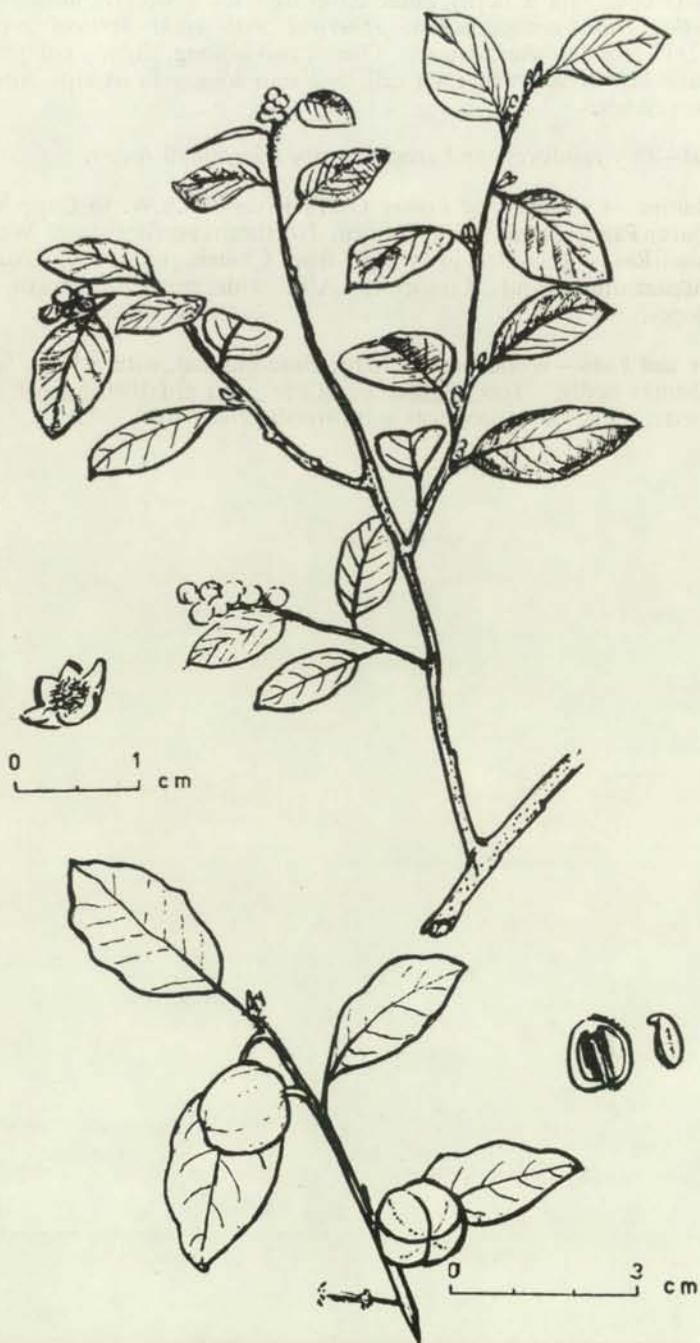


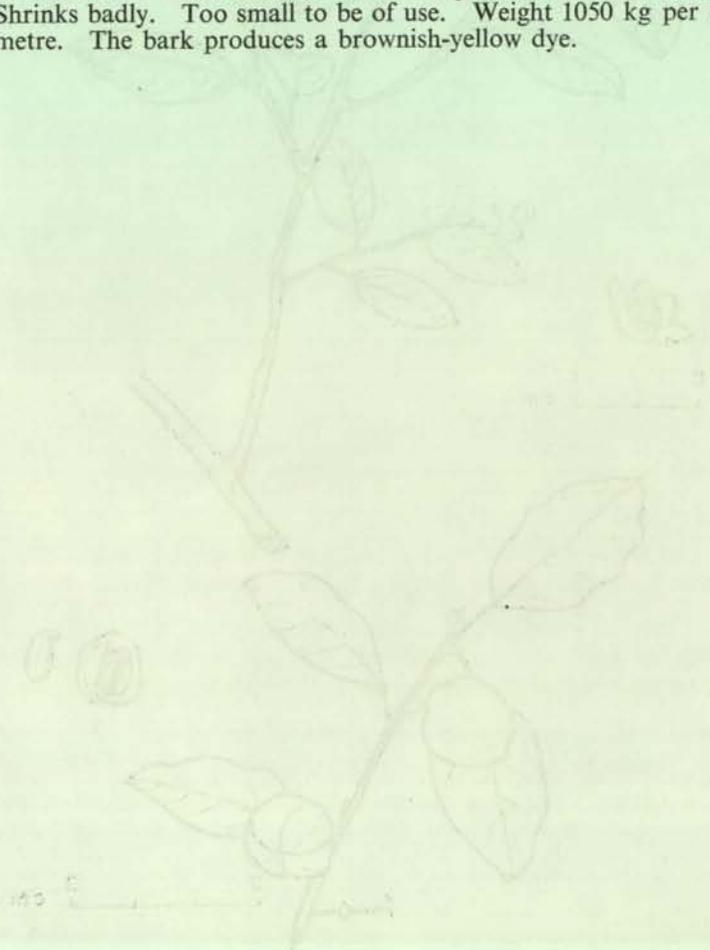
Plate No. 23
Petalostigma pubescens Domin.

Fruit—Drupe, with a fleshy outer covering over a woody, mostly *four-celled fruit, orange-yellow, spherical with eight vertical grooves, 12–17 mm diameter, downy*. One or two oblong, slightly compressed dark brown seeds in each cell, 5–7 mm long. Fruit ripe April to November.

Habitat—Dry rainforest and creeks in dry sclerophyll forest.

Distribution—Clarence and Lower Orara Rivers, N.S.W. to Cape York, Queensland, Papua New Guinea, Northern Territory and Western Australia. Recorded in N.S.W. from Chambigne Creek, Coaldale, Copmanhurst and Ramornie. Also widespread on north west slopes.

Timber and Uses—Wood brown, hard, close-grained, with a wavy figure. Shrinks badly. Too small to be of use. Weight 1050 kg per cubic metre. The bark produces a brownish-yellow dye.



PETALOSTIGMA TRILOCULARE Muell. Arg.

Synonym—*P. quadriloculare* var. *glabrescens* Benth., *P. glabrescens* Domin.

Reference—Fl. XLVII, 1864.

Derivation—Triloculare from Latin “tri” three and “locularis” a chamber, referring to the supposedly three-celled rather than four-celled fruit.

Common Name—Suggest Long-leaved Bitter Bark.

Standard Trade Name—None.

Small tree 15 m tall and 25 cm diameter.

Trunk—Slightly swollen at the base.

Outer Bark—Grey-black with brown in the vertical fissures. Smooth in smaller trees. Underbark dark brown with cream transverse curved bands. Outer surface of live bark plum to deep pink-brown.

Inner Bark—Blaze on a tree 25 cm diameter pink-red near the outer margin shading to creamy-yellow towards the sapwood. No change in colour on exposure. *Very bitter taste*, no smell. 10 mm thick.

Branchlets—Thin, grey-brown with silky grey-brown hairs. Leaf buds grey-brown, furry. Dull grey, glabrous on leafless portions.

Leaves—Alternate, simple, not toothed, rather *narrow elliptic*, 5–8 cm long, *pointed at the tip* and tapered at the base. Dark green *drying dark brown*, smooth and shiny above, grey felty, to almost smooth and dull beneath. Leaf stalks grey, furry, 5–7 mm long.

Venation—Midrib conspicuous above but less so beneath; sunken above but raised beneath. Lateral veins more conspicuous above, four to six at 45° to the midrib.

Flowers—Green to creamy-fawn, only male flowers strongly lemon-scented, male and female flowers on separate trees, the males in axillary clusters of three to five and the females singly. Sepals of male flowers four to six, rounded, silky-hairy, 2–4 mm long. Petals absent. Stamens numerous. Female flowers with two layers of three silky-hairy, pointed sepals. Ovary of female flowers round to egg-shaped with three or four cells, silky-hairy, and *styles terminating in three cream ribbon-like stigmas*. Flowering period October to January or as early as July.

Fruit—Drupe with a fleshy outer covering over a woody mostly four-celled fruit, *orange-brown, spherical with eight indistinct vertical grooves*, 10–17 mm diameter, glossy, *smooth when ripe*. Seeds one or two in each cell, elliptic-flattened, orange-brown, 5–7 mm long. Fruit ripe March to October.

Habitat—Bordering on or in dry rainforest on sandy soil derived from sandstone or old sand dunes.

Distribution—Kangaroo River S.F., N.S.W. to Rockhampton, Queensland and West to Yetman and Coolatai. Recorded in N.S.W. from Madmans Creek F.R., Sherwood Cliffs, Kangaroo River S.F., Wild Cattle Creek S.F., Browns Knob Newfoundland, Pillar Valley, Coal-dale, Tabbimoble, Woodburn, Iluka N.R., Evans River, Richmond River and Yetman.

At Dalmorton, Ramornie and Copmanhurst there are intermediates between *P. triloculare* and *P. pubescens*.

Timber and Uses—Possibly similar to *P. pubescens*.

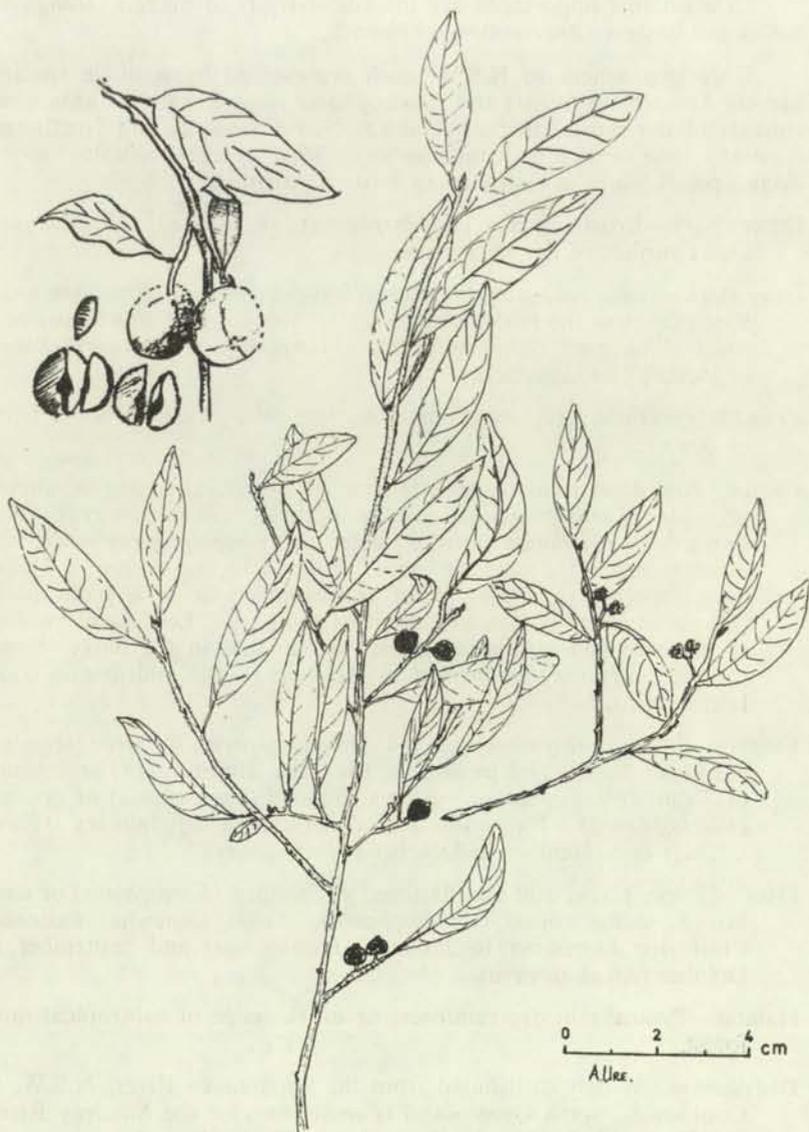


Plate No. 24
Petalostigma triloculare Muell. Arg.

FAMILY ANACARDIACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

A large family of 60 genera and 600 species in mostly tropical countries, but some in temperate areas with one genus in New Zealand.

Of economic importance are the edible fruits of mango, *Mangifera indica* and cashew, *Anacardium occidentale*.

Only two genera in N.S.W. each represented by a single species, namely *Euroschinus falcata* and *Rhodosphaera rhodanthema*. *Euroschinus* consists of ten species in New Guinea, New Caledonia and North-east Australia (one or two endemic species). *Rhodosphaera* contains only a single species which is restricted to Eastern Australia.

Outer Bark—Brown, scaly (*Rhodosphaera*) or fissured (*Euroschinus*).
Outer surface of live bark pink.

Inner Bark—Blaze red, granular (*Euroschinus*) or fibrous (*Rhodosphaera*).
Resin ducts in the bark produce a clear thick sap (*Euroschinus*) or a white thick gum (*Rhodosphaera*). Mango-like smell (*Euroschinus*) or lacking (*Rhodosphaera*).

Branchlets—Thick, grey with numerous lenticels. Young shoots hairy or downy.

Leaves—Alternate, pinnate, leaflets four to twelve, alternate or almost opposite (*Euroschinus*) or mostly opposite (*Rhodosphaera*). Not toothed (*Euroschinus*) or indistinctly so (*Rhodosphaera*) where the juvenile leaves are wavy or lobed. Elliptic to egg-shaped, 4–10 cm long, tapering to a long point (*Euroschinus*) or to a blunt point (*Rhodosphaera*). Often assymetric at the base. Leaf stalks swollen at the base and exuding a similar sap to that in the bark. Small tufts of hairs may be present in the axils of the midrib and some lateral veins.

Flowers—Pink (*Euroschinus*) or red (*Rhodosphaera*) in large terminal panicles. Sepals and petals five, the latter 2 mm long (*Euroschinus*) or 3 mm (*Rhodosphaera*). Sepals rounded (*Euroschinus*) or pointed (*Rhodosphaera*). Flowering period December to January (*Euroschinus*) or September to October (*Rhodosphaera*).

Fruit—Drupe, black, dull and flattened egg-shaped (*Euroschinus*) or dark brown, shiny, round (*Rhodosphaera*). Seeds somewhat flattened. Fruit ripe December to January (*Euroschinus*) and September to October (*Rhodosphaera*).

Habitat—Typically in dry rainforest or on the edge of subtropical rainforest.

Distribution—Widely distributed from the Shoalhaven River, N.S.W. to Cooktown, North Queensland (*Euroschinus*) or the Macleay River, N.S.W. to Maryborough, Queensland (*Rhodosphaera*).

Timber and Uses—Pink and woolly (*Euroschinus*) or yellowish-bronze with a sheen (*Rhodosphaera*).

EUROSCHINUS FALCATA Hook. f.

Reference—Benth. and Hook. Gen. Plant. 1, 422, 1862–67.

Derivation—Euroschinus from Greek “euros” south-east wind and “schinos” the mastic tree, probably referring to it as a south-east *schinus*; falcata from Latin “falcata” sickle-shaped because of the curved leaves.

Common Name—Chinaman’s Cedar, Ribbonwood, Port Macquarie Beech, Maiden’s Blush, Blush Cudgerie, Pink Poplar.

Standard Trade Name—Pink Poplar.

A tree attaining a height of 40 m and a stem diameter of 90 cm.

Trunk—Often flanged or buttressed at the base in large trees.

Outer Bark—*Brown, usually wrinkled and finely scaly.* Underbark dark brown. Outer surface of live bark pink with creamy-pink blotches.

Inner Bark—Blaze on a tree 45 cm diameter *red, of a finely flecked pattern* due to its somewhat granular composition. Paler towards the sapwood. *A clear sap exudes from the cut surface and slowly sets to a consistency like bee’s wax.* No change in colour on exposure. No taste, but a *turpentine or mango-like smell.* 8 mm thick.

Branchlets—Thick, fawn, dotted by numerous lenticels, all parts glabrous except the fawn downy very young shoots and branches of the inflorescence.

Leaves—Alternate, pinnate, the rachis bearing four to ten *alternate or sub-opposite leaflets*, not toothed, elliptical or egg-shaped 5–10 cm long, drawn into a long point at the tip, assymetrical at the base. Green both surfaces, paler beneath. *Stalks exude a clear thick resinous sap smelling like mangos.* Leaf stalks swollen at the base, 3–8 cm long. Leaflet stalks up to 13 mm long.

Venation—Midrib raised and venation more distinct on the under surface, *sometimes with small tufts of hairs* in the axils of the midrib and some lateral veins.

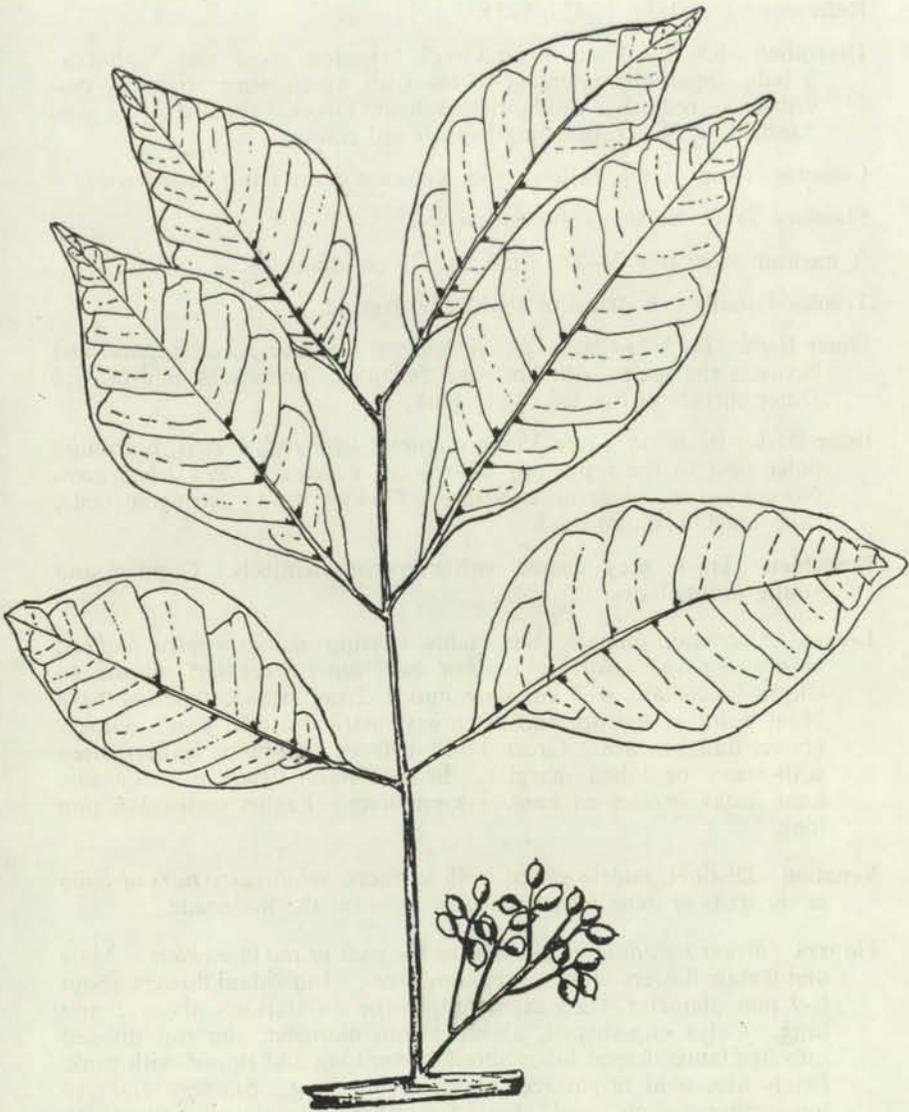
Flowers—*Pink*, in large terminal panicles, or springing from the forks of the upper leaves, generally shorter than the leaves. Sepals, five, brown, smooth, very small. Petals five, pink with cream margins, smooth, 2 mm long. Stamens eight. Flowering period November to December.

Fruit—Drupe, *black*, scented, obliquely egg-shaped (*like a small mango*), 6–9 mm long. Seed obliquely egg-shaped, 5 mm long. Fruit ripe December to January.

Habitat—In all types of rainforest but especially in littoral, riverine and dry rainforests. A common pioneer species in the rainforest—sclerophyll forest ecotone.

Distribution—From Jervis Bay, N.S.W. to Cooktown, North Queensland. Recorded in N.S.W. from Jervis Bay, Comerong Island, Minnamurra Falls, Albion Park, Wollongong, Royal N.P., Gosford, Upper Williams River, John Gould Island N.R., Seal Rocks, Cape Hawke, Black Head, Woko, Boorganna N.R., Black Creek F.R., Sea Acres, Point Plomer, Big Hill, Willi Willi N.R., Smoky Cape, Shark Island, Warrell Creek, Nambucca S.F., Pine Creek S.F., Bundagen F.R., Bellingen, Boambee S.F., Bruxner Park F.R., Woolgoolga Creek F.R., Waihou F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Blandford Creek F.P., Chandler's Creek, Willowee Creek, Ewingar S.F., Boonoo Boonoo Falls, Rivertree, Iluka N.R., Bundjalung N.P., Mt Pikapene S.F., Cherry Tree S.F., Toonumbar S.F., Unungar S.F., Yabbra S.F., Edinburgh Castle S.F., Acacia Creek, Mt Lindesay, Roseberry S.F., Sawpit Creek, Lever's Plateau, Wiangaree S.F., Whian Whian S.F., Boatharbour, Wilson's Park, Hayter's Hill, Ballina, Broken Head N.R., Brunswick Heads N.R., Cudgen Lake, Mebbin S.F., Pumpenbil, Mt Warning N.P., Murwillumbah, Mt Cougal, Stott's Island N.R. and Terranora.

Timber and Uses—Wood pinkish, soft, light and tough. Although resembling red cedar, it is woolly, difficult to work and is non-durable, hence the historically derogatory common name of "China-man's Cedar". Liable to attack by *Lyctus* borers and fungi. It is used for plywood, furniture and interior joinery. The most favoured wood for brake blocks on bullock waggons. It is now very scarce. Weight 400–575 kg per cubic metre.



0 1 2 cm.

Plate No. 25
Euroschinus falcata Hook. f.

RHODOSPHAERA RHODANTHEMA Engl.

Reference—Bot. Jahr. 1, 423, 1881.

Derivation—Rhodosphaera from Greek “rhodon” rose and “sphaera” a ball, apparently referring to the fruit which were originally described as reddish; rhodanthema from Greek “rhodon” rose and “anthos” a flower, referring to their red colour.

Common Name—Deep Yellowwood, Yellow Cedar, Tulip Satinwood.

Standard Trade Name—Tulip Satinwood.

A medium sized tree 24–27 m tall and 75 cm diameter.

Trunk—Usually cylindrical or slightly buttressed.

Outer Bark—*Dark brown, scaly, shedding in irregular patches*, patterned between the scales with brownish pustules; underbark mid-brown. Outer surface of live bark light pink.

Inner Bark—Blaze on a tree 35 cm diameter *light red, fibrous*, becoming paler next to the sapwood. When cut *exuding a thick white gum*. No change in colour on exposure. Sticky with an astringent taste, cane smell. 10 mm thick.

Branchlets—Thick, grey, dotted with numerous lenticels. Coppice and young shoots hairy.

Leaves—Alternate, pinnate, the rachis bearing *six to twelve leaflets, mostly opposite, scarcely toothed but rather irregular*, elliptic to elliptic-lanceolate, 4–7 cm long and 1–2 cm broad, tapering to a blunt point at the tip, and often asymmetrical at the base. Glossy above, dull beneath. Green both surfaces. Coppice leaflets often with wavy or lobed margins. Broken parts *exude a milky sap*. Leaf stalks swollen at base, 3–8 cm long. Leaflet stalks 3–6 mm long.

Venation—Distinct, midrib raised both surfaces, *small rusty tufts of hairs in the axils of most lateral and mid veins* on the underside.

Flowers—*Bright red, in large panicles at the ends of the branchlets*. Male and female flowers often on separate trees. Individual flowers about 6–9 mm diameter when expanded, borne on stalklets about 2 mm long. Calyx cup-shaped, about 3 mm diameter, the rim divided into five lance-shaped lobes about 1 mm long and tipped with pink. Petals five, oval bright red, about 3 mm long. Stamens eight to ten, anthers yellow, oval, about 1 mm long on colourless filaments, about 1 mm long inserted on the outside and below the margin of a shallow, concave disk. Ovary in female flowers almost globular, bearing at its summit three styles terminated by thickened stigmas. Flowering period September to October.

Fruit—Drupe, *dry, brown and shining, globular, about 1 cm diameter in dense bunches*, containing a single seed enclosed in a very hard woody layer. Seed flattened, about 9 mm broad. Fruit ripe February to June.

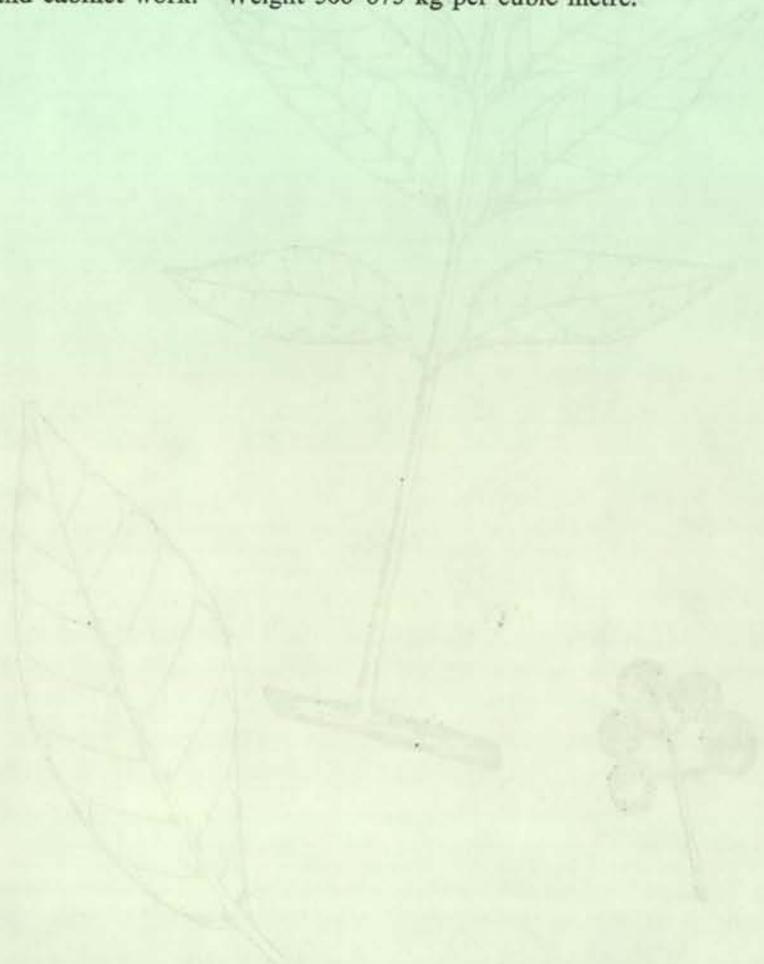


Plate No. 26
Rhodospaera rhodantha Engl.

Habitat—Subtropical and dry rainforests.

Distribution—From Macleay River, N.S.W. to Maryborough, Queensland. Recorded in N.S.W. from Kunderang Brook, Willi Willi N.R., Wollomombi Falls, Guy Fawkes River N.P., Way Way S.F., Taylor's Arm Mistake S.F., Mt Coramba, Chandler's Creek, Cherry Tree S.F., Richmond Range S.F., Toonumbar S.F., Koreelah S.F., Moore Park, Sawpit Creek, Roseberry S.F., Wiangaree S.F., Kyogle, Whian Whian S.F., Wilson Park and Limpinwood N.R.

Timber and Uses—Pleasing *yellowish-bronze with a silky lustre*. Soft, fine-grained and beautifully figured. Durable. Used for inlays and cabinet work. Weight 500–875 kg per cubic metre.



FAMILY CORYNOCARPACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

Consists of only a single genus of five species, one each in New Guinea and North-east Queensland, New Hebrides, New Caledonia, New Zealand and Glenugie Peak near Grafton.

Probably most closely related to family *Anacardiaceae* but without resin ducts in bark, branchlets, leaf stalks and fruits. Also differs in the presence of five staminodes alternating with the five stamens rather than possessing up to ten stamens without staminodes.

Leaves—Alternate, simple, entire on mature leaves.

Flowers—In terminal panicles. Sepals and petals each five with the petals attached to the base of the sepals. Stamens five with five staminodes. Disk with five large glands opposite the staminodes. Ovary one-celled, with two ovules but only one fertile.

Fruit—Fleshy drupe, one-seeded.

CORYNOCARPUS SP. NOV.

Derivation—Corynocarpus from Greek “koryne” a club and “carpos” a fruit, referring to the club shaped fruit of some species.

Common Name—Glenugie Karaka.

Standard Trade Name—None.

A glabrous shrub or small tree, sometimes exceeding 6 m in height and attaining a stem diameter of 17 cm.

Trunk—Often crooked and bumpy, not buttressed.

Outer Bark—Grey-brown, fissured, smooth and cork-like between the fissures. Underbark dark brown, leathery with a thin white corky inner layer. Outer surface of live bark fawn.

Inner Bark—Blaze on a tree 17 cm diameter with a fawn narrow outer layer then mid-brown with a few lighter vertical streaks. Sapwood straw coloured with dark vertical regular lines. No change in colour on exposure. No taste or smell. 8 mm thick.

Branchlets—Thick, *green turning purple-black* with scattered paler raised round lenticels.

Leaves—Alternate, simple, margins entire on older trees, but *coarsely and sharply toothed on young trees* and coppice shoots. Elliptic, oblong-elliptic or obovate, 5–18 cm long, bluntly pointed at the tip, leathery, dark green and shining on the upper surface but paler below. Leaf stalks 6–9 mm long.

Venation—Midrib, lateral nerves and net veins visible on both surfaces.

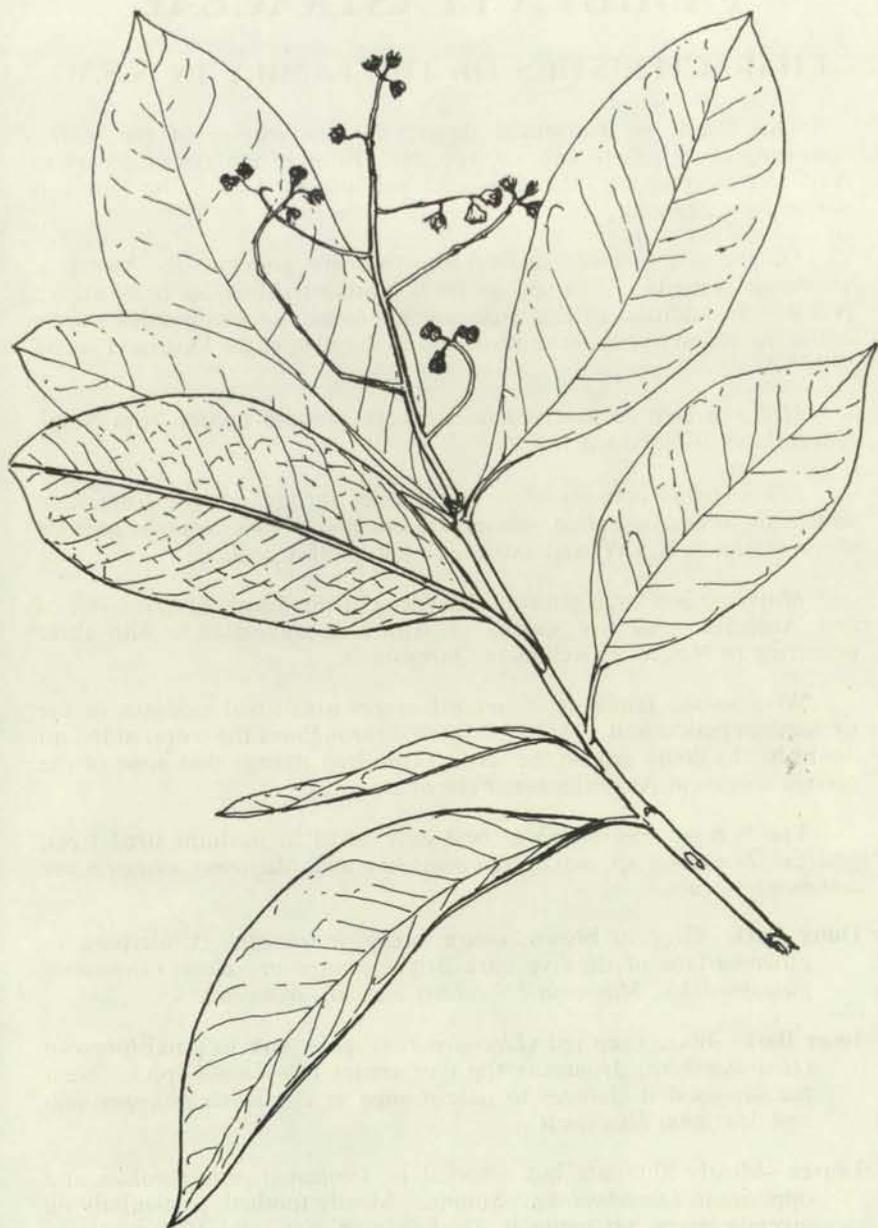
Flowers—White, in terminal panicles, shorter, or as long as the leaves, individual flowers about 3 mm diameter. Flower stalk, 2–3 mm long. Calyx persistent, five-lobed, glossy pale green and somewhat fleshy. Petals five, broadly spoon-shaped. Stamens five, attached to the centre of the base of the petals, filaments thickened towards the base; usually slightly longer than the petals. Staminodes five, resembling petals and alternating with them. Ovary ovoid usually two-celled, but one cell often empty; style slender with an oval stigma. Flowering period October to November.

Fruit—Drupe, black. No other details available, as it rarely sets fruit.

Habitat—Dry rainforest on steep dry stony slopes.

Distribution—Recorded only from Glenugie Peak, about 20 km S.E. of Grafton, N.S.W.

Timber and Uses—Too small to be of use.



0 1 2 cm.

Plate No. 27
Corynocarpus sp. nov.

FAMILY CELASTRACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

This family is distributed throughout the tropics of the world, consisting of 55 genera and 850 species. Three of the eleven genera in Australia are endemic, the remainder are also in Asia. The family is not in New Zealand.

Of the four genera in N.S.W., two are endemic to Australia. *Denhamia* consists of five species from Northern Australia to Northern N.S.W. In addition to the wide-ranging *Denhamia pittosporoides* there is also an undescribed species restricted to the edge of the Dorrigo Plateau in N.S.W.

Hedraianthera porphyropetala is monotypic and occurs from North Queensland to Northern N.S.W.

Elaeodendron consists of sixteen species throughout the tropics, of which all three Australian species are endemic. *Elaeodendron australe* alone occurs in N.S.W. and extends to the South Coast.

Maytenus is a large genus of 225 species from South America, Africa and Australia. All five species in Australia are endemic with three occurring in N.S.W. as well as in Queensland.

Whereas the family is of ancient origin with fossil evidence in the Cretaceous period and is widely dispersed throughout the world aided no doubt by the fleshy aril on the seed, it is indeed strange that none of the present species in Australia occur elsewhere.

The N.S.W. species are at best only small to medium sized trees, whereas *Denhamia* sp. nov., *Hedraianthera* and *Maytenus silvestris* are commonly shrubs.

Outer Bark—Grey to brown, rough, scaly or smooth. Underbark or outer surface of the live bark bright orange or yellow (*Denhamia pittosporoides*, *Maytenus bilocularis* and *M. disperma*).

Inner Bark—Blaze deep red (*Elaeodendron*), pale pink to pinkish-brown (*Hedraianthera*, *Maytenus* spp.) or cream (*Denhamia* spp.). Near the sapwood it changes to pale orange in *Denhamia pittosporoides* and *Maytenus bilocularis*.

Leaves—Mostly alternate but whorled in *Denhamia pittosporoides* and opposite in *Elaeodendron*. Simple. Mostly toothed, particularly on juvenile leaves but entire in *Denhamia* sp. nov. and *Hedraianthera*. Leaves elliptic to orbicular and over 2 cm wide except *Denhamia* sp. nov. and *Maytenus silvestris* where they are under 1.5 cm wide.

Venation—Lateral veins obscure in *Elaeodendron* and *Hedraianthera* otherwise clearly visible, diverging from the midrib at 45° or more (only 30° in *Maytenus disperma*).

Flowers—White, cream or pale green (deep red in *Hedraianthera*) in axillary cymes, racemes or singly (*Denhamia* sp. nov., *Hedraianthera*). Flower stalks generally under 1 cm long but up to 3 cm in *Hedraianthera*. Sepals and petals five, but four in *Elaeodendron* and *Maytenus disperma*.

Fruit—Either an indehiscent bright red drupe with one to two seeds (*Elaeodendron*) or a capsule splitting into two valves and cells (*Maytenus*), three or four (*Denhamia*) or usually five (*Hedraianthera*). The number of seeds in each cell of the capsule is commonly one (*Maytenus*), two (*Denhamia*) and two to three (*Hedraianthera*). In *Denhamia* and *Maytenus* the seeds are enclosed in a fleshy aril (except *M. disperma* where it is restricted to the basal portion), in *Hedraianthera* it is on one side only whilst in *Elaeodendron* it is absent.

Habitat—*Maytenus* spp. and *Elaeodendron* are typically in dry rainforest, but the latter is very common in littoral rainforest also. *Hedraianthera* prefers subtropical and littoral rainforests. *Denhamia pittosporoides* occurs in all rainforest formations, whereas *Denhamia* sp. nov. is restricted to warm and cool temperate rainforests. Except for *Hedraianthera* they are found as pioneers in the rainforest-sclerophyll forest ecotone.

Distribution—Only two of the seven N.S.W. species occur south of the Manning River (*Elaeodendron* and *Maytenus silvestris*) reaching their limits at Batemans Bay and Picton respectively. Most extend well north in Queensland except *Maytenus silvestris* (Caloundra) and *Denhamia* sp. nov. (restricted to the Dorrigo escarpment).

Timber and Uses—Pale, hard and close-grained. Could be useful for carving, inlays and turnery.

KEY TO THE RAINFOREST TREE SPECIES OF CELASTRACEAE AND SIPHONODONTACEAE IN N.S.W.

A. USING LEAVES AND BRANCHLETS ONLY

1. Leaves all opposite *Elaeodendron australe* Vent.
1. Leaves mostly alternate 2
 2. Leaves always entire 3
 2. Leaves sometimes toothed 7
 3. Leaves under 1.5 cm wide 4
 4. Net veins conspicuous and paler on the upper surface
Denhamia sp. nov.
 4. Net veins obscure on the upper surface .. *Maytenus silvestris*
N. Lander & J. Johnson
 3. Leaves over 1.5 cm wide..... 5
 5. Leaf blade tapering gradually to the leaf stalk 7 mm long.
Lateral veins at 30° to the midrib *Maytenus disperma*
(F. Muell.) Loes.
 5. Leaf blade tapering abruptly to the leaf stalk 2-5 mm long.
Lateral veins at 45° to the midrib 6
 6. Leaves tapering to a point .. *Hedraianthera porphyropetala*
F. Muell.
 6. Leaves rounded and hardly tapering .. *Siphonodon australe*
Benth.
7. Leaves in groups of three to four at ends of branchlets
Denhamia pittosporoides F. Muell.
7. Leaves not in groups 8
 8. Leaves broad, 2-5 cm wide 9
 8. Leaves narrow, .5-2 cm wide..... 10
 9. Leaf blade tapering gradually to the leaf stalk 7 mm long.
Lateral veins at 30° to the midrib *Maytenus disperma*
(F. Muell.) Loes.
 9. Leaf blade tapering abruptly to the leaf stalk 2-5 mm
long. Lateral veins at 45° to the midrib
Maytenus bilocularis (F. Muell.) Loes.
 10. Leaves up to 1.2 cm wide *Maytenus silvestris*
N. Lander & L. Johnson
 10. Leaves 1.2-2.0 cm wide *Maytenus silvestris*
x *M. bilocularis*

B. USING BARK ONLY

1. Bark corky, fissured with powdery yellow patches.....
Siphonodon australe Benth.
1. Bark not corky, rough, scaly or smooth 2
2. Inner layers of dead bark bright orange or yellow..... 3
3. Outer bark smooth, live bark pale pink
Maytenus bilocularis (F. Muell.) Loes.
3. Outer bark roughened or scaly, live bark bright salmon pink
or cream 4
4. Live bark cream *Denhamia pittosporoides* F. Muell.
4. Live bark bright salmon pink on the outer half
Maytenus disperma (F. Muell.) Loes.
2. Inner layers of dead bark grey, brown or red 5
5. Live bark deep red *Elaeodendron australe* Vent.
5. Live bark cream to pinkish-brown 6
6. Live bark creamy-biscuit without pink shades
Denhamia sp. nov.
6. Live bark with pink shades 7
7. Live bark pink-brown, underbark creamy-fawn
Hedraianthera porphyropetala F. Muell.
7. Live bark cream speckled with pink, underbark brown
Maytenus silvestris N. Lander & L. Johnson

DENHAMIA PITTOSPOROIDES F. Muell.

Reference—Phil. Soc. Vic., III, 30, 1859.

Derivation—Denhamia after Captain D. Denham, an African explorer; pittosporoides from pittosporum and Greek "eidos" resembling because of the similarity of the leaf arrangement to Pittosporum.

Common Name—Orange Boxwood.

Standard Trade Name—None.

A small tree attaining a height of 18 m and a stem diameter of 50 cm. The crown is rather sparsely leaved.

Trunk—Usually fluted or irregular.

Outer Bark—*Brown*, rough or slightly scaly, with transverse lines. Underbark patterned with transverse lines, creamy, with occasional reddish streaks. Outer surface of live bark *bright orange* or apple green with cream flecks on small trees.

Inner Bark—Blaze from a tree 40 cm diameter, creamy with a yellowish-fawn outer layer. Sapwood boundary only turns pale orange on exposure. Bitter to taste, doughy or fishy smell. 6 mm thick.

Branchlets—Moderately slender, grey-brown, smooth with small raised lumps from the old axillary buds.

Leaves—*Alternate or grouped at the ends of the branchlets*, simple, toothed or rarely entire, elliptic to lanceolate, 7–13 cm long, 2–4 cm broad, tapering gradually to both tip and base, green and shiny on both surfaces. Leaf stalks 6–9 mm long, smooth, green.

Venation—Net and lateral veins distinct, midrib raised on both surfaces.

Flowers—Creamy-white, on stalked cymes, few-flowered, on short leafless branches on the old wood or at the base of the leafy branches. Calyx segments broadly orbicular. Petals ovate, about 2 mm long, rather thick at the base. Ovary fleshy, completely three-celled, three to four ovules in each cell. Flowering period October to November.

Fruit—A capsule, *hard and woody, grey, globular with a sharp protuberance at the top* 3 mm long, 15 mm diameter, three or four celled and splitting into three or four valves. *Seeds* two or one in each cell, *dark brown*, 3 mm diameter, more or less *enveloped at the tip by a thin fleshy bright red covering*. Fruit ripe February to June.

Habitat—A common tree occurring in most rainforest areas and on their margins.

Distribution—From Manning River, N.S.W. to Rockhampton, Queensland. Recorded in N.S.W. from Wingham Brush, Weelah N.R., Boorganna N.R., Black Creek F.R., Middlebrother Mountain, Long Flat, Bellangry S.F., Wollomombi Gorge, Ingalba S.F., Way



0 1 2 cm.
E.S.

Plate No. 28
Denhamia pittosporoides F. Muell.

Way S.F., Oakes S.F., New England N.P., Pine Creek S.F., Bundagen F.R., Never Never S.F., Killingoondie S.F., Tucker's Nob S.F., Orara West S.F., Bruxner Park F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Moonpar S.F., Cloud's Creek S.F., Mt Hyland, Marengo S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Gibraltar Range S.F. and N.P., Boonoo Boonoo Falls, Drake, Mt Pikapene S.F., Cambridge Plateau, Toonumbar S.F., Unumgar S.F., Beary S.F., Acacia Plateau, Mt Wilson F.P., Mt Clunie F.P., Nothofagus Mountain F.R., Mt Lindesay, Lever's Plateau, Roseberry S.F., Wiangaree S.F., Terania Creek, Whian Whian S.F., Big Scrub F.R., Boomerang Falls, Lismore, Davis Scrub, Ballina, Brunswick Heads N.R., Billinudgel, Crabbe's Creek, Mebbin S.F., Mt Warning N.P., Limpinwood N.R., Numinbah Creek, Couchy Creek and Murwillumbah.

Timber and Uses—Wood uniformly pale. Extremely hard box-like, suitable for turnery, knife-handles, rulers and engraving.

DENHAMIA SP. NOV.

Reference—

Derivation—

Common Name—Mountain Denhamia.

Standard Trade Name—None.

A small erect tree or shrub up to 6 m tall and 7 cm diameter. Usually much branched from the ground.

Trunk—Not buttressed.

Outer Bark—Grey or brown, smooth to slightly scaly or with occasional vertical cracks. Underbark mottled grey and brown or sometimes bright orange. Outer surface of live bark green with cream vertical bands.

Inner Bark—Blaze on a tree 7 cm diameter creamy biscuit. Sapwood white with a transparent margin. No change in colour upon exposure. No taste or smell. 2 mm thick.

Branchlets—Purple-brown where leafy, otherwise grey, smooth, but somewhat ribbed due to the decurrent leaf bases.

Leaves—Alternate, simple, not toothed, lanceolate to broad lanceolate, 2.5–4.5 cm long, tapering to the base and to a point at the tip. *Dull and smooth both sides*, dark green above, paler below. Margin recurved. Leaf stalk under 1 mm.

Venation—Midrib and lateral veins raised and visible on both surfaces. Net veins obvious only on dried specimens. Major lateral veins six to eight at 30°–45° to the midrib.

Flowers—Probably cream, single in the axils on slender stalks, 5–8 mm long with a midway joint and deciduous stipules. Sepals small triangular, five. Petals five. Stamines four. Style 2 mm long with a three-lobed stigma. Flowering period March to April.

Fruit—Capsule, *hard and woody, yellow* when ripe, ovoid pointed, *three-celled* and splitting into three valves, cream inside. 10–12 mm long. Seeds one or two in each cell, *dark brown to black*, elliptical flattened, 5 mm long, *covered except for the top by an orange-red aril*. Fruit ripe April to August.

Habitat—Margin of cool temperate rainforest (*Nothofagus*) with *Acacia melanoxydon* and *Pittosporum undulatum* on stony brown earth derived from trachyte.

Distribution—Locally abundant along the Bellinger river escarpment from Hanging Rock to The Lookout, head of Little Murray River, 15 km S.W. of Dorrigo, Deervale, Killungoondie Plain F.R., Tuckers Nob and Mt Hyland.

Timber and Uses—Too small to be used.



0 1 2 cm.

Plate No. 29
Denhamia sp. nov.

ELAEODENDRON AUSTRALE Vent.

Reference—Jard. Malm. t, 117, 1804.

Derivation—Elaeodendron from Greek “elaeos” olive and “dendron” a tree, referring to the resemblance of the fruit to the olive; australe from Latin “australis” Australian, being the first of the two Australian species to be described.

Common Name—Red Olive-berry, Red-fruited Olive Plum.

Standard Trade Name—None.

A small tree up to 8–9 m tall and 15–20 cm diameter. Ornamental when open grown, flowering and fruiting as a shrub.

Trunk—Usually straight, not buttressed but slightly flanged.

Outer Bark—Dark brown, pustular, (in older trees somewhat wrinkled and shedding in small scales). Underbark light brown. Outer surface of live bark mottled red and darker red.

Inner Bark—Blaze on a tree 10 cm diameter *deep red* with a pale layer next to the sapwood. No change in colour on exposure. The bark has a bitter alum-like taste and a sappy smell. 8 mm thick.

Branchlets—Thick, grey-brown, smooth, leaf scars prominent. Leaf buds smooth, short-pointed.

Leaves—*Opposite*, simple, *toothed or waved*, margins *often entire at the basal end*, oblanceolate or elliptic, 4–11 cm long, tapering to a blunt point at the tip or occasionally rounded, smooth and green on both surfaces, paler beneath. *Very thick*, Var. *angustifolia* has leaves only 8–20 mm wide, rarely toothed and is restricted to the western slopes and dry tableland gorges. Leaf stalks 3–6 mm long, smooth and green, slightly channelled on the upper surface.

Venation—Midrib conspicuous and raised on both surfaces. Lateral veins six to eight, inconspicuous above but somewhat clearer beneath. Net veins only visible on the lower surface of dried leaves.

Flowers—Pale green, not scented, in slender cymes much shorter than the leaves. Calyx segments four, broadly ovate. Petals four, 2 mm to nearly 4 mm long, ovate, often broadly and shortly three-lobed. Stamens four, as long as the petals. Ovary conical, two-celled, style either very short or up to 2 mm long. Flowering period August to November.

Fruit—*Drupe, bright red or orange, globular to ovoid*, about 15 mm long. Outer covering succulent, inner hard “stone” containing one or rarely two fawn globular-pointed seeds, 8–12 mm diameter. Fruit ripe March to July.

Habitat—Dry and littoral rainforests and in the sclerophyll forest ecotone.

Distribution—From Bateman's Bay, N.S.W. to Cardwell, North Queensland. Recorded in N.S.W. from Pebbly Beach, Boyne S.F., Milton, Conjola Creek, Comerong Island, Cambewarra, Kiama, Camden, Minnamurra, Albion Park, Royal N.P., Terrigal, Belmont, Scone, Murrurundi, Cedar Brush N.R., Allyn and Williams Rivers, Coneac, Booral, Port Stephens, John Gould Island N.R., Myall Lakes N.P., Seal Rocks, Cape Hawke, Forster, Black Head, Saltwater, Harrington, Wingham Brush, Weelah N.R., Boorganna N.R., Port Macquarie, Point Plomer, Big Hill, Doyles River S.F., Kunderang Brook, Willi Willi N.R., Wollomombi Gorge, Smoky Cape, Shark Island, Warrell Creek, Pine Creek S.F., Bundagen F.R., Coffs Harbour, Madman's Creek F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Cloud's Creek S.F., Blandford Creek F.P., Chandler's Creek, Guy Fawkes N.P., Glenugie F.R., Ramornie, Willowee Creek, Boonoo Boonoo Falls, Mt Pikapene S.F., Iluka N.R., Cherry Tree S.F., Richmond Range S.F., Toonumbar S.F., Unumgar S.F., Acacia Plateau, Mt Clunie F.P., Mt Lindesay, Roseberry S.F., Sawpit Creek, Lever's Plateau, Wiangaree S.F., Eltham, Boatharbour, Wilson Park, Hayter's Hill, Ballina, Broken Head N.R., Brunswick Heads N.R., Mebbin S.F., Limpinwood N.R., Couchy Creek and Stott's Island N.R.

Timber and Uses—Pinkish, very tough, close-grained. Tendency to warp badly when drying. Could be used for tool handles.



var *angustifolia*

0 1 2 cm.

Plate No. 30
Elaeodendron australe Vent.

HEDRAIANTHERA PORPHYROPETALA F. Muell.

Reference—F. v. M. Fragm., V, 58, 1865.

Derivation—Hedraianthera apparently from Greek, referring to the sessile anthers; porphyropetala from Greek “porphyreos” rich purple and “petalon” petal, referring to the purple flowers.

Common Name—Hedraianthera.

Standard Trade Name—None.

A shrub or small tree up to about 5 m high and 10 cm diameter.

Trunk—Often crooked but not buttressed.

Outer Bark—Grey or greyish-brown, finely scaly, sometimes showing minute white flecks. Underbark creamy-fawn. Outer surface of live bark pale green.

Inner Bark—Blaze on a tree 5 cm diameter, pinkish-brown, becoming white at the inner margin. No rapid change in colour, no distinct taste or smell. 6 mm thick.

Branchlets—*Thick*, reddish-brown to greyish-brown, often streaked greyish-white, sometimes a little scaly and rough.

Leaves—Alternate, simple, entire but often wavy, ovate-lanceolate or lanceolate, 6–14 cm long, tapering to a fine point at the tip and more rapidly tapering at the base; often pale or yellowish-green above, paler beneath, glossy both surfaces. *Characteristic hard cream hemispherical lumps up to 1 cm diameter* are often found on the upper leaf surface. Leaf stalks 2–5 mm long.

Venation—Midrib visible on both surfaces, raised more on the upper surface, lateral veins faintly visible above only.

Flowers—*Purple or deep red*, single or in groups on long stalks 3 cm long springing from the trunk, branches or branchlets. Sepals very small and green. Petals five, very thick, deep wine red, 6 mm long. Stamens five, almost without stalks. Flowering period November to January.

Fruit—*Capsule, brown, usually five-valved, oval or egg-shaped*, up to 2 cm long, suspended on a slender stalk 3–5 cm long. Seeds two to three in each cell, dark brown with a white aril bordering one side, angular-ovate, about 12 mm long. Fruit ripe April to September.

Habitat—On shallow soils on steep rocky slopes often with basaltic enrichment of poorer parent material. In gully rainforest or sub-optimal subtropical rainforest.

Distribution—From Richmond River, N.S.W. to Cooktown, North Queensland. Recorded in N.S.W. from Terania Creek, Whian Whian S.F., Lost Valley, Minyon Falls F.R., Boomerang Falls, Lismore, Hayter's Hill, Ballina, Broken Head N.R., Brunswick Heads N.R., Nullum S.F., Mt Warning N.P., Couchy Creek, Mt Cougal, Murwillumbah, Banora Point, Round Mountain and Tweed Heads.

Timber and Uses—Wood pale, close-grained, but tree generally too small to be of much use.

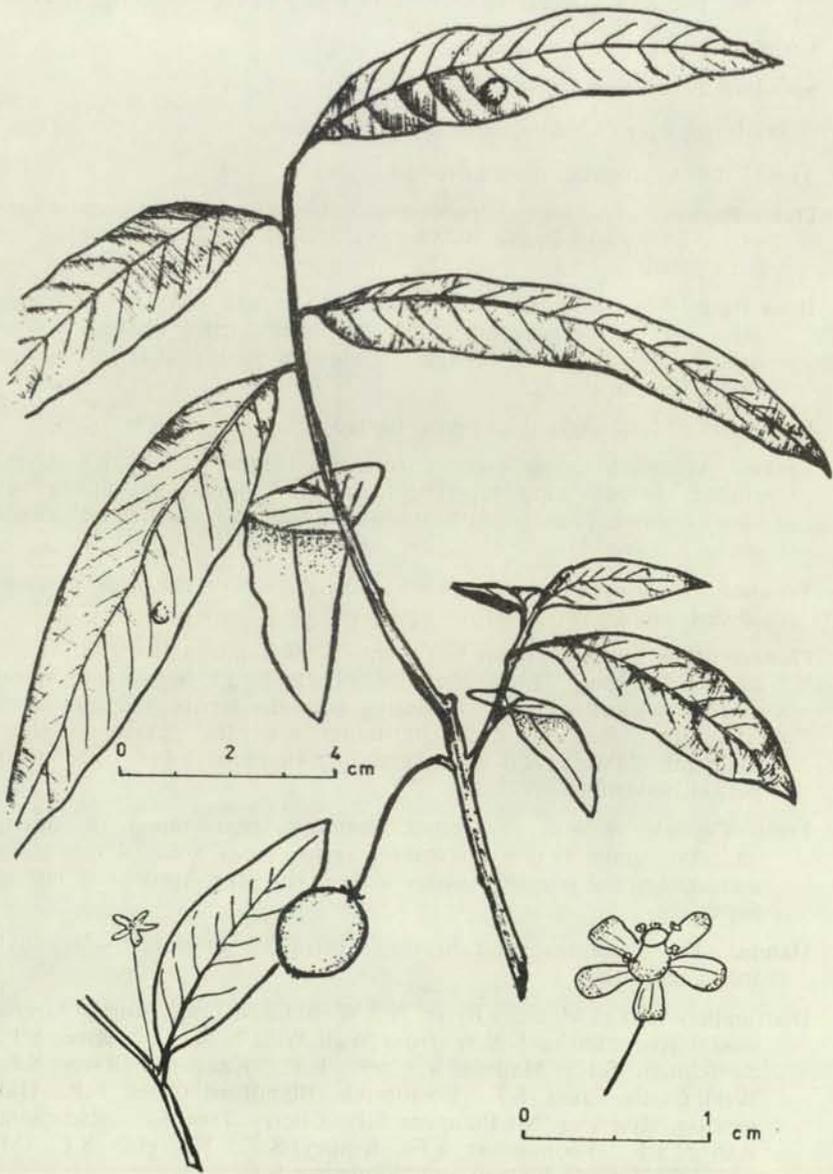


Plate No. 31
Hedraianthera porphyropetala F. Muell.

MAYTENUS BILOCULARIS (F. Muell.) Loes.

Synonym—*Celastrus bilocularis* F. Muell.

Reference—Engl. and Prantl. Nat. Pflanz. 2, xxb, 138, 1942.

Derivation—Maytenus of obscure derivation; bilocularis from Latin "bi" two and "locularis" cavities, referring to the two-celled fruit.

Common Name—Orangebark.

Standard Trade Name—None.

A small tree up to 12 m tall and 20 cm diameter.

Trunk—Often crooked, not buttressed or fluted.

Outer Bark—*Brown, smooth, paper-thin. Underbark bright deep orange or red-brown with bright yellow vertical lines.* Outer surface of live bark green.

Inner Bark—Blaze on a tree 20 cm diameter *pale pink with a bright orange layer next to the sapwood.* Only the inner portion changes colour on exposure to creamy-orange. Somewhat astringent taste. Sappy smell. 6 mm thick.

Branchlets—Moderately thick, grey, dotted with very small lenticels.

Leaves—Alternate, simple, *toothed*, (coarsely toothed in coppice leaves) elliptic, 5–7 cm long, tapering to a short sharp point at the tip, shining above, paler beneath, smooth and green both surfaces. Leaf stalks 3–6 mm long.

Venation—Midrib, lateral and net veins very distinct on the under surface. Midrib slightly raised on the upper surface.

Flowers—Pale green to cream, not scented. Racemes axillary or lateral, rarely 2 cm long. Flowers stalks 2–4 mm long. Sepals five, broad and very short. Petals alternating with the sepals, 1–2 mm long, triangular. Stamens five, alternating with the petals on short filaments. Two broad short spreading stigmatic lobes. Flowering period November.

Fruit—*Capsule, yellow, two-valved, leathery, pear-shaped or nearly globular, under 6 mm diameter. Seeds black, ovate, 4 mm long, almost enclosed in a thin orange aril.* Fruit ripe April or as late as September.

Habitat—Dry rainforest and in the subtropical rainforest-sclerophyll forest ecotone.

Distribution—From Macleay River, N.S.W. to Cape York, North Queensland. Recorded in N.S.W. from Willi Willi N.R., Styx River S.F., Scotchman S.F., Madman's Creek F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Bostobrick, Blandford Creek F.P., Dalmorton, Rivertree, Mt Pikapene S.F., Cherry Tree S.F., Richmond Range S.F., Toonumbar S.F., Beaury S.F., Koreelah S.F., Mt Lindesay, Lever's Plateau and Wiangaree S.F.,

Timber and Uses—Wood light grey, hard, tough, close-grained. Too small to be of commercial value.



0 0.5 1 cm.



Juvenile leaf

0 1 2 cm.

E.S.

Plate No. 32

Maytenus bilocularis (F. Muell.) Loes.

MAYTENUS DISPERMA (F. Muell.) Loes.

Synonym—*Celastrus dispermus* F. Muell.

Reference—Engl. and Prantl. Nat. Pflanz. 2, xxb, 135, 1942.

Derivation—Disperma from Greek “di” two and “sperma” seed, referring to the two seeds in each cell.

Common Name—Taper-leaf Orangebark, Orange Boxwood, Orangebark, Orange Bush, Orange Tree.

Standard Trade Name—Orange Boxwood.

A tree attaining a height of 15 m and a stem diameter of 50 cm. The crown is dense and rounded.

Trunk—Large trees usually flanged at the base.

Outer Bark—Grey-brown, the surface closely roughened by minute scales, wrinkles and horizontal pustular markings. *Underbark creamy-fawn, often bright yellow on the inner margin.* Outer surface of live bark creamy-pink with vertical green stripes. The underbark of the roots is bright orange.

Inner Bark—Blaze on a tree 50 cm diameter *bright salmon pink on the outer half* with fine cream vertical lines, becoming uniform cream towards the inner margin. Turns slightly paler on exposure. Slightly astringent taste but no distinct smell. 3 mm thick.

Branchlets—Moderately thick, grey, smooth, often marked by minute white dots.

Leaves—Alternate, simple, entire, elliptic or elliptic-lanceolate, 6–10 cm long, drawn out into a short blunt point or rounded at the tip, *tapering gradually towards the base;* green both surfaces, paler beneath. Leaf stalks 3–13 mm long.

Venation—Midrib and lateral veins distinct, net veins usually visible.

Flowers—White, in short axillary racemes from under 2 cm to 3 cm long, or solitary along the branchlets on stalks about 3 mm long. Individual flowers about 3 mm diameter. Sepals four, small. Petals four, 1 mm long, triangular. Stamens four on filaments 1 mm long, with a broad base. Ovary globular, smooth. Style short, thick. Flowering period October.

Fruit—*Capsule, yellow* when ripe, two-celled, *pear-shaped,* 9–13 mm long, *opening in two valves* containing one or two dark brown glossy seeds about 6 mm long. Fruit ripe January to March.

Habitat—Dry and littoral rainforests.

Distribution—From the Richmond River, N.S.W. to Atherton, North Queensland. Recorded in N.S.W. from Toonumb̄ar, S.F. Unumgar S.F., Mt Lindsay S.F., Roseberry S.F., Lever's Plateau, Whian Whian S.F., Wilson Park, Boatharbour and Mebbin S.F.

Timber and Uses—Wood pale yellow, firm, prettily marked and close-grained. Suitable for turnery, carving, inlays, rules. Weight 825 kg per cubic metre.

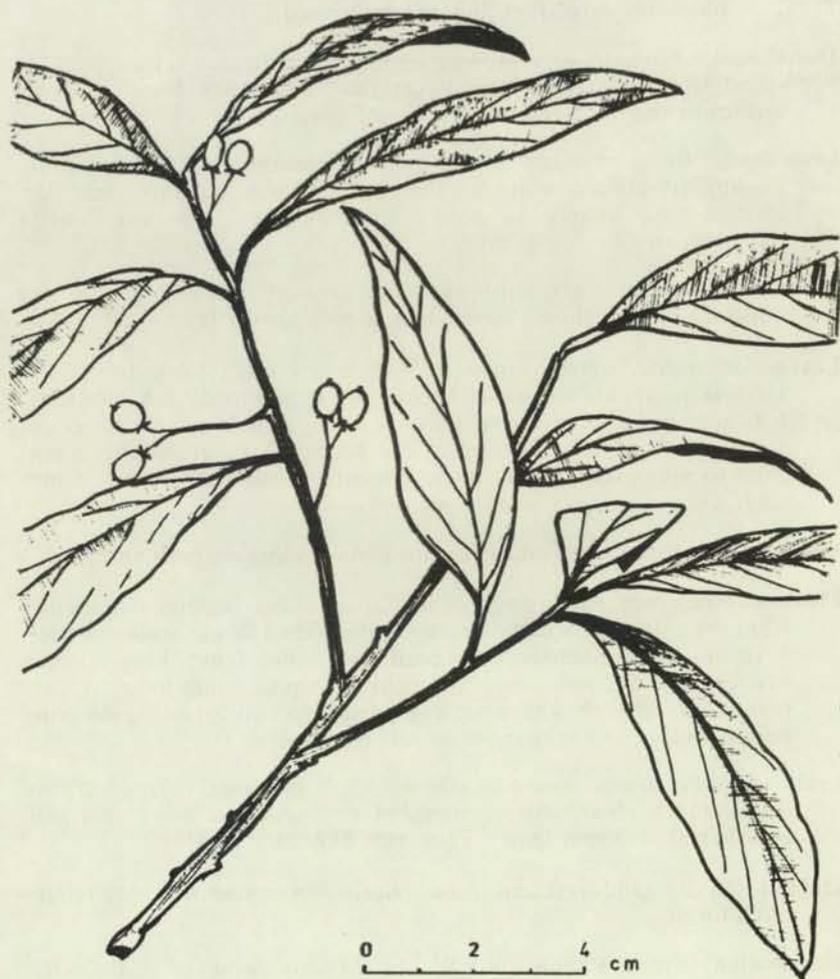


Plate No. 33
Maytenus disperma (F. Muell.) Loes.

MAYTENUS SILVESTRIS N. Lander & L. Johnson

Reference—Contrib. N.S.W. Nat. Herb. 4, 6, 373–7, 1973.

Derivation—Silvestris from Latin “silvestris” pertaining to woods, referring to its occurrence in more open forest as well as in rainforest.

Common Name—Narrow-leaved Orangebark, Orange Bush, Orange Bark.

Standard Trade Name—None.

A small crooked leaning tree 10–15 m high and 25 cm diameter with a dense dark green crown.

Trunk—Commonly misshapen but not buttressed.

Outer Bark—Grey to grey-brown, smooth or with horizontal lines of raised lenticels. Dead bark paper thin, underbark brown. Outer surface of the live bark red-brown and green.

Inner Bark—Blaze on a tree 24 cm diameter, cream speckled with pink, shading to almost white at the sapwood. A copious clear sap appears. No change of colour on exposure. No taste, but a cucumber smell. 3 mm thick.

Branchlets—Slender, dark red-brown with lenticels, turning grey where leafless. Young shoots covered by a pale brown felt.

Leaves—Alternate, simple, entire or with a few teeth towards the tip, *margins recurved*, narrow-lanceolate to egg-shaped, 1–8 cm long, 1–13 mm wide, *often curved towards the tip* which quickly tapers to a point. Gradually tapering at the base. Dark green above and paler to grey-green below, thick, smooth. Leaf stalks short, 5 mm long.

Venation—Midrib, lateral and net veins equally clear on both surfaces.

Flowers—Pale green, either singly or in clusters of two or three on racemes from the axils, 4–5.5 mm diameter. Individual flower stalks slender, 5–10 mm long. Sepals five, broad and blunt, 1 mm long. Petals five, broad 1.5–2 mm long. Stamens five up to 2 mm long. Ovary two-celled, smooth with a style divided into two lobes. Flowering period October to January or as late as April.

Fruit—*Capsule, orange, round or elliptic*, 3.5–7 mm long, *splitting in two*. Seeds one to four, *shiny brown but enclosed in a green thin aril*, egg-shaped, 4–5 mm long. Fruit ripe February to May.

Habitat—In dry rainforest and in the rainforest ecotone with wet sclerophyll forest.

Distribution—From Picton, N.S.W. to Maleny west of Caloundra, Queensland and extending west to Widdin on the Central Western slopes. Recorded in N.S.W. from Picton, Ingleburn, Liverpool, Hornsby, Rylstone, Woy Woy, Gosford, Olney S.F., Watagan S.F.,



Maytenus silvestris X
M. bilocularis

0 1 2

Plate No. 34
Maytenus silvestris N. Lander & L. Johnson

Putty, Singleton, Mt Royal, Upper Williams River, Woko, Gloucester, Bulga S.F., Boorganna N.R., Black Creek F.R., Middlebrother Mountain, Apsley Falls, Armidale, Kunderang Brook, Carrai S.F., Wollomombi Falls, Guy Fawkes River N.P., Scotchman S.F., Chandler's Creek, Gibraltar Range N.P., Unumgar S.F., Beaury S.F., Acacia Creek and Roseberry S.F.

A hybrid with *M. bilocularis* has broader leaves, 12–18 mm wide; and occurs from the Macleay River to the Queensland border.

Timber and Uses—Too small to be of use.

FAMILY SIPHONODONTACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

Previously included under the family *Celastraceae*, the genus *Siphonodon* now comprises the family *Siphonodontaceae*. One species occurs from India through South East Asia to New Guinea, whilst a further three species are endemic to Australia. Two of the Australian species are restricted to North Queensland whilst the third, *Siphonodon australe* extends south into Northern N.S.W.

It differs from *Celastraceae* in the large bright yellow globular drupe consisting of five cells each with two bony pyrenes enclosing a seed and arranged around a central axis. Whereas *Elaeodendron* also produces a drupe, it contains generally only one or occasionally two seeds rather than ten; and moreover has opposite toothed leaves rather than alternate and entire. *Hedraianthera* alone resembles *Siphonodon* in its five cells with two or three seeds in each, but it splits open when ripe to release these seeds which possess a white aril to aid dispersal presumably by birds.

As in the case of most N.S.W. members of the family *Celastraceae*, *Siphonodon* also occurs in dry rainforest but is generally of greater size. The timber is highly regarded for carving, inlays and turnery.

SIPHONODON AUSTRALE Benth.

Reference—Fl. Aust. 1, 403, 1863.

Derivation—Siphonodon from Greek “siphon” a hollow body and “odon” a tooth, referring to the prominent teeth of the very short tubular disc; australe from Latin “australe” southern, referring to the occurrence in southern Queensland.

Common Name—Ivorywood, Scrub Guava.

Standard Trade Name—Ivorywood.

A small to medium sized tree attaining a height of up to 30 m and a stem diameter of 45 cm.

Trunk—Usually cylindrical, not buttressed.

Outer Bark—Grey-brown, *corky*, longitudinally fissured *with powdery yellow patches*. Underbark light yellow-brown. Outer surface of live bark orange-yellow.

Inner Bark—Blaze on a tree 30 cm diameter *yellow-brown with cream speckles towards the outer edge but orange-brown towards the sapwood*. *Hard*. No change in colour on exposure. No taste or smell. 5 mm thick.

Branchlets—*Moderately thick*, grey but later turning black, leaf scars evident, lenticels absent.

Leaves—Alternate, simple, margins entire, elliptical or elliptical-lanceolate, 5–7 cm long, 2–4 cm broad, tapering to a blunt point at the tip, *rounded at the base*. Smooth, green on both surfaces, paler beneath, *rather stiff and leathery* in texture. Leaf stalks green, 6–18 mm long, smooth.

Venation—Midrib and lateral veins distinct on both surfaces, midrib raised below but only slightly raised on the upper surface. Net veins not visible.

Flowers—Yellow, in small cymes, much shorter than and arising from the forks of the leaves. Stalks of individual flowers 6–13 mm long. Flowers about 10 mm diameter. Calyx of five round overlapping lobes, the shorter ones less than half the length of the petals. Petals five, broad about 5 mm long. Stamens five, broad, shorter than the petals. Ovary flattened, surmounted by a short stigmatic point inserted in a central depression of the ovary. Flowering period January to February.

Fruit—Drupe, *bright yellow, globular or oval*, hard, 2–5 cm diameter, *granular* internally. When cut horizontally, *about ten nutlets* (two in each original cell) are seen, brown, ovoid, 6–8 mm long. Fruit ripe December to February.

Habitat—Dry rainforest.

Distribution—From Richmond River, N.S.W. to Iron Range, North Queensland. Recorded in N.S.W. from Mt Pikapene S.F., Cherry



Plate No. 35
Siphonodon australe Benth.

Tree S.F., Casino, Toonumbar S.F., Unumgar S.F., Beaury S.F.,
Roseberry S.F., Sawpit Creek, Lever's Plateau, Wiangaree S.F.,
Wilson Park, Davis Scrub, Hayter's Hill and Brunswick Heads N.R.

Timber and Uses—White, moderately hard, close-grained and easily worked. As a substitute for Boxwood it could be used for turnery, knife handles, golf club heads, rules and wood carving. Weight 800 kg per cubic metre.

FAMILY ICACINACEAE

CHARACTERISTICS OF THE FAMILY IN N.S.W.

A mainly tropical and subtropical family of 58 genera and 400 species, although the two genera in Australia extend well into southern hemisphere temperate zones. *Citronella* consists of seven species of which one is in Malaysia and Indonesia, another in Fiji, three in South America and two endemic species in Eastern Australia. *Pennantia* contains only three species, one each in Norfolk Island, New Zealand and Australia. As the fossil record of this family can be traced back about 80 million years to both hemispheres, these two predominantly south pacific genera appear to have been isolated for a very long period.

The family is represented in N.S.W. by *Citronella moorei* and *Pennantia cunninghamii*.

The trunk is characteristically fluted, crooked and leaning.

Outer Bark—Grey to brown, corky, fissured (*Citronella*) or pustular (*Pennantia*).

Inner Bark—Blaze orange-brown with vertical and horizontal white lines (*Citronella*) or pink to cream with orange-brown vertical flecks (*Pennantia*). Turning greenish (*Citronella*) or dirty orange-brown (*Pennantia*).

Branchlets—Slender, zig-zagging between leaves.

Leaves—Alternate, simple, entire, elliptic to ovate, glossy. Small hollow glands in the axils of the mid and lateral veins (*Citronella*) or also in the forks of the lateral veins towards the leaf margin (*Pennantia*).

Flowers—White to creamy-green in broad much branched panicles (*Pennantia*) or narrow raceme-like panicles (*Citronella*). Sepals conspicuous (*Citronella*) or minute (*Pennantia*). Sepals, petals and stamens five. Flowering period May to September (*Citronella*) or November to January (*Pennantia*).

Fruit—Ovoid black drupe, 12 mm (*Pennantia*) or 20–25 mm long (*Citronella*) containing a single seed by abortion which in *Citronella* has a deep vertical furrow.

Habitat—Favours moist sheltered valleys and slopes in subtropical and well developed warm temperate rainforest. *Pennantia* often overhangs the streams.

Distribution—From the Clyde River, N.S.W. to Mossman, North Queensland.

Timber and Uses—Conspicuous rays resembling English Beech but somewhat softer.

CITRONELLA MOOREI Howard

Synonym—*Villaresia moorei*, F. Muell., *Chariessa moorei* Engler.

Reference—Journ. Arn. Arb. 21, 472, 1940.

Derivation—Citronella from a Chilean native name for a species of the genus; moorei after Chas. Moore, a former Government Botanist of N.S.W.

Common Name—Soapy Box, Churnwood, Silky Beech, Corduroy.

Standard Trade Name—Silky Beech.

A large irregularly shaped tree attaining a height of 50 m and a diameter of 200 cm. Crown dark green, large and dense.

Trunk—*Prominently* and irregularly channelled or *fluted*, rarely round, except in very small trees. Often leaning. Grey in appearance.

Outer Bark—*Light grey-brown, fissured and corky*. Underbark speckled orange, brown and white. Outer surface of live bark cream with numerous vertical orange-brown lines.

Inner Bark—Blaze on a tree 200 cm diameter, *orange-brown with numerous fine white vertical lines and several transverse white bands*. The blaze sometimes turns a greenish tinge on exposure. Bitter but no smell. *Sapwood white with fine vertical rays*. 10 mm thick of which most is dead bark.

Branchlets—Moderately, slender, green, smooth. Young shoots finely downy.

Leaves—Alternate, simple, margins entire, elliptic or broadly lanceolate in outline, 5–10 cm long, 4–6 cm broad, drawn out to a blunt point at the tip. *Glossy above, green both surfaces, paler beneath*. Leaf stalks 6–9 mm long, smooth, green.

Venation—Prominent both surfaces, mid and lateral veins raised beneath. *Small pits situated in the axils of the mid and lateral veins*.

Flowers—Creamy-green in *narrow panicles* arising from the forks of the leaves or from the branchlets opposite or between the leaves. Panicles 2–7 cm long with short branches 4–6 cm long, each bearing a cluster of three to seven stalkless flowers, about 4 mm long. Calyx cup-shaped or bell-shaped, hairy, less than 2 mm long bearing five broadly triangular lobes at its rim. Petals five, narrow, with inflexed tips, hairless, 3 mm long. Stamens five, slender, as long as the petals with yellow anthers less than 1 mm long. Ovary egg-shaped, hairy, tapering at its tip into a hairless style about 2 mm long with a lobed stigma. Flowering period May to September.

Fruit—*Drupe, black, oval or globular, about 2 cm long*, the outer part succulent, inner part hard, enclosing one large *seed with a deep vertical furrow* formed by the hard part of the fruit projecting into the centre of the seed cavity and forming a partial dissepiment. Fruit ripe December to June.



0 1 2 cm.
r.s.

Plate No. 36
Citronella moorei Howard

Habitat—In moist sheltered valleys and slopes in subtropical and warm temperate rainforests.

Distribution—From Clyde River, N.S.W. to Mossman, North Queensland. Recorded in N.S.W. from Clyde River, Minnamurra Falls, Camberwarra, Albion Park, Royal N.P., Wyong, Cedar Brush N.R., Allyn and William's Rivers, Craven S.F., Woko, Nowendoc, Taree, Bulga S.F., Weelah N.R., Boorganna N.R., Black Creek F.R., Middlebrother Mountain, Doyle's River S.F., Mt Boss S.F., Bellangry S.F., Carrai S.F., Smoky Cape, Way Way S.F., Oakes S.F., Roses Creek S.F., Deervale, Dorrigo N.P., Bellingen, Pine Creek S.F., Mt Coramba, Bruxner Park F.R., Woolgoolga Creek F.R., Madman's Creek F.R., Waihou F.R., Kangaroo River S.F., Wild Cattle Creek S.F., Moonpar S.F., Cloud's Creek S.F., Horton's Creek, Blandford Creek F.P., Chandler's Creek, Mt Hyland, Marengo S.F., Grafton, Cangi, Gibraltar Range S.F. and N.P., Willowee Creek, Cambridge Plateau, Toonumbar S.F., Yabbra S.F., Beaury S.F., Acacia Plateau, Nothofagus Mountain F.R., Roseberry S.F., Lever's Plateau, Wiangaree S.F., Terania Creek, Whian Whian S.F., Big Scrub F.R., Minyon Falls F.R., Mooball S.F., Mebbin S.F., Mt Warning N.P., Pumpenbil Creek, Limpinwood N.R., Couchy Creek and Mt Cougal.

Timber and Uses—Pale grey, close-grained, with conspicuous rays. Suitable for brush stocks and small mouldings. Sapwood is susceptible to borers. Weight 650–800 kg per cubic metre.

PENNANTIA CUNNINGHAMII Miers

Reference—Ann. Nat. Hist., ser 2, IX, 491, 1852.

Derivation—Pennantia after Thomas Pennant, a Scottish naturalist; cunninghamii after Allan Cunningham, the Australian explorer and superintendent of the Sydney Botanic Gardens.

Common Name—Brown Beech.

Standard Trade Name—Brown Beech.

A fairly large tree attaining a height of 30 m and a diameter of 90 cm.

Trunk—Base and stem usually flanged. *Crooked and leaning*. Often with numerous protuberances of various sizes.

Outer Bark—Dark grey or brown, often marked by numerous corky pustules and small scales. Underbark mid-brown. Outer surface of live bark orange-brown with short vertical darker lines.

Inner Bark—Blaze on a tree 90 cm diameter *pink or cream with orange-brown vertical flecks*, somewhat soft and granular. Quickly changing to a dirty orange-brown. No taste, but with a smell like sugar cane. 6 mm thick.

Branchlets—*Thin*, green, smooth, *zig-zagging between leaves*. Marked by *numerous small brown raised dots*.

Leaves—Alternate, ovate or elliptic, 7–15 cm long, usually drawn out into a short point at the tip. Shining above, green on both sides. When heated with a match from below the waxy covering is melted and a black margin appears around the heated area. Leaf stalk 8–13 mm long.

Venation—Midrib, lateral veins and some net veins visible on the upper surface. Raised and generally more distinct on the underside. *Small hollow glands* in the forks of the upper lateral veins and the midrib and *in the forks of the lateral veins towards the leaf margin* on the underside.

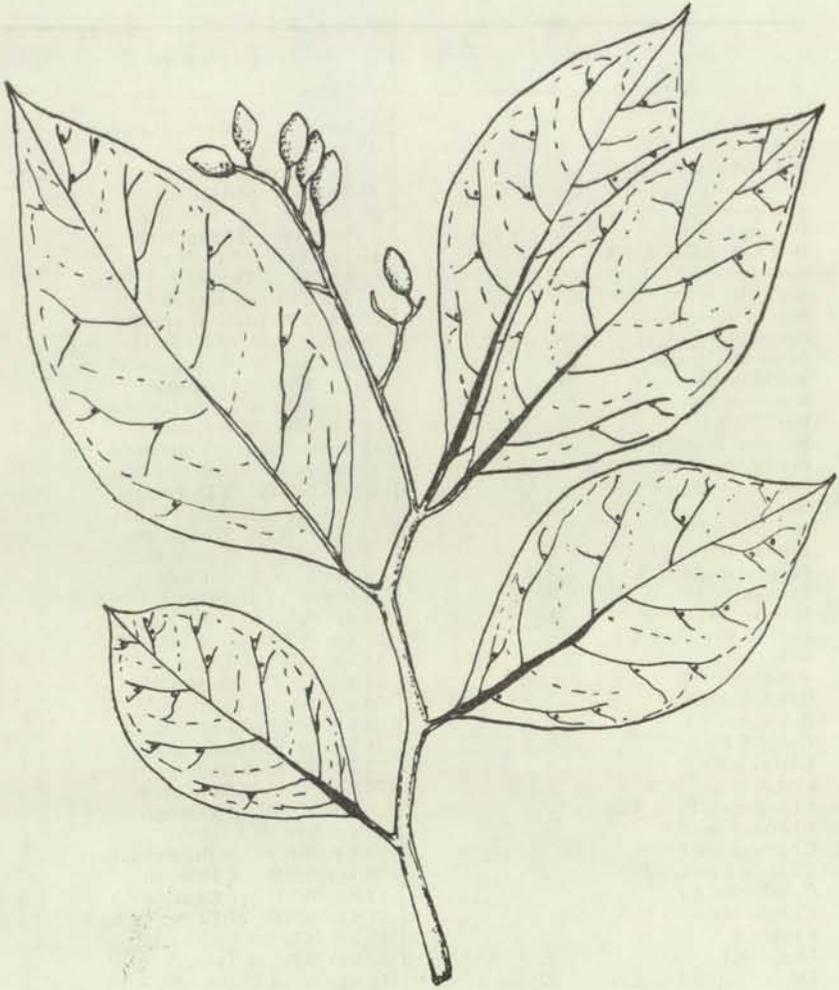
Flowers—White, in *short dense panicles*. Terminal or in the forks of the leaves and generally shorter than the leaves. Separate male, female and hermaphrodite flowers sometimes found on the same tree. Individual flowers about 3 mm long. Sepals minute. Petals five, round, about 2 mm long. Stamens five with arrow-head anthers. Ovary narrow with two or three style-like lobes. Flowering period November to January.

Fruit—Berry-like *drupe*, *black, egg-shaped*, about 13 mm long containing a single *egg-shaped seed* about 10 mm long. Fruit ripe December to July. Eaten by topknot pigeon.

Habitat—Subtropical rainforest on basaltic soil and in the richer pockets of warm temperate rainforest on the poorer sedimentary soils. It prefers the cool moist valleys and is *often found growing along water-courses*.

Distribution—Illawarra, N.S.W. to Atherton, North Queensland. Recorded in N.S.W. from Milton, Robertson, Kiama, Sassafras, Mt Keira, Bulli, Stanwell Park, Cedar Brush N.R., Myall Lakes N.P., Upper William's River, Woko, Wingham Brush, Bulga S.F., Weelah N.R., Ellenborough Falls, Boorganna N.R., South, Middle and North Brothers Mountains, Black Creek F.R., Doyle's River S.F., Mt Boss S.F., Carrai S.F., Way Way S.F., Oakes S.F., Roses Creek S.F., Scotchman S.F., Bellinger River S.F., Deervale, Bellingen, Hyland S.F., Marengo S.F., Gibraltar Range N.P. and S.F., Willowee Creek, Forestland S.F., Ewingar S.F., Girard S.F., Boonoo Boonoo Falls, Toonumbar S.F., Unumgar S.F., Yabbra S.F., Beaury S.F., Acacia Plateau, Mt Wilson F.P., Mt Clunie F.P., Nothofagus Mountain F.R., Mt Lindesay, Roseberry S.F., Lever's Plateau, Wiangaree S.F., Terania Creek, Whian Whian S.F., Minyon Falls F.R., Mebbin S.F., Pumpenbil Creek, Limpinwood N.R., Couchy Creek, Murwillumbah and Mt Cougal.

Timber and Uses—Resembles English Beech in appearance but is softer. It is said to be suitable for Brush Stocks and could be used for cabinet work.



0 2 4 cm.

Plate No. 37
Pennantia cunninghamii Miers

APPENDIX

LIST OF LOCATIONS OF STATE FORESTS, FLORA RESERVES
(INCLUDING FOREST PRESERVES), NATIONAL PARKS AND NATURE
RESERVES

Forest	Location
Bagawa S.F.	23 km NW. of Coffs Harbour.
Banda Banda F.R.	40 km WSW. of Kempsey.
Barcoongere S.F.	35 km SE. of Grafton.
Barrington Tops N.P.	35 km NW. of Dungog.
Beaury S.F.	20 km SW. of Urbenville.
Bellangry S.F.	27 km NW. of Wauchope.
Bellinger River S.F.	13 km SSW. of Dorrigo.
Bielsdown S.F.	4 km N. of Dorrigo.
Big Fella Gum Tree F.R.	8 km SSW. of Kendall.
Big Scrub F.R.	20 km SW. of Mullumbimby.
Black Bull F.P.	38 km WNW. of Coffs Harbour.
Black Creek F.R.	15 km SW. of Wauchope.
Blandford Creek F.P.	40 km SW. of Grafton.
Boambee S.F.	6 km SW. of Coffs Harbour.
Bodalla S.F.	8 km NW. of Narooma.
Boonoo Boonoo S.F.	15 km NNW. of Tenterfield.
Boorganna N.R.	32 km N. of Taree.
Boundary Creek S.F.	40 km NNW. of Dorrigo.
Boyne S.F.	8 km N. of Bateman's Bay.
Bril Bril S.F.	24 km NW. of Wauchope.
Broken Bago S.F.	3 km SW. of Wauchope.
Broken Head N.R.	8 km S. of Byron Bay.
Brunswick Heads N.R.	1 km N. of Brunswick Heads.
Bruxner Park F.R.	6 km NW. of Coffs Harbour.
Buckra Bendinni S.F.	27 km WNW. of Macksville.
Bulga S.F.	37 km NW. of Taree.
Bundagen F.R.	11 km S. of Coffs Harbour.
Bundjalung N.P.	70 km NE. of Grafton.
Bungabee S.F.	18 km NW. of Lismore.
Cangi S.F.	48 km W. of Grafton.
Carrai S.F.	52 km W. of Kempsey.
Cedar Brush N.R.	170 km NW. of Newcastle.
Chapman's Plain F.R.	20 km NNW. of Dorrigo.
Cherry Tree S.F.	30 km SW. of Casino.
Chichester S.F.	53 km NNW. of Bulahdelah.
Cloud's Creek S.F.	24 km NNW. of Dorrigo.
Comboyne S.F.	15 km WS. of Kendall.
Conglomerate S.F.	21 km NNW. of Coffs Harbour.
Craven S.F.	40 km NW. of Bulahdelah.
Dingo S.F.	30 km NW. of Taree.
Donaldson S.F.	16 km N. of Urbenville.
Dorrigo N.P.	3 km SE. of Dorrigo.
Doyles River S.F.	58 km W. of Wauchope.
Edinburgh Castle S.F.	10 km E. of Urbenville.
Ellis S.F.	29 km NW. of Dorrigo.
Ewingar S.F.	42 km E. of Tenterfield.
Forestland S.F.	15 km SE. of Tenterfield.
Gibraltar Range S.F. and N.P.	47 km NE. of Glen Innes
Girard S.F.	32 km NE. of Tenterfield.
Gladstone S.F.	8 km SW. of Bellingen.
Glenugie S.F. and F.R.	19 km SE. of Grafton.
Goonimbar S.F.	7 km NNE. of Nimbin.
Guy Fawkes River N.P.	45 km NW. of Dorrigo.
Hyland S.F.	31 km WNW. of Dorrigo.
Ingalba S.F.	18 km SW. of Macksville.

Forest	Location
Kangaroo River S.F.	34 km NW. of Coffs Harbour.
Killungoondie S.F.	13 km NE. of Dorrigo.
Kiwarrak S.F.	5 km S. of Taree.
Koreelah S.F.	20 km NW. of Urbenville.
Livers Plateau F.R.	35 km NNW. of Kyogle.
Limpinwood N.R.	20 km W. of Murwillumbah.
Lower Bucca S.F.	14 km NNW. of Coffs Harbour.
Madman's Creek F.R.	10 km NW. of Woolgoolga.
Marengo S.F.	34 km NW. of Dorrigo.
Massey's Creek S.F.	89 km WNW. of Bulahdelah.
Mebbin S.F.	24 km NNE. of Kyogle.
Minnamurra N.P.	15 km SW. of Moss Vale.
Minyon Falls F.R.	13 km SW. of Mullumbimby.
Mistake S.F.	23 km W. of Macksville.
Mobong Creek F.R.	16 km NNE. of Dorrigo.
Mooball S.F.	8 km SE. of Murwillumbah.
Moonpar S.F.	16 km NNW. of Dorrigo.
Mt Belmore S.F.	42 km SW. of Casino.
Mt Boss S.F.	48 km NW. of Wauchope.
Mt Clunie F.P.	22 km N. of Urbenville.
Mt Hyland	40 km NW. of Dorrigo.
Mt Lindesay S.F. and F.R.	19 km NE. of Urbenville.
Mt Pikapene S.F.	39 km SW. of Casino.
Mt Warning N.P.	10 km SW. of Murwillumbah.
Mt Wilson F.P.	25 km NNW. of Urbenville.
Myall Lakes N.P.	13 km SE. of Bulahdelah.
Nambucca S.F.	10 km NNE. of Macksville.
Never Never S.F.	11 km E. of Dorrigo.
New England N.P.	75 km E. of Armidale.
Newry S.F.	19 km N. of Macksville.
Norfolk Falls F.R.	25 km NE. of Coolah.
Nothofagus Mountain F.R.	20 km NNE. of Urbenville.
Nulla Five-Day S.F.	48 km NW. of Kempsey.
Nullum S.F.	16 km WSW. of Mullumbimby.
Oakes S.F.	40 km NW. of Macksville.
Olney S.F.	24 km NW. of Wyong.
Orara East S.F.	10 km NW. of Coffs Harbour.
Orara West S.F.	18 km W. of Coffs Harbour.
Ourimbah S.F.	6 km SW. of Wyong.
Pine Brush S.F.	24 km NE. of Grafton.
Pine Creek S.F.	16 km SSW. of Coffs Harbour.
Red Cedar F.R.	18 km NNW. of Dorrigo.
Red Scrub F.R.	20 km SW. of Mullumbimby.
Riamukka S.F.	25 km SSE. of Walcha.
Richmond Range S.F.	35 km NW. of Casino.
Roseberry S.F.	32 km NNW. of Kyogle.
Roses Creek S.F.	25 km SW. of Bellingen.
Rowley's Creek F.R.	32 km NW. of Wingham.
Royal N.P.	5 km SSW. of Sutherland.
Scotchman S.F.	10 km WSW. of Bellingen.
Sea Acres Reserve	Port Macquarie.
Shea's Nob S.F.	34 km NNW. of Dorrigo.
Sherwood N.R.	20 km NW. of Woolgoolga.
Stott's Island N.R.	12 km NE. of Murwillumbah.
Strickland S.F.	64 km SSW. of Newcastle.
Styx River S.F.	53 km E. of Armidale.
Tabbimoble S.F.	65 km NE. of Casino.
Toooloom S.F.	19 km SW. of Urbenville.
Toonumar S.F.	23 km WNW. of Kyogle.
Tuckers Nob S.F.	13 km SW. of Coffs Harbour.
Unumgar S.F.	14 km NE. of Urbenville.

Forest	Location
Victoria Park N.R.	15 km SE. of Lismore.
Waihou F.R.	18 km WNW. of Woolgoolga.
Wallingat S.F.	23 km ENE. of Bulahdelah.
Warung S.F.	25 km NE. of Coolah.
Washpool S.F.	72 km WNW. of Grafton.
Way Way S.F.	10 km SE. of Macksville.
Wedding Bells S.F.	19 km N. of Coffs Harbour.
Weelah N.R.	42 km NNW. of Taree.
Whian Whian S.F.	16 km SW. of Mullumbimby.
Wiangaree S.F.	24 km N. of Kyogle.
Wild Cattle Creek S.F.	32 km W. of Coffs Harbour.
Willi Willi N.R.	40 km WNW. of Kempsey.
Wilson River F.R.	37 km SW. of Kempsey.
Wollumbin S.F.	16 km WSW. of Murwillumbah.
Woodburn S.F.	42 km NNE. of Batemans Bay.
Woolgoolga Creek F.R.	5 km W. of Woolgoolga.
Yabbra S.F.	16 km S. of Urbenville.
Yarrhapinni S.F.	5 km SE. of Macksville.

For Comm. of N.S.W. Photofile:

Fig. 1—SC6249; 2—6275; 3—6262; 4—6280; 5—6252; 6—6256; 7—6279; 8—6244; 9—6253;
10—SC6276; 11—6245; 12—6264B; 13—6243; 14—6255; 15—6254; 16—6257; 17—6248; 18—6246;
19—SC6264; 20—6250; 21—6277; 22—6273; 23—6278; 24—6265; 25—6261; 26—6266; 27—6270;
28—SC6259; 29—6271; 30—6268; 31—6274; 32—6260; 33—6247; 34—6267; 35—6269; 36—6263;
37—SC6272.



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