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PACIFIC CAPSULAR MYRTACEAE 9

The Metrosideros Complex: M. queenslandica Group

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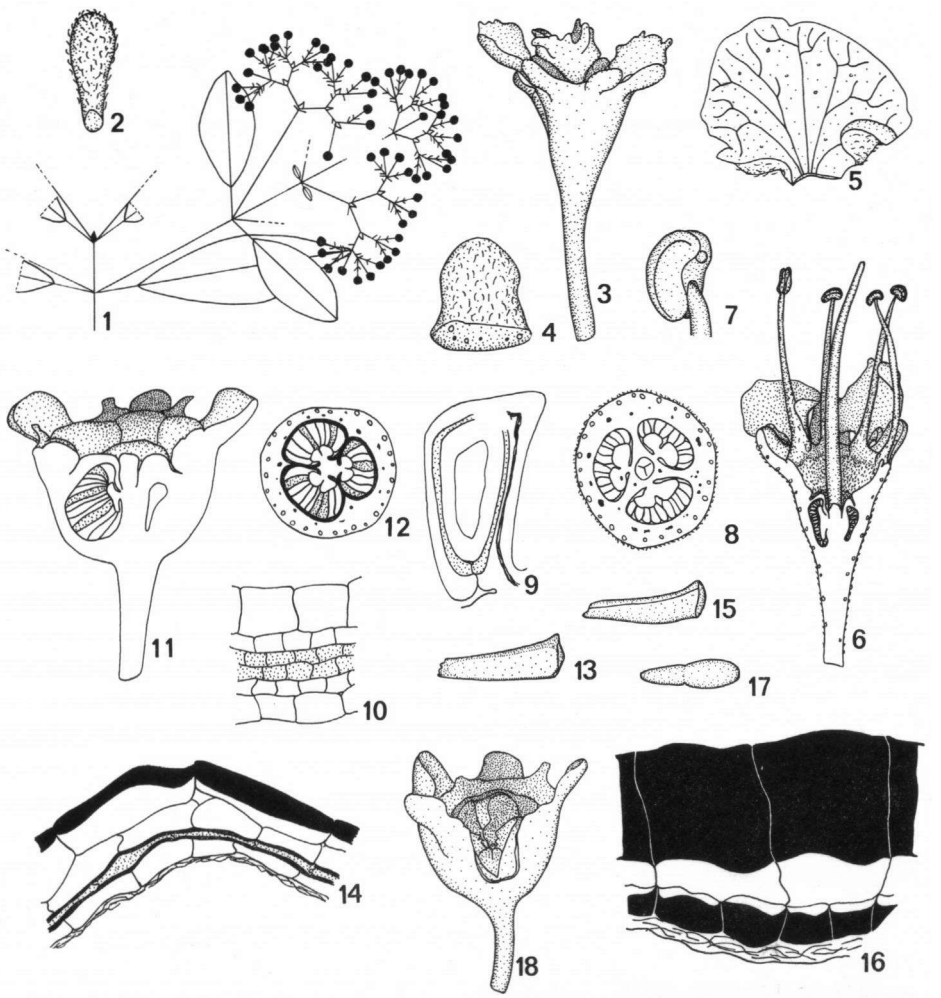
INTRODUCTION

Metrosideros queenslandica L. S. Smith, Proc. Roy. Soc. Qld. 64 (1958) 50, is a species of the North Queensland rain forests mostly found above 1,000 metres altitude. *Metrosideros ornata* C. T. White, Journ. Arn. Arb. 23 (1942) 79, another member of the group, occurs in rain forests of eastern New Guinea at 1,500 metres altitude and above. Probably some of the *Metrosideros* species described by Diels (1922) from New Guinea also belong to this group, but material of these has not yet been obtained.

DESCRIPTION OF METROSIDEROS QUEENSLANDICA GROUP

Trees up to 40 metres tall; branching monopodial; bud scales wanting; leaves opposite, dorsiventral, microphyllous; young parts with a rusty or reddish pubescence. *Inflorescences* terminal, or axillary (fig. 1) in groups at the ends of branches which eventually resume vegetative growth; each inflorescence with a terminal and one or two pairs of lateral dichasial cymes, terminal flowers of the first orders of branching of a cyme usually abortive; bracts (fig. 2) adnate for varying distances to the axes they subtend. Inflorescence axes, bracts, sepals, petals, exposed distal part of capsule, interior and exterior hypanthium sparsely to densely pubescent with short hairs; sometimes lower parts of stamen filaments with a few hairs. *Sepals* (figs. 3,4) 5, free. *Petals* (figs. 3,5) 5, free, sometimes with infolded lobes, yellow or red. *Stamens* (fig. 6) free, 5—10, sometimes more, when 5 opposite petals, 2—3 times longer than petals, red or yellow; anthers (fig. 7) dorsifixed, more or less versatile with one large oil gland at the tip of the connective. *Ovary* inferior (fig. 6) to semi-superior, 3-loculed (fig. 8); style a little longer than stamens, set into top of ovary (fig. 6); stigma, small, convex; placentas axile. *Ovules* anatropous (fig. 9), numerous, close set all over the surface of the placenta; nucellus and each integument 2-layered in the median transverse plane of the ovule (fig. 10); all ovules potentially fertile. Tissue between style and placenta not elongating in the fruit (fig. 11); veins of hypanthium not strongly developed. *Fertile seeds* (fig. 13) few: testa (fig. 14) derived from both integuments, the outer layer of the outer integument with thick outer walls, the inner layer of the outer integument thin-walled, the outer layer of the inner integument flattened tangentially with moderately thickened inner and outer walls and brown contents, inner layer of inner integument thin-walled. Sterile seeds (fig. 15) consisting of the outer integument only with the outer walls of the outer layer and the inner walls of the inner layer heavily thickened (fig. 16). *Embryo* (fig. 17) straight; hypocotyl a little shorter than the cotyledons, no hypocotyl sheath; cotyledons approximately the same width as the hypocotyl and lying face to face. Seed release entirely through the free distal part of the capsule (fig. 18).



Metrosideros queenslandica (*A. K. Irvine 712, 714; B. Hyland 6683*). —1. Diagram of inflorescence group. Only lowermost inflorescence shown in partial detail. Black triangle at branch end is the dormant bud; open triangles are abortive flowers; black circles are flowers; ×2/3. —2. Bract; ×7. —3. Exterior view of flower with stamens and style removed; ×4. —4. Sepal; ×7. —5. Petal; ×7. —6. L. S. flower; ×4. —7. Anther, dorsal view; ×15. —8. T. S. Ovary; ×7. —9. L. S. ovule. Inner integument stippled; ×70. —10. Cell detail T. S. Ovule. Inner integument stippled, outer integument at top; ×300. —11. L. S. nearly mature capsule. Fertile seeds stippled; ×5. —12. T. S. nearly mature capsule; ×5. —13. Fertile seed; ×15. —14. Cell detail T. S. testa fertile seed. Wall thickenings black, brown pigmentation stippled; ×300. —15. Sterile seed; ×15. —16. Cell detail T. S. testa sterile seed. Wall thickenings black; ×300. —17. Embryo; ×15.—18. Dehisced capsule. Part of hypanthium removed; ×5.

DISCUSSION

The *Metrosideros queenslandica* group comes closer to typical *Mearnsia* (Dawson, 1970a) than to typical *Metrosideros* (Dawson, 1970b). It differs from the former chiefly in the large size of the trees, the adnate bracts and abortive terminal flowers in the inflorescence, the small stamen number, the weakly developed veins in the fruit, and the release of the seed entirely through the free distal parts of the capsules.

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