NEW SLANTS ON NEW ZEALAND PLANTS

by L.B. Moore

I. New Zealand Species of Tmesipteris (Psilotaceae). By R.J. Chinnock N.Z. Journal of Botany 13, 1975:743-68.

Tmesipteris, which is called "chain fern" in Stewart Island, is occasionally seen in Canterbury, much more often in Westland, as plants up to 30 cm long hanging from the trunks of tree ferns. Mr. Chinnock, formerly of Wellington and now living in Adelaide, has been looking carefully at these plants for a long time and now recognises not only the one species, T. tannensis, whose name is familiar to us, but also three others. A table shows some of the differences.

TMESIPTERIS

Species authority	tannensis (Spreng.) Bernh.	elongata Dang.	lanceolata Dang.	sigmatifolia Chinnock
Shoot growth	indefinite	indefinite	limited --annual	indefinite
tip	narrow	narrow	broad	narrow
branching	rare	common	rare	?
fertile	upper half	upper half	lower half	upper half
Leaves	spiral	spiral/flat	flat	spiral
Synangia ends	pointed	± pointed	rounded	rounded
attachment	tips free	appressed	appressed	appressed ± unequal
Distribution:				
-- New Zealand				
Kermadec Is	-	-	+	-
North Id	+	+	northern	northern
South Id	+	+	-	northern
Auckland Is	+	-	-	-
Chatham Is	+	+	-	-
-- Elsewhere	Tanna Id	Tasmania, S.Victoria	Queensland N.Caledonia	N.Caledonia

Additional Points:

T. elongata is divided into two subspecies: ssp. robustum Chinnock is known only from North Auckland and differs from the more widespread ssp. elongatum in having much more branching stems with prominent wings, and widely spaced leaves that reach a width of 7-9 mm; it grows on the bases of tufts of Collospermum. T. tannensis is sometimes found growing on the ground, usually on steep banks, but the usual site for Tmesipteris is on the fibrous trunks of tree ferns. T. sigmatifolia has been found (in New Zealand) only on Cyathea dealbata, and T. lanceolata seems to prefer C. dealbata and Dicksonia squarrosa, occurring less commonly on C. smithii, C. medullaris and

D. lanata. A special feature of T. sigmatifolia is, as the name suggests, the sigmoidly curved shape of the leaf, like a very thin and long-drawn-out S, with a very long (2-4 mm) spike at the tip.

Anyone who finds any species other than T. tannensis in Canterbury will have a new record.

II. Tree Ferns. By D.R. Given. New Zealand Nature Heritage 6 (pt.77): 2157-60. Distributed in November 1975.

Articles in New Zealand Nature Heritage present much up-to-date information about both plants and animals in "popular" form, and most of this is very welcome. Quite unpopular, however, (even if technically justifiable) is the announcement in this article on tree ferns that "Until recently, the New Zealand representatives of the Cyatheaceae were put into the genus Cyathea, but recent research shows that most are better placed in Alsophila ...". This involves changes in some of the best known names in the Flora, names that many non-professional botanists have long been proud to trot out for the benefit of visitors admiring such a display of these spectacular plants as can be seen in few other parts of the world. These familiar names are so deeply entrenched in the literature that they cannot be forgotten, and anyone can continue to use them without fear of ambiguity. Nevertheless, it is as well to know what is now suggested, and a table shows what is equivalent to what. No authorities are given for the new names but one of them goes back to what was acceptable in earlier years.

Flora of New Zealand vol.I, 1961	New Zealand Nature Heritage, 1975
Cyathea dealbata (Forst.f.) Swartz	Alsophila tricolor
Cyathea medullaris (Forst.f.) Swartz	Sphaeropteris medullaris
Cyathea cunninghamii Hook.f.	Alsophila cunninghamii
Cyathea milnei Hook. ex Hook.f.	Alsophila milnei
Cyathea kermadecensis W.R.B.Oliver	Alsophila kermadecensis
Cyathea smithii Hook.f.	Alsophila smithii
Cyathea colensoi (Hook.f.) Domin	Alsophila colensoi Hook.f.

III. Taxonomic Revisions in the Family Haloragaceae. I. The Genera Haloragis, Haloragodendron, Glischrocaryon, Mesiella, and Gonocarpus. By A.E. Orchard. Bulletin of the Auckland Institute and Museum No.10, 1975: 299 pages.

Plants of the family Haloragaceae are mostly small, some almost weedy. New Zealand has been credited with three genera, Haloragis, Myriophyllum and Gunnera. As long ago as 1841 it was suggested that Gunnera be placed in a separate family, Gunneraceae, partly because its fleshy fruits contrast with the dry capsules of Haloragaceae. This suggestion has been taken more seriously in the last 40 years as new knowledge shows differences in pollen types and in embryo development. Myriophyllum, water milfoil, is widespread throughout the world, and New Zealand has, besides its five native species, at least one naturalised from South America. Haloragis and the genera most closely related to it are predominantly Southern Hemisphere plants though some extend to South east Asia, and these are the ones dealt with by Dr.

Orchard in great detail with much discussion of relationships. Only points affecting names of New Zealand plants are noted here.

In "Flora of New Zealand vol.I" (1961) seven species of Haloragis were described. M.B. Forde (N.Z.J.Bot. 2, 1964:425-453) showed convincingly that one of these, H. colensoi, could not logically be separated from the broad complex of forms to be aggregated under the name H. erecta. She grew hundreds of plants from 30 different localities and made more than 100 artificial crosses and so had a very broad and secure base for her conclusions. The remaining units are accepted by Orchard with little or no change in circumscription, though he regards H. cartilaginea as a subspecies of H. erecta. But there are numerous name changes, arising in great part from the fact that the four species previously placed in Section Monanthus revert or are transferred to the genus Gonocarpus. Name changes are summarised in the table below.

Flora of New Zealand 1961	Orchard, 1975
HALORAGACEAE	GUNNERACEAE (Gunnera only) HALORAGACEAE
Haloragis erecta (Banks ex Murr.)Eichl.	
H. colensoi Skottsb.	H. erecta (Banks ex Murr.) Oken ssp. erecta
H. cartilaginea Cheesem.	H. erecta ssp. cartilaginea (Cheesem.) Orchard
H. micrantha (Thunb.) R.Br.ex Siebold et Zucc.	Gonocarpus micranthus Thunb. ssp. micranthus
H. depressa (A.Cunn.) Walp.	Gonocarpus aggregatus (Buchanan) Orchard
H. incana (A.Cunn.) Walp.	Gonocarpus incanus (A.Cunn.) Orchard
H. procumbens Cheesem.	Gonocarpus montanus (Hook.f.) Orchard

Distribution.

Maps show the locations of the hundreds of herbarium specimens examined. These indicate restricted distributions for: ssp. cartilaginea (North Cape Peninsula); G. aggregatus (in North Island mostly in high country, widespread further south); G. incanus (lowlands of North Island with a gap from Egmont to East Cape, and coastal plains about Nelson and Golden Bay); C. montanus (South Island particularly above 500 m from Dunedin northwards); under G. montanus is the comment: "Plants that approach this species closely in most respects occur throughout North Island as far north as lat. 35°S and are mapped under this species".