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**N.S.W.  
RAINFOREST TREES**

**PART V**

**FAMILIES SAPINDACEAE  
AND AKANIACEAE**

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A. G. Floyd**



**FORESTRY COMMISSION OF N.S.W.  
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**N.S.W. RAINFOREST TREES**  
**PART V**  
**FAMILIES SAPINDACEAE AND AKANIACEAE**

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FORESTRY COMMISSION OF NEW SOUTH WALES  
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## INTRODUCTION

This is the fifth in a series of research notes describing the rainforest trees of N.S.W.

Previous publications are—

Research Note No. 3 (1960)—

N.S.W. Rainforest Trees.  
Part I, Family *Lauraceae*.  
A. G. Floyd and H. C. Hayes.

Research Note No. 7 (1961)—

N.S.W. Rainforest Trees.  
Part II, Families *Capparidaceae*, *Escalloniaceae*, *Pittosporaceae*,  
*Cunoniaceae*, *Davidsoniaceae*.  
A. G. Floyd and H. C. Hayes.

Research Note No. 28 (1973)—

N.S.W. Rainforest Trees.  
Part III, Family *Myrtaceae*.  
A. G. Floyd.

Research Note No. 29 (1976)—

N.S.W. Rainforest Trees.  
Part IV, Family *Rutaceae*.  
A. G. Floyd.

Research Note No. 34 (1977)—

N.S.W. Rainforest Trees.  
Part VI, Families *Podocarpaceae*, *Araucariaceae*, *Cupressaceae*,  
*Fagaceae*, *Ulmaceae*, *Moraceae*, *Urticaceae*.  
A. G. Floyd.

Each of the thirty-one species of the families *Sapindaceae* and *Akaniaceae* have been described with the emphasis on field characteristics. The diagnostic features are shown in italics. Standard Trade Names used are those in Australian Standard AS02—1970 "Nomenclature of Australian Timbers".

The locations in N.S.W. for each species are shown in latitudinal order of the major river systems; and where on State Forests, their location from the nearest large town is listed in the appendix.



# FAMILY SAPINDACEAE

## CHARACTERISTICS OF THE FAMILY IN N.S.W.

Most are only small trees, but a few species attain 30 metres or more in height (*Castanospora alphandi*, *Diploglottis australis*, *D. campbellii* and *Rhysotoechia bifoliolata*). There are thirty rainforest tree species in fifteen genera.

**Trunk**—Whereas no species are buttressed, many have flanged or fluted butts.

**Outer Bark**—The majority have smooth bark, the exception having scaly bark being *Harpullia alata*, *H. hillii*, *H. pendula*, *Alectryon forsythii* and *Cupaniopsis parvifolia*. Some of the smooth-barked species closely resemble that of *Ceratopetalum apetalum* because of their blotchy grey colour and the presence of raised horizontal rings.

**Inner Bark**—The blaze may be cream (*Harpullia pendula*), yellow-brown (*Atalaya virens*), or various shades of brown, pink or red-brown. In some species the whole blaze may change colour on exposure, whereas in many others only the sapwood margin changes. A few species are bitter or astringent but rarely is there a characteristic odour. Most species show a corrugated sapwood surface, which is typical of this family.

**Leaves**—Alternate, compound, consisting of usually three to eight leaflets but with only two leaflets (*Alectryon coriaceus*, *A. forsythii*, *Arytera distylis*, *Guioa semiglauc*a and *Rhysotoechia bifoliolata*) or over eight (*Castanospora alphandi*, *Diploglottis australis*, *Lepiderema punctulata* and *Sarcopteryx stipitata*). Unlike the families *Rutaceae* and *Meliaceae*, the leaflets are rarely opposite. Leaflets are toothed in *Alectryon subcinereus*, *A. subdentatus*, *A. tomentosus*, *Cupaniopsis foveolata*, *C. serrata*, *Elattostachys nervosa*, *E. xylocarpa*, *Harpullia alata* and *Jagera pseudorhus*. Hairy tufts or hollow glands are present in the axils of the leaflets of some species (*Arytera distylis*, *A. divaricata*, *Castanospora alphandi*, *Cupaniopsis foveolata*, *Elattostachys xylocarpa*, *Mischocarpus anodontus*, *Toechima dasyrrhache* and *T. tenax*).

**Flowers**—Usually small and numerous in panicles or racemes (*Toechima dasyrrhache*), commonly white, cream or orange. Pink in *Alectryon subcinereus* and *Cupaniopsis serrata* or red in *Alectryon forsythii*, *A. subdentatus* and *Elattostachys xylocarpa*. Sepals and petals five, sometimes very small or absent.

**Fruit**—A capsule, commonly two to three-lobed or angled (but globular in *Elattostachys*, compressed globular in *Castanospora* and winged in *Atalaya*). Usually splitting open to reveal one seed in each lobe (two in *Harpullia*). Seeds dark brown to black, commonly enclosed or partially enclosed in a red, orange or yellow aril (absent in *Atalaya*, *Castanospora* and *Harpullia* in part).

**Habitat**—Very common in dry and littoral rainforests, where with the family *Euphorbiaceae* represents the greatest number of species. Also

common in subtropical rainforest but rare in warm temperate and absent from cool temperate rainforests due to the Indo-Malaysian origin of this family.

**Distribution**—Mostly restricted to north of the Hunter Valley except *Cupaniopsis anacardioides* to Port Hacking, *Diploglottis australis* to the Illawarra, *Alectryon tomentosus* to Milton and *Alectryon subcinereus* to East Gippsland, Victoria. To the west, *Alectryon forsythii* is restricted to the gorges on the eastern escarpment of the northern tablelands, whilst *A. subdentatus* extends to the N.W. slopes and *Atalaya virens* to Warialda.

**Timber**—Generally too small to be of much commercial use. The wood is generally very hard, giving rise to such common names as "Steelwood" and "Axe Breaker". The sapwood surface is characteristically corrugated. The timber is not commonly noted for its figure except in the case of *Harpullia pendula*.

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

## A. USING LEAVES AND BRANCHLETS ONLY

1. Foveolae or hairy tufts in the axils of the leaflet veins on the undersurface ..... 2
2. Leaflets toothed ..... 3
  3. Leaflets two to five .... *Elattostachys xylocarpa* (A. Cunn. ex F. Muell.) Radlk.
  3. Leaflets ten to eighteen .... *Cupaniopsis foveolata* (F. Muell.) Radlk.
2. Leaflets not toothed ..... 4
  4. Undersurface of leaflets grey *Castanospora alphanthi* (F. Muell.) F. Muell.
  4. Undersurface of leaflets green ..... 5
    5. Rarely more than two foveolae per leaflet ..... 6
      6. Leaflet stalk about 6 mm long .. *Mischocarpus anodontus* Radlk.
      6. Leaflet stalk under 2 mm long .. *Toechima tenax* (Benth.) Radlk.
    5. Foveolae or hairy tufts more than two ..... 7
      7. Leaflets commonly two ..... *Arytera distylis* (F. Muell. ex Benth.) Radlk.
      7. Leaflets commonly more than two ..... 8
      8. Leaflet stalk 3-6 mm long ..... 9
        9. Main lateral veins six to eight *Toechima dasyrrhache* Radlk.
        9. Main lateral veins eight to twelve *Arytera divaricata* F. Muell.
      8. Leaflet stalk under 3 mm long ..... 10
        10. Main leaf stalk of recently expanded leaves, hairy *Toechima dasyrrhache* Radlk.
        10. Main leaf stalk of recently expanded leaves, smooth ..... *Toechima tenax* (Benth.) Radlk.
1. Foveolae or hairy tufts absent ..... 11
  11. Main leaf stalk conspicuously winged ..... 12
    12. Leaflets toothed, shiny beneath .. *Harpullia alata* F. Muell.
    12. Leaflets not toothed, dull beneath.. *Atalaya virens* C. T. White
  11. Main leaf stalk not winged ..... 13
  13. Leaflets toothed ..... 14
    14. Leaflets more than nine ..... 15
      15. Leaflets 12-18 mm wide, unequal at the base ..... *Jagera pseudorhus* (A. Rich.) Radlk.
      15. Leaflets 25-50 mm wide, equal at the base ..... *Cupaniopsis serrata* (F. Muell.) Radlk.
  14. Leaflets less than nine ..... 16

16. Leaflets hairy beneath on the veins *Alectryon tomentosus*  
(F. Muell.) Radlk.
16. Leaflets not or sparsely hairy beneath ..... 17
17. Leaflets ovate to ovate-lanceolate, rounded or only  
shortly pointed ..... *Alectryon subdentatus*  
(F. Muell. ex Benth.) Radlk.  
(Also the glabrous small-leaved form of *A. tomentosus*.)
17. Leaflets lanceolate to broad lanceolate, gradually  
tapering to a point ..... 18
18. Leaflets on short stalks, 6 mm long .....  
*Elattostachys nervosa* (F. Muell.) Radlk.
18. Leaflet stalks under 4 mm long *Alectryon subcinereus*  
(A. Gray) Radlk.
13. Leaflets not toothed ..... 19
19. Leaflets mainly in pairs ..... 20
19. Leaflets three to eight ..... 25
19. Leaflets mainly more than eight ..... 41
20. Leaflets greyish and paler on the undersurface ..... 21
21. Leaflets ovate, 4-5 cm broad ..... 22
22. Leaflets dull above, beach species *Alectryon coriaceus*  
(Benth.) Radlk.
22. Leaflets shiny above, tablelands.... *Alectryon forsythii*  
Radlk.
21. Leaflets broad lanceolate, up to 2.5 cm broad .... 23
23. Leaflets with a sharp point or prickle .....  
*Guioa semiglauca* (F. Muell.) Radlk.
23. Leaflets blunt ..... *Rhysotoechia bifoliolata*  
(F. Muell.) Radlk.
20. Leaflets not greyish or markedly paler beneath ..... 24
24. Leaflets somewhat glossy above, blunt or bluntly  
pointed .... *Rhysotoechia bifoliolata* (F. Muell.) Radlk.
24. Leaflets dull above, notched at the tip .. *Arytera distylis*  
(F. Muell. ex Benth.) Radlk.
25. Secondary veins on the underside of the leaflets hairy 26
26. Leaflets mostly over 15 cm long .. *Diploglottis australis*  
(G. Don.) Radlk.
26. Leaflets mostly under 15 cm long .....  
*Mischocarpus lachnocarpus* (F. Muell.) Radlk.
25. Secondary veins not hairy ..... 27
27. Leaflets grey beneath ..... 28
28. Leaflets ending in a short prickle .. *Guioa semiglauca*  
(F. Muell.) Radlk.
28. Leaflets rounded at the tip *Alectryon forsythii* Radlk.
27. Leaflets green beneath..... 29
29. Main stem of newly expanded leaves, hairy or  
downy ..... 30
30. Main lateral veins 15-25..... 31

31. Leaflets alternate ..... *Elattostachys nervosa*  
(F. Muell.) Radlk.
31. Leaflets almost opposite *Diploglottis campbellii*  
Cheel.
30. Main lateral veins 6-12 ..... 32
32. Leaflets gradually tapering to a long fine point  
*Sarcopteryx stipitata* (F. Muell.) Radlk.
32. Leaflets tapering to a blunt point ..... 33
33. Leaflet ending in a short prickle .....  
*Harpullia pendula* Planch.
33. Leaflet not ending in a short prickle .... 34
34. Main lateral veins 6-8 *Toechima dasyrrhache*  
Radlk.
34. Main lateral veins 8-12 *Arytera divaricata*  
F. Muell.
29. Main stem of newly expanded leaves smooth .. 35
35. Leaflet tip not notched ..... 36
36. Leaflets with minute pale dots .....  
*Lepiderema punctulata* Radlk.
36. Leaflets not dotted ..... 37
37. Leaflets not markedly paler beneath.....  
*Mischocarpus anodontus* (F. Muell.) Radlk.
37. Leaflets paler beneath *Alectryon subcinereus*  
(A. Gray) Radlk.
35. Leaflet tip notched ..... 38
38. Leaflet stalks over 9 mm long .....  
*Mischocarpus pyriformis* (F. Muell.) Radlk.
38. Leaflet stalks under 6 mm long ..... 39
39. Leaflets over 9 cm long, oblong .....  
*Harpullia hillii* F. Muell.
39. Leaflets under 8 cm long, broad lanceolate  
to ovate..... 40
40. Leaflets 5-8 cm long .....  
*Cupaniopsis anacardioides* (A. Rich.) Radlk.
40. Leaflets 3-7 cm long *Cupaniopsis parvifolia*  
(F. M. Bail.) L. Johnson
41. Undersurface of leaflets greyish.... *Castanospora alphandi*  
(F. Muell.) F. Muell.
41. Undersurface of leaflets green ..... 42
42. Main stem of recently expanded leaves smooth,  
leaflets with minute pale dots .. *Lepiderema punctulata*  
(F. Muell.) Radlk.
42. Main stem of recently expanded leaves rusty-hairy,  
leaflets without minute pale dots ..... 43
43. Leaflets 5-10 cm long, pointed at the tip.....  
*Sarcopteryx stipitata* (F. Muell.) Radlk.
43. Leaflets 12-30 cm long, rounded at the tip ....  
*Diploglottis australis* (G. Don.) Radlk.

## B. USING BARK ONLY

- |   |  |
|---|--|
| 1. Bark scaly .....                                       | 2  |
| 2. Blaze cream .....                                      | <i>Harpullia pendula</i> Planch.                                 |
| 2. Blaze with pink or red tints .....                     | 3  |
| 3. No change in colour on exposure .....                  | <i>Alectryon forsythii</i> Radlk.                                |
| 3. Greenish tinge on exposure .....                       | <i>Harpullia hillii</i> F. Muell.                                |
| 2. Blaze brown .....                                      | 4  |
| 4. Blaze deep tan .....                                   | <i>Cupaniopsis parvifolia</i> (F. M. Bail.) L. Johnson           |
| 4. Blaze pale brown .....                                 | 5  |
| 5. Dark brown on exposure .....                           | <i>Harpullia alata</i> F. Muell.                                 |
| 5. Greenish tinge on exposure .....                       | <i>Harpullia hillii</i> F. Muell.                                |
| 1. Bark smooth .....                                      | 6  |
| 6. Blaze brown or cream without red or pink colours ..... | 7  |
| 7. Turning dull green on exposure ..                      | <i>Atalaya virens</i> C. T. White                                |
| 7. Slight darkening or no change on exposure .....        | 8  |
| 8. Blaze cream outside, then orange-tan .....             | <i>Mischocarpus lachnocarpus</i> (F. Muell.) Radlk.              |
| 8. Blaze brown .....                                      | 9  |
| 9. Blaze darker near the sapwood ..                       | <i>Cupaniopsis foveolata</i><br>(F. Muell.) Radlk.               |
| 9. Blaze paler near the sapwood .....                     | 10   |
| 10. Dead bark black or brown....                          | <i>Elattostachys xylocarpa</i><br>(A. Cunn. ex F. Muell.) Radlk. |
| 10. Dead bark red-brown .....                             | <i>Mischocarpus anodontus</i><br>(F. Muell.) Radlk.              |
| 6. Blaze with pink or red tints .....                     | 11   |
| 11. Inner margin of blaze only changing colour .....      | 12   |
| 12. Inner margin turning red-brown ....                   | <i>Alectryon subcinereus</i><br>(A. Gray) Radlk.                 |
| 12. Inner margin turning yellow-brown .....               | 13   |
| 13. Blaze without vertical stripes ....                   | <i>Alectryon subdentatus</i><br>(F. Muell. ex Benth.) Radlk.     |
| 13. Blaze with vertical stripes .....                     | 14   |
| 14. Outer surface of bark dark grey to brownish-grey..    | <i>Diploglottis australis</i> (G. Don.) Radlk.                   |
| 14. Outer surface of bark grey ....                       | <i>Elattostachys nervosa</i><br>(F. Muell.) Radlk.               |
| 12. Inner margin brown to orange-brown .....              | 15   |
| 15. Blaze without vertical stripes .....                  | <i>Jagera pseudorhus</i><br>(A. Rich.) Radlk.                    |
| 15. Blaze with vertical stripes .....                     | 16   |
| 16. Live bark not astringent .....                        | <i>Arytera divaricata</i> F. Muell.                              |
| 16. Live bark astringent .....                            | 17   |
| 17. Blaze with paler horizontal lines .....               | <i>Alectryon tomentosus</i><br>(F. Muell.) Radlk.                |

17. Blaze without paler horizontal lines *Guioa semiglauca*  
(F. Muell.) Radlk.
11. Whole blaze changing colour ..... 18
18. Blaze turning purplish ..... *Sarcopteryx stipitata*  
(F. Muell.) Radlk.
18. Blaze turning greenish-brown .... *Harpullia hillii* F. Muell.
18. Blaze turning pale yellow-brown .... *Toechima dasyrrhache*  
Radlk.
18. Blaze turning brown ..... 19
18. Blaze turning red-brown ..... 20
19. Outer surface of bark dark greyish-brown to almost  
black ..... *Alectryon coriaceus* (Benth.) Radlk.
19. Outer surface of bark grey ..... *Castanospora alphanii*  
(F. Muell.) F. Muell.
20. Dead bark fawn ..... *Toechima tenax* (Benth.) Radlk.
20. Dead bark black *Cupaniopsis serrata* (F. Muell.) Radlk.
20. Dead bark dark brown ..... 21
21. Blaze deep pink with paler stripes .....  
*Cupaniopsis anacardioides* (A. Rich.) Radlk.
21. Blaze reddish-brown with paler stripes .....  
*Rhysotoechia bifoliolata* (F. Muell.) Radlk.
11. Blaze fading or not changing colour ..... 22
22. Dead bark dark brown ..... *Lepiderema punctulata*  
(F. Muell.) Radlk.
22. Dead bark purplish-fawn to pinkish-brown ..... 23
23. Outer surface of live bark black ..... *Arytera distylis*  
(F. Muell. ex Benth.) Radlk.
23. Outer surface of live bark green and deep red .....  
*Mischocarpus pyriformis* (F. Muell.) Radlk.

## ALECTRYON CORIACEUS (Benth.) Radlk.

**Synonym**—*Nephelium coriaceum* Benth. Includes *N. semicinereum* (F. Muell.) Radlk.

**Reference**—Act. Congr. Bot. Amst. (1877), 118 (1879).

**Derivation**—Alectryon from Greek “alectryon” a cock, possibly because of the comb-like crest on the fruit of the original species in the genus; coriaceum from Latin “coriaceus” leathery, in reference to the thick leaves.

**Common Name**—Beach Bird’s Eye.

**Standard Trade Name**—None.

A small and often bushy tree up to about 6 m in height and about 15 cm diameter.

**Trunk**—Often flanged, fluted or irregular.

**Outer Bark**—Dark greyish-brown to almost black, smooth. Underbark dark brown. *Outer surface of live bark light olive-green.*

**Inner Bark**—Blaze on a tree 10 cm diameter *pink or lilac*, green at the outer margin, with an adjoining paler inner band. Inner margin and inner surface of bark *changes to a brownish colour* after several minutes exposure. No rapid change in colour of the blaze surface. Astringent taste, but no smell. About 1.5 mm thick.

**Branchlets**—Grey to dark grey, often slightly furry towards the ends.

**Leaves**—Alternate, pinnate, *leaflets mostly two* to each leaf but sometimes up to six, not toothed, obovate, obovate-oblong or elliptic, 6–11 cm long. Blunt, rounded, notched or sometimes with a short fine point at the tip, often rounded at the base, green and shining above, *dull grey on the underside*. Leaflet stalk 2 to 6 mm long.

**Venation**—Distinct on both surfaces, raised and more conspicuous on the underside where the midrib and lateral veins change to reddish-brown on drying.

**Flowers**—Greenish-yellow, in small branched panicles, shorter or sometimes as long as the leaves. Sepals small, rounded, five, green with yellowish hairs. Petals white, smaller, five, round with two lobes at the base, 1 mm long, smooth. Anthers yellow, large, almost stalkless, eight to ten. Ovary top-shaped with fawn silky hairs. Flowering period December.

**Fruit**—A capsule, *rusty hairy* with *three or sometimes four globose lobes* about 6 mm diameter, each containing a *glossy round black seed*, 4–6 mm diameter almost enclosed in a bright red aril. Fruit ripe April to July.

**Habitat**—*Littoral rainforest* fringing the sea shore.

**Distribution**—From Port Stephens, N.S.W. to Maryborough, Queensland. Recorded in N.S.W. from Myall Lakes, Treachery Head, Smiths Lake, Forster, Mitchell Is., Port Macquarie, Crescent Head, Hat Head, Bundagen, Coffs Harbour, Angourie, Iluka, Evans Head, Ballina, Cape Byron and Tweed Heads.

**Timber and Uses**—Wood pale brown, close grained, very hard and tough, but generally the tree is too small to be of much use.



Plate No. 1  
*Alectryon coriaceus* (Benth.) Radlk.

## ALECTRYON FORSYTHII Radlk.

**Reference**—Engl. and Pr. Nat. Pfl-Fam. Nachtr. 111, 205 (1907).

**Derivation**—Forsythii, after the collector W. Forsyth.

**Common Name**—Ravine Bird's Eye.

**Standard Trade Name**—None.

A gnarled, crooked, leaning tree 6–8 m high and up to 36 cm diameter, clinging to the steep rocky sides of gorges.

**Trunk**—Flanged.

**Outer Bark**—*Fawn to grey, scaly*. Underbark brown with white spots or short lines. Surface of live bark green.

**Inner Bark**—Blaze on a tree 20 cm diameter *pinkish-brown with fine vertical lines* near the outer margin and *speckled* nearer to the sapwood. No change in colour on exposure except the sapwood margin which turns brown. Bitter with a smell like sugar cane. 5 mm thick.

**Branchlets**—Greenish-brown to dark brown, smooth and shiny. No lenticels visible.

**Leaves**—Alternate, abruptly pinnate, *usually only a single pair of leaflets*, rarely three or four leaflets. *Oval oblong, 6–7 cm long, not toothed, blunt at the tip*, leathery, smooth, *shining and dark green above but dull and grey beneath*. Leaflets very shortly stalked, main stalk 13–25 mm long.

**Venation**—Net veins visible on both sides.

**Flowers**—*Dark red* in the axils of the leaves or sometimes in apparently terminal panicles with few branches and rarely longer than the leaves. Individual flowers on short stalks, often in clusters of two or three. Calyx cup-shaped with five teeth, petals absent. Stamens six or seven with short filaments, the anthers infolded at first then outfolded. Flowering period October to November.

**Fruit**—Woody capsule, grey-brown, *usually two* (exceptionally three) *lobed, flattened*, joined and spreading horizontally, very shortly or scarcely stalked, *not splitting open*, smooth inside. 18 mm broad, 8 mm high and 4 mm thick. Seeds shiny, black, slightly flattened and almost concealed in the red fleshy aril. Fruit ripe March.

**Habitat**—*In steep rocky gorges* from 450 to 600 m altitude along the coastal escarpment of the Northern Tablelands. Common associate species are *Maytenus silvestris* and *Notelea microcarpa* var. *velutina*.

**Distribution**—Restricted to the coastal edge of the Northern Tablelands from Nundle to Guy Fawkes River. Recorded from Nundle, top of Mt Duri, Currabubula, Tia and Apsley Canon near Walcha, Blue Hole, Baker's Creek, Wollomombi Falls and above Peak Ck, Guy Fawkes River.

**Timber and Uses**—Too small to be of any value.



Scale 1" ———

P. Condon.

Plate No. 2

*Alectryon forsythii* Radlk.

## ALECTRYON SUBCINEREUS (A. Gray) Radlk.

**Synonym**—*Nephelium leiocarpum* F. Muell., *Cupania subcinerea* A. Gray.

**Reference**—Sitzb. Maths-Phys. cl. Acad. Muench. IX, 524 (1879).

**Derivation**—Subcinereus from Latin “sub” almost and “cinereus” ash-grey referring to the greyish underside on the leaves.

**Common Name**—Wild Quince, Bird’s Eye (referring to the open fruit), Smooth Rambutan.

**Standard Trade Name**—None.

A shrub or small tree occasionally attaining a height of 18 m and a stem diameter of 30 cm.

**Trunk**—Often fluted or flanged and seldom cylindrical.

**Outer Bark**—Dark brown usually smooth with numerous corky pustules and horizontal raised lines. Large trees may be pitted and wrinkled or slightly scaly. Underbark reddish-brown to dark brown. Outer surface of live bark green.

**Inner Bark**—Blaze on a tree 30 cm diameter pinkish-red with numerous very fine pale vertical lines, paler near the sapwood. Inner margin and the corrugated surface of the sapwood turns reddish-brown after a few minutes exposure with a slight darkening of the blaze surface. Slightly astringent taste and no smell. About 6 mm thick.

**Branchlets**—Grey or brown, smooth, often hairy towards the ribbed ends, leaf scars distinct, young shoots downy.

**Leaves**—Alternate, pinnate with usually four to six leaflets, entire or toothed mostly in the upper half. Blades oblong-elliptic, ovate-lanceolate or lanceolate, 5–15 cm long, tapering at both ends, protracted into a blunt or fairly fine point at the tip. Green on both surfaces, paler beneath. Main leaf stalk usually flattened and swollen at the base. Leaflet stalks indistinct, 1–3 mm long.

**Venation**—Distinct and raised on both surfaces, more prominent beneath, net veins numerous. Includes *A. laevis* of Upper Macleay to Dorrigo with more prominent venation, never toothed and scarcely paler beneath.

**Flowers**—Pink, in axillary, loose, branched panicles, often shorter than the leaves. Sepals 2 mm diameter with short teeth. Petals broad and short. Stamens often longer than the calyx. Ovary two or three cells. Flowering period December.

**Fruit**—Capsule, smooth, grey-brown, consisting of one to three (usually two) distinct indehiscent rounded, leathery lobes each up to 9 mm diameter containing one glossy black or dark brown seed, up to 6 mm diameter and half enclosed in a bright red, fleshy aril. Fruit ripe April to August or as late as October.

**Habitat**—Dry, riverine or littoral rainforest.



Plate No. 3

*Alectryon subcinereus* (A. Gray) Radlk.

**Distribution**—From East Gippsland, Victoria to Maryborough, Queensland. Recorded in N.S.W. from Tantawanglo Mtn, Tuross River, Currowan S.F., Milton, Cambewarra, Mt Kembla, Camden, Jenolan Caves, Newport, Woy Woy, Wyong, Singleton, Murrurundi, Gloucester, Upper Williams River, Port Stephens, Dungog, Wingham, Doyles River S.F., Bellangry S.F., Yessabah Caves, Coramba, Mt Coramba, Woolgoolga, Kangaroo River S.F., Wild Cattle Creek S.F., Clouds Creek S.F., Dalmorton, Glenugie S.F., Lismore, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Rivertree, Beaury S.F., Acacia Plateau, Moore Park, Lynchs Creek, Murwillumbah and Stotts Island.

**Timber and Uses**—Outer wood pale brown, often with a dark heartwood. Very hard and has been known to break axes. Suitable for small turnery and tool handles.

**ALECTRYON SUBDENTATUS** (F. Muell. ex Benth.)  
Radlk.

**Synonym**—*Nephelium subdentatum* F. Muell.

**Reference**—Act. Congr. Bot. Amst. (1877), 117 (1879).

**Derivation**—Subdentatum from Latin “sub” almost and “dentatus” sharply toothed in reference to the irregularly toothed leaves.

**Common Name**—Holly-leaved Bird’s Eye.

**Standard Trade Name**—None.

A shrub or small tree attaining a height of about 11 m and a stem diameter of 20 cm. In many respects it is intermediate between *A. forsythii* and *A. tomentosus*, but has a distinct range of its own.

**Trunk**—Cylindrical, usually not buttressed.

**Outer Bark**—Slaty-grey, smooth, very thin. Underbark brown. Outer surface of live bark light green.

**Inner Bark**—Blaze on a tree 10 cm diameter reddish-brown often showing lateral white lines, paler towards the inner margin which turns yellowish-brown after a few minutes exposure. No rapid change in colour. No distinct taste or smell. 3 mm thick.

**Branchlets**—Brown, smooth, often hairy towards the ends. Young shoots downy.

**Leaves**—Alternate, pinnate, leaflets two to six in pairs, mostly irregularly deeply toothed. Ovate or ovate-lanceolate, 3–8 cm long, the basal pair much smaller than the two terminal leaflets, often with a prickle at the tip, shining above, green both surfaces, paler or yellowish-green beneath, leathery. Main leaf stalk mainly flattened. Leaflet stalks indistinct. Differs from *A. forsythii* in having usually four or more (not two) leaflets which are toothed.

**Venation**—Conspicuous on both surfaces often with scattered hairs along the midrib and lateral veins.

**Flowers**—Red, in sparsely branched panicles, generally shorter than the leaves. Flower stalks short. Sepals truncated or short and broadly lobed. Petals absent. Stamens very short. Flowering period January to April.

**Fruit**—A hard capsule, usually two lobed, flattened at the top, globular, 13–15 mm diameter, hairy. By contrast, *A. forsythii* has flattened and glabrous fruits. Fruit ripe November.

**Habitat**—Dry rainforest on steep rocky slopes, but not as precipitous as that where *A. forsythii* is found.

**Distribution**—Gloucester and northwest slopes of N.S.W. to Kilcoy, Queensland. Recorded in N.S.W. from Gloucester, Upper Hastings River, Carrai, Guy Fawkes River, Kangaroo River S.F., Mt Pikapene S.F., Toonumbar S.F. and Acacia Creek S.F. On the tablelands and Northwest slopes from Nundle, Nandewar Range, Warialda, Tenterfield and Bonshaw.

**Timber and Uses**—Wood pale, close-grained and tough but seldom if ever used.

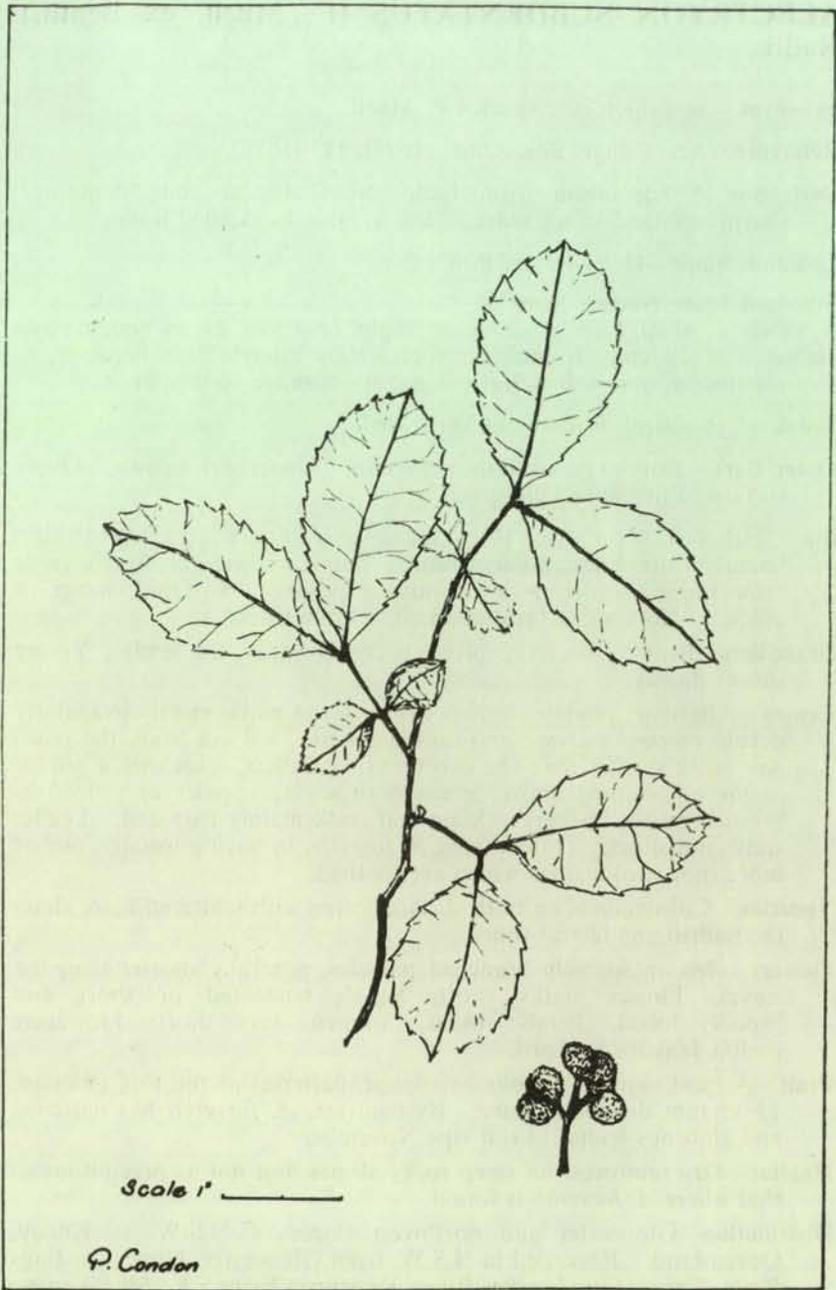


Plate No. 4

*Alectryon subdentatus* (F. Muell. ex Benth.) Radlk.

## ALECTRYON TOMENTOSUS (F. Muell.) Radlk.

**Synonym**—*Nephelium tomentosum* F. Muell.

**Reference**—Act. Congr. Bot. Amst. 1877, 117 (1879).

**Derivation**—Tomentosus from Latin “tomentosus” covered with closely-matted hairs, in reference to the hairy leaves and young shoots.

**Common Name**—Hairy Bird’s Eye.

**Standard Trade Name**—None.

A tree attaining a height of about 15 m and a stem diameter of 30 cm. An attractive species and worthy of more extensive planting for ornamental purposes.

**Trunk**—Frequently crooked, fluted and flanged at the base but not buttressed.

**Outer Bark**—Smooth, dark slate-grey or greyish-brown. Underbark very thin, brown. Outer surface of live bark reddish-black.

**Inner Bark**—Blaze on a tree 25 cm diameter *pinkish-brown with fine vertical pale and reddish-brown lines* and also pale lateral undulating or wavy bands. The paler inner margin which is the only part to noticeably change colour darkens to a brownish shade after about 5 minutes exposure. Astringent taste, sugar cane smell. Surface of sapwood corrugated. 6 mm thick.

**Branchlets**—Dark slate or brown, *densely rusty-hairy* and often fluted towards the ends.

**Leaves**—Alternate, pinnate with *four to eight leaflets*, margins *generally acutely toothed* or sometimes with only the acute point showing and perhaps a slight indentation. Obovate to narrow elliptic, 5–13 cm long. Tip variable from broadly rounded to acutely pointed. Upper surface hairy or at length smooth, *underside generally more hairy and often densely downy*. Green on both surfaces, paler beneath. Leaflet stalks up to 6 mm long.

**Venation**—Distinct and raised on both surfaces. Net veins numerous.

**Flowers**—Cream in short panicles, downy, springing from the forks of the leaves. Flowers small, on stalks up to 2 mm long, without petals, but with a small 5 toothed hairy cup-shaped calyx about 2 mm diameter, stamens eight, small, pink. Ovary two or three-lobed, hairy, with a short style branching into two or three curved stigmas. Flowering period August.

**Fruit**—A capsule consisting of *one or more rarely two or three globular lobes densely clothed with yellowish or brownish hairs*, 8–10 mm diameter. Each contains one round *shining black seed*, 4–6 mm diameter, almost *enveloped in a scarlet fleshy wrinkled aril*. Fruit ripe March to August.

**Habitat**—Common in all types of rainforest and on all types of soils, reaching its best development on the red volcanic soils of the Macpherson Range.

**Distribution**—From Milton, N.S.W. to Eungella Range, Queensland. Recorded in N.S.W. from Milton, Conjola, Minnamurra, Kiama, Mt Keira, Camden, Royal N.P., Como, Barrenjoey, Calga, Ash Is., Port Stephens, Seal Rocks, Upper Allyn River, Saltwater Creek, Doyles River S.F., Bellangry S.F., Bellinger River S.F., Pine Creek S.F., Bruxner Park, Mt Coramba, Orara East S.F., Hayes Creek, Woolgoolga, Wild Cattle Ck S.F., Moonpar S.F., Clouds Ck S.F., Hyland S.F., Copmanhurst, Lennox Head, Wilsons Ck, Casino, Toonumbar S.F., Unumgar S.F., Yabbra S.F., Beaury S.F., Tooloom, Acacia Plateau, Lynchs Ck, Wiangaree S.F., Whian Whian S.F., Brunswick Heads and Murwillumbah.

**Timber and Uses**—Wood pinkish, close-grained and tough and may be suitable for tool handles. Tree generally too small to be of much commercial value. The bark contains a saponin and was used by the Aborigines as a fish poison.



Plate No. 5

*Alectryon tomentosus* (F. Muell.) Radlk.

## ARYTERA DISTYLIS (F. Muell. ex Benth.) Radlk.

**Synonym**—*Nephelium distyle* F. Muell. ex Benth., *Ratonia distylis* F. Muell. ex Benth.

**Reference**—Sitzb. Math-Phys. cl. Acad. Muench. IX, 553 (1879).

**Derivation**—Arytera from Greek "aryter", a cup referring to the cuplike valves of the fruits; distylis from Greek "di" two and Latin "stylus" a style because of the two styles.

**Common Name**—Two-leaved Coogara.

**Standard Trade Name**—None.

Usually a small tree but sometimes attaining a height of about 24 m and a stem diameter of about 35 cm. Crown dense, light green, rounded.

**Trunk**—Often irregular, flanged and slightly buttressed at the base.

**Outer Bark**—Greyish-brown, smooth. *Underbark pinkish-brown. Outer surface of live bark black.*

**Inner Bark**—Blaze on a tree 36 cm diameter, *reddish-brown with paler vertical streaks*, paler at the inner margin. Blaze surface sometimes fades slightly on exposure. Slightly bitter, no distinct smell. 6 mm thick. Sapwood surface corrugated.

**Branchlets**—Brown or dark grey, smooth. Young shoots hairy.

**Leaves**—Alternate, pinnate, *leaflets mostly two*, sometimes one to four, not toothed, ovate-oblong to elliptical or lanceolate, 5–11 cm long gradually tapering to a blunt point or notched at the tip. Smooth and dull green on both surfaces. Leaf stalk 9–18 mm long. *Leaflet stalk* indistinct or up to 6 mm long, *dark grey and corky.*

**Venation**—Distinct on both surfaces, *three to six swellings in the junction of the midrib and lateral veins.*

**Flowers**—Cream, in small downy panicles or sometimes the female reduced to a raceme. Sepals five, small broad teeth. Petals minute, round. Stamens short with dark brown anthers. Ovary downy-hairy, with the style recurved and divided to the base. Flowering period September to October.

**Fruit**—Capsule, dry, *yellow*, consisting of *one to three almost distinct smooth egg-shaped or oval lobes*, 9–13 mm long, *hairy inside* and each containing one seed up to about 9 mm long. *Seed partly covered by an orange-red aril.* Fruit ripe November to January.

**Habitat**—Littoral and riverine rainforests.

**Distribution**—Richmond River, N.S.W. to Bowen, Queensland. Recorded in N.S.W. from Woodburn, Ballina, Tintenbar, Booyong, Alstonville, Wilsons Creek, Eltham, Toonumbar S.F., Long Creek, Wiangaree S.F., Whian Whian S.F., Brunswick Heads, Mt Warning, Mebbin S.F., Murwillumbah, Condong and Stotts Island.

**Timber and Uses**—Wood yellowish-brown. Very hard and tough, but has no known uses.



E.S.

Plate No. 6

*Arytera distylis* (F. Muell. ex Benth.) Radlk.

## ARYTERA DIVARICATA F. Muell.

**Synonym**—*Nephelium divaricatum* (F. Muell.) F. Muell. ex Benth.

**Reference**—Trans. Phil. Inst. Vict. III, 25 (1859).

**Derivation**—Divaricata from Latin "divaricatus" wide-spreading, in reference to the few straggling branches of panicles.

**Common Name**—Gap Axe, Coogara.

**Standard Trade Name**—Rose tamarind.

A small to medium sized tree occasionally attaining a height of 24 m but trees 6–8 m high are much more common. A handsome tree with dark green mature leaves and *limp pale pink new foliage*. Should be useful for ornamental purposes.

**Trunk**—Often slightly flanged at the base.

**Outer Bark**—Grey, smooth, very thin. *Underbark fawn*. Outer surface of live bark purplish-black.

**Inner Bark**—Blaze on a tree 15 cm diameter *pinkish-brown* with pale fine vertical streaks, pale at the *inner margin* which *changes to brown* after a few minutes exposure. No distinct taste or smell. About 3 mm thick.

**Branchlets**—Brown, smooth, often dotted with pale lenticels. Young shoots brown, slightly hoary.

**Leaves**—Alternate, pinnate, leaflets two to seven, *not toothed*, elliptical, oblong-lanceolate or ovate-oblong, 5–15 cm long, blunt, bluntly acuminate, or sometimes tapering to a fine point at the tip, moderately leathery, glossy above, green on both surfaces, paler beneath and sometimes hairy along the midrib and lateral veins. Leaflet stalks 3–6 mm.

**Venation**—Distinct on both surfaces, prominently raised on the underside and *mostly with six to twelve swellings in the forks of the lateral veins and midrib*.

**Flowers**—Cream, small in loose sparsely branched panicles. Sepals five or rarely four, downy broad lobes, 1 mm long. Petals small. Stamens short, downy. Ovary hairy. Flowering period November to April.

**Fruit**—A capsule, *yellow drying to brown*, with *three almost distinct egg-shaped or oval lobes*, 13–18 mm long, smooth and sometimes finely wrinkled outside, hairy inside, each lobe containing one oval *brown seed* 6–10 mm long, *almost completely enclosed in an aril*. *A. foveolata* differs only in the velvety exterior of the fruits, and may not be distinct. Fruit ripe June to August.

**Habitat**—Chiefly semi-dry and dry coastal rainforest.

**Distribution**—Port Stephens, N.S.W. to Atherton, Queensland. Recorded in N.S.W. from Cabbage Tree Island, Myall Lakes, Seal Rocks, Port Macquarie, Kempsey, Bruxner Park, Ramornie, Susan Island, Maclean, Iluka, Ballina, Sandiland Ranges, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Beaury S.F., Toooloom S.F., Acacia Plateau, Mt Lindsay, Moore Park, Cape Byron, Brunswick Heads and Cudgen Lake.

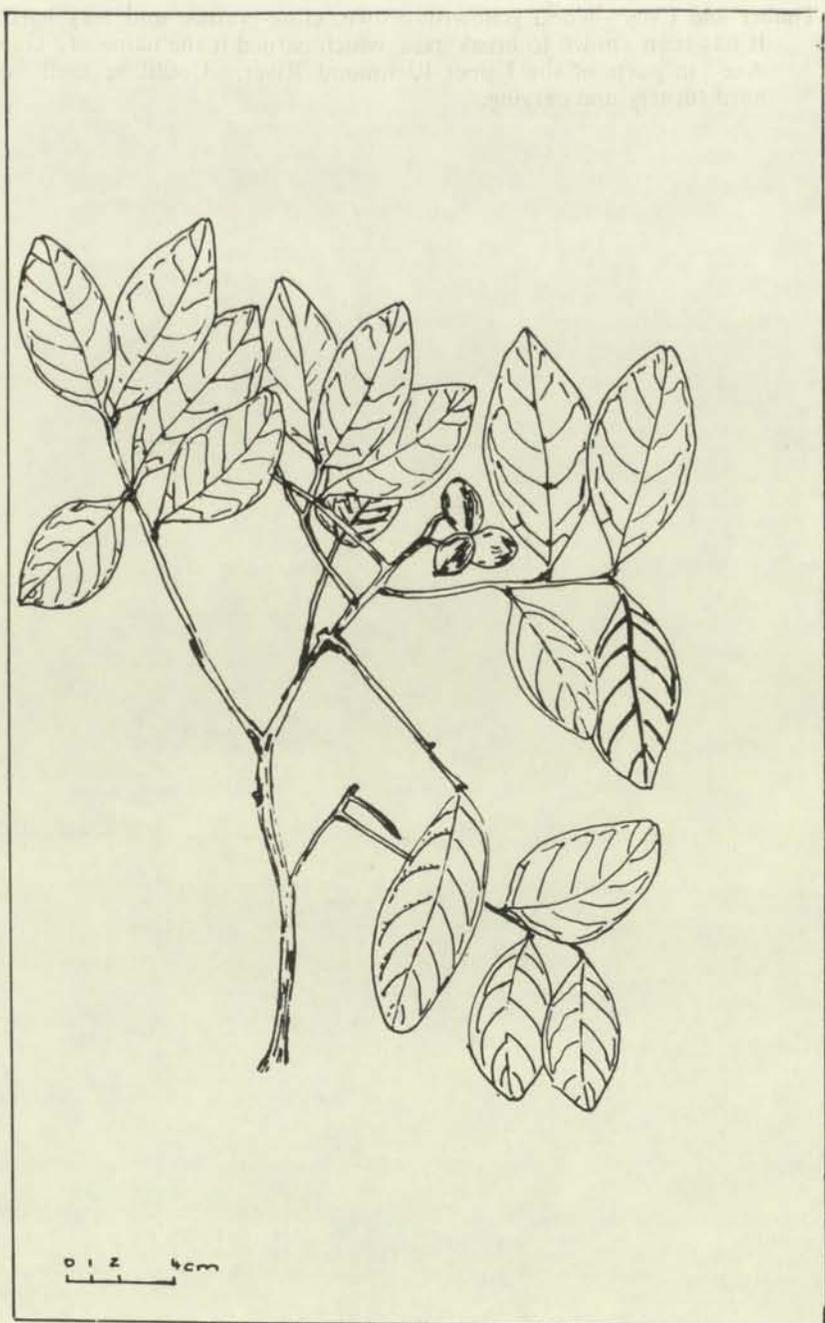


Plate No. 7

*Arytera divaricata* F. Muell.

**Timber and Uses**—Wood yellowish-brown, close-grained and very hard. It has been known to break axes, which earned it the name of "Gap Axe" in parts of the Upper Richmond River. Could be used for hard turnery and carving.



## ATALAYA VIRENS C. T. White.

**Reference**—Proc. Roy. Soc. Qld. 55, 62 (1944).

**Derivation**—Atalaya an Indian name; virens from Latin "virens" green, referring to the green leaves of this eastern species as distinct from the grey leaves of the western *A. hemiglauca*.

**Common Name**—Whitewood.

**Standard Trade Name**—None.

A tree attaining a height of about 20 m and a stem diameter of 45 cm.

**Trunk**—Often buttressed at the base.

**Outer Bark**—Greyish-brown, smooth, underbark brown. Outer surface of live bark dark reddish-brown.

**Inner Bark**—Blaze on a tree 25 cm diameter *yellowish-brown*, paler towards the sapwood. The whole surface of the *blaze changes* in a few minutes to a *dull green* which is more pronounced at the inner margin and on the surface of the sapwood. Bitter to taste, no distinct smell. 5 mm thick.

**Branchlets**—Thick, grey, smooth.

**Leaves**—Alternate, pinnate, *two to ten leaflets, not toothed, oblong or oblong-lanceolate*, 8–13 cm long, blunt or notched at the tip. Green both surfaces, paler and *dull beneath*, sometimes faintly greyish on young trees. Leaflet stalks indistinct, much swollen. The *common stalk of the leaves is often distinctly winged*.

**Venation**—Pale and distinct on both surfaces.

**Flowers**—Colour not known. In panicles. Sepals five, petals five and larger. Stamens eight. Ovary three-celled. Flowering period possibly November.

**Fruit**—Capsule, *light brown with three winged carpels each up to 4 cm long, the upwardly extended wing about 13 mm broad, hairy at the base*. Seeds single in each carpel, not surrounded by an aril. Fruit ripe October to December.

**Habitat**—Confined generally to the drier types of rainforest.

**Distribution**—Richmond River, N.S.W. to Cardwell, Queensland. Recorded in N.S.W. from Wilson Park, Lismore, Toonumbar S.F., Tooloom Range, Acacia Creek, Unumgar S.F., Roseberry S.F., Mebbin S.F., and Warialda.

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

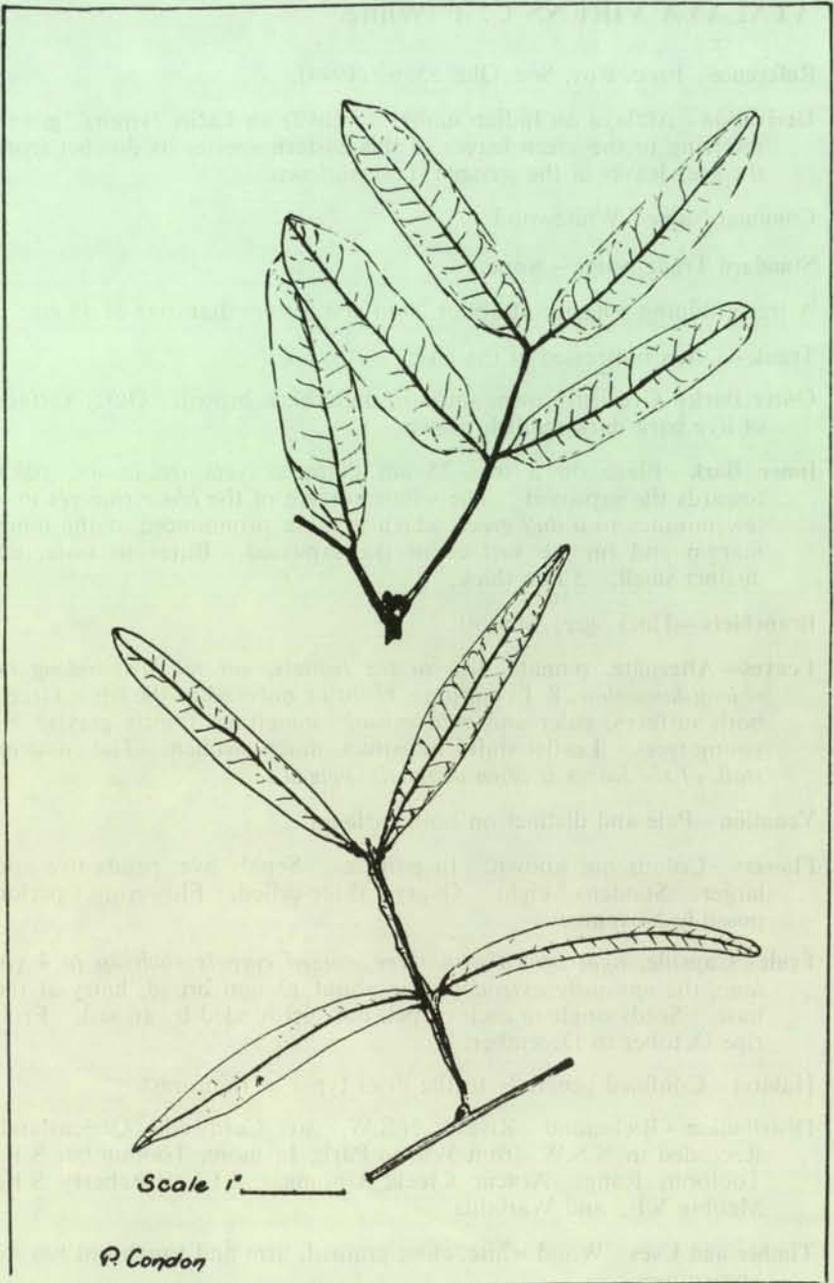


Plate No. 8

*Atalaya virens* C. T. White

## **CASTANOSPORA ALPHANDI (F. Muell.) F. Muell.**

**Synonym**—*Ratonia alphandi* F. Muell.

**Reference**—Fragm. IX, 92 (1875).

**Derivation**—*Castanospora* from Latin “castanea” a chestnut and Greek “spora” a seed referring to the chestnut coloured seeds; *alphandi* after M. Alphand, author of a book on the gardens of Paris.

**Common Name**—Brown Tamarind, Native Chestnut.

**Standard Trade Name**—Brown Tamarind.

A tree attaining a height of 30 m and a stem diameter of 75 cm.

**Trunk**—Sometimes flanged at the base in large trees.

**Outer Bark**—On small stems grey, smooth. On large trees brown with small scales or finely vertically fissured. *Underbark mottled red-brown and green.* Outer surface of live bark green.

**Inner Bark**—Blaze on a tree 30 cm diameter *pink to pinkish-brown with vertical pale lines and reddish dots.* Blaze changes to a brown after a few minutes exposure. No taste or smell. Sapwood white, corrugated. 7 mm thick.

**Branchlets**—*Thick*, grey or brown, appearing smooth but appears under a lens as being covered by a very thin dusky wool. Leaf scars prominent.

**Leaves**—Alternate, pinnate, *eight to ten leaflets, not toothed*, undulate, lanceolate to narrow-elliptical, 10–20 cm long, tapering to a blunt point or notched at the tip. Glossy, smooth and green on the upper surface, the *underside usually grey and felty.* Main leaf stalk 8–10 cm long, swollen at the base. Leaflet stalks 5–13 mm long, also swollen at the base.

**Venation**—Distinct on both surfaces, midrib prominent, and venation generally more conspicuous beneath. *Hollow glands in the forks of the veins and midrib are often present on the under surface.*

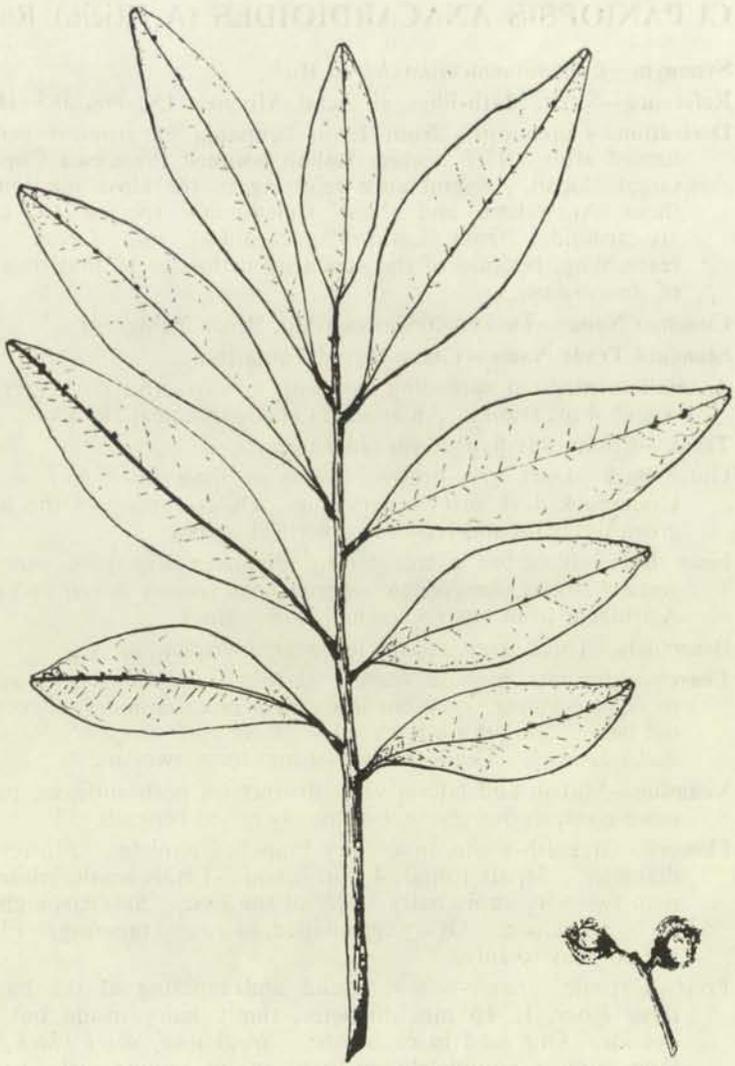
**Flowers**—White, in panicles towards the ends of the branches, up to 10 cm long. Flower stalks 1–3 mm long. Sepals five-toothed. Petals five, diamond shaped with a short claw bearing two bearded incurved scales. Stamens eight, stalks about 3 mm long, flattened and hairy near the base. Egg-shaped ovary with a short style. Flowering period May.

**Fruit**—A capsule, *brown, somewhat compressed globular, about 3 cm diameter* divided into two cells, each containing a large dark brown seed, flattened on one side, 18 mm diameter. Each seed with a pale triangular scar at the top where attached to the placenta. Fruit ripe December to May.

**Habitat**—Rainforest on volcanic soils.

**Distribution**—Bellinger River, N.S.W. to Cairns, North Queensland. Recorded in N.S.W. from Bellingen, Booyong, Alstonville, Nimbin, Whian Whian S.F., Brunswick Heads, Mt Warning, Palm Vale and Stotts Island.

**Timber and Uses**—Wood yellowish, hard and close-grained. Could be suitable for cases.



E.S.

Plate No. 9

*Castanospora alphandi* (F. Muell.) F. Muell.

## CUPANIOPSIS ANACARDIOIDES (A. Rich.) Radlk.

**Synonym**—*Cupania anacardioides* A. Rich.

**Reference**—Sitzb. Math-Phys. cl. Acad. Muench. IX, 498, 585 (1879).

**Derivation**—Cupaniopsis from Latin "cupania" a tropical genus and named after a 17th century Italian botanist Francesca Cupani and Greek "opsis", resemblance referring to the close relationship of these Australian and New Caledonian species to *Cupania*; anacardioides from Latin "anacardium" and Greek "eidos", resembling, because of the similarity in foliage to that of a species of *Anacardium*.

**Common Name**—Tuckeroo, Carrotwood, Beech Tamarind.

**Standard Trade Name**—Green-leaved Tamarind.

A small to medium spreading tree with an attractive dark green dense crown and short trunk. An excellent shade tree near the sea.

**Trunk**—Commonly flanged on older trees.

**Outer Bark**—Dark grey-brown, *smooth or with raised horizontal lines*. Underbark dark brown, very thin. Outer surface of the live bark greenish cream and red-brown vertical stripes.

**Inner Bark**—Blaze on a tree 50 cm diameter *deep pink with creamy vertical stripes changing to red-brown and creamy brown* on exposure. Astringent taste but no smell. 25 mm thick.

**Branchlets**—Thick, *grey, downy*, leaf scars conspicuous.

**Leaves**—Alternate, pinnate, *leaflets six to ten, not toothed, broadly ovate to elliptic-oblong, 7–10 cm long. Tip blunt or notched, rounded at the base. Smooth on both sides, glossy dark green above, paler and duller beneath. Leaflet stalk 3–9 mm long, swollen.*

**Venation**—Midrib and lateral veins distinct on both surfaces, paler and more conspicuous above, but mostly raised beneath.

**Flowers**—Greenish-white, in axillary branched panicles. Flowers 5 mm diameter. Sepals round, 4 mm broad. Petals small, white, round with two very short hairy scales at the base. Stamens eight to ten up to 5 mm long. Ovary egg-shaped, hairy and tapering. Flowering period May to July.

**Fruit**—Capsule, *orange-yellow*, round and tapering at the base, with *three lobes*, 12–16 mm diameter, thinly hairy inside but smooth outside. One seed in each lobe. *Seeds oval, shiny black, 12 mm long, almost completely enclosed in an orange aril.* Fruit ripe November and December.

**Habitat**—In low poorly developed dry rainforest on sand behind the dunes near the sea or estuaries.

**Distribution**—Port Hacking, N.S.W. to Queensland and Northern Territory. Recorded in N.S.W. from Port Hacking, Botany Bay, Nielson Park, Tuggerah, Ash Island, Cabbage Tree Island, Hawks Nest, Booral, Myall Lakes N.P., Seal Rocks, Foster, Port Macquarie, Macksville, Nambucca Heads, Bundagen, McCauleys Headland, Woolgoolga, Broomes Head, Brushgrove, Coraki, Ballina, Broken Head, Byron Bay, Brunswick Heads, Mooball, Cudgen Lake and Tweed Heads.

**Timber and Uses**—Wood light-pinkish, close-grained and tough. Could be used for tool handles.

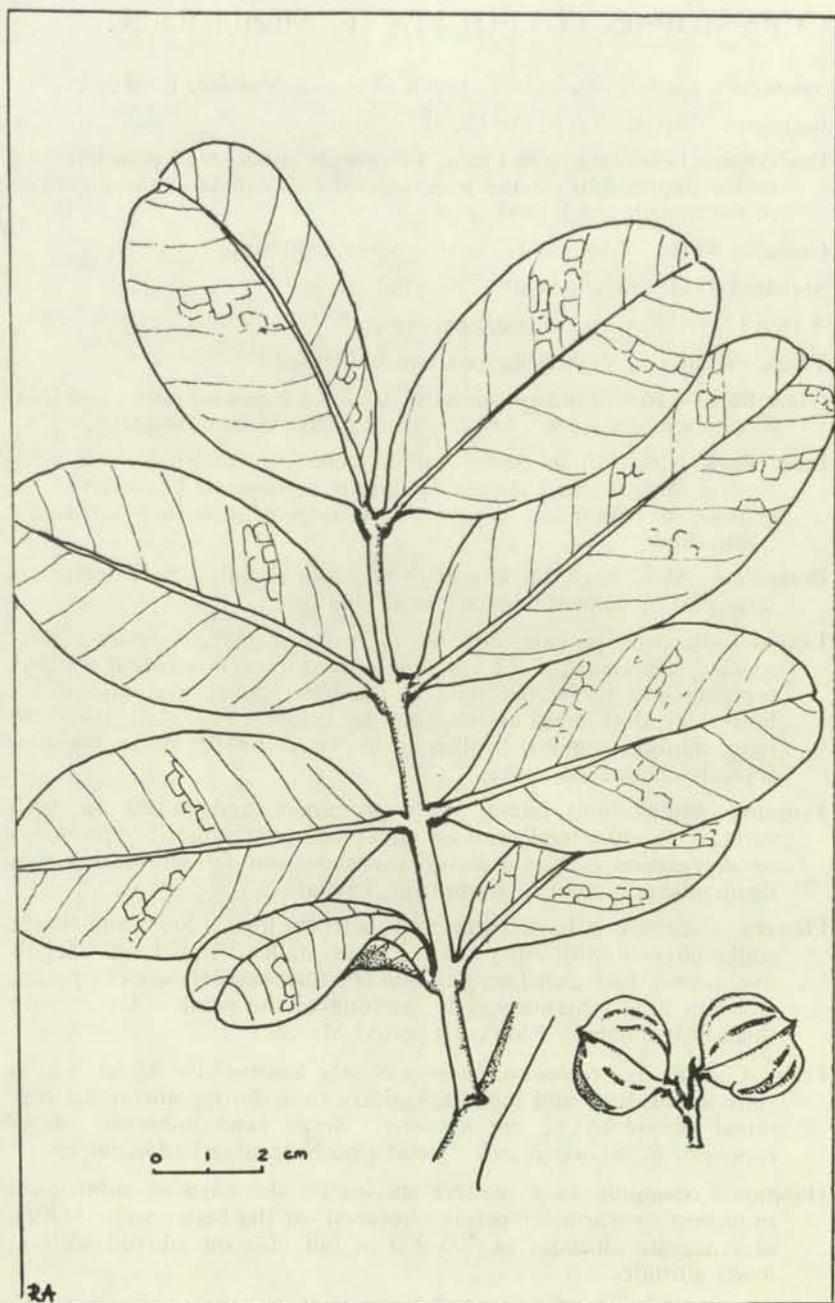


Plate No. 10

*Cupaniopsis anacardioides* (A. Rich.) Radlk.

## CUPANIOPSIS FOVEOLATA (F. Muell.) Radlk.

**Synonym**—*Ratonia foveolata* F. Muell., *Cupania foveolata* F. Muell.

**Reference**—Sitz K. Bayer. Ac IX, 1879, 514.

**Derivation**—Foveolata from Latin "foveolatus" with small pits, referring to the depressions on the underside of the leaflets in the junctions of the midrib and lateral veins.

**Common Name**—Toothed Tuckeroo, White Tamarind.

**Standard Trade Name**—White Tamarind

A tree 13 m tall, with a dense, neat crown.

**Trunk**—Round or slightly flanged, not buttressed.

**Outer Bark**—Grey to brown, smooth. *Underbark pinkish-fawn to pinkish-black* on larger trees. Outer surface of live bark olive-green.

**Inner Bark**—Blaze on a tree 7 cm diameter *biscuit brown with paler vertical threads* and a *darker band near the sapwood boundary*. No change in colour on exposure. Astringent taste but no smell. 2 mm thick.

**Branchlets**—Moderately thick, green smooth or slightly scurfy, leaf scars large and prominent, lenticels small and pale.

**Leaves**—Alternate, pinnate with *ten to twelve leaflets, distantly bluntly toothed, lanceolate, 7-12 cm long, rounded or notched at the tip*, tapering into the leaflet stalk at the base, glossy and smooth on both sides, dark green above and paler below. Leaf stalk 10-30 cm long, smooth, angular, swollen at the base. Leaflet stalks 3-8 mm, smooth, channelled above.

**Venation**—Midrib and lateral veins prominent and raised on both surfaces, 20-30 lateral veins on either side of the midrib. *Swellings or depressions in the axils of the main and lateral veins* which distinguishes it from *C. serrata* var. *serrata*.

**Flowers**—Cream, in a loose panicle up to 10 cm long. Stem and flower stalks covered with rusty felt. Flower stalks 3 mm long. Sepals five, round, hairy, enclosing in bud the fine, smaller, smooth petals, 1-2 mm long. Stamens eight, as long as the petals. Ovary with thick brown hairs. Flowering period March.

**Fruit**—Capsule, *red to brown, hanging in long bunches like Melia*, with a stalk at the base and tapering quickly to a short point at the top, *round three-lobed, 2 cm diameter. Seeds blackish-brown, almost concealed by an orange aril*. Fruit ripe November to December.

**Habitat**—Commonly as a pioneer species on the edge of subtropical rainforest or warm temperate rainforest on the better soils. Often at moderate altitudes of 700-900 m but also on alluvial soils at lower altitudes.

**Distribution**—Bulga Plateau, N.S.W. to Rockingham Bay, North Queensland. Recorded in N.S.W. from Bulga S.F., Doyles River S.F., Carrai S.F., Nulla Nulla Creek, Bellinger River, Dorrigo, Acacia Creek S.F., Tyalgum, and Murwillumbah.

**Timber and Uses**—Too small to be used.



Plate No. 11

*Cupaniopsis foveolata* (F. Muell.) Radlk.

## CUPANIOPSIS PARVIFOLIA (F. M. Bail.) L. Johnson

**Synonym**—*Cupaniopsis anacardioides* (A. Gray) Radlk. var *parvifolia* (F. M. Bail.) Domin.

**Reference**—Cont. N.S.W. Nat. Herb. 3, 3, 1962, p. 98.

**Derivation**—Parvifolia from Latin "parvus" small and "folia" a leaf, referring to the smaller leaves of this species than the allied *C. anacardioides*.

**Common Name**—Small-leaved Tuckeroo.

**Standard Trade Name**—Green-leaved Tamarind.

A small to medium tree, attaining a height of 20–25 m and a diameter of 50 cm.

**Trunk**—Often irregular in shape with transverse raised ridges on the bark.

**Outer Bark**—Grey, thin, finely scaly. *Underbark mottled dark red and tan*, sometimes almost black. Outer surface of live bark red-brown streaked with pale green.

**Inner Bark**—Blaze on a tree 45 cm diameter *deep tan, fibrous*, with transverse grey layers, becoming paler next to the sapwood, *deepening to dull pinkish-brown on exposure*. Sapwood white, often corrugated. Astringent taste. No smell. 9 mm thick.

**Branchlets**—Thick, dark grey, young shoots hairy, dotted with numerous lenticels.

**Leaves**—Alternate, pinnate, *leaflets six to eight*, mostly alternate, *not toothed*, elliptic to obovate, 3–8 cm long, tip blunt or rounded, *usually with a distinct notch*, leaflet base wedge-shaped. Leaflets generally much smaller on larger trees, *dull green on both surfaces*, paler beneath. The leaflets are smaller and with closer and finer venation than *C. anacardioides*. Leaf stalks 3–4 cm long, often ribbed giving a flattened appearance, swollen at the base; leaflet stalks 3–6 mm long and also swollen at the base.

**Venation**—Distinct on both surfaces. Midrib raised on both surfaces; and on the upper side has a thin pale line in the centre, traversing the entire length of the leaflet.

**Flowers**—Greenish-white, in panicles in the upper axils, rusty hairy, very similar to *C. anacardioides* but with a shorter inflorescence, 7–10 cms long. Flowering period mainly September, rarely April.

**Fruit**—Capsules three lobed about 10 mm diameter opening along the back in longitudinal slits. Rough outside, *densely rusty hairy inside*; seeds dark brown to black, almost enclosed in the orange aril, 6–9 mm long. Fruits smaller than in *C. anacardioides*. Fruit ripe January (rarely September).

**Habitat**—In better developed dry rainforest further away from the sea than *C. anacardioides*.

**Distribution**—From Gloucester, N.S.W. to Gympie, Queensland. Recorded in N.S.W. from Gloucester, Wingham, Manning River, Bellangry, Kangaroo River S.F., Clouds Creek S.F., Ramornie, Susan Island, Woodburn, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Mt Lindsay and Brunswick Heads.

**Timber and Uses**—Wood light-coloured, close-grained and very tough.



Plate No. 12

*Cupaniopsis parvifolia* (F. M. Bailey) L. Johnson

## CUPANIOPSIS SERRATA (F. Muell.) Radlk.

**Synonym**—*Cupania serrata* F. Muell.

**Reference**—Sitzb. Math-Phys. cl. Acad. Muench. IX, 498, 585 (1879).

**Derivation**—*Serrata* from Latin "serratus" saw-toothed, in reference to the toothed leaflets.

**Common Name**—Rusty Tuckeroo, Steelwood.

**Standard Trade Name**—None.

A tree attaining a height of 11–12 m and a stem diameter of 30 cm.

**Trunk**—Usually shortly flanged at the base in larger trees.

**Outer Bark**—Brownish-grey, fairly smooth with numerous vertical lines of small pale pustules. *Underbark black*. Outer surface of live bark biscuit.

**Inner Bark**—Blaze on a tree 30 cm diameter *reddish-brown*, becoming paler towards the sapwood *with lighter vertical stripes and fine dark lines* extending towards the inner margin. Surface of the blaze darkens after a few minutes exposure. Slightly irony taste, no smell. 6 mm thick. Surface of sapwood corrugated.

**Branchlets**—*Rusty, hairy*, generally fluted.

**Leaves**—Alternate, pinnate, *leaflets eight to over twelve*, prominently and *sharply toothed*, elliptical to elliptical-lanceolate, 8–11 cm long, drawn out into an acute point at the tip. Glossy and smooth on the upper surface, underside paler and shortly hairy in var. *tomentella* (F. Muell. ex Benth.) Domin. only. Leaflet stalks 1–6 mm long.

**Venation**—Fairly distinct on the upper surface, raised and very prominent beneath, the lateral veins extending through to terminate in a sharp point at the tip of each tooth. *Midrib and lateral veins covered with yellowish-brown hairs*.

**Flowers**—*Pink*, in panicles in the upper axils, 5–15 cm diameter, *rusty hairy outside*. Flowers rather large on very short stalks. Sepals five, round, up to 4 mm long. Petals much shorter and broader. Stamens short, eight. Ovary hairy with a short style and round stigma. Flowering period October to January.

**Fruit**—A *capsule, yellow-brown*, two to three lobed, *wrinkled and covered with fine dense yellowish-brown hairs*, 12–25 mm broad. A dark brown or black glossy egg-shaped seed is in each lobe, covered for about three-quarters of its length by an orange aril. Fruit ripe November and December.

**Habitat**—Subtropical rainforest on volcanic soils.

**Distribution**—Richmond River, N.S.W. to Rockingham Bay, Queensland. Var. *serrata* is less common in N.S.W. than var. *tomentella* being recorded from Mullumbimby, Tyalgum, Mebbin S.F. and Mooball S.F. Var. *tomentella* is recorded in N.S.W. from Tintenbar, Victoria Park, The Risk, Wiangaree S.F., Tunstall, Minyon Falls and Whian Whian S.F.

**Timber and Uses**—White in colour, hard and fairly heavy. Has no particular uses.

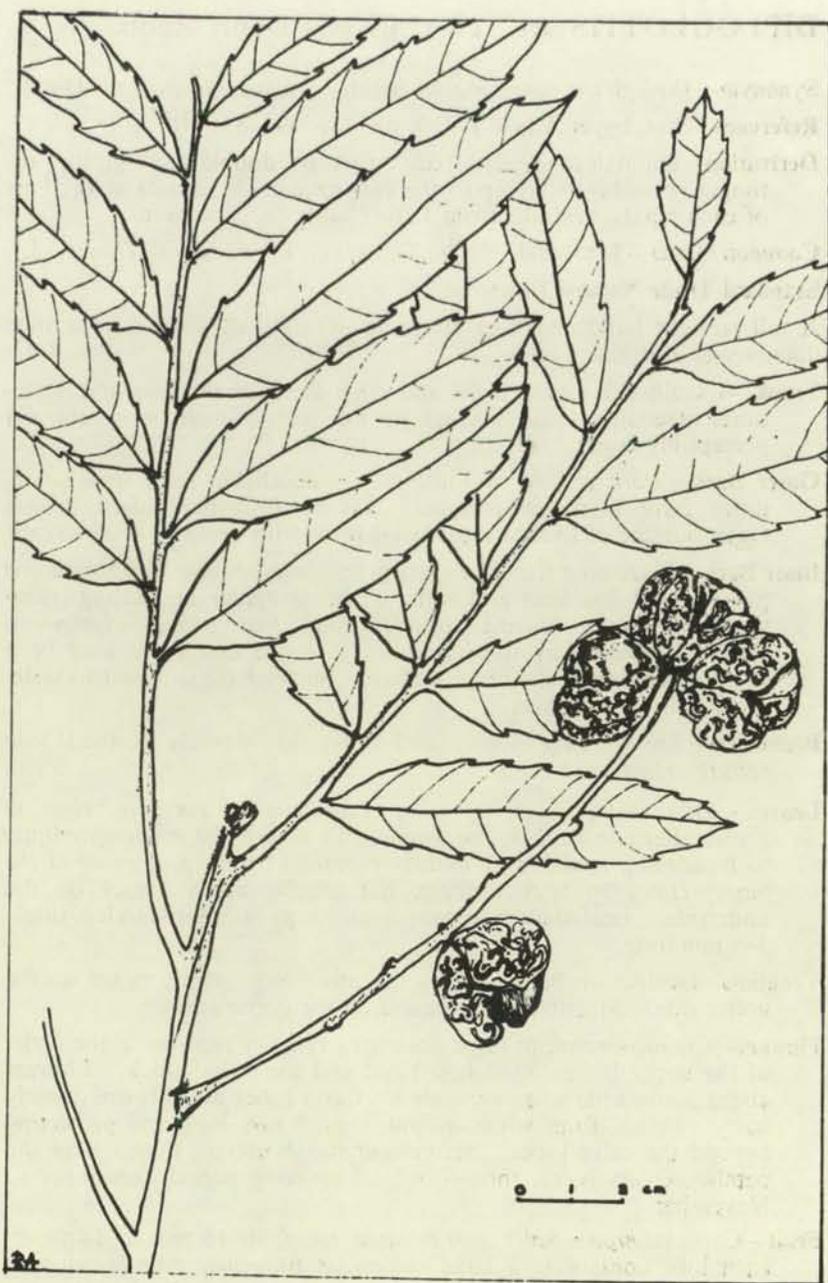


Plate No. 13

*Cupaniopsis serrata* (F. Muell.) Radlk.

## DIPLOGLOTTIS AUSTRALIS (G. Don.) Radlk.

**Synonym**—*Diploglottis cunninghamii* Benth., *Stadmannia australis* Don.

**Reference**—Sitz. bayer Akad. Vol. 9, pp. 486, 499, 531 (1879).

**Derivation**—Diploglottis from Greek “diploos” double and “glotta” the tongue, possibly referring to the two tongue-like glands at the base of each petal; australis from Latin “australis” southern.

**Common Name**—Tamarind, Native Tamarind, Broad-leaved Tamarind.

**Standard Trade Name**—Tamarind.

A tall straight handsome tree attaining a height of 36 m and a stem diameter of 75 cm.

**Trunk**—Usually tall and straight and *often fluted at the base* and sometimes extending some distance up the bole. Small trees generally perceptibly fluted.

**Outer Bark**—*Dark grey or brownish-grey*, smooth but large trees sometimes have a rough pimples surface. *Underbark dark brown*. Outer surface of live bark pinkish-brown with green vertical stripes.

**Inner Bark**—Blaze on a tree 33 cm diameter *pinkish-brown* with numerous pale vertical fine lines and some darker irregular undulating transverse lines, paler towards the sapwood. *Inner margin changes to yellowish-brown* after some minutes exposure and there may be a slight darkening of the blaze surface. Somewhat astringent to taste. No smell. 6 mm thick.

**Branchlets**—*Thick young shoots and branchlets* densely clothed with *velvety brown hairs*.

**Leaves**—Alternate, pinnate, up to or exceeding 60 cm long, *eight to twelve* alternate leaflets, *not toothed*, 13 to over 30 cm long, elliptic to lanceolate, rounded or bluntly pointed at the tip, *unequal at the base*. *Hairy on both surfaces*, but usually much denser on the underside. Leaf stalk 5 to over 8 cm long. Leaflet stalklets thick, 3–6 mm long.

**Venation**—Distinct on both surfaces but more prominently raised on the under side. Midrib slightly raised on the upper surface.

**Flowers**—*Creamy-brown*, in *large densely rusty-hairy panicles* in the forks of the upper leaves, branches fluted and somewhat thick. Flowers about 3 mm wide when expanded. Calyx lobes five, brown, densely hairy. Petals, four, white, round, thin, 3 mm long and projecting beyond the calyx lobes. Stamens eight, shorter or longer than the petals. Ovary hairy, three-lobed. Flowering period September to November.

**Fruit**—Capsule, *brown, hairy, two to three lobed*, 10–15 mm in diameter, each lobe containing a large somewhat *triangular pale brown seed* which is enclosed by an *orange-yellow juicy pulp* (aril) of a pleasant acid flavour. The fruits are sometimes used by bushmen for making acid drinks. Fruit ripe November and December.

**Habitat**—Rainforest of all types. In N.S.W. the tree attains its best development in the sub-tropical rainforest of the Macpherson Range and similar basaltic areas.



Plate No. 14

*Diploglottis australis* (G. Don.) Radlk.

**Distribution**—From Illawarra, N.S.W. to Proserpine, Queensland. Recorded in N.S.W. from Minnamurra Falls, Macquarie Pass, Mt Kembla, Bulli Pass, Port Hacking, Peats Ridge, Hogans Brush, Strickland S.F., Piri Brush (Upper Hunter), Upper Chichester and Williams Rivers, Doyles River S.F., Port Macquarie, Bellangry S.F., Way Way S.F., Bellinger River S.F., Pine Creek S.F., Coramba, Bruxner Park, Mt Coramba, Woolgoolga, Wild Cattle Creek S.F., Moonpar S.F., Clouds Creek S.F., Hyland S.F., Marengo S.F., Glenugie S.F., Gibraltar Range S.F., Ewingar S.F., Mt Pikapene S.F., Girard S.F., Tintenbar, Eltham, Boat Harbour, Lynchs Creek, Wilson Creek, Toonumbar S.F., Unumgar S.F., Tooloom, Beaury S.F., Acacia Plateau, Mt Lindsay, Wiangaree S.F., Whian Whian S.F., Mooball and Murwillumbah.

**Timber and Uses**—Wood pale, heartwood dark in old trees, hard, close-grained and tough. Suitable for flooring and cases. Could be used for indoor work, but the sapwood is liable to attack by borers.

## DIPLOGLOTTIS CAMPBELLII Cheel.

**Reference**—Proc. Linn. Soc. N.S.W. 48, 685 (1923).

**Derivation**—Campbellii after Mr R. A. Campbell of the Tweed district who discovered this species.

**Common Name**—Small-leaved Tamarind.

**Standard Trade Name**—None.

A large straight tree 18–24 m high and 60–90 cm diameter, cultivated as a shade tree in Brisbane.

**Trunk**—Straight, slightly flanged.

**Outer Bark**—Grey-brown with brown vertical cracks, smooth to lightly fissured on a tree 50 cm diameter. Underbark fawn. Outer surface of live bark green with orange-brown blotches.

**Inner Bark**—Blaze on a tree 50 cm diameter creamy or orange-brown with darker vertical streaks, uniform creamy-fawn near the sapwood. Becoming slightly paler on exposure. No distinct taste, cucumber smell. 10 mm thick.

**Branchlets**—Moderately thick, fawn, softly hairy at first, later smooth. Angular and grooved at first. Leaf buds creamy fawn.

**Leaves**—Alternate, pinnate, *leaflets almost opposite, four to six*, not toothed, broad lanceolate, 7–15 cm long, drawn out into a blunt point, *unequal-sided at the base*. Smooth both sides, paler on the underside. Leaflet stalk 6 mm long.

**Venation**—Midrib, lateral and net veins visible on both surfaces. 15–25 lateral veins on either side of the midrib. Raised below, sunken above.

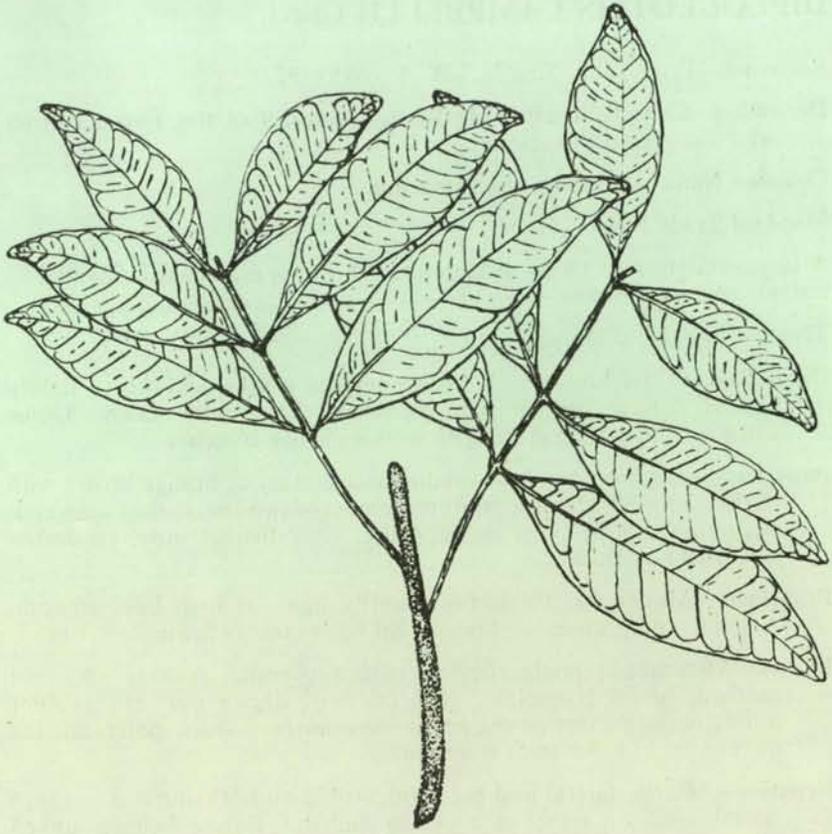
**Flowers**—Creamy-brown, crowded in composite racemose panicles up to 10 cm long. Flower stalks 2 mm long. Sepals five, broad, 2–3 mm long, densely hairy outside. Petals four, slightly shorter than the sepals, with scattered hairs. Stamens eight. Ovary hairy with a simple slightly curved style. Flowering period November to March.

**Fruit**—A capsule, *yellow-brown*, usually three-lobed, each lobe 4 cm in diameter, *smooth*, hard, enclosing a single *round, yellow seed*, 2 cm diameter which is *enveloped* in a pleasantly acid, *juicy, red aril*. Fruit ripe February and March.

**Habitat**—Riverine rainforest.

**Distribution**—From Tintenbar, Richmond River to Tweed River, N.S.W. Cultivated in Brisbane. Recorded in N.S.W. from Tintenbar and Murwillumbah (not seen recently), Mt. Warning Road, Farrants Hill and Terranora.

**Timber and Uses**—Not known.



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Plate No. 15

*Diploglottis campbellii* Cheel.

## ELATTOSTACHYS NERVOSA (F. Muell.) Radlk.

**Synonym**—*Cupania nervosa* F. Muell.

**Reference**—Sitzb. Math.-Phys. cl. Acad. Muench. IX, 600 (1879).

**Derivation**—Elattostachys from Greek “elaterios” driving away and “stachys” a spike of unknown significance; nervosa from Latin “nervosus” nerved referring to the prominent leaf veins.

**Common Name**—Beetroot.

**Standard Trade Name**—None.

A tree attaining a height of 21 m and a diameter of 50 cm.

**Trunk**—Flanged, or large trees moderately buttressed.

**Outer Bark**—Grey, smooth, as thin as paper. Large trees often have straight lateral raised lines and wrinkles. Outer surface of live bark mottled green and brown.

**Inner Bark**—Blaze on a tree 25 cm diameter pinkish-brown with paler and darker vertical stripes which are more distinct in some specimens than in others. *Inner white margin changes to yellowish-brown* after about five minutes exposure, but surface of blaze does not change colour. Slightly bitter to taste, no distinct smell. 5 mm thick.

**Branchlets**—Moderately thick, grey or brown, *often rusty-hairy towards the ends. Young shoots clothed with close, rusty, woolly hairs.*

**Leaves**—Alternate, pinnate, *leaflets three to six, sinuate, toothed or entire, lanceolate, often sickle-shaped, 7–15 cm long but sometimes attaining 28 cm on young growth, protracted into a fine or blunt point at the tip, abruptly tapered at the base, smooth, green and somewhat shiny on the upper surface, paler and dull beneath. Leaflet stalk 5–12 mm.*

**Venation**—Distinct on both surfaces but a little more prominent on the underside where the net veins are also visible. Principal lateral veins 15–25. Raised on both surfaces. *No small tufts of hairs in the axils, as are present in E. xylocarpa.*

**Flowers**—Short axillary racemes, 3–5 cm long, yellow-brown, clothed with a close down. Flower stalks 2 mm, flowers 3–4 mm diameter. Differing from *E. xylocarpa* in the larger and stalked flowers. Sepals narrow egg-shaped, over 2 mm long. Petals very small. Flowering period commonly April and May but sometimes September to November.

**Fruit**—A woody capsule, *red, pinkish or a mixture of green and red, hairless, surface wrinkled and uneven, depressed globular. Three-celled, each 12–18 mm diameter, opening in three parts exposing a pink velvety lining inside and a glossy brown or black seed in each cell with a short basal red aril.* Fruit ripe July to October.

**Habitat**—Found in all types of rainforest but the species seems to attain its greatest size on basaltic soils.

**Distribution**—From Barrington, N.S.W. to Gympie, Queensland. Recorded in N.S.W. from Dilgry River, Coneac, Gloucester River,

Myall Lakes, Doyles River S.F., Bellangry S.F., Bellinger River, Dorrigo N.P., Pine Creek S.F., Bruxner Park, Mt Coramba, Orara West S.F., Hayes Creek, Woolgoolga, Wild Cattle Creek S.F., Ballina, Boat Harbour, Wilsons Creek, Toonumbar S.F., Lynchs Creek, Roseberry S.F., Wiangaree S.F., Whian Whian S.F., Mooball S.F., Brunswick Heads, Mt Warning and Murwillumbah.

**Timber and Uses**—Wood dark brown, close-grained and very tough. Should be suitable for tool handles.



Plate No. 16

*Elattostachys nervosa* (F. Muell.) Radlk.

**ELATTOSTACHYS XYLOCARPA** (A. Cunn. ex F. Muell.) Radlk.

**Synonym**—*Cupania xylocarpa* A. Cunn.

**Reference**—Sitzb. Math.-Phys. cl. Acad. Muench. IX, 600 (1879).

**Derivation**—Xylocarpa from Greek "xylon" wood and "carpos" fruit referring to the thick hard fruits.

**Common Name**—Short-leaf Beetroot, White Tamarind.

**Standard Trade Name**—White Tamarind.

Usually a small tree, 20–25 m in height and a diameter of 30–35 cm. *Young leaves often coloured brilliant red or orange.*

**Trunk**—Commonly fluted but scarcely buttressed.

**Outer Bark**—Thin, dark brown, smooth with horizontal raised lines. *Underbark black or brownish.* Outer surface of live bark mottled green, brown and yellow.

**Inner Bark**—Blaze on a tree 30 cm diameter *light brown with paler streaks,* but uniform pale fawn near the sapwood, granular. Sapwood white, no oxidation except for a slight fading, bitter to taste, with a mushroom odour. 9 mm thick.

**Branchlets**—Medium thickness, grey, hairy. Young shoots rusty hairy.

**Leaves**—Alternate, pinnate, *leaflets three to six* alternately arranged on the rachis. *Toothed,* elliptic, 5–8 cm long, *terminating in an acute point,* abruptly tapering at the base. Green both surfaces, *upper surface smooth, shiny, lower surface clothed in short stiff hairs.* Leaf stalks green, swollen at the base. Leaflet stalks 3 mm long.

**Venation**—Distinct on both sides, more so on the lower surface, midrib raised on both surfaces. *Small tufts of hair situated in the axils of the main and lateral veins.*

**Flowers**—Red, panicles short and little branched, often reduced to simple racemes, and rarely above 5 cm long, shortly hairy. Flowers small, the upper male ones sessile, the lower hermaphrodite and on short stalks only 1 mm long. Sepals ovate, woolly, under 2 mm long, unequal. Petals very small with a minute scale at the base. Stamens eight to ten. Filaments oblong. Ovary woolly, occasionally four-celled. Flowering period December to April.

**Fruit**—Capsule, *globose or slightly pear-shaped,* 15–20 mm diameter, *splitting into three or more rarely four woody valves,* each with a central partition, *wine-coloured inside,* grey-brown outside. Solitary on short stalks, 4–6 mm long. *Seeds one in each cell, glossy black, elongate egg-shaped,* 6–8 mm long, *with a small wine-coloured arillus at the base.* Fruit ripe April to May.

**Habitat**—Dry rainforest on volcanic soils.

**Distribution**—Orara River, N.S.W. to Rockhampton, Queensland. Recorded in N.S.W. from Coramba, Glenugie Peak, Mt Pikapene S.F., Rivertree, O'Donnells Creek, Toonumbar S.F., Unumgar S.F., Beary S.F., Acacia Creek S.F., and Roseberry S.F.

**Timber and Uses**—Wood light yellow and very tough. Could be used for tool handles.

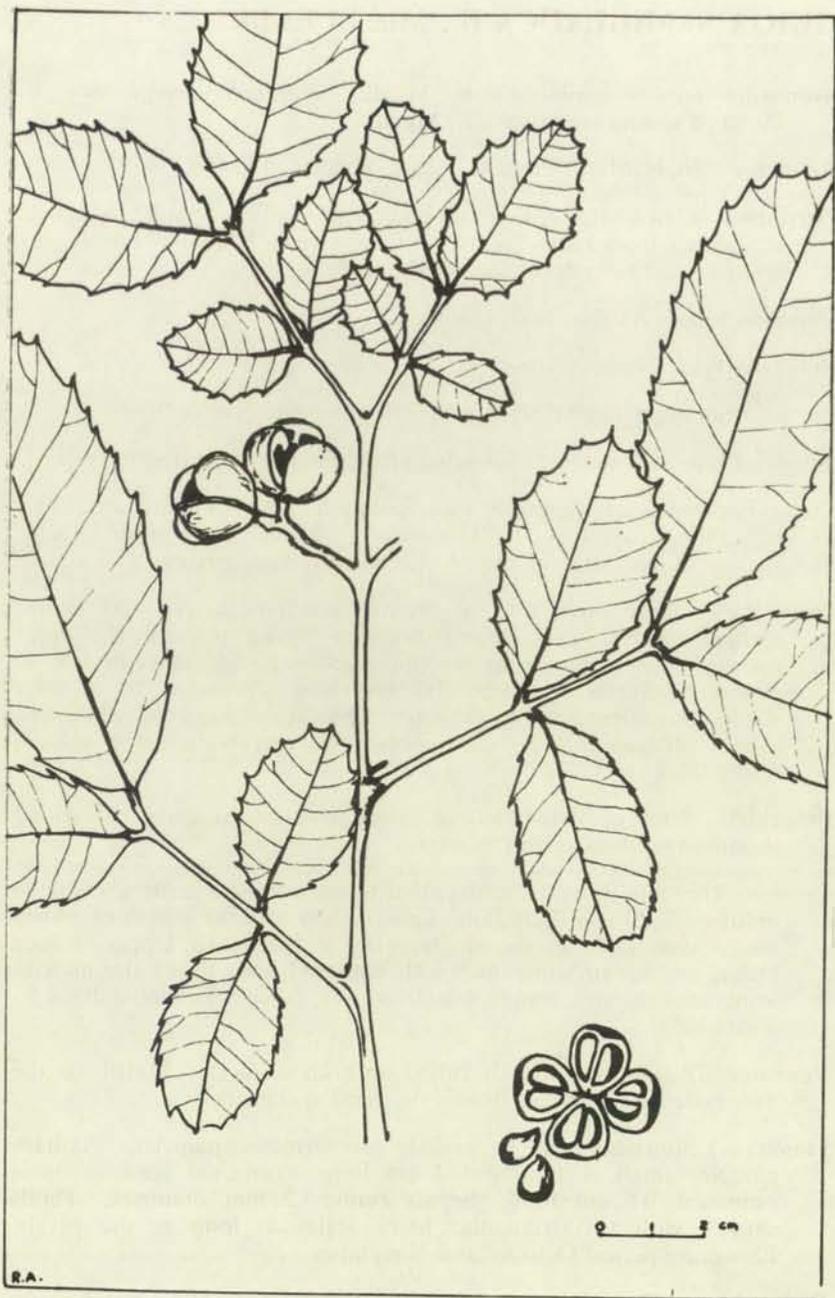


Plate No. 17

*Elattostachys xylocarpa* (A. Cunn. ex F. Muell.) Radlk.

## GUIOA SEMIGLAUCA (F. Muell.) Radlk.

**Synonym**—*Arytera semiglauca* F. Muell., *Nephelium semiglaucum* F. Muell., *Cupania semiglauca* F. Muell.

**Reference**—Sitzb. Math.-Phys. cl. Acad. Muench. IX, 608 (1879).

**Derivation**—Guioa after J. Guio an eighteenth century Spanish botanist; semiglauca from Latin "semi" half and Greek "glaukos" bluish grey referring to the undersurface of the leaflets.

**Common Name**—Guioa, Wild Quince.

**Standard Trade Name**—None.

A tree attaining a height of 18 m and a stem diameter of 30 cm.

**Trunk**—Flanged, fluted or channeled at the base in large trees.

**Outer Bark**—Smooth, grey or slate-coloured, often spotted, sometimes resembling coachwood. Underbark brown, very thin. Outer surface of live bark red-brown with green vertical stripes.

**Inner Bark**—Blaze on a tree 30 cm diameter pinkish red with lighter vertical streaks; and creamy fawn to brown towards the outer margin. Inner margin paler but darkening to orange-brown on exposure. Surface of sapwood bleaching somewhat to a paler shade after a few minutes exposure. Surface of sapwood white and often corrugated. Very astringent taste and watermelon odour. 6 mm thick.

**Branchlets**—Grey or slate-coloured, hairy towards the ends, the young shoots sometimes velvety brown.

**Leaves**—Alternate, pinnate, entire, two to six alternate leaflets, ovate to oblong elliptic, 5–10 cm long, usually blunt with the midrib extending into a short point at the tip, tapering at the base. Upper surface green, smooth or sometimes with scattered hairs along the midrib, sometimes shining, underside pale or grey, hairy. Leaflet stalks 1.5–3 mm long.

**Venation**—Distinct and slightly raised on both surfaces. Midrib on the underside often reddish brown on dried specimens.

**Flowers**—Yellowish-green, in axillary or terminal panicles. Axillary panicles small, 1 to about 5 cm long. Terminal panicles more branched, 15 cm long. Sepals round, 2 mm diameter. Petals shorter with two triangular hairy scales as long as the petals. Flowering period October and November.

**Fruit**—A capsule with two to three compressed wing-like lobes broader than long, up to 12 mm wide, blue-green. Within each lobe is one oval glossy brown or black seed, 6 mm diameter with a thin aril. Fruit ripe January to February.

**Habitat**—All types of rainforest.

**Distribution**—From the Hunter River, N.S.W. to Proserpine, Queensland. Recorded in N.S.W. from Lochinvar (Hunter River), Cabbage Tree Island, Mungo Brush, Cape Hawke, Yessabah Caves, Newton-Boyd, Copmanhurst, Glenugie S.F., Susan Island, Woodburn, Lismore, Mt Pikapene S.F., Rivertree, Toonumbar S.F., Unumgar S.F., Moore Park, Whian Whian S.F., and Tweed Heads.

**Timber and Uses**—Wood pale yellow, close-grained and hard. Has no particular use.



*Alphitonia excelsa* (R.Br.) A.C. Smith



Plate No. 18

*Guioa semiglaucula* (F. Muell.) Radlk.

## HARPULLIA ALATA F. Muell.

**Reference**—Fragm. II, 103 (1861).

**Derivation**—Harpullia from Harpulli, the native name in India of *Harpullia cupanioides*, the first-named species of the genus; *alata* from Latin "alatus" winged, in reference to the winged main leaf stalk.

**Common Name**—Wing-leaved Tulip.

**Standard Trade Name**—None.

A tall slender shrub or small tree up to 5 m in height and 6 cm diameter.

**Trunk**—Cylindrical or often irregular.

**Outer Bark**—Grey, often wrinkled, with scattered thin scales. Underbark fawn. Outer surface of live bark orange with a few pale vertical streaks.

**Inner Bark**—Blaze on a tree 5 cm diameter pale brown, darker at the outer margin, paler towards the sapwood. Blaze surface darkens after a few minutes exposure. Freshly cut bark is bitter to taste and has a faint distinctive smell. 3 mm thick.

**Branchlets**—Thick, reddish-brown or dark greenish-brown dotted with dark brown raised lenticels. Young shoots and branchlets more or less rusty-hairy.

**Leaves**—Alternate, pinnate, six to ten leaflets. *Coarsely and usually acutely toothed*, lanceolate to oblong-elliptic, 8–15 cm long, protracted into a long point at the tip, tapering but often finally lobed at the base, green both surfaces, paler beneath and often a little more glossy. *Leaf stalk winged and generally toothed*, about 13 mm broad. Leaflet stalks very short or indistinct.

**Venation**—Firm, distinct and raised on both surfaces but more conspicuous beneath.

**Flowers**—White, few, in terminal branched panicles, about 16 cm long. Flowers on short stalks. Sepals shortly woolly, 6 mm long. Petals 8 mm long, oblong-triangular and narrowed at the base. Stamens seven or eight. Flowering period April and May.

**Fruit**—A *two-lobed capsule*, clothed with *brownish starry hairs outside* and smooth red inside, 25–40 mm broad. Seeds two or one in each lobe, round, glossy black, completely enveloped in an orange-yellow aril. Fruit ripe July and August.

**Habitat**—Subtropical and riverine rainforest.

**Distribution**—From Bulahdelah, N.S.W. to Innisfail, North Queensland. Recorded in N.S.W. from Bulahdelah S.F., Clarence River, Wilsons Creek, Eltham, Mt Lindesay S.F., Whian Whian S.F., Nullum S.F., Mebbin S.F., Wollumbin S.F., Burringbar, Mooball S.F., and Tumbulgum. Only a single collection is known south of the Clarence River, being at the end of the last century.

**Timber and Uses**—Wood pale, close-grained and hard but of no particular use.

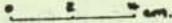
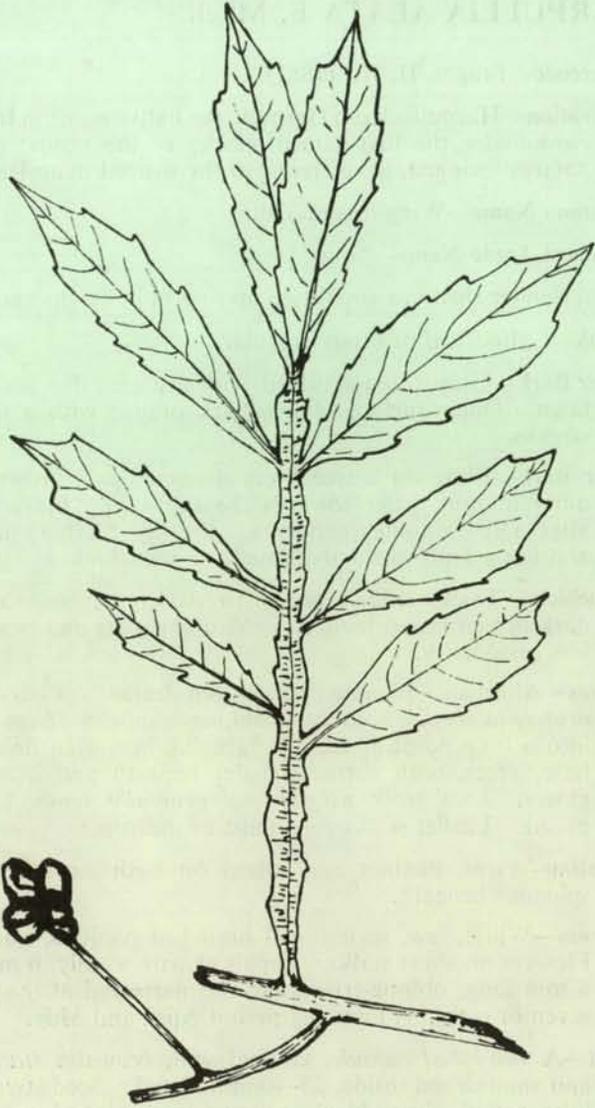


Plate No. 19

*Harpullia alata* F. Muell.

## HARPULLIA HILLII F. Muell.

**Reference**—Trans. Phil. Soc. Vict. III, 26 (1859).

**Derivation**—Hillii after Walter Hill who first collected this species.

**Common Name**—Oblong-leaved Tulip.

**Standard Trade Name**—None.

A small tree attaining a height of 20 m and a stem diameter of 50 cm. Attractive, often with a dense crown of leaves.

**Trunk**—Sometimes flanged, grooved or irregular, buttressed or flanged at the base.

**Outer Bark**—Grey, smooth or finely scaly. Underbark light brown. Outer surface of live bark orange-brown with cream stripes.

**Inner Bark**—Blaze on a tree 50 cm diameter outer half mottled reddish-brown, inner half pale brown to cream, surface *darkens slightly* after a few minutes exposure *with a greenish tinge*. Slightly bitter, but no smell. 13 mm thick.

**Branchlets**—Thick, grey, smooth, with hairy young shoots, often faintly ridged, with numerous brown elongated lenticels.

**Leaves**—Alternate, pinnate, not toothed, up to 30 cm or more long, leaflets six to eleven, firm and somewhat rigid. Smooth, *broadly oblong or ovate oblong*, 6–15 cm long, *rounded at the tip or often notched*, slightly unequal-sided at the base. Glossy above, paler beneath. Leaflet stalks 3–5 mm long, slightly swollen at the base.

**Venation**—Distinct on both surfaces but much more prominent on the underside. Midrib often slightly sunken on the upper surface but raised beneath.

**Flowers**—White, in loose, sparsely-branched panicles, which are shorter than the leaves. Inflorescence densely and rusty downy. Sepals broadly ovate, 4–6 mm long. Petals oblong, 6–8 mm long. Stamens five to six. Flowering period October and November.

**Fruit**—A *two-lobed capsule*, *outside clothed with yellow-brown hairs*, *inside also hairy*, about 40 mm broad tapering into a short stalk. Seeds egg-shaped, one to two to each cell, 8–12 mm long. Fruit ripe November to January.

**Habitat**—Occurs in the dry as well as subtropical rainforest.

**Distribution**—From the Clarence River, N.S.W. to Ayr, Queensland. Recorded in N.S.W. from Kangaroo River S.F., Rivertree, Glenugie S.F., Iluka, Tintenbar, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Acacia Creek, Mt Lindesay, Long Creek, Wiangaree S.F., Whian Whian S.F., and Stotts Island.

**Timber and Uses**—Wood pale or almost white, close-grained and tough but has no known uses.

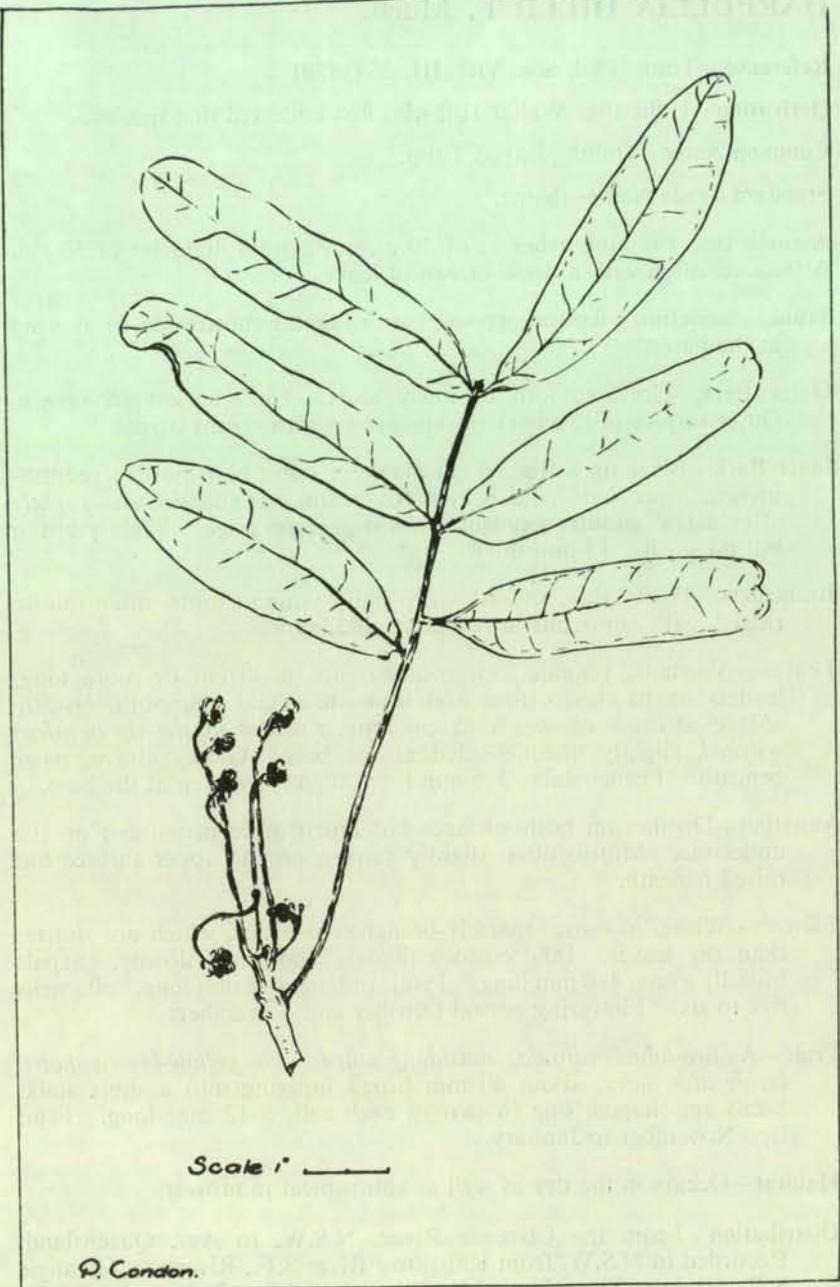


Plate No. 20

*Harpullia hillii* F. Muell.

## HARPULLIA PENDULA Planch.

**Reference**—Trans. Phil. Soc. Vict. III, 26 (1859).

**Derivation**—Pendula from Latin "pendula" hanging or drooping in reference to the pendant fruit bunches.

**Common Name**—Tulipwood, Black Tulip.

**Standard Trade Name**—Tulipwood.

A small to medium sized tree of the drier rainforest areas, attaining a height of 24 m and a stem diameter of 60 cm.

**Trunk**—Very irregular in shape, often fluted. Crown spreading and shapely.

**Outer Bark**—Grey, scaly, the scales shedding in long irregular flakes, beneath which there is a pattern of numerous corky pustules. Underbark cream. Outer surface of live bark greenish-orange.

**Inner Bark**—Blaze on a tree 40 cm diameter cream with a lighter, watery layer next to the sapwood which turns blackish-green on exposure. Delayed bitter taste and sugar cane smell. Sapwood white. 10 mm thick.

**Branchlets**—Average thickness, light grey, young shoots finely hairy, roughened by the presence of numerous corky lenticels.

**Leaves**—Alternate, pinnate, consisting of three to eight leaflets, thin, margins not toothed, elliptic to narrowly elliptic, 5–12 cm long, terminating in a short blunt point at the tip and often unequal sided at the base, smooth, green and shining above, paler beneath. Leaf stalks green, finely hairy, and swollen at the base. Leaflet stalks green, 3–5 mm long.

**Venation**—Distinct on both surfaces, midrib raised on both surfaces.

**Flowers**—Greenish-yellow in axillary narrow panicles, sometimes as long as the leaves. Flower stalks 6 mm long, flowers 15 mm diameter. Sepals red-brown, of five oval or circular downy lobes, 3–5 mm long. Petals five, oval on a small stalk, finely hairy towards the base, 6–10 mm long. Stamens five to eight, about 3 mm long. Ovary downy, two lobed on top of which is a spirally twisted style, 6 mm long. Flowering period November to January.

**Fruit**—A two-lobed capsule, yellow or reddish, each papery lobe 13–18 mm diameter containing one to two shining dark brown or black oval seeds about 13 mm long and attached near the top of the central axis of the fruit. Aril absent. Fruit ripe September to October.

**Habitat**—Riverine, subtropical and dry rainforests on basaltic or alluvial soils.

**Distribution**—From Bellinger River, N.S.W., to Mulgrave River near Cairns, Queensland. Recorded in N.S.W. from Bellinger River, Kangaroo River S.F., Coaldale, Susan Island, Iluka, Toonumbar S.F., Unungar S.F., Acacia Creek S.F., Mt Lindesay, Long Creek, Lynch's Creek, Whian Whian S.F., Murwillumbah and Tweed Heads.

**Timber and Uses**—An excellent turnery and cabinet timber, the dark centre is highly figured with dark brown bands and pale or yellowish areas. Fine-grained, tough and heavy, very durable.



Plate No. 21

*Harpullia pendula* Planch.

## JAGERA PSEUDORHUS (A. Rich.) Rädlk.

**Synonym**—*Cupania pseudorhus* A. Rich.

**Reference**—Sitzb. Math.-Phys. cl. Acad. Muench. IX, 621 (1879).

**Derivation**—Jagera after Dr Herbert De Jager, who collected plants in Indonesia in the mid 19th century for botanist Rumphius; pseudorhus from Greek “pseudo” false or imitative, “rhus” the Sumac tree of North America in reference to the similarity in foliage.

**Common Name**—Foam Bark Tree, Ferntop, Pink Tamarind.

**Standard Trade Name**—Pink Tamarind.

A small tree attaining a height of 18 m and a stem diameter of about 38 cm. A beautiful tree when open grown with its dense crown of fine, bright green leaves.

**Trunk**—*Somewhat fluted on large trees.* Patterned with transverse raised ridges.

**Outer Bark**—Dark grey, smooth with transverse raised ridges. Underbark red-brown. Outer surface of live bark green (green and red in larger trees).

**Inner Bark**—Blaze on a tree 40 cm diameter, *reddish-brown* with a pale layer next to the sapwood, sapwood white. *The inner layer changes to a tan-brown* on exposure. Lingered iron taste but no smell. 5–10 mm thick.

**Branchlets**—*Slender, rusty brown,* young shoots and leaf rachis clothed in *dense rusty-brown hairs.* *Branchlets ribbed or fluted* towards the tips.

**Leaves**—Alternate, pinnate, *fourteen to twenty leaflets, toothed,* lanceolate, 4–6 cm long, *tapering gradually to a sharp point at the tip, often unequal-sided* and *oblique at the base,* green both surfaces, *undersurface clothed in rusty hairs.* Leaf stalks 10–20 cm, hairy, swollen at the base. Leaflet stalks hairy and only 2 mm long.

**Venation**—Distinct on both surfaces. Midrib raised on both surfaces and clothed in brown hairs.

**Flowers**—Yellow-brown, panicles usually much branched and rather dense, rarely exceeding the leaves, tomentose. Flowers rather small on very short stalks. Sepals ovate, the longest scarcely exceeding 2 mm. Petals red, orbicular, rather exceeding the sepals, the inner scales hairy, as long as the lamina. Stamens eight to ten. Filaments somewhat downy, anthers oblong. Ovary purple, globular and densely hairy. Flowering period April.

**Fruit**—*Capsule, densely covered with yellowish-brown rigid, itchy hairs,* egg-shaped and somewhat three-lobed, three-celled, up to 18 mm long, seeds one in each lobe, black or dark brown, egg-shaped, 5 mm long, enclosed at the base by an aril. Fruit ripe August to November.

**Habitat**—Subtropical rainforest on basaltic and alluvial soils.

**Distribution**—From Manning River, N.S.W. to Bloomfield River, North Queensland. Recorded in N.S.W. from Tinonee, Port Macquarie, Bellangry S.F., Telegraph Point, Kempsey, Bellinger River S.F., Bruxner Park, Woolgoolga, Wild Cattle Creek S.F., Ramornie, Coaldale, Upper Copmanhurst, Woodford Island, Maclean, Yamba, Alstonville, Mt Pikapene S.F., Lynch's Creek, Wilson's Creek, Toonumbar S.F., Unumgar S.F., Beaury S.F., Acacia Plateau, Roseberry S.F., Whian Whian S.F., Mooball S.F., Brunswick Heads, Murwillumbah and Cudgen Lake.

**Timber and Uses**—Wood pale brown. Very hard, close-grained and tough. Could be used for tool handles and flooring but generally is too small and crooked.



Plate No. 22

*Jagera pseudorhus* (A. Rich.) Radlk.

## LEPIDEREMA PUNCTULATA (F. Muell.) Radlk.

**Synonym**—*Cupaniopsis punctulata* (F. Muell.) Radlk., *Cupania punctulata* F. Muell., *Ratonia punctulata* F. Muell.

**Reference**—Ubar de Sapindae Holl. Ind., 99 and 256 (1877).

**Derivation**—Lepiderema from Greek "leptos" a scale and "eremos" deprived of, referring to the petals lacking scales; punctulata from Latin "punctulatus" minutely dotted, referring to the small oil dots on the leaflets.

**Common Name**—Fine-leaved Tuckeroo.

**Standard Trade Name**—None.

A small tree attaining a height of 15 m and a stem diameter of 40 cm with a most attractive rounded crown of light green young foliage. This N.S.W. species should possibly be known as *L. pulchella* Radlk. rather than *L. punctulata*.

**Trunk**—Not fissured but slightly flanged on older trees.

**Outer Bark**—Grey, smooth, sometimes with fine horizontal raised rings. Underbark dark brown, very thin. Outer surface of live bark green with cream and pink vertical stripes.

**Inner Bark**—Blaze on a tree 40 cm diameter pink to pinkish-red with paler vertical streaks, speckled at the outer margin. Surface of the blaze sometimes fades to a lighter red after some minutes exposure. Astringent taste but no smell. 3 mm thick.

**Branchlets**—Brown, smooth.

**Leaves**—Alternate, pinnate, four to seven leaflets, not toothed (except juvenile foliage with several large teeth), obliquely ovate-lanceolate, 5–9 cm long. *Gradually tapering at both ends, shining and smooth, light green, minutely pellucid-dotted.* Thinly coriaceous. Leaflet stalks 6–12 mm long.

**Flowers**—*Yellow-orange*, in slender axillary racemes 5–10 cm long. Flower stalks 2–3 mm long, sepals five, 2–3 mm diameter, round, smooth. Petals similar but paler. Stamens eight with large yellow anthers. Flowering period September.

**Fruit**—A capsule, brown, smooth, round or three-lobed, 9 mm diameter, contracted into a short stalk. Seeds singly in each lobe, dark brown, compressed, elliptical 5 mm long, grooved at the back. Fruit ripe May and June.

**Habitat**—Riverine and littoral rainforest.

**Distribution**—From the Tweed River, N.S.W. to Proserpine, Queensland. Recorded in N.S.W. from North Pumpenbil Creek, Hopkins Creek, Numinbah Gap, and Stotts Island.

**Timber and Uses**—Wood light coloured, hard and tough. A rare species and little is known of the qualities of the wood.

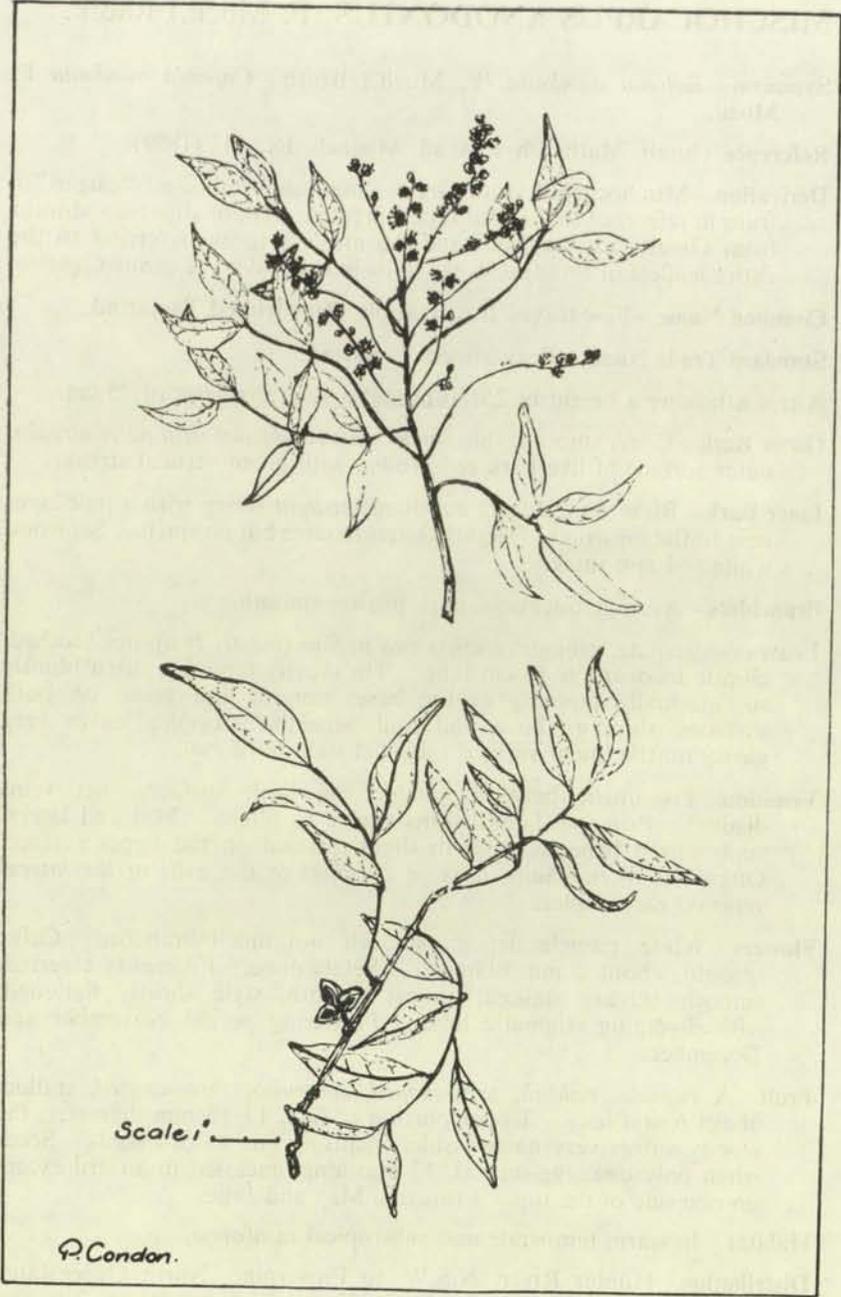


Plate No. 23

*Lepiderema punctulata* (F. Muell.) Radlk.

## MISCHOCARPUS ANODONTUS (F. Muell.) Radlk.

**Synonym**—*Ratonia anodonta* (F. Muell.) Benth., *Cupania anodonta* F. Muell.

**Reference**—Sitzb. Maths-Phys. Acad. Muench. IX, 647 (1879).

**Derivation**—*Mischocarpus* from Greek "mischos" stalk and "carpos" a fruit, in reference to the fruit tapering into a stalk or stipe; *anodontus* from Greek "an" without and "dontos" a tooth, referring to the entire leaflets of this species when included under the genus *Cupania*.

**Common Name**—Few-leaved Brush Apple, Pear-fruited Tamarind.

**Standard Trade Name**—Pear-fruited Tamarind.

A tree attaining a height of 25–30 m and a stem diameter of 25 cm.

**Outer Bark**—Grey, smooth, thin, *underbark red-brown with paler streaks*, outer surface of live bark red-brown, with green vertical streaks.

**Inner Bark**—Blaze on a tree 25 cm diameter *light brown* with a pale layer next to the sapwood. Slightly bitter to taste but no smell. Sapwood white. 4 mm thick.

**Branchlets**—Average thickness, dark brown, smooth.

**Leaves**—Alternate, pinnate, *leaflets two to four (mostly two)*, not toothed, elliptic to ovate, 6–12 cm long. Tip shortly tapering, often bluntly so, gradually tapering at the base, smooth and green on both surfaces, shining above and dull beneath. Coppice leaves very glossy on the upper surface. Leaflet stalk 6–12 mm.

**Venation**—Prominent beneath, distinct on both surfaces, net veins distinct. Principal lateral veins twelve to fifteen. Mid and lateral veins raised beneath, mid-rib slightly raised on the upper surface. Often *one to two hairy tufts or swellings in the axils of the lateral veins* on each leaflet.

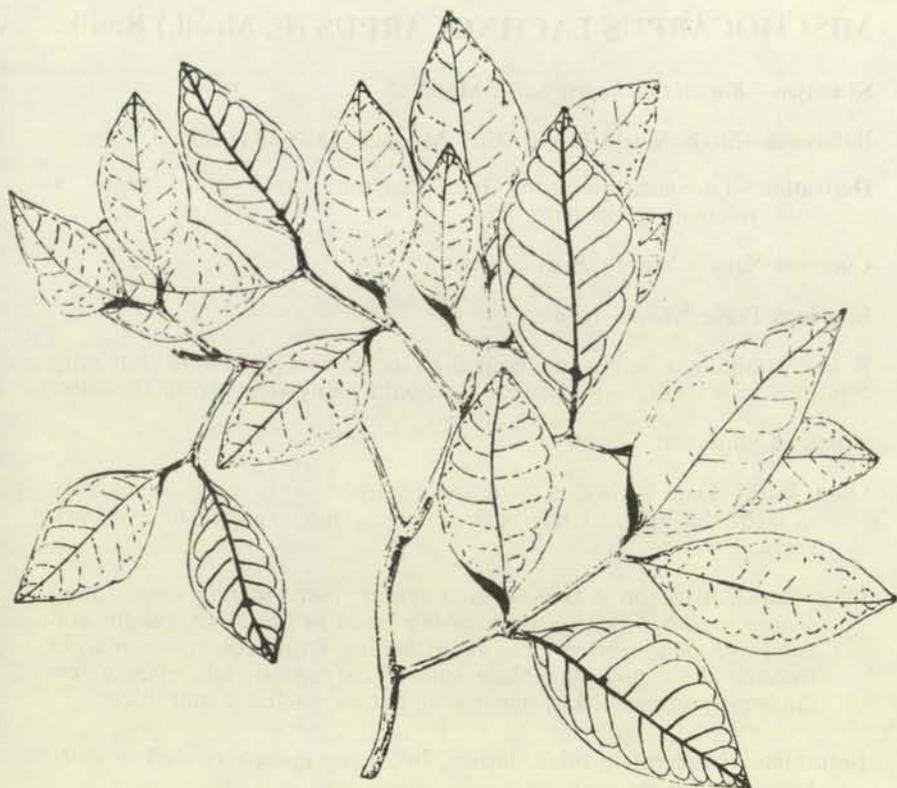
**Flowers**—White, panicle slender, smooth, not much branched. Calyx smooth, about 2 mm diameter. Petals none. Filaments exerted, smooth. Ovary stalked, almost smooth, style shortly flattened, with diverging stigmatic lobes. Flowering period November and December.

**Fruit**—A *capsule, reddish, pear-shaped, somewhat three-angled*, stalklet about 6 mm long. Upper portion of fruit 13–15 mm diameter, the woody valves very hairy inside, enclosing one to two seeds. Seeds when only one, egg-shaped, 13 mm long, enclosed in an aril except on one side of the top. Fruit ripe May and June.

**Habitat**—In warm temperate and subtropical rainforest.

**Distribution**—Hunter River, N.S.W. to Proserpine, North Queensland. Recorded in N.S.W. from Minmi, Upper Williams River, Tinonee, Bellangry S.F., Willawarrin, Pine Creek S.F., Bagawa S.F., Booyong, Wilsons Creek, Roseberry S.F., Wiangaree S.F., Brunswick Heads, Mebbin S.F., Murwillumbah and Stotts Island.

**Timber and Uses**—Not used.



0 2 4 cm.

Plate No. 24

*Mischocarpus anodontus* Radlk.

## MISCHOCARPUS LACHNOCARPUS (F. Muell.) Radlk.

**Synonym**—*Ratonia lachnocarpa* F. Muell.

**Reference**—Sitzb. Maths-Phys. Acad. Muench. IX, 647 (1879).

**Derivation**—Lachnocarpus from Greek “lachno” woolly and “carpos” a fruit, referring to the hairy fruit.

**Common Name**—Woolly Brush Apple.

**Standard Trade Name**—None.

A tree attaining a height of about 9 m in North Queensland, but only 5 m on Mt Warning. Rather crooked with many stems from the base.

**Trunk**—Cylindrical.

**Outer Bark**—Dark brown, *smooth with vertical cracks*, sometimes pimply towards the base. Underbark brown. Outer surface of live bark green.

**Inner Bark**—Blaze on a tree 8 cm diameter, *outer margin cream*, then *orange-tan inside* with a dark brown band at the inner margin and *numerous pale vertical streaks* extending from the outer margin towards the centre, the blaze surface darkens slightly after a few minutes exposure. Astringent taste but no smell. 2 mm thick.

**Branchlets**—Moderately thick, brown, becoming *densely reddish or rusty hairy towards the ends*.

**Leaves**—Alternate, pinnate, *one to four leaflets*, not toothed, ovate or lanceolate-ovate, 6–14 cm long, with a round point, prickle or notched at the tip, shortly tapering at the base. Smooth and *puckered on the upper surface*. Green and shiny above, paler and dull beneath with *soft rusty hairs on young leaves*. Leaflet stalks about 6 mm long.

**Venation**—Visible on the upper surface, conspicuously raised on the underside. *Midrib and lateral veins rusty downy*, net veins numerous.

**Flowers**—White in spikes, 2–8 cm long, woolly. Flower stalks very short. Sepals as small teeth, petals absent. Stamens small but longer than the sepals. Flowering period October and November.

**Fruit**—Capsule, *two or three-angular and valved, dusky hairy*, up to 18 mm long. Seeds solitary, ovate or round, 6–8 mm long, enveloped in a thin yellow or orange aril. Fruit ripe July.

**Habitat**—Subtropical rainforest on volcanic soil.

**Distribution**—A North Queensland species, but recorded in N.S.W. from Goonengerry, Mt Warning, Limpinwood N.R. and Mooball S.F.

**Timber and Uses**—Wood pale, close-grained and tough.

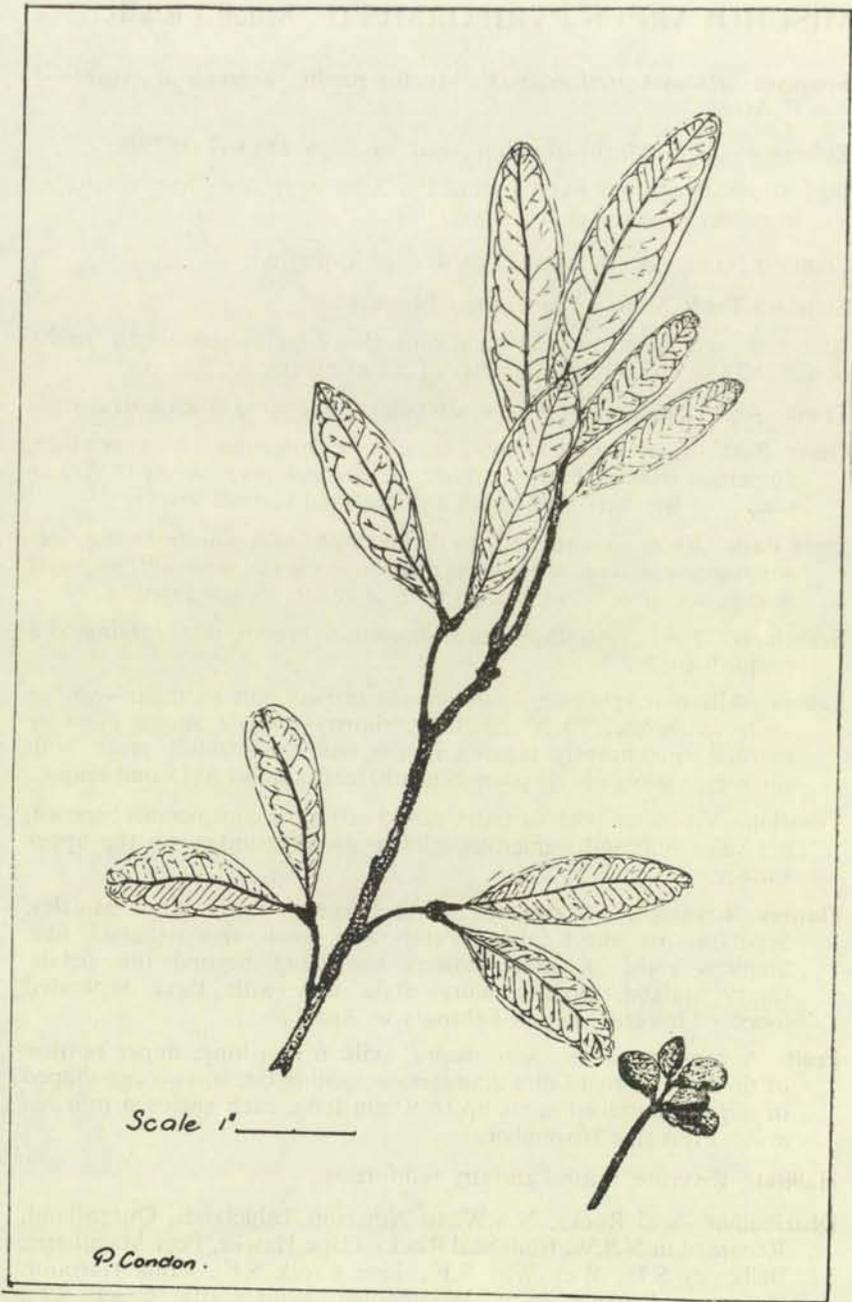


Plate No. 25

*Mischocarpus lachnocarpus* (F. Muell.) Radlk.

## MISCHOCARPUS PYRIFORMIS (F. Muell.) Radlk.

**Synonym**—*Ratonia pyriformis* (F. Muell.) Benth., *Schmidelia pyriformis* F. Muell.

**Reference**—Sitzb. Maths-Phys. cl. Acad. Muench. IX, 647 (1879).

**Derivation**—Pyriformis from Latin "Pyrus" a pear and "forma" shape, in reference to the pear-shaped fruits.

**Common Name**—Brush Apple, Pear-fruited Tamarind.

**Standard Trade Name**—Pear-fruited Tamarind.

An attractive bushy tree with handsome glossy leaves attaining a height of about 18 m and a stem diameter of about 50 cm.

**Trunk**—Cylindrical or sometimes irregular. Sapwood often corrugated.

**Outer Bark**—Grey to dark grey, smooth or sometimes roughened by numerous rows of hard pustules. *Underbark purplish-fawn*. Outer surface of live bark with green and deep red vertical stripes.

**Inner Bark**—Blaze on a tree 30 cm diameter *red with pale vertical stripes and fine lateral undulating lines*, paler towards the sapwood, no rapid change in colour. No distinct taste or smell. 9 mm thick.

**Branchlets**—Thick, smooth, greenish-brown or brown, often drying to a purplish shade.

**Leaves**—Alternate, pinnate, four to eight leaflets, not toothed, *ovate or ovate lanceolate*, 10–20 cm long, shortly *tapered into a blunt or notched tip*, abruptly tapered at the base, *very thick*, green both surfaces, *shining above*, paler beneath, leaflet stalks 8–15 mm long.

**Venation**—Visible on both surfaces, raised and more conspicuous beneath, net veins fine and numerous, midrib usually sunken on the upper surface.

**Flowers**—Cream, sweet scented, small, borne in fairly large panicles. Sepals as five short lobes. Petals also small, spoon-shaped, five. Stamens eight in male flowers projecting beyond the petals. Ovary stalked, slightly hairy, style thin with three separated lobes. Flowering period February to April.

**Fruit**—A capsule, *yellow, pear shaped*, stalk 6 mm long, upper portion of the fruit up to 13 mm diameter containing one or two egg-shaped or slightly flattened seeds up to 9 mm long, each enclosed in a *red aril*. Fruit ripe November.

**Habitat**—Riverine, littoral and dry rainforests.

**Distribution**—Seal Rocks, N.S.W. to Atherton Tablelands, Queensland. Recorded in N.S.W. from Seal Rocks, Cape Hawke, Port Macquarie, Bellangry S.F., Way Way S.F., Pine Creek S.F., Coffs Harbour, Coramba, Bruxner Park, Woolgoolga, Wild Cattle Creek S.F., Maclean, Iluka, Rous, Whian Whian S.F., Brunswick Heads, Mooball S.F., Murwillumbah, Stotts Island, Terranora and Cudgen.

**Timber and Uses**—Wood pale, hard and tough. Has been found suitable for axe-handles.

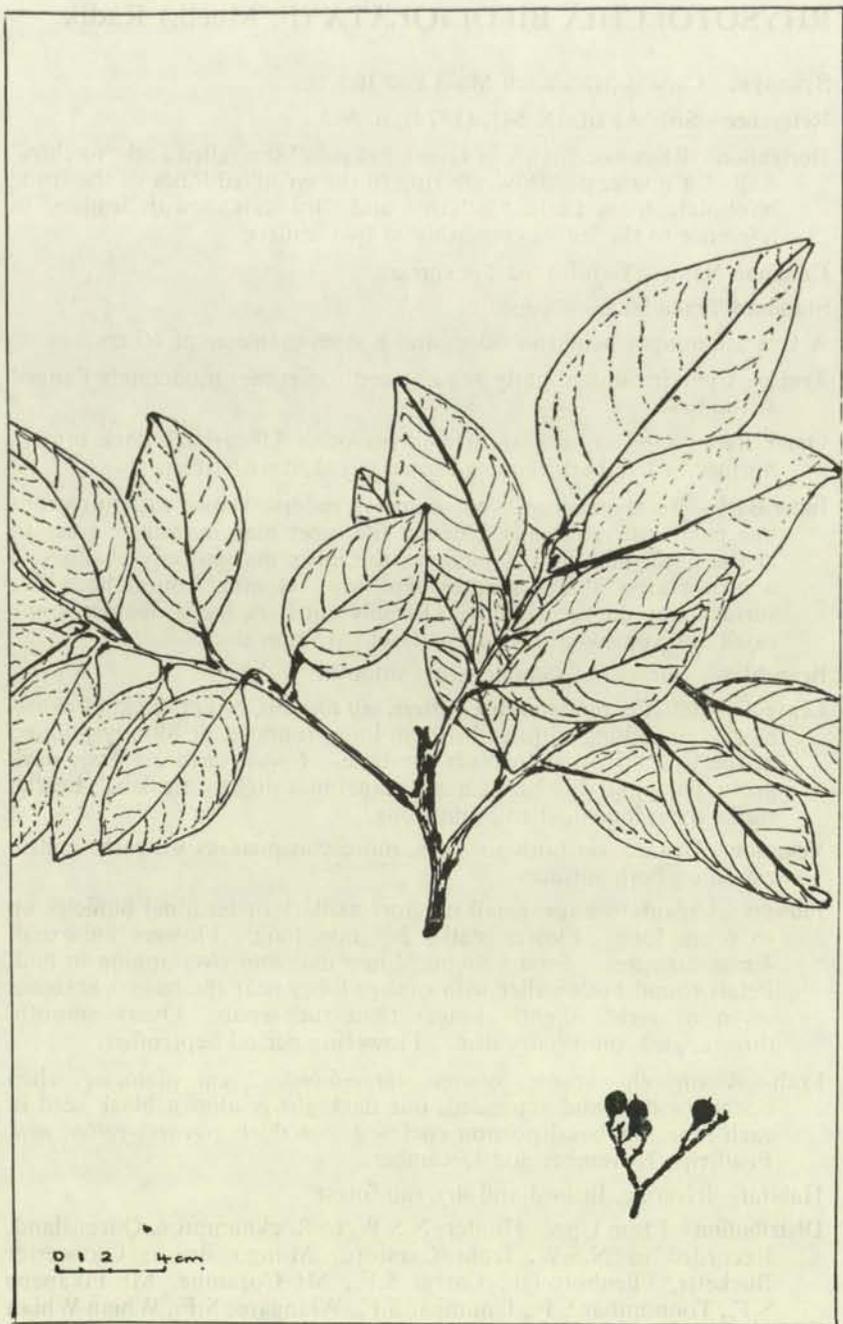


Plate No. 26

*Mischocarpus pyriformis* (F. Muell.) Radlk.

## RHYSOTOECHIA BIFOLIOLATA (F. Muell.) Radlk.

**Synonym**—*Cupaniopsis dunnii* Maid and Betche.

**Reference**—Sitz. Akad. IX 541, (1879), n. 591.

**Derivation**—Rhsyotoechia from Greek "rhyosos" shrivelled and "toichos" wall of a house, possibly referring to the wrinkled lobes of the fruit; bifoliolata from Latin "bi" two and "foliolatus" with leaflets, in reference to the leaves consisting of two leaflets.

**Common Name**—Two-leaved Tuckeroo.

**Standard Trade Name**—None.

A tree attaining a height of 30 m and a stem diameter of 60 cm.

**Trunk**—Cylindrical or slightly angular and sometimes moderately flanged at the base.

**Outer Bark**—Grey or greyish-brown, smooth. Underbark dark brown. Surface of live bark reddish-brown streaked with green.

**Inner Bark**—Blaze on a tree 28 cm diameter, reddish-brown with numerous fine pale vertical streaks, paler at the inner margin, faintly greenish at the outer margin. Sometimes the inner margin only changes to a brown after a few minutes exposure; at other times the whole surface may darken slightly. Freshly cut bark has a distinct sappy smell and somewhat astringent taste. 13 mm thick.

**Branchlets**—Somewhat slender, grey, smooth.

**Leaves**—Alternate, pinnate, *two leaflets, not toothed*, rather thick, obovate, elliptic or oblong-elliptic, 4–10 cm long, rounded or bluntly pointed at the tip, narrowed towards the base. *Upper surface glossy*, dark green, paler and dull beneath and sometimes slightly greyish. Leaflet stalks from indistinct to 6 mm long.

**Venation**—Distinct on both surfaces, more conspicuous beneath, midrib raised on both surfaces.

**Flowers**—Creamy orange, small in short axillary or terminal panicles up to 6 cm long. Flower stalks 2–3 mm long. Flowers unisexual, 4 mm diameter. Sepals round, 2 mm diameter overlapping in bud. Petals round but smaller with orange lobes near the base. Stamens seven or eight, slightly longer than the sepals. Ovary smooth, three-angled, on a hairy disc. Flowering period September.

**Fruit**—A smooth capsule, *orange, three-lobed*, 2 cm diameter when opened widely and expanded, one dark glossy almost black seed in each lobe, the basal portion enclosed in a *thick greenish-yellow aril*. Fruit ripe November and December.

**Habitat**—Riverine, littoral and dry rainforest.

**Distribution**—From Upper Hunter, N.S.W. to Rockhampton, Queensland. Recorded in N.S.W. from Gresford, Mungo Brush, Gloucester Bucketts, Ellenborough, Carrai S.F., Mt Coramba, Mt Pikapene S.F., Toonumbar S.F., Unumgar S.F., Wiangaree S.F., Whian Whian S.F., Brunswick Heads, Mooball S.F., Murwillumbah and Cudgen Lake.

**Timber and Uses**—Wood of a light colour, close-grained, hard and tough but seldom if ever used.



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Plate No. 27

*Rhysotoechia bifoliolata* (F. Muell.) Radlk.

## SARCOPTERYX STIPITATA (F. Muell.) Radlk.

**Synonym**—*Ratonia stipitata* Benth., *Cupania stipitata* F. Muell.

**Reference**—Sitz. Maths-Phys. cl. Acad. Muench. IX, 659 (1879).

**Derivation**—Sarcopteryx from Greek “sarco” fleshy and “pteron” a wing, referring to the thick angled or winged fruits; stipitata from Latin “stipitatus” stalked with reference to the stalked fruits.

**Common Name**—Steelwood, Corduroy Tree.

**Standard Trade Name**—Corduroy.

A tree attaining a height of 18 m and a stem diameter of 35 cm.

**Trunk**—Often slightly flanged at the base in larger trees.

**Outer Bark**—Grey, surface hard and usually wrinkled in large trees or sometimes marked by numerous small hard warts and horizontal raised bands. Underbark dark brown, very thin. Outer surface of live bark with green and brown vertical stripes.

**Inner Bark**—Blaze on a tree 30 cm diameter pinkish-red with a dark brown outer margin and pale horizontal wavy lines. Surface of the blaze usually changes to a purplish hue after fifteen minutes exposure. Astringent and slightly bitter taste. Gritty. No smell. Surface of the sapwood corrugated. 6 mm thick.

**Branchlets**—Thin, usually longitudinally ridged and often densely covered with velvety-brown hairs.

**Leaves**—Alternate, pinnate, usually six leaflets but may vary from three to nine, entire, broad lanceolate, 5–10 cm long, abruptly narrowed at the base, protracted into a long fine point at the tip and unequal-sided. Upper surface green, smooth and shining. Underside paler with scattered brown hairs. Main leaf stalk brown, hairy, swollen at the base. Leaflet stalks 3–12 mm long.

**Venation**—Raised on both surfaces but more prominent and brown beneath. In many specimens the lateral nerves on the underside of the leaflet show a perceptible widening at their junction with the midrib.

**Flowers**—White or cream, in axillary or terminal panicles. Sepals of five, scarcely hairy, short broad lobes, petals five, white, round, 2 mm diameter. Stamens projecting, eight. Flowering period August to October or occasionally as early as June.

**Fruit**—A capsule, red, with three to four angles, almost woody, 13 mm diameter. Extremely bitter. Three-celled, each about 12 mm long, with a single seed. Seeds cylindrical, rounded, 5 mm diameter, shiny dark brown, completely enclosed in a papery yellow aril. Fruit ripe November and December.

**Habitat**—Subtropical and riverine rainforest on rich soil, but also in warm temperate rainforest on the poorer sedimentary soils.



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Plate No. 28

*Sarcopteryx stipitata* (F. Muell.) Radlk.

**Distribution**—Bulga Plateau, N.S.W. to Fraser Island, Queensland. Recorded in N.S.W. from Bulga and Comboyne Plateaux, Doyles River S.F., Mt Boss S.F., Bellangry S.F., Carrai S.F., Way Way S.F., Bellinger River S.F., Dome Mtn, Pine Creek S.F., Orara West, Coramba, Mt Coramba, Woolgoolga, Kangaroo River S.F., Wild Cattle Creek S.F., Moonpar S.F., Clouds Creek S.F., Hyland S.F., Ballina, Tintenbar, Alstonville, Toonumbar S.F., Unumgar S.F., Beaury S.F., Acacia Creek, Wilsons Peak, Lynch's Creek, Wiangaree S.F., Whian Whian S.F., and Mt Warning.

**Timber and Uses**—Wood interlocked and very tough to chop. Old trees usually have a brown, very hard and heavy heart-wood. Generally too small to be of use.

## TOECHIMA DASYRRHACHE Radlk.

**Reference**—Proc. Linn. Soc. N.S.W. XXXI, 733 (1906).

**Derivation**—Toechima from Greek "toichos" wall and "ima" a cloak, referring perhaps to the hairy inner lining of the lobes of the fruit; dasyrrhache from Greek "dasys" shaggy and "rhachis" a leaf stalk, referring to the densely hairy young stems.

**Common Name**—Blunt-leaved Steelwood.

**Standard Trade Name**—None.

A small tree attaining a height of about 8 m and a stem diameter of 23 cm. Easily confused with *Sarcopteryx stipitata*.

**Trunk**—Cylindrical, not buttressed.

**Outer Bark**—Grey to greyish-brown, smooth. Underbark chocolate brown. Outer margin of live bark green.

**Inner Bark**—Blaze on a tree 10 cm diameter *pink with red, purplish and pale vertical streaks*, paler towards the sapwood *changing to pale yellowish-brown* after a few minutes exposure. No distinct smell but *bitter* to taste. 3 mm thick.

**Branchlets**—Slender, from reddish-brown to dark brown, somewhat rusty hairy towards the ends including the young shoots and inflorescence.

**Leaves**—Alternate, pinnate, two to ten leaflets, not toothed, lance-shaped, 5–10 cm long, mostly drawn out into a *blunt point at the tip*, tapering and often unequal-sided at the base. Leaflet stalks swollen, 3–6 mm long.

**Venation**—Distinct on both surfaces but raised and more conspicuous beneath. *Hairy tufts in most lateral vein axils*.

**Flowers**—Creamy-brown in *short axillary racemes* often shorter than the leaves. Sepals of five densely hairy, yellow-brown lobes, petals white, not hairy, round, 2 mm diameter, stamens eight, protruding. Flowering period September and October.

**Fruit**—A capsule, bright red, one or two celled, hairy inside with a black oval glossy seed in each cell, about 7 mm long. *Aril small, fleshy, yellow at the base of the seed only*. Fruit ripe November.

**Habitat**—Dry and subtropical rainforest.

**Distribution**—From the Hastings River, N.S.W. to Tallebudgera, Queensland. Recorded in N.S.W. from Bellangry S.F., Bellingen, Pine Creek S.F., Ballina, Tintenbar, Alstonville, Wollongbar, Dunnoon, Whian Whian S.F., Coopers Creek, Byron Bay, Brunswick Heads, Billinudgel, Murwillumbah and Mooball S.F.

**Timber and Uses**—Wood yellowish-brown, close-grained and hard. Could be used for small turnery.

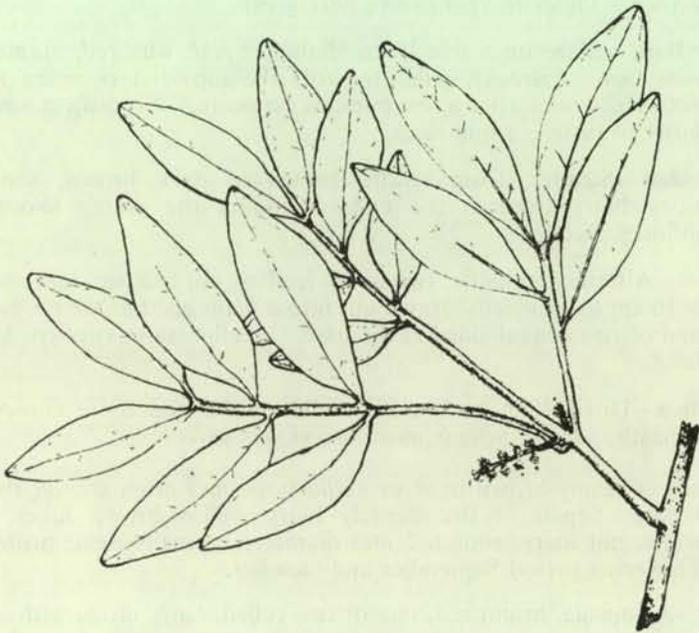
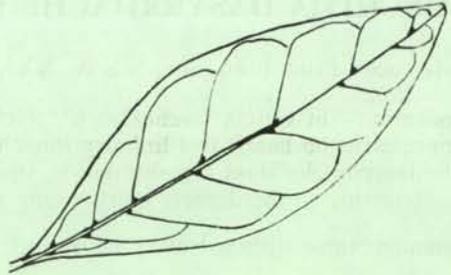
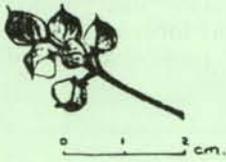


Plate No. 29

*Toechima dasyrrhache* Radlk.

## TOECHIMA TENAX (Benth.) Radlk.

**Synonym**—*Ratonia tenax* Benth., *Cupania tenax* A. Cunn.

**Reference**—Sitzb. Maths-Phys. cl. Acad. Muench. IX, 501, 671 (1879).

**Derivation**—Tenax from Latin "tenax" tough, probably referring to the wood.

**Common Name**—Brush Teak.

**Standard Trade Name**—None.

A small to medium sized tree, up to 15–18 m high and 30 cm diameter.

**Trunk**—Often irregular, particularly towards the base and generally buttressed.

**Outer Bark**—Grey, smooth, except for some scattered thin scales towards the base. Underbark fawn. Outer surface of live bark olive-green.

**Inner Bark**—Blaze on a tree 15 cm diameter *pale reddish-brown* with numerous paler vertical streaks and a few darker red vertical lines. Outer margin marked by a thin green line. The *inner paler margin changes to a brownish colour* after a few minutes exposure. Surface of blaze may fade to a more uniform reddish colour after several minutes exposure. The freshly cut bark has a distinctive smell and is astringent to taste. 5 mm thick.

**Branchlets**—Slender, grey, smooth, becoming green towards the ends.

**Leaves**—Alternate, pinnate, three to six leaflets, *margins generally wavy* but not toothed, obovate, oblong-elliptical or lanceolate, 4–7 cm long, *bluntly pointed* or rounded at the tip, tapered at the base. Light green and glossy on both surfaces, paler beneath. Leaflet stalks from indistinct to 2 mm long.

**Venation**—Distinct on both surfaces, a little more prominent on the underside. The leaves dry a characteristic grey colour on the upper surface while the underside usually remains green. Often with *one or two raised lumps in the axils of the veins*.

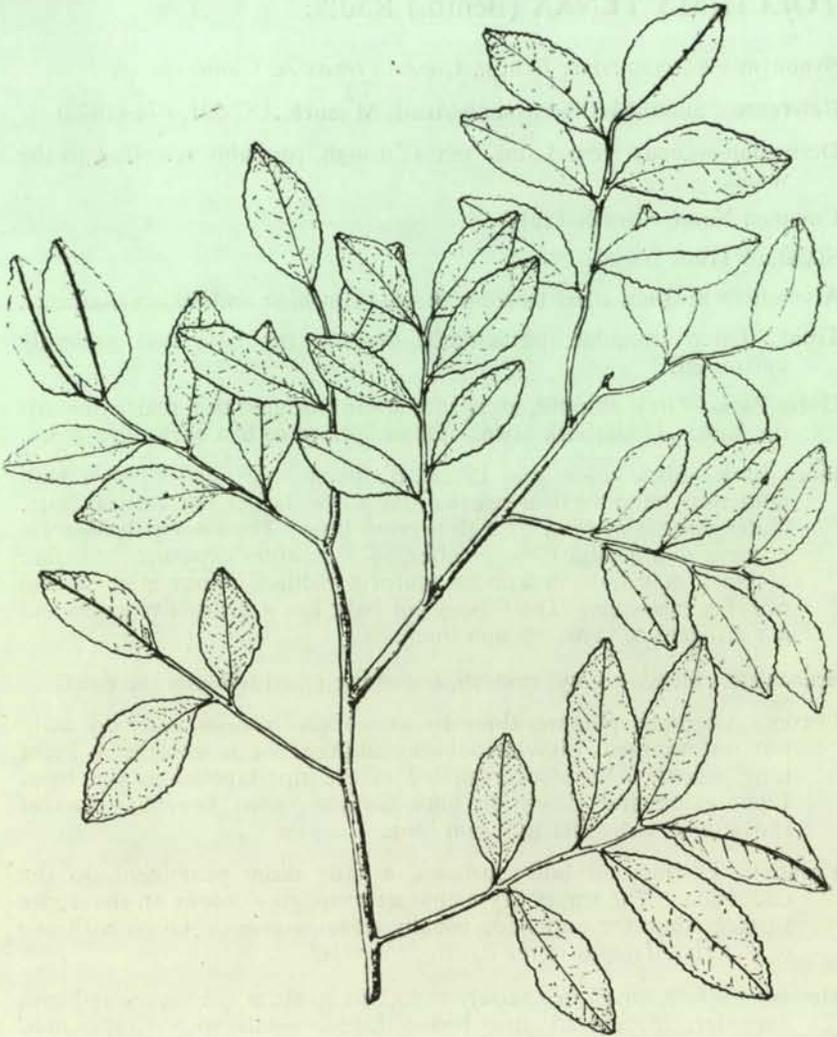
**Flowers**—White, small in sparsely-branched panicles. Flowers 1–2 mm diameter. Sepals as five broad lobes, petals also five, small. Stamens eight with woolly stalks. Ovary stalked, two to three cells with a short divided style. Flowering period May and June.

**Fruit**—A capsule, red, pear-shaped, angular, two to three lobed, 15–20 mm long, valves thick, densely hairy inside. One seed in each cell, egg-shaped, glossy, brownish-black, 6 mm long, half covered by an aril. Fruit ripe November.

**Habitat**—Dry rainforest.

**Distribution**—Richmond River, N.S.W. to Gympie, Queensland. Recorded in N.S.W. from Toonumbar S.F., Unumgar S.F., Whian Whian S.F., and Stott's Island.

**Timber and Uses**—Sapwood pinkish, becoming red towards the centre. Very tough and hard to chop but has no particular use.



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Plate No. 30

*Toechima tenax* (Benth.) Radlk.

# FAMILY AKANIACEAE

## CHARACTERISTICS OF THE FAMILY

A small tree resembling the family *Sapindaceae* in its alternate pinnate leaves with numerous alternate or sub-opposite strongly toothed leaflets and pear-shaped, three-celled fruit. Mueller considered it had affinities with *Harpullia* because there was more than one ovule in each cell, and the seeds were not surrounded by a fleshy aril. However it does differ from the family *Sapindaceae* in the twisted petals when in bud, the absence of a disc or rim in the flower and in the well developed endosperm in the seed.

In addition there were reasons why it did not belong in the closely related family *Staphyleaceae*; and hence it was finally placed in the new family *Akaniaceae* which thus contains only this one species.

Geographically it is confined to the Macpherson-Macleay Overlap of Burbidge, which zone in Northern N.S.W. represents the intermingling of the rainforest elements of both temperate and tropical origins. The family *Petermanniaceae*, also with only a single species is similarly restricted.

## AKANIA LUCENS (F. Muell.) Airy-Shaw

**Synonym**—*A. hillii* Hook. f.

**Reference**—Gen. Plant 1, 409 (1862).

**Derivation**—*Akania* from Greek “a” without and “kania” bracts, referring to the absence of bracts at the base of the flower stalks which distinguishes it from *Harpullia*; *lucens* from Latin “lucens” shining because of the glossy leaves.

**Common Name**—Turnipwood.

**Standard Trade Name**—Turnipwood.

A tree attaining a height of 12 m and a stem diameter of 30 cm with attractive large pinnate glossy foliage.

**Trunk**—Sometimes slightly flanged at the base in large trees.

**Outer Bark**—Grey to dark brown, smooth, finely scaly and wrinkled. Outer layer of dead bark very thin and separates readily from the surface of the live bark. Outer surface of live bark deep red, blotched with dark brown.

**Inner Bark**—Blaze on a tree 25 cm diameter *pinkish* with a narrow dark reddish-brown outer margin and broad paler vertical stripes. The surface is also striated *with fine brownish lines* extending from the outer to the inner paler margin. Does not change colour very rapidly. *Hot radish taste and turnip-like odour.* 5 mm thick.

**Branchlets**—Thick, green or brown, smooth, small leaf scars sometimes present.

**Leaves**—Alternate, pinnate, *prickly toothed, up to 75 cm long, 8 to 30 leaflets, 10–28 cm long, more or less lanceolate or oblong-lanceolate, rigid, tapering to a point at the tip, unequal and almost rounded at the base, light or dark green and shining above, paler beneath.* In the dried state, the under surface of the leaf is marked by a pale dot in each space between the net veins. Leaflet stalks 6–12 mm long, enveloped in a *stocking-like brown thickening* which may form a small patch on the main leaf stem at the base of the leaflets.

**Venation**—*Strong and distinct,* usually raised on both surfaces, but more prominent below.

**Flowers**—Usually *waxy-white, sometimes pinkish,* sweet scented, in *panicles up to 40 cm in length* in the forks of the leaves or from the branches below the leaves. Individual flowers about 13 mm diameter. Branches of the inflorescence are densely rusty hairy. Flower stalks about 13 mm long with one or more densely hairy, dark reddish-brown bracts at the base. Sepals five, round with thin edges, 4 mm diameter. Petals five, oblong, tapered, 8–12 mm long. Stamens five to ten. Ovary three-celled, tapering into a thickened style with a round stigma. Flowering period October to November.

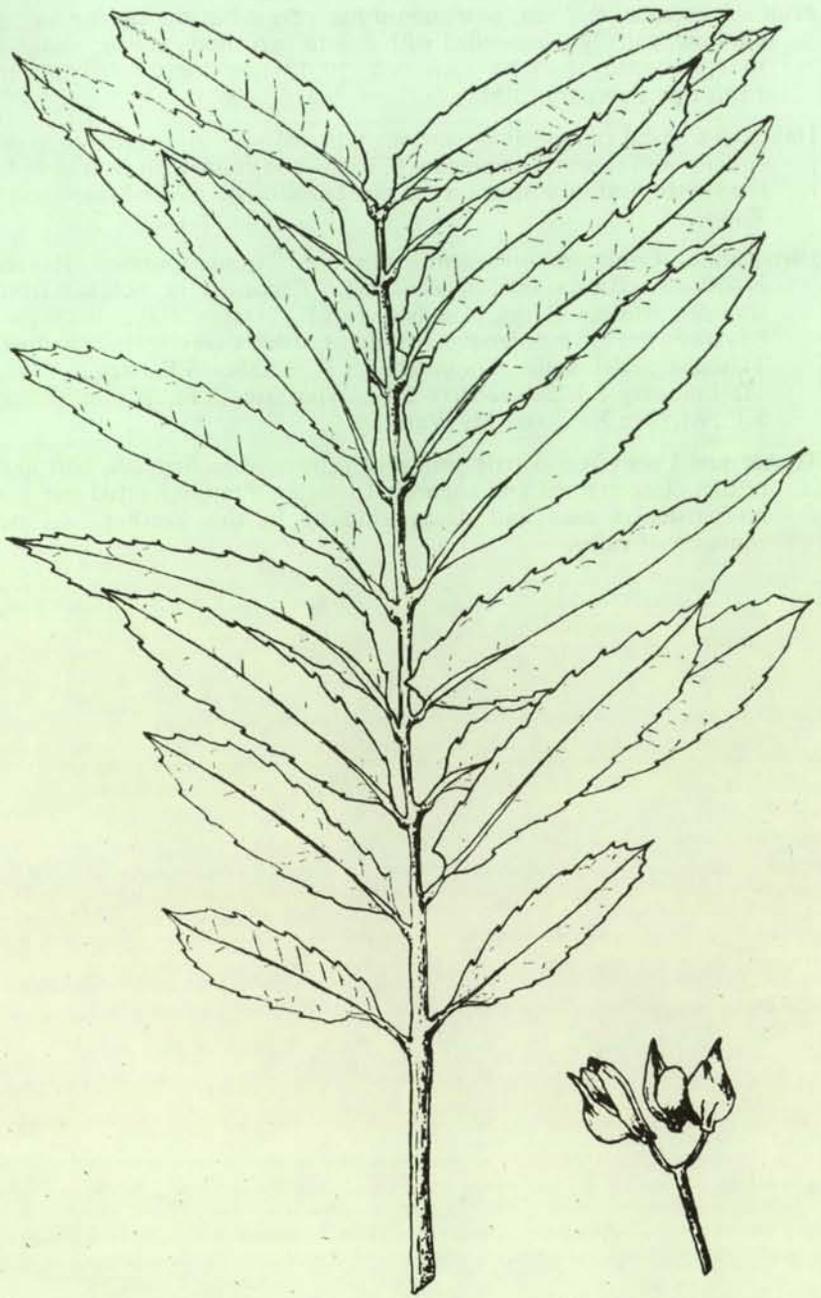
**Fruit**—A capsule, *dull red, pear-shaped* but pointed at the tip, up to 2.5 cm long, usually three-celled with one to two shiny, *yellow, roundish* to egg-shaped *seeds* to each cell, 10–12 mm long. *Aril absent*. Fruit ripe February to May.

**Habitat**—Coastal rainforest on various types of soils and seems to grow equally well in warm temperate (Coachwood) rainforest as it does in the subtropical rainforest on the rich basaltic soil of the Macpherson Range.

**Distribution**—Common in coastal rainforest from Camden Haven, N.S.W. to Palmwoods, Queensland. Recorded in N.S.W. from Camden Haven River, Gladstone S.F., Oakes S.F., Bellingen, Bruxner Park, Woolgoolga, Wild Cattle Creek S.F., Ballina, Tintenbar, Alstonville, Toonumbar S.F., Yabbra S.F., Beaury S.F., Mt Lindesay S.F., Roseberry S.F., Wiangaree S.F., Whian Whian S.F., Mebbin S.F., and Mt Warning.

**Timber and Uses**—Wood pale yellowish-brown when first cut, soft and brittle, close-grained and somewhat tough. Prettily figured but has no particular uses and decays rapidly in the weather. Of no commercial value.





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Plate No. 31

*Akania lucens* (F. Muell.) Airy-Shaw

APPENDIX  
LIST OF LOCATIONS OF STATE FORESTS

State Forest	No.	Location
Acacia Creek and Koreelah ..	1	19 km NW. of Urbenville.
Bagawa .. .. .	30	23 km NW. of Coffs Harbour.
Barcoongere .. .. .	826	35 km SE. of Grafton.
Bellangry .. .. .	524	27 km NW. of Wauchope.
Bellinger River .. .. .	651	13 km SSW. of Dorrigo.
Bielsdown .. .. .	490	4 km N. of Dorrigo.
Boambee .. .. .	611	6 km SW. of Coffs Harbour.
Bodalla .. .. .	606	8 km NW. of Narooma.
Boyne .. .. .	832	8 km N. of Batemans Bay.
Bril Bril .. .. .	158	24 km NW. of Wauchope.
Buckra Bendinni .. .. .	471	27 km WNW. of Macksville.
Bulga .. .. .	285	37 km NW. of Taree.
Cangi .. .. .	354	48 km W. of Grafton.
Carrai .. .. .	909	52 km W. of Kempsey.
Chichester .. .. .	292	53 km WNW. of Bulahdelah.
Clouds Creek .. .. .	111	24 km NNW. of Dorrigo.
Conglomerate .. .. .	349	21 km NNW. of Coffs Harbour.
Donaldson .. .. .	121	16 km N. of Urbenville.
Doyles River .. .. .	911	58 km W. of Wauchope.
Edinburgh Castle .. .. .	541	10 km E. of Urbenville.
Ellis .. .. .	831	29 km NW. of Dorrigo.
Ewingar .. .. .	845	42 km E. of Tenterfield.
Gibraltar Range .. .. .	352	47 km NE. of Glen Innes.
Girard .. .. .	303	32 km NE. of Tenterfield.
Glenugie .. .. .	26	19 km SE. of Grafton.
Hyland .. .. .	659	31 km WNW. of Dorrigo.
Ingalba .. .. .	527	18 km SW. of Macksville.
Kangaroo Creek .. .. .	21	34 km NW. of Coffs Harbour.
Killungoondie .. .. .	849	13 km NE. of Dorrigo.
Lower Bucca .. .. .	29	14 km NNW. of Coffs Harbour.
Mandle and Beaury .. .. .	2	19 km SW. of Urbenville.
Marengo .. .. .	318	34 km NW. of Dorrigo.
Massey's Creek .. .. .	886	89 km WNW. of Bulahdelah.
Mebbin .. .. .	626	24 km NNE. of Kyogle.
Mistake .. .. .	525	23 km W. of Macksville.
Mooball .. .. .	342	8 km SE. of Murwillumbah.
Moonpar .. .. .	489	16 km NNW. of Dorrigo.
Mt Belmore .. .. .	361	42 km SW. of Casino.
Mt Boss .. .. .	910	48 km NW. of Wauchope.
Mt Lindesay .. .. .	542	19 km NE. of Urbenville.
Mt Pikapene .. .. .	170	39 km SW. of Casino.
Nambucca .. .. .	543	10 km NNE. of Macksville.
Never Never .. .. .	613	11 km E. of Dorrigo.
Newry .. .. .	487	19 km N. of Macksville.
Nulla Five-Day .. .. .	601	48 km NW. of Kempsey.
Nullum .. .. .	356	16 km WSW. of Mullumbimby.
Oaks .. .. .	609	40 km NW. of Macksville.
Olney .. .. .	124	24 km NW. of Wyong.
Orara East .. .. .	536	10 km NW. of Coffs Harbour.
Orara West .. .. .	535	18 km W. of Coffs Harbour.
Pine Brush .. .. .	661	24 km NE. of Grafton.
Pine Creek .. .. .	537	16 km SSW. of Coffs Harbour.
Richmond Range .. .. .	610	35 km NW. of Casino.
Roseberry .. .. .	608	32 km NNW. of Kyogle.
Shea's Nob .. .. .	803	34 km NNW. of Dorrigo.
Strickland .. .. .	289	64 km SSW. of Newcastle.
Styx River .. .. .	339	53 km E. of Armidale.
Tooloom .. .. .	2 B	19 km SW. of Urbenville.
Toonumbar .. .. .	343	23 km WNW. of Kyogle.

State Forest	No.	Location
Tucker's Nob .. .. .	612	13 km SW. of Coffs Harbour.
Unumgar .. .. .	540	14 km NE. of Urbenville.
Washpool .. .. .	355	72 km WNW. of Grafton.
Way Way .. .. .	470	10 km SE. of Macksville.
Wedding Bells .. .. .	360	19 km N. of Coffs Harbour.
Whian Whian .. .. .	173	16 km SW. of Mullumbimby.
Wiangaree .. .. .	358	24 km N. of Kyogle.
Wild Cattle Creek .. .. .	488	32 km W. of Coffs Harbour.
Woodburn .. .. .	755	42 km NNE. of Bateman's Bay.
Yabbra .. .. .	394	14 km S. of Urbenville.

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Plate 1—L1279/24; 2—/25; 3—/26; 4—/27; 5—/23; 6—/22; 7—/20; 8—/19; 9—/18; 10—/17;  
11—/16; 12—/15; 13—/16; 14—SC3405; 15—L1279/12; 16—/11; 17—/10; 18—/9; 19—/8; 20—/7;  
21—/6; 22—SC3404; 23—L1279/4; 24—/39; 25—/39; 26—/4; 27—/32; 28—/31; 29—/30; 30—/29;  
31—/28.