

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

BRACHYCHITON AND ALLIED GENERA STUDY GROUP

Newsletter No. 10

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MEMBERSHIP MATTERS: Our financial year ends June 30th. Sub remains at \$5, but due to tardy newsletter production you can all consider yourselves paid up for 95-96 if you paid for 94-95. (Exceptions will get a slip in with their newsletters). Welcome to new members Alan Rozen, Double Bay NSW, Kelvin Grove TAFE, Qld, and Aust. National Botanic Gardens, Canberra.

BRACHYCHITON DISTRIBUTION MAPS: I have omitted these for those people who I know have copies of Guymer's article from which they were taken.

LIVING PLANT COLLECTION: Due to the drought (which continues), the small southern and WA species have not been subject to the usual climatic extremes re humidity. All are in raised beds to minimise wet feet. To date, all have survived, except for a small prostrate pink-flowered *Commersonia* from western Qld. A list of current survivors is given below. *Sterculia* spp. are as in last newsletter. (Incidentally, I omitted to mention the obvious differences between *Sterculia* and *Brachychiton* in last newsletter's notes on *Sterculia*. These include

1. *Sterculia* have follicles which, when fresh and mature, are pink to scarlet both inside and outside. *Brachychiton* follicles are pale yellow to brown to black.
2. *Brachychiton* seeds as they dry are still covered by the hairy pericarp and hairy exotesta (outer seed layer) and are held inside the follicle. *Sterculia* have a glabrous (smooth) exotesta, and seeds fall from the pod as they mature.
3. In *Brachychiton*, the radicle (seed root) is adjacent to the hilum (attachment point of the seed to the pod), and in *Sterculia* it is remote from the hilum).

Brachychitons - list as per later notes re frost.

Argyrodendron - I am growing all that I describe later. *Commersonia bartramia*.

Keraudrenia collina, *corollata*, *hillii*, *hillii* var. *velutina* (with larger hairy leaves).

Guichenotia macrantha (2 forms).

Lasiopetalum behrii, *ferrugineum*, *macrophyllum*.

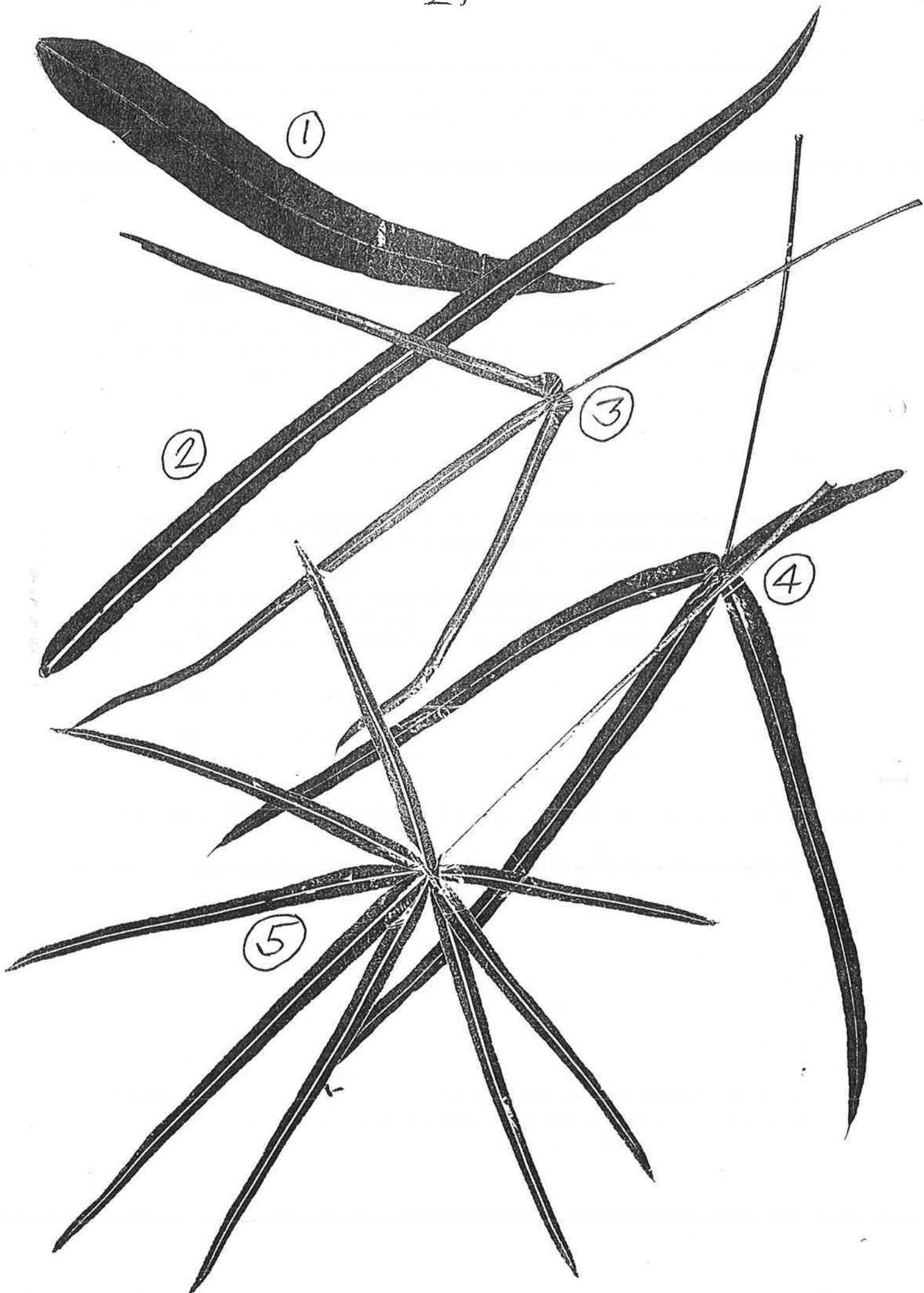
Lysiosepalum involucreatum.

Rulingia dasyphyllum, *hermannifolia*.

Thomasia macrocarpum, *tenuivista*.

JUVENILE BOTTLETREE LEAVES: The following sheet illustrates typical juvenile leaves of *B. rupestris* from my garden. Growth would be faster in a wetter climate. Number 1 is a year old, c 9 inches tall (similar/identical to *B. populneus* at the same age); No. 2 is 0.5m tall and about 3 years old; No. 3 is 1m tall about 4 years old; No. 4 is 2m tall, about 6 years old; and No. 5 is 3m tall and about 12 years old.

2.



GRAFTED PLANTS: Will be available in reasonable quantities from about Xmas onwards. Those available will include

1. Large trees:

B.x roseus 'Jerilderie' and 'Turner's Pink'.

B.x vinicolor 'Clarabelle'.

B.x incarnatus 'Griffith Pink', 'Butt's Red'

2. Shrubs

B.chillagoensis (probably orange and red colour forms).

B.vitifolius 'Large Red', 'Large Pink', 'Red'.

Seedlings of these last 2 spp, and of *B. bidwillii*, *B. australis*, *B. rupestris*, some N Aust *B.spp* and *Keraudrenia hillii* will be available at most times. Probably cutting-grown specimens of the small "allied" genera also.

THE GENUS ARGYRODENDRON: ⁴Argyrodendron comes from the Greek argyros (silver), and dendron (a tree). I must confess to not being sure what features unite the family Sterculiaceae, for some, like *Argyrodendron*, are far removed from *Brachychiton* in many ways. All members of the family have alternate leaves (some simple, some palmately compound), actinomorphic flowers (star-shaped in ground plan), a superior ovary, 2-locular anthers, and stamens numbering 5-30. Variation is in sepals, usually 5, either basally fused or (like *Brachychiton* and *Sterculia*) calyx tubular and mostly 5-lobed, and persistent in the fruit (very obvious in *Commersonia*, *Keraudrenia* and *Lasiopetalum*). Petals if present are 5, but are often minute or absent.

Brachychiton and *Sterculia* have one of the two common types of family fruit, namely a follicle, in their case more or less boat-like in shape. The other common form is a loculicidal capsule (eg, *Commersonia*, *Keraudrenia*, *Lasiopetalum*). *Argyrodendron* and *Heritiera* are the outsiders, with the fruit being a winged nut, called a samara. Some botanists lump *Argyrodendron* in with *Heritiera*; the differences relate to number of stamens and the venation on the wing (woody epicarp) of the samara.

Argyrodendron and *Heritiera* have the "minority" leaf form, being palmately compound with 3-9 entire leaflets. Flowers are unisexual, with male flowers more common than female. Plants are monoecious (both sexes). (Some of the Sterculiaceae family are dioecious). Inflorescences are axillary (like *Brachychiton*), with scales and stellate hairs. *Brachychiton* and *Sterculia* also have unisexual flowers (after abortion of the "wrong" flower part), while *Keraudrenia*, *Lasiopetalum*, *Commersonia* and others have bisexual flowers. Flowers are small, but borne in large panicles.

Argyrodendrons are majestic tall rainforest trees with well-developed buttresses in mature trees. Young plants germinate easily from fresh seed, are slow growing at first, but speed up once a metre or so high. Leaves are green above, and gold or bronze beneath in many spp, giving most attractive colour changes on windy days. All were logged extensively for their hardwood timber in the 19th century.

Two spp., *A.actinophylla* and *A.trifoliatum*, occur in NSW as well as Qld. *A.actinophylla*, the Black Booyong or Black Jack, is a tree to 50m with dark green crown and dark grey bark. Leaflets are 5-9, usually 7, green, with domatia (little holes for beneficial mites to hide in) on their undersides. Mostly on rich soils and above 600m altitude north from Gloucester (NSW) to Gympie. It flowers during autumn, with perfumed bell-shaped flowers. Every tree in an

area is reputed to flower at the one time, a habit shared by some orchids like *Rhinerrhiza divitiflora*.

A. trifoliatum, the White Booyong, is a tree to 40m with canopy often looking whitish from below. Bark is fissured and brown or grey. Leaflets 3, with lower surface silvery-scaly. Common in lowland rainforest on rich soils to 600m altitude, north from the Hastings River (NSW). An excellent host for epiphytic orchids, ferns etc.

Both these trees grown in gardens, and not in rainforests, are more likely to be bushy trees to about 15m. David Jones, in his book "Ornamental Rainforest Plants in Australia", lists them and *A. peralatum* and *A. polyandrum* all as "bushy trees to 15m tall". Peter and Anne Radke and Garry and Nada Sankowsky (all of Yuruga Nursery in the Atherton Tablelands) only list *A. peralatum* in their recent (1993) book "Growing Australian Tropical Plants", and cite it as 6-10m height x 3-4m spread, and "too slender to make a good specimen or shade tree in the short to medium term. I suspect all *Argyrodendron* spp. become giants eventually, given rich soil and copious water.

A. peralatum, the red tulip oak, has large stiff trifoliate leaves with silver-white undersides. Is distributed from Cooktown to Cairns, in both lowland and highland moist or wet rainforest.

A. polyandrum, the brown tulip oak, has trifoliate leaves with silvery-brown undersides.

A. sp. Big Tableland has been the fastest growing sp. with me. It has large leaves in whorls, with bronze undersides, and my plants currently have mostly 5-7 leaflets per leaf.

A. sp. Mt Lewis is a small tree with stiff whorled leaves with bronze undersides. My plants currently have 3-5 leaflets per leaf. New growth is rusty-brown.

A. sp. Lammin's Hill again has bronze undersides to its leaves. My plant currently has 3 leaflets per leaf, and holds the leaves strictly horizontal. On *A. sp.* Big Tableland the leaflets droop, particularly as the plants age.

FROST-RESISTANCE: Normally plants in my rainforest escape frost as the canopy traps enough warm air to last a night, and only leaves at the top of the canopy get scorched. But this year there were 2 very bleak cloudy sunless days, followed by a clear night with a -6°C frost, which penetrated to ground level in the rainforest. Turned *Rhododendron lochae* and *Proiphys* spp. into instant pulp, but only caused minor leaf damage to *Argyrodendron* spp. Except for new baby leaves, I saw no damage to *Brachychiton incarnatus* "Griffith Pink" and its parent *B. populneus* and (surprisingly) little leaf damage to *B. chillagoensis*. All plants of *B. acerifolius*, *B. vitifolius*, *B. rupestris*, *B. australis*, *B. vinicolor* 'Clarabelle', *B. diversifolius* ssp. *orientalis*, *B. discolor*, *B. bidwillii*, *B. acuminatus*, *Sterculia quadrifidus* and *Commersonia bartramia* were defoliated.

Plants of *B. x roseus* "Turner's Pink" and 'Victoria Point' and 'Jerilderie Red' and *B. incarnatus* 'Butt's Red' suffered considerable leaf damage but did not defoliate. *B. x excellens* 'Rosalind' had defoliated at the first mild frost of -2°C or so. No plants seem to have stem damage. *B. megaphyllus* defoliated naturally in late May, before any frosts.

No *Lasiopetalum*, *Keraudrenia* or *Thomasia* sp. noticed the cold.

CULTIVAR NAMES: To refresh our memories, the named hybrids, and some clones thereof, are listed below. All the named hybrids occur in the wild, except *B. x roseus* and *B. x excellens* which only exist as man-made hybrids. (* means that I have plants of that clone (or species))

B.x roseus	acerifolius x populneus
1. Jerilderie Red *	
2. Turner's Pink*	
3. Victoria Point*	
B.x turgidulus	rupestris x populneus
B.vinicolor	acerifolius x discolor
1. Clarabelle*	
B.x incarnatus	discolor x populneus
1. Griffith Pink*	
2. Butt's Red* (I wrongly listed this as a clone of B. x vinicolor in the last newsletter)	
B.x ecellens	discolor x bidwillii
1. Rosalind*	
2. Peter	
B.x carneus	garawayae x grandiflorus
B.x allochrous	muellerianus x grandiflorus
B.x hirtellus	megaphyllus x multicaulis

FOSSIL BRACHYCHITONS: The latest (1994) book by paleo-botanist Mary E. White, "After the Greening: the Browning of Australia" (Kangaroo Press: Kenthurst, NSW), contains some stunning photographs of fossil leaves of a Brachychiton that looks the spitting image of a flame tree (*B. acerifolius*) (Pp 84-88 in particular). Some of these fossils came from Nelly Creek at Lake Eyre South, and others from Stuart creek (gibber desert today). and both date to circa 45 million years ago in the Middle Eocene.

YOUR LETTERS:

B. Lethbridge of Clarendon, SA. reports that Brachychiton "tap roots of young seedlings are very tasty, sort of like coconut." He and others report young *B. gregorii* growing well in southern Australia.

Rodger Elliott, well known nurseryman and author on Australian plants, reports *Keraudrenia hillii* growing well and "much better than western species." *Thomasias* doing well for him include *T. pygmaea* (my favourite) *T. foliosa* (Ed: did have this for some years and it did well), *T. grandiflora*, *T. grandiflora* var. *angustifolia*, *T. macrocarpa*, *T. micrantha*, *T. querquifolia*, and *T. sp. aff. solanacea*. *Lasiopetalum micranthum* and the semi prostrate forms of *L. macrophylla* do well. Both *Lysiosepalums* (*involucratum* and *rugosum*) do well, but have been confused by the nursery trade in Victoria.

He reports a student at the Burnley (Vic.) College of Agriculture and Horticulture is doing work on *Thomasia* and *Guichenotia*. *Guichenotia macrantha* does well around Melbourne (and fairly well around Brisbane).

How about the rest of you out there putting pen to paper, or finger to the keyboard? Anything will be most welcome.

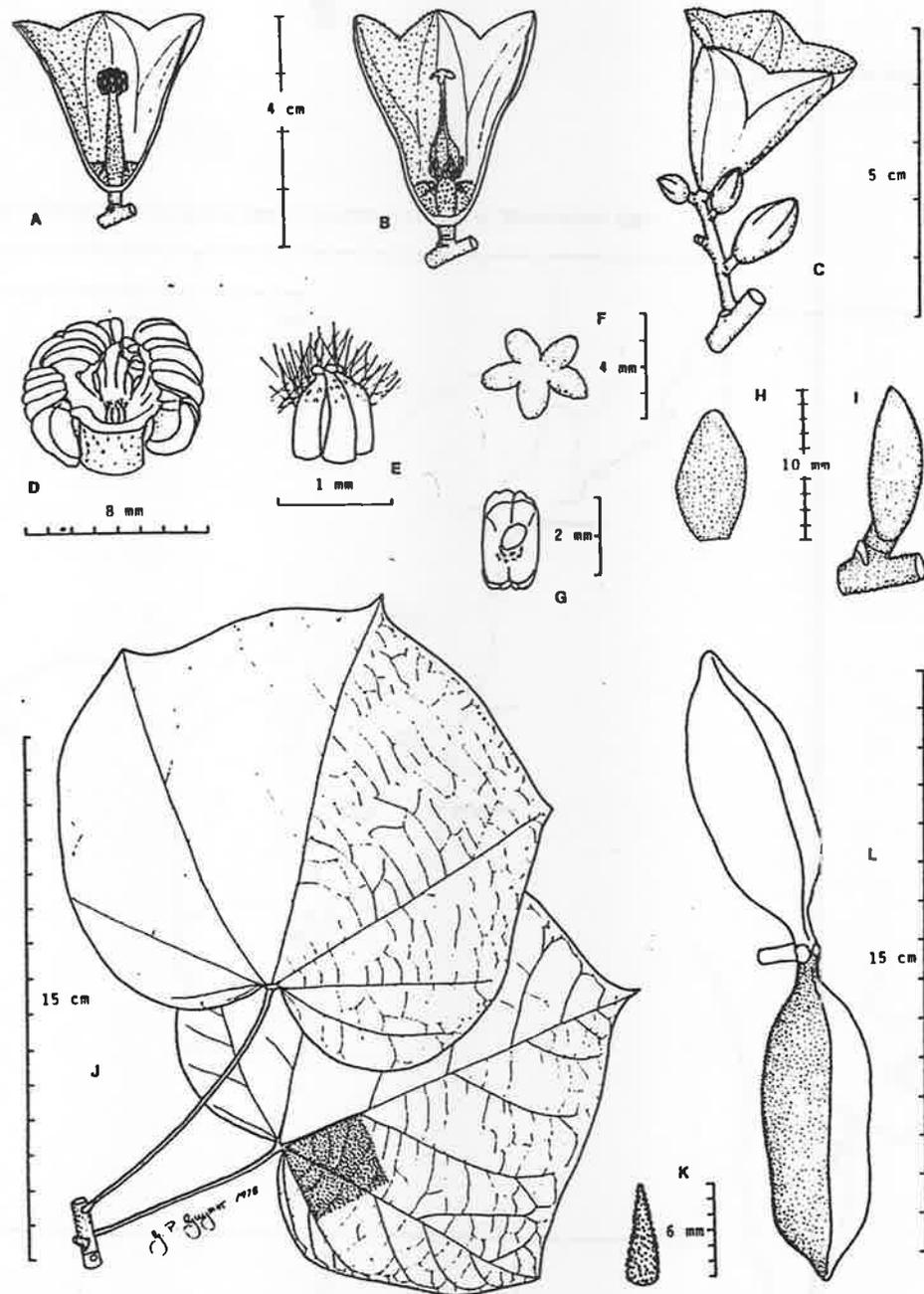


Fig. 26. *Brachychiton velutinosus*. A, male flower; B, female flower; C, inflorescence; D, androecium; E, carpelodes (with front hairs removed); F, stigmas; G, anther; H & I, bracts; J, branchlet with leaves; K, stipule; L, follicles. A & C from Hyland 6412; B, F, H & I from Darbyshire 841; D, E & G from Hyland 6461; J from Pullen 6870 (type); K from Hyland 3557; L from Pullen 3525.

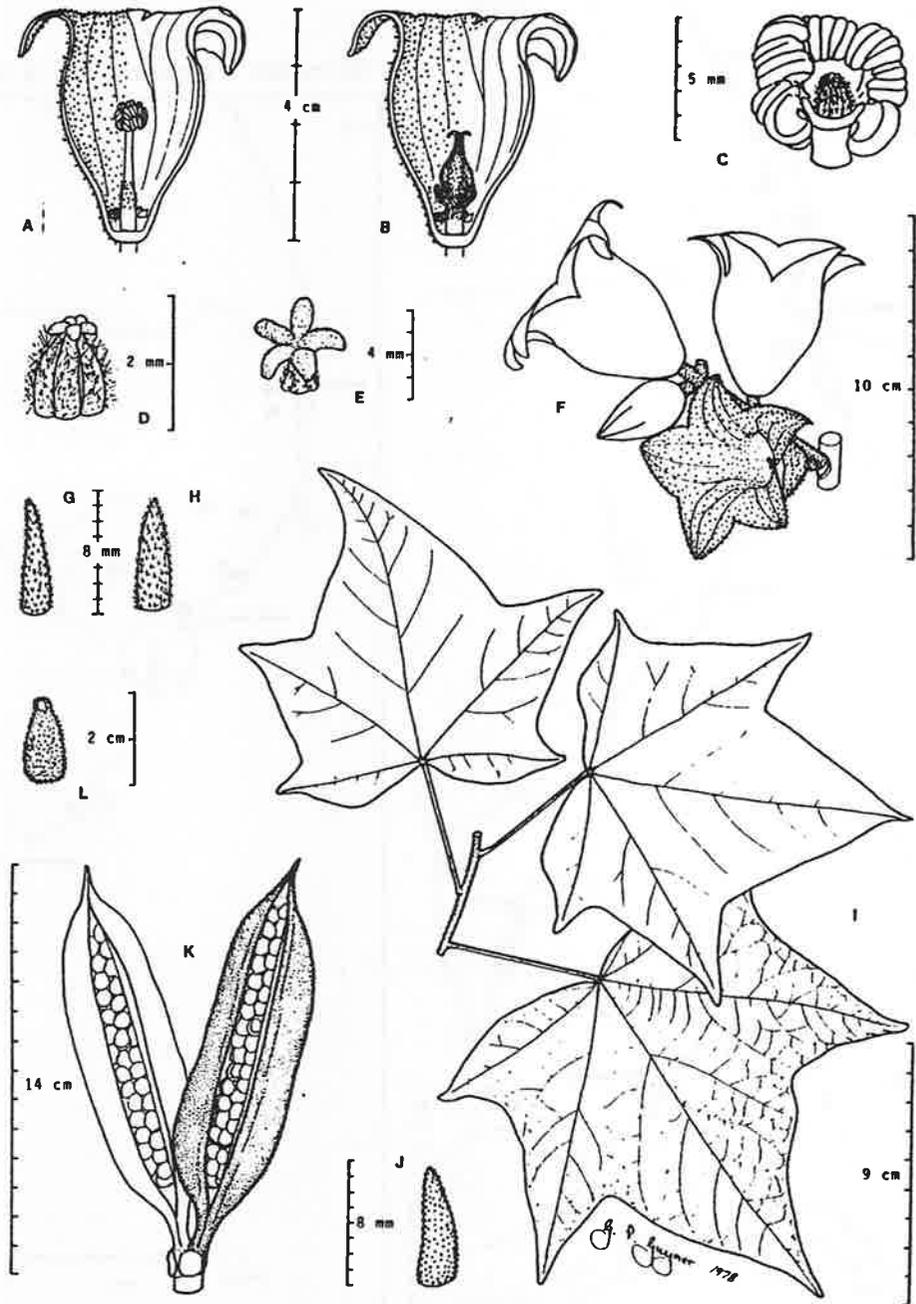


Fig. 28. *Brachychiton discolor*. A, male flower; B, female flower; C, androecium; D, carpelodes; E, stigmas; F, inflorescence; G & H, bracts; I, branchlet with leaves; J, stipule; K, follicles; L, exotesta. A-F from Guymer 1283; G, H & J from Guymer 1301; I from Guymer 1302; K & L from Guymer 219.

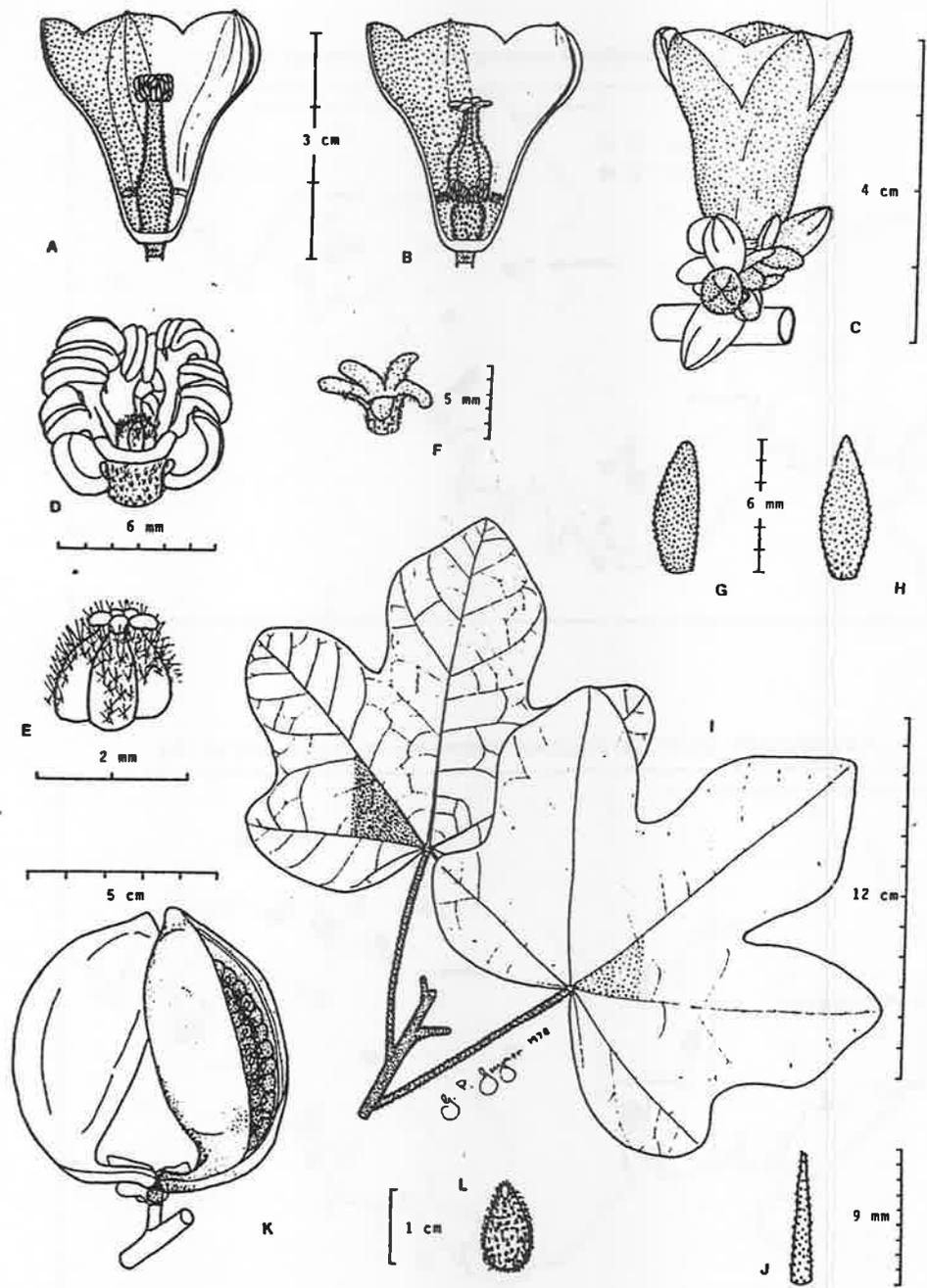


Fig. 47. *Brachychiton chillagoensis*. A, male flower; B, female flower; C, inflorescence; D, androecium; E, carpelodes; F, stigmas; G & H, bracts; I, branchlet with leaves; J, stipule; K, follicles; L, exotesta. A-H from Guymer 261; I from Guymer 907; J from Armit 703; K & L from Webb & Tracey 8112.

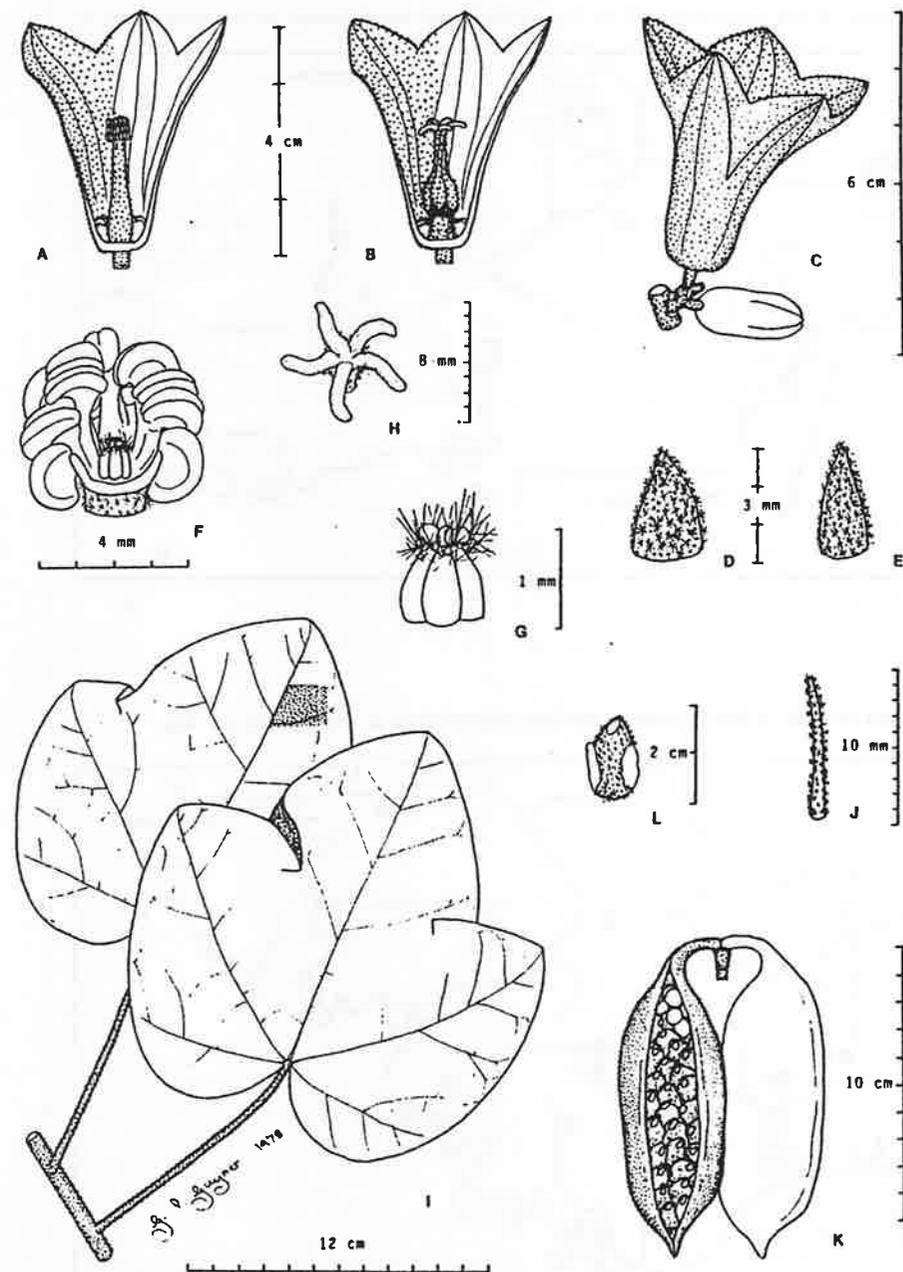


Fig. 49. *Brachychiton paradoxus*. A, male flower; B, female flower; C, inflorescence; D & E, bracts; F, androecium; G, carpelodes; H, stigmas; I, branchlet with leaves; J, stipule; K, follicles; L, exotesta. A-H, K & L from Guymer 500; I & J from Must 1524.

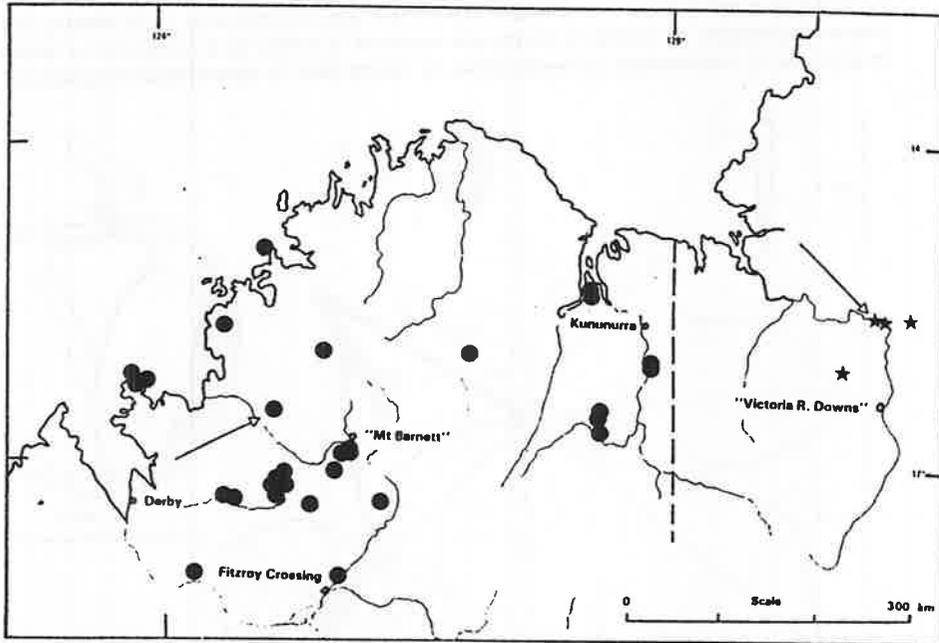


Fig. 37. Distribution of *Brachychiton viscidulus* (●) and *B. spectabilis* (★).

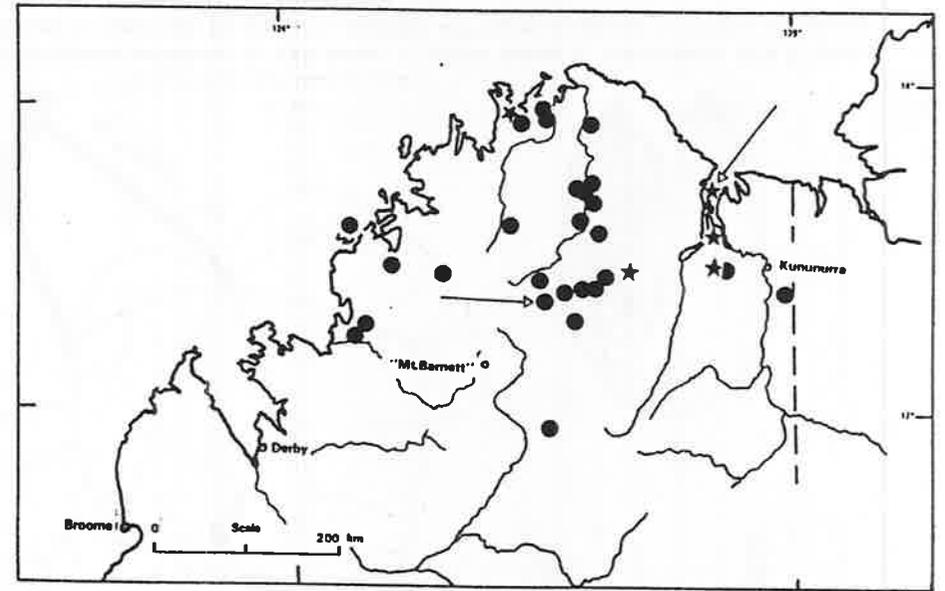


Fig. 40. Distribution of *Brachychiton fitzgeraldianus* (●) and *B. incanus* (★).

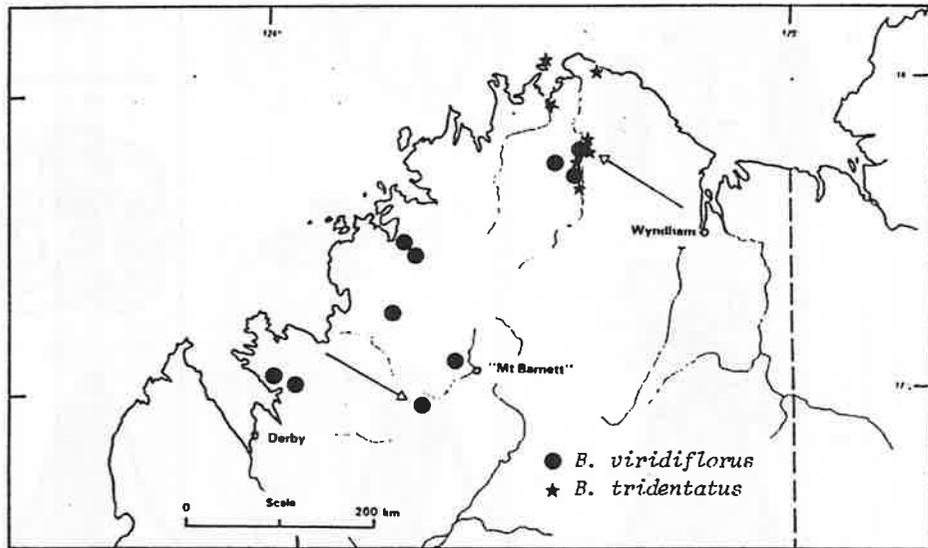


Fig. 43. Distribution of *Brachychiton viridiflorus* and *B. tridentatus*.

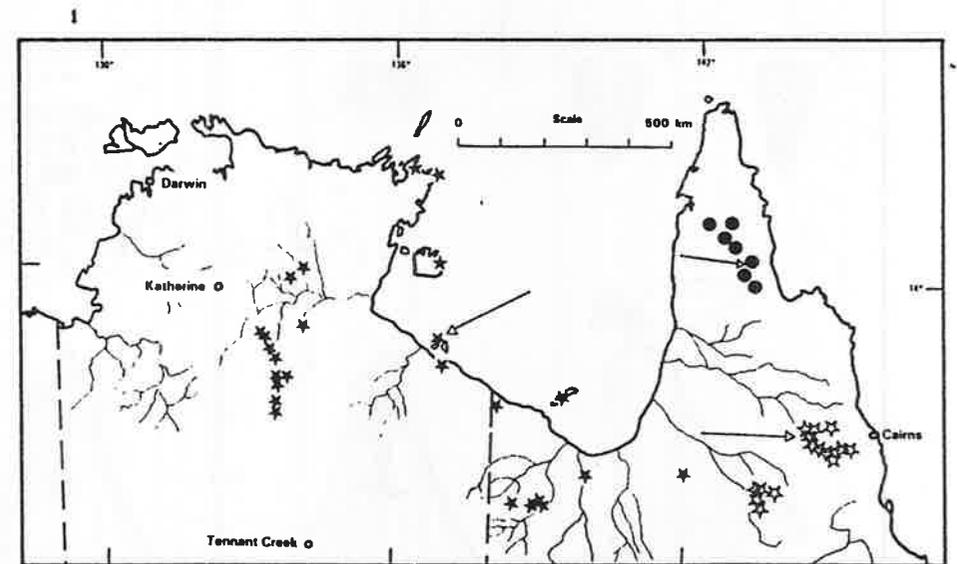


Fig. 48. Distribution of *Brachychiton chillagoensis* (☆), *B. paradoxus* (★) and *B. muellerianus* (●).

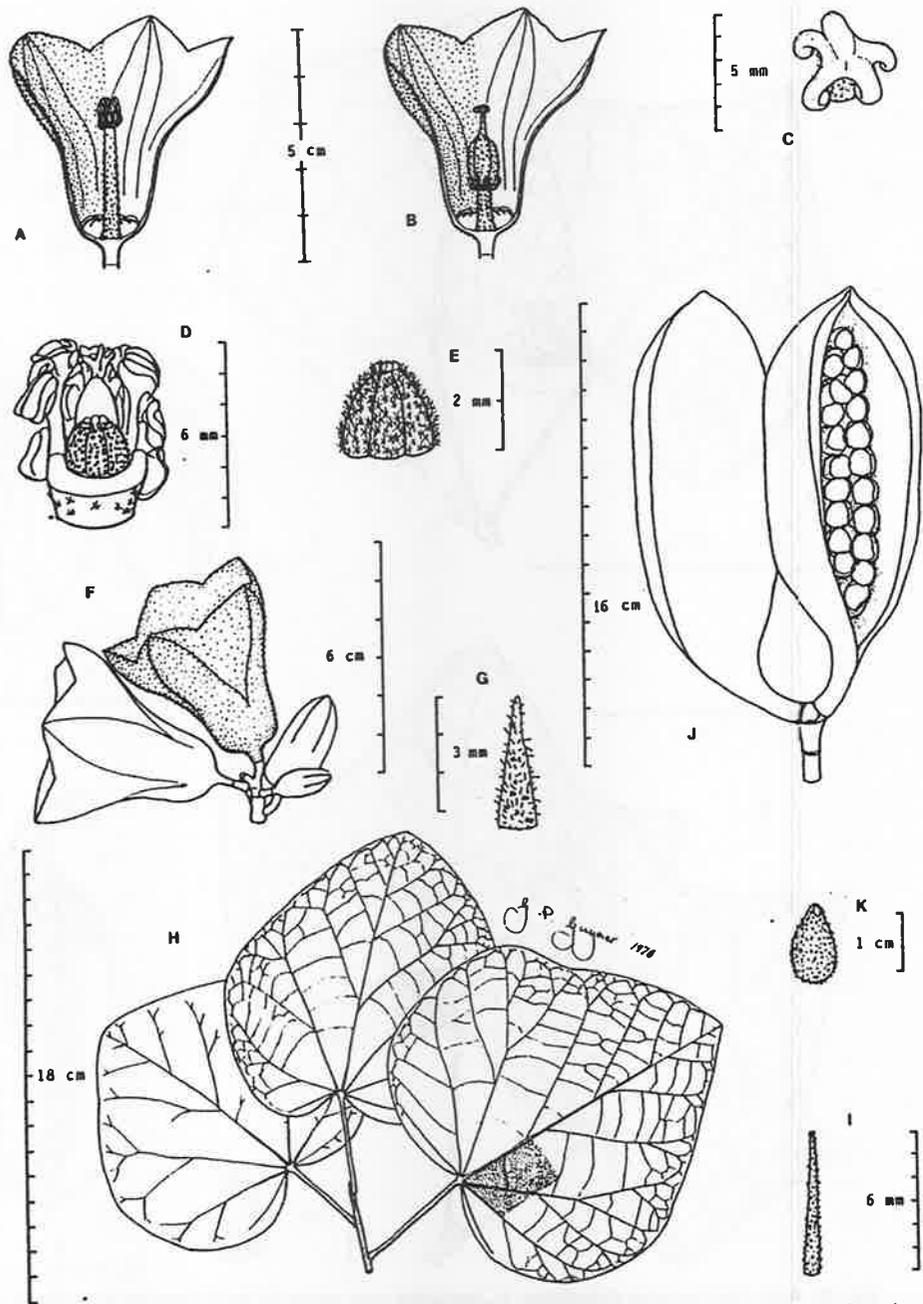


Fig. 39. *Brachychiton fitzgeraldianus*. A, male flower; B, female flower; C, stigmas; D, androecium; E, carpelodes; F, inflorescence; G, bract; H, branchlet with leaves; I, stipule; J, follicles; K, exotesta. A-G from Guymer 621; H from Fitzgerald 1137; I & J from Guymer 623; K from Hill 5a.

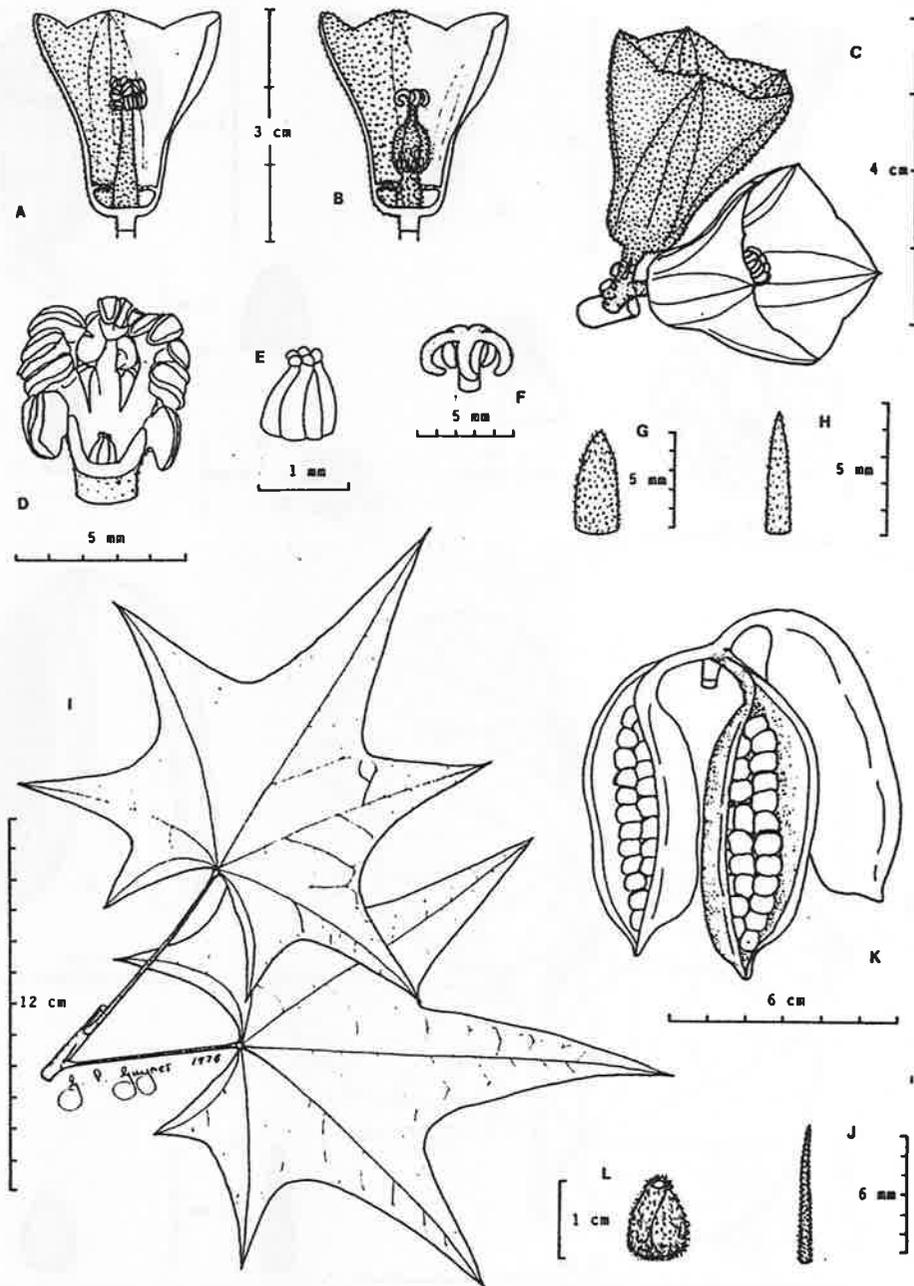


Fig. 41. *Brachychiton incanus*. A, male flower; B, female flower; C, inflorescence; D, androecium; E, carpelodes; F, stigmas; G & H, bracts; I, branchlet with leaves; J, stipule; K, follicles; L, exotesta. A-F & I-L from Guymer 547; G from Guymer 624; H from Guymer 535.

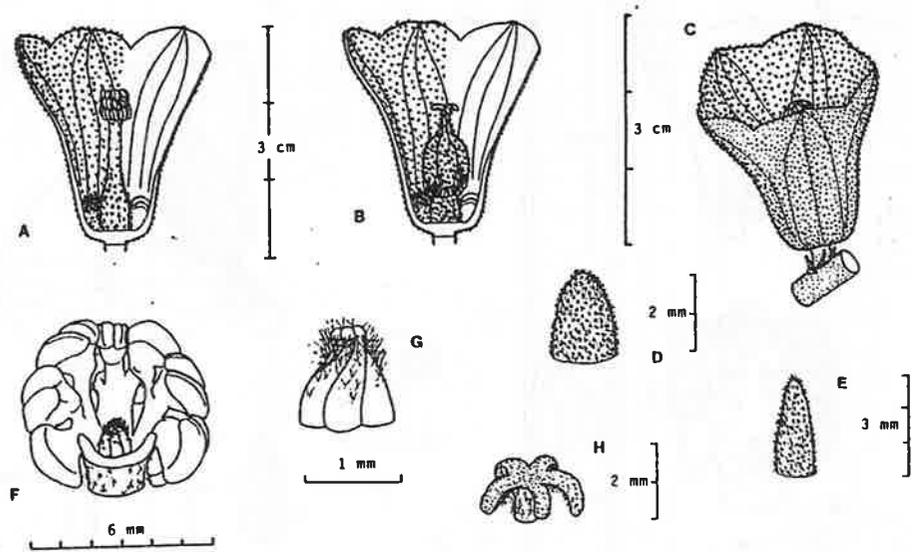


Fig. 44. *Brachychiton viridiflorus*. A, male flower; B, female flower; C, inflorescence; D & E, bracts; F, androecium; G, carpelodes; H, stigmas; I, branchlet with leaves; J, stipule; K, follicles; L, exotesta. A-C, E-H, K & L from Guymner 587; D from Fitzgerald 1297; I & J from Guymner 588.

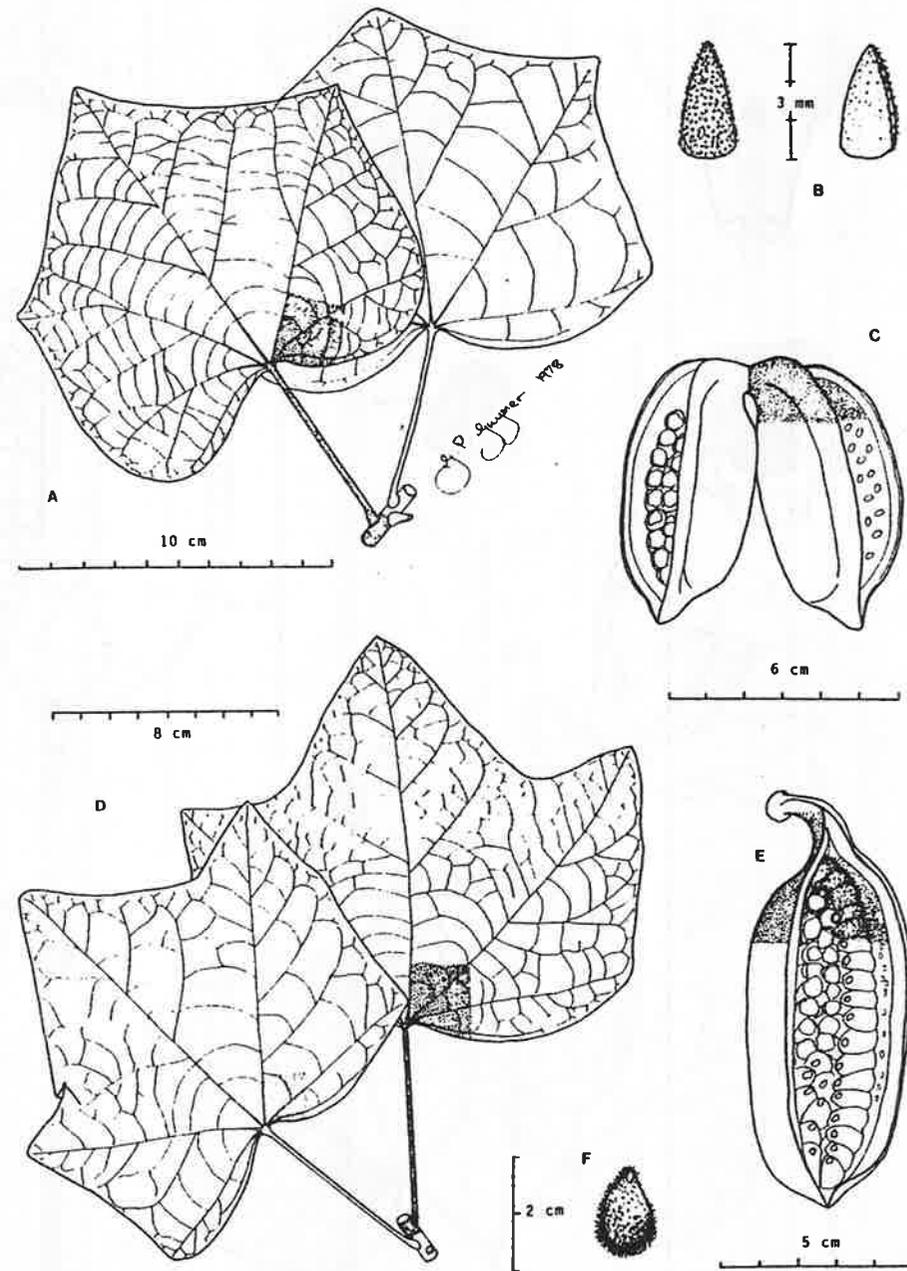


Fig. 42. A-C, *Brachychiton tridentatus*. A, branchlet with leaves; B, bract (outside & inside); C, follicles. A from Wilson 11239; B from George 13933; C from Crawford 76. D-F, *Brachychiton xanthophyllus*. D, branchlet with leaves; E, follicle; F, exotesta. D-F from Kennelly 6401 (type).