

## FURTHER BOOKS ABOUT NEW ZEALAND BOTANY

This list is the third in a series (begun in C.B.S.J. 31, 1996, pp. 77-82, and continued in C.B.S.J. 32, 1998, pp. 54-61). Included here are recent and older technical books (from about the last half century), and a few journal articles, containing descriptions and classifications of the New Zealand vegetation and flora (or parts thereof). Some of the titles would be daunting for beginners. Books on: popular botany, the wide field of ethnobotany, economic, medicinal and other uses for plants, mainly on vegetation are also listed.

The contents of the technical books and some others are explained in more detail than is usual in this series. Even so many points could not be covered (e.g. the whys and wherefores of classification systems). Ethnobotany, with particular emphasis on Maori usage of plants, is only minimally covered.

If any reader knows of books, new or old, that should be included in this series, but haven't been, please let Colin Burrows know (with title, publisher, summary of contents, information about availability and date of publication).

The present list is organised into four categories (1. Technical References; 2. Popular Botany and Horticulture; 3. Ethnobotany; 4. Economic and Other Uses) with the titles in each in alphabetic order, according to the name of the first author. O.P. = out of print (not noted for journal articles).

### 1. Technical References

**Allan, H.H.** 1940. *A Handbook of the Naturalised Flora of New Zealand*. New Zealand D.S.I.R. Bulletin No. 83. Government Printer, Wellington, 344 pp. O.P.

All introduced and naturalised angiosperm species known at the time are treated, with brief descriptions and illustrations of many. For a long time this was the only reasonably comprehensive account of introduced flora, including grasses. It is still useful, though well outdated.

**Allan, H.H.** 1961. *Flora of New Zealand Vol. I: Indigenous Tracheophyta (Psilopsida, Lycopsida, Filicopsida, Gymnospermae, Dicotyledons)* (includes contributions by L.B. Moore and M.B. Ashwin), Government Printer, Wellington, 1085 pp.

Most of the text was completed by Dr Allan before he died, but the final touches were by Lucy Moore. It was the definitive volume at the time, describing all indigenous vascular plants except monocotyledons. Much of the information is still valid, but much is out-dated for certain groups.

New Zealand is regarded as extending to the Kermadec Islands and the Subantarctic Islands, including Macquarie. The volume covers 116 families, 290 genera and 1457 species. Of

these 164 species are ferns or in other allied groups, 20 are gymnosperms, and the rest dicotyledon angiosperms.

The ordering of the book is by families, according to a “phylogenetic” system. Publications on the indigenous flora are listed in “Annals of Taxonomic Research on N.Z. Tracheophyta 1769 – 1958”. There are keys for families, genera and species. Illustrations are confined to a few line drawings of parts useful for identification of species in a few genera. Other aids for users are a glossary of technical terms, a list of new taxa and one of Maori names for plants.

See also Vol. II (Moore & Edgar, 1970); Vol. III (Healy & Edgar, 1980); Vol. IV (Webb, Sykes & Garnock-Jones, 1988).

- Cassie, V.** 1984. Revised checklist of the freshwater algae of New Zealand (excluding diatoms and charophytes) Part I – Cyanophyta, Rhodophyta, Chlorophyta. *Water and Soil Technical Publication No. 25*. N.W.A.S.C.O., Wellington. 116 pp. O.P.

This and the next two references contain definitive lists for particular groups.

- Cassie, V.** 1984. Revised checklist of the freshwater algae of New Zealand (excluding diatoms and charophytes) Part II – Chlorophyta, Chromophyta, Pyrrophyta, Rhaphidophyta and Euglenophyta. *Water and Soil Technical Publication No 26*. N.W.A.S.C.O., Wellington. 133 pp. O.P.

- Cassie, V.** 1984. Checklist of freshwater diatoms in New Zealand. *Bibliotheca Diatomologica* 4: 7-129.

- Connor, H.E., Edgar, E.** 1987. Name changes in the indigenous New Zealand flora 1966-1986 and Nomina Nova IV, 1983-1986. Reprint from *New Zealand Journal of Botany* 25: 115-170.

The background to changes of nomenclature for many taxa of seed plants is well outlined. Species newly-published since Vol. III of the *Flora of New Zealand* series came out (see Healy & Edgar, 1980 in the present list) are also noted. (See also Parsons, Douglas & Macmillan, 1998 in this list.)

- Cranwell, L.M.** 1939. Southern beech pollens. *Records of the Auckland Institute and Museum* 2: 175-196.

Morphology of the pollen grains of *Nothofagus* spp. is described.

- Cranwell, L.M.** 1940. Pollen grains of the New Zealand conifers. *New Zealand Journal of Science and Technology* 22B: 1-17.

Morphology of the pollen grains of members of Araucariaceae, Cupressaceae and Podocarpaceae is covered. Illustrations include photographs and diagrams.

- Cranwell, L.M.** 1952. *New Zealand Pollen Studies: The Monocotyledons*. Bulletin of the Auckland Museum and Institute 3. Harvard University Press, Boston.

Pollen grains of many monocotyledon generic or family representatives are described and illustrated.

- Croasdale, H., Flint, E.A.** 1986. *Flora of New Zealand Freshwater Algae (Chlorophyta: Desmids)*. Vol 1. Government Printer, Wellington. 133 pp + 27 of diagrams.
- Croasdale, J., Flint, E.A.** 1988. *Flora of New Zealand: Freshwater Algae (Chlorophyta: Desmids)*. Vol 2. Government Printer, Wellington. 147 pp + 33 of diagrams.
- Croasdale, H., Flint, E.A. & Racine, M.M.** 1994 *Flora of New Zealand: Freshwater Algae (Chlorophyta: Desmids)*. Vol 3. Government Printer, Wellington. 218 pp + 84 of diagrams.
- Each volume describes the species from certain families, locates collecting sites, has keys to the genera and species, has notes about the ecology and is well illustrated with line drawings of these beautiful, microscopic, freshwater algae.
- Fife, A.J.** 1995. Checklist of the mosses of New Zealand. *The Bryologist* 98: 313-337.
- A full coverage of the mosses, including naturalised species. Changes in nomenclature are noted.
- Fisher, F.J.F.** 1965. *The Alpine Ranunculi of New Zealand*. New Zealand D.S.I.R. Bulletin 165, 192 pp. O.P.
- This is a very thoroughly researched monograph on the plants, with considerable garden and laboratory experimental and observational backing of the conclusions. Variation, hybridisation and evolution trends are discussed. The illustrations are fine black and white drawings and one colour photo, and there are good maps. The study was a trend-setter which, alas, has not often been emulated, as well as it might have been, for other groups.
- Galloway, D.J.** 1985. *Flora of New Zealand: Lichens*. Government Printer, Wellington. 662 pp.
- Though already outdated for some groups (because of revisions), this is the definitive book for the group. It is massive (985 taxa in 210 genera). The main content is the systematic description of genera, with a key, followed by keys to, and thorough descriptions of, each species, genus by genus. Important items are the historical survey and the set of "Annals of Taxonomic Research on New Zealand Lichens 1781 – 1983."
- Harris, W.F.** 1955. *A Manual of the Spores of New Zealand Pteridophyta*. D.S.I.R. Bulletin No 116. Government Printer, Wellington. O.P.
- A well-illustrated book. The diagrams help to identify spores of many ferns and lycopods.
- Healy, A.J., Edgar, E.** 1980. *Flora of New Zealand Vol III: Adventive Cyperaceous, Petalous and Spathaceous Monocotyledons*. Government Printer, Wellington. 220 pp.
- Arthur Healy and Elizabeth Edgar dealt with all of the naturalised monocotyledon groups except the grasses. Introduced species are the focus, but the mixed flora (native and introduced) is recognised by the inclusion of brief descriptions of indigenous species that are in any of the naturalised genera recorded. Continues the "Annals" (1969-1976) (see Vol. I, Allan, 1961 and Vol. II, Moore & Edgar 1970 and Vol. III, Webb *et al.*, 1988). More illustrations appear, including some colour photographs. In all 22 families, 66 genera and 168 species of adventive species are described.

**Kondo, R., Childs, C., Atkinson, I.** 1994. *Opal Phytoliths of New Zealand*. Manaaki Whenua Press, Lincoln. 85 pp.

Phytoliths are pieces of opalised silica that develop in plant tissue. Some species produce distinctively-shaped phytoliths. They accumulate in soil and, like pollen, they can be used to examine the history of vegetation on a site. They are common in sedges, grasses, daisies, *Nothofagus* and some ferns. Black and white scanning electron microphotographs depict a range of these objects.

**Lange, M.F., Braggins, J.E.** 1991. *Spore Atlas of New Zealand Ferns and Fern Allies*. SIR Publishing, Wellington. 167 pp.

A comprehensive account of the spores of these groups. The many illustrations are in the form of scanning- and transmission-electron micrographs, and some light microscope images. This is a very useful book, with detailed descriptions.

**Meylan, B.A., Butterfield, B.G.** 1978. *The Structure of New Zealand Woods*. N.Z. D.S.I.R. Bulletin 222. 250 pp. O.P.

A survey of wood structure of many native species is presented. The 805 illustrations are very fine scanning electron micrographs. The data would enable users to identify wood specimens of the species concerned, as well as to understand many points of their internal anatomy.

**Moar, N.T.** 1993. *Pollen Grains of New Zealand Dicotyledon Plants*. Manaaki Whenua Press, Lincoln. 200 pp.

This is a very detailed and technical book, containing the first really comprehensive coverage of the indigenous dicotyledonous angiosperm plant pollen. The many and varied, very beautiful, pollen grains are illustrated with scanning electron microphotographs and the text for each species includes descriptions of the pollen morphology. An essential text for anyone wishing to know the pollen types (e.g., for vegetation history, honey, or forensic studies).

**Moore, L.B., Edgar, E.** 1970. *Flora of New Zealand, Vol. II: Indigenous Tracheophyta (Monocotyledons except Gramineae)*. Government Printer, Wellington. 354 pp.

Lucy Moore and Elizabeth Edgar prepared this book in much the same style as for Vol. I. It continues the "Annals" (1959 – 1968), adding some older titles missed in Vol. I (Allan, 1961) and covering all vascular plant groups. Errors in Vol. I are corrected. A very important innovation is the inclusion of a list of chromosome numbers covering indigenous seed plant groups (gymnosperms, dicotyledons, monocotyledons). Rather sparsely illustrated with line drawings. Recognised are 22 families, 75 genera and 339 species. See also Allan 1961 (Vol. I), Healey & Edgar 1980 (Vol. III) and Webb *et al.* 1988 (Vol. IV).

**Parsons, M.J., Douglas, P., Macmillan, B.H.** 1998. *Current Names List for Wild Gymnosperms, Dicotyledons and Monocotyledons (except grasses) in New Zealand*. Version 1, to 31 Dec. 1995. Manaaki Whenua Press, Lincoln. 206 pp.

This is an important and useful list for busy botanists. It enables indigenous and introduced plant names (including revisions up to the end of Dec. 1995) to be checked quickly. It covers the groups included in Vols. I, II, III and IV of the *Flora of N.Z.* series. The scientific, common and Maori names for each taxon are given, as are references, and a note on distribution. Synonymy is included only for revisions published since those outlined in Vol. IV of the *Flora of N.Z.* (see Webb *et al.* 1988 in the present list).

**Pocknall, D.T.** 1981. Pollen morphology of the New Zealand species of *Dacrydium*, *Podocarpus* and *Dacrycarpus* (Podocarpaceae). *New Zealand Journal of Botany* 19: 67-95.

This and the following two articles describe the pollen morphology, with the help of scanning and transmission electron micrographs. They are definitive accounts.

**Pocknall, D.T.** 1981. Pollen morphology of *Phyllocladus*. *New Zealand Journal of Botany* 19: 259-266.

**Pocknall, D.T.** 1981. Pollen morphology of the New Zealand species of *Libocedrus* (Cupressaceae) and *Agathis* (Araucariaceae). *New Zealand Journal of Botany* 19: 267-272.

**Raven, P.H., Raven, T.E.** 1976. *The Genus Epilobium in Australasia: a Systematic and Evolutionary Study*. New Zealand D.S.I.R. Bulletin 216, 321 pp. O.P.

A very thorough coverage of the species of the genus in our region, with detailed descriptions, drawings (mostly in black and white) of plant habit, flowers, fruit and seeds, distribution maps and notes on artificial hybrids.

**Sainsbury, G.O.K.** 1955. *A Handbook of the New Zealand Mosses*. Bulletin of the Royal Society of New Zealand 5: 1-490. O.P.

This was the original main reference to the mosses. It can still be used, though outdated in terms of the nomenclature for many mosses, and the numbers of genera and species represented.

**Wardle, P.** 1991. *The Vegetation of New Zealand*. Cambridge University Press, Cambridge. 608 pp.

This is the definitive book on the New Zealand vegetation. There are chapters on vegetation history, ecology, community structure and biogeography, but mainly it is a systematic, concise description of the kinds of vegetation found in the multitude of habitat types present throughout the country and its offshore islands. Many facts and figures make it a very useful reference for ecology students.

**Webb, C.J., Sykes, W.R., Garnock-Jones, P.J.** 1988. *Flora of New Zealand Vol IV: Naturalised Pteridophytes, Gymnosperms, Dicotyledons*. Botany Division, D.S.I.R., Christchurch. 1365 pp (with contributions by D.R. Given, P.J. Brownsey, B.H. Macmillan, L.B. Moore).

This thick book contains comprehensive descriptions of naturalised vascular plants, except monocotyledons. The “Annals” (1977-1986) are continued and cover indigenous vascular plants. Many illustrations, including colour photographs, appear. The arrangement of families deviates from the “phylogenetic” style used formerly in the *Flora* series. Here they are arranged in alphabetic order (in some ways an advantage, in others, not). Native species are included whenever they occur in any of the naturalised genera recorded. New information on indigenous taxa, available since Vol. I was published, is included. In some cases this involves revisions of genera with indigenous species only and acceptance of new generic designations for many indigenous plants. In all 132 families with naturalised taxa, but 47 more families with indigenous representatives only, are recognised; as well as 617 genera with naturalised species and 167 further genera with indigenous species; 1470 naturalised species or species-equivalents (hybrids or cultivars treated as species). There are 1419 species of dicotyledons, 28 gymnosperms and 23 pteridophytes. Most are fully described, but some casually-naturalised species are given reduced entries.

See also Vol. I, (Allan, 1971), Vol. II, (Moore & Edgar, 1970) and Vol. III (Healy & Edgar, 1980).

**Wood, R.D., Mason, R.** 1977. Characeae of New Zealand. *New Zealand Journal of Botany* 15: 87-180.

A well-illustrated description of this group of freshwater algae.

**N.B.** For recent changes in N.Z. fern nomenclature see references in Hugh Wilson’s article on Banks Peninsula ferns in this Journal.

## 2. Popular Botany and Horticulture

**Anon.** 1975. *Weed Seeds*. Ministry of Agriculture and Fisheries, Bulletin No 316. 56 pp. O.P.

A handy atlas for identifying seeds of 230 species of common weeds. The index summarises some key characters.

**Anon.** 1998. *The Biological Control of Weeds Book*. Manaaki Whenua Press, Lincoln.

A folder of information about what biocontrol is and pamphlets with specific information on the organisms available for control of broom, gorse, old man’s beard, nodding thistle and ragwort.

**Bryant, G.** 1992. *Gardens for Free*. David Bateman, Auckland. 123 pp.

Covers propagation methods and indicates which method is best for each plant listed. Pest and disease control is also discussed.

**Cockayne, L., Phillips Turner, E.** 1958. *The Trees of New Zealand*. 4<sup>th</sup> edn., Government Printer, Wellington. O.P.

For a long time this was our standard tree identification reference. After a brief summary of the vegetation the species are treated (in alphabetical order by genus) each with a black and white photo and a brief description. Short sections deal with hybridism, seedlings of some species, seeds of some conifers, and timbers.

**Craw, C.J.** 1995. *Poisonous Plants and Fungi in New Zealand: A Guide for Parents, Schools and Child Minders*. Northland Regional Council, Whangarei. 88 pp.

This very useful book has a clear colour code classification of the plants according to the action needed if someone is poisoned. Colour photos depict the plants and their parts – many are introduced, a few native.

**Crowe, A.** 1997. *The Quickfind Guide to Growing Native Plants*. Viking, Auckland. 64 pp.

A simple keyed system for finding the most suitable ways for propagating many species.

**Crowe, A.** 1997. *The Life-Size Guide to Native Trees and Other Common Plants of New Zealand's Native Forest*. Viking, Auckland. 32 pp.

Leaves, flowers, fruit and bark can be matched against colour photos to identify plants.

**Davies, W.C.** 1961. *New Zealand Native Plant Studies*. A.H. & A.W. Reed, Wellington. 333 pp. (Chapters 7-9 prepared by H.H. Allan). O.P.

Very clear black and white photos are a feature of this book which has brief descriptions of the plants. Organised by "botanical districts" and vegetation types.

**Etheredge, M.K., Pridmore, R.D.** 1987. *The Freshwater Planktonic Blue-Greens (Cyanophyta/Cyanobacteria) of New Zealand – A Taxonomic Guide*. N.W.A.S.C.A., Wellington. Miscellaneous Publication No 111. 122 pp.

Systematic descriptions, keys and good diagrams are very useful for identification.

**Fisher, M.E., Forde, M.L.** 1994. *Growing New Zealand Plants, Shrubs and Trees*. David Bateman, Auckland. 224 pp.

Full of good information for those wishing to grow native plants.

**Hall, I., Buchanan, P.K., Yun, W., Cole, A.L.J.** 1998. *Edible and Poisonous Mushrooms*. Crop & Food Research, Christchurch. 200 pp.

A wealth of information is provided for New Zealand and Australian (and some Japanese) native and introduced fungi, including cultivars, with guides to identification of those safe to eat and those not. 170 colour photos.

**Healy, A.J.** 1970. *Identification of Weeds and Clovers* (with a chapter on aquatic weeds by Ruth Mason). Editorial Services, Wellington. 190 pp. O.P.

This handy book has clear illustrations and good keys for identifying some difficult species in groups such as clovers, thistles, dandelions, docks and their relatives, and rushes.

Illustrations are black and white photos and line drawings.

**Hilgendorf, F.W., Calder, J.W.** 1952. *Weeds of New Zealand*. 5<sup>th</sup> (revised) edn. Whitcombe & Tombs, Christchurch. 260 pp. O.P.

Used as a text by generations of students, especially in agriculture. The book describes the species, family by family, and has line drawings illustrating many. There is a brief section on control methods.

**Hutchins, G.** 1997. *Hebes Here and There*. Hutchins & Davies, Reading. 317 pp.

The author is an Englishman who has spent a lot of time here. This is a pleasant, well-presented book with mainly black and white drawings illustrating the species. In a chapter about the more than 500 cultivars the author's expertise and special interest show through.

**Laing, R.M., Blackwell, E.W.** 1964. *Plants of New Zealand*. 7<sup>th</sup> (revised) edn. Editor E.J. Godley. Whitcombe & Tombs, Christchurch. 500 pp. O.P.

Well-illustrated with black and white photographs, this has been a very popular reference since its origin (first published in 1907). The plants are considered family by family. It is still very useful for beginners, containing as it does many facts about each plant that it covers.

**Martin, W.** 1961. *The Flora of New Zealand*. 4<sup>th</sup> (revised) edn. Whitcombe & Tombs, Christchurch. 335 pp. O.P.

This little book covers all groups from seaweeds to angiosperms, and describes the vegetation. There are keys for, for example, the trees, and the shrubs, and many black and white photos.

**Parham, B.E.V., Healy, A.J.** 1985. *Common Weeds in New Zealand*. Government Printer, Wellington. 173 pp. O.P.

An easy to use book about the commoner weed species, with black and white photographs.

**Pridmore, R.** 1982. *A Guide to the Common Freshwater Algae in New Zealand*. Water and Soil Division, Ministry of Works and Development, for N.W.A.S.C.O. Wellington. Miscellaneous Publication No. 39. 45 pp. O.P.

Clear diagrams and keys make this a useful book for identification.

**Richards, E.C.** 1947. *Our New Zealand Trees and Flowers*. Simpson & Williams, Christchurch. 262 pp. O.P.

Describes and illustrates many species (black and white photos and line drawings). Good for herbaceous species (for Canterbury botanists it was the predecessor of Hugh Wilson's Mt Cook flora). The plants are grouped into major forms – trees, shrubs, climbers and herbs.

**Steuart, J.** 1989. *Poisonous Plants in New Zealand*. 3<sup>rd</sup> (revised) edn. G.P. books. 39 pp. O.P.

Well-illustrated, with colour photos and some line drawings, this little book provides a brief description of the plants, listing their poisonous parts, the toxins and symptoms of poisoning. Only 6 of the 54 plus species dealt with are natives of this country. One erroneous figure has crept in (on p. 10, a birch *Betula*, instead of a beech, *Fagus*).

### 3. Ethnobotany

**Anon.** 1964. *Weaving*. Art and Craft Branch, Department of Education, Wellington. 16 pp. O.P.

The art and craft of weaving harakeke baskets, etc. are described by this well-illustrated booklet.

**Anon.** 1967. *Tukutuku and Kowhaiwhai*. Art and Craft Branch, Department of Education, Wellington. 23 pp. O.P.

The art form tukutuku panel decoration (which requires the use of toetoe, kiekie, pingao and harakeke) and how it may be constructed, is briefly described. Illustrated by drawings and photographs.

**Barrow, T.** 1969. *Maori Wood Sculpture of New Zealand*. A.H. & A.W. Reed, Wellington. 163 pp. O.P.

The book is really about the art forms of carving, but it is evident that the woods used determine what is possible. Few of them are specifically mentioned (totara, the most important and kauri). The illustrations are excellent.

**Beaver, J.** 1991. *A Dictionary of Maori Plant Names*. 2<sup>nd</sup> edn. Auckland Botanical Society Bulletin No. 20., Auckland. 75 pp.

Names have mainly been gathered from earlier lists, compiled by botanists and ethnographers. Recent words applying to introduced plants are included. Alphabetical lists are in two series: Maori names, followed by scientific, and scientific (genera and species), followed by Maori.

**Best, E.** 1925. *Maori Agriculture*. Dominion Museum Bulletin No 9. 172 pp. O.P.

This is a systematic description of traditional methods used for growing (and storing) the main pre-European food plant crops (kumara *Ipomoea batatas*, taro *Colocasia antiquorum*, uwhi *Dioscorea alata*) and some others such as hue (*Lagenaria vulgaris*) and ti pore (*Cordyline terminalis*). Each of these had been brought from further north in the Pacific by the first Maori settlers. Items of lore and references to early European accounts of gardens make this a very interesting volume. Brief statements are made about the "cultivation" and use of aruhe (*Pteridium esculentum*), ti kouka (*Cordyline australis*), harakekeke (*Phormium tenax*) and a few other indigenous species, as well as the agricultural revolution begun by the introduction of potatoes.

**Best, E.** 1942. *Forest Lore of the Maori*. Polynesian Society Memoir No. 19; Dominion Museum Bulletin No. 14. 1-420. O.P.

The book deals with plants and animals. It discusses, in detail, uses of plants for food (including pollen and nectar), for clothing, woven mats, fibre, containers, structures, canoes, tools, weapons, gums and oils for various purposes, and medicines. The writing style is strangely old-fashioned.

- Goulding, J.H.** 1971. Identification of archaeological and ethnological specimens of fibre-plant material used by the Maori. *Records of the Auckland Institute and Museum* 8: 57-101. O.P.  
A well-presented account of the ways in which the plant materials can be identified.
- Harris, W., Kapoor, P.** (Eds). 1990. *Nga Mahi Maori o te Wao Nui a Tane: Contributions to an International Workshop on Ethnobotany*. Manaaki Whenua Press, Lincoln. 207 pp.  
Many of the papers delivered at a hui/workshop at Te Rehua Marae in Christchurch in February 1988 are presented here. The topic was the traditional use of plants by Maori, Pacific Islanders and others. Four of the papers are especially interesting to botanists:  
Yen, D. The achievements of the Maori agriculturist. pp. 37-42.  
Fankhauser, B. The Maori use of ti (cabbage trees) for food. pp 43-47.  
Molloy, B.P.J. The origin, relationships, and use of karaka or kopi (*Corynocarpus laevigatus*). pp 48-53.  
Walker, J. Cole, A. Antibiotics from New Zealand native plants: a new look at Maori medicine. pp 146-151.
- Heenan, P.B.** 1991. *Checklist of Phormium Cultivars*. Royal Institute of Horticulture, Lincoln University.  
An alphabetic, and a bibliographic list are included.
- McDonald, C.** 1974. *Medicines of the Maori*. Collins (N.Z.) Ltd, Auckland. 142 pp. O.P.  
The main medicinal uses of plants are covered. The species are ordered alphabetically, by common name. Each entry is illustrated by a small drawing.
- Mead, S.M.** 1969. *Traditional Maori Clothing*. A.H. & A.W. Reed, Wellington. 238 pp. O.P.  
Changing fashions in dress (in the wide sense, including headgear to footgear, adornment and decoration) over the periods from before European contact to the present are the subject of this well-illustrated book. All phases of life and death had particular clothing traditions associated with them. The species of plants used were numerous, but of course harakeke was always supremely important.
- Orbell, M.** 1996. *The Natural World of the Maori*. 3<sup>rd</sup> (revised) edn. Collins, Auckland. 230 pp.  
In this beautiful book details from old documentary records of Maori lore about the mythology and practical relationships of the Maori people with plants (and animals) are skilfully interwoven. There are many fascinating stories and apt quotations of proverbs. The illustrations are outstanding.
- Paul, T.** 1987. *Nga Taonga o te Ngahere (Treasures of the Forest)*. Department of Conservation, Wellington. 24 pp. O.P.  
This is a brief, but informative book about 24 plant species and the many uses to which parts of them were/are put by Maori (mainly as medicines, but also for clothing, tools and weapons, etc.). It is well-illustrated, with colour photos.
- Pendergrast, M.** 1987. *Te Aho Tapu: The Sacred Thread*. Reed Methuen, Auckland. 124 pp. O.P.

The weaving processes are described, but the book particularly illustrates the beautiful end-products, the garments.

**Puketapu-Hetet, E.** 1989. *Maori Weaving*. Longman Paul, Auckland. 88 pp. O.P.

Outlined in this very interesting book are many techniques for weaving with various plant materials, including *Hoheria* bark, and colouring with plant-derived dyes. It has much also, about the traditions of weaving, with appropriate chants and proverbs. Garments, containers and other items are illustrated.

**Riley, M.** 1994. *Maori Healing and Herbal*. Viking Sevenses, N.Z. Ltd, Paraparaumu. 528 pp.

In this well-compiled volume is the fullest account yet produced of uses of plant products for medicinal and some other purposes. It is a beautiful book, illustrated with superb photos. A very good feature is the citation of original references to uses of the plants. Introduced, as well as indigenous, plant species are included.

**Scheele, S., Walls, G.** 1994. *Harakeke: The Rene Orchiston Collection*. 2<sup>nd</sup> (revised) edn. Manaaki Whenua Press, Lincoln. 24 pp.

The booklet lists 63 cultivars, each with its Maori name, source, where known, description of the cultivar and indication of its specific uses. It is a very important and interesting compilation.

**Taylor, A., Taylor, W.A.** 1966. *The Maori Builds*. Whitcombe & Tombs, Christchurch. 80 pp. O.P.

This well-illustrated book depicts and describes the development of Maori building construction from pre-European times to the present. Living houses, meeting houses, hakari stages, food stores and fighting platforms are among the items discussed.

**Wallace, R.T.** 1985. A preliminary study of wood types used in pre-European Maori wooden artefacts. In: D.G. Sutton (ed). *Saying So Doesn't Make it So*. Papers in honour of B.F. Leach. N.Z. Archaeological Association Monograph 17: 222-232.

A useful account of wood types used for specific purposes.

**Walls, G.** 1988. *Traditional Uses of Plants in New Zealand and the Pacific*. Commonwealth Science Council on Biological Diversity and Genetic Resources. Project 1986-88. A Pilot Study.

Investigates many issues relating to plant use, as well as ownership of knowledge and the like.

**Yen, D.E.** 1974. *The Sweet Potato and Oceania: An Essay in Ethnobotany*. Bernice P. Bishop Museum Bulletin 236: 1-389. O.P.

Doug Yen presents a masterly and fascinating analysis of data on the origin in the Pacific of the kumara (*Ipomoea batatas*). He ends with some uncertainty (nowadays some of the loose ends are being tied up with DNA sequencing) but this volume is a great read for anyone keen on botanical mysteries.

#### 4. Economic and Other Uses

**Brooker, S.G., Cambie, R.C., Cooper, R.C.** 1987. *New Zealand Medicinal Plants*. 3<sup>rd</sup> (revised) edn. Heinemann, Auckland. 268 pp. O.P.

This book summarises reports on the medicinal uses of indigenous plants (and a few introduced species), mostly angiosperms, gymnosperms and ferns (and a few algae, fungi, mosses and lichens). Pharmacology and the chemistry of the plant extracts are briefly considered. Abundant beautiful illustrations. They range from old black and white engravings to more recent water colours, pencil drawings and photographs (black and white and colour).

**Cambie, R.C., Cooper, R.C.** 1991. *New Zealand's Economic Native Plants*. Oxford University Press. 234 pp.

A very wide range of uses for native plants is considered, mainly from a modern-day, and pakeha perspective. However there are interesting historic sections. The text covers garden uses and those for timber, tanning, fibres, paper-making, chemical products (including production of steroids, antibiotics and other medicinal materials), as well as food and beverages, fragrant oils and many others. Most of the plants discussed are angiosperms or gymnosperms, but other groups receive brief mention.

A most interesting aspect of the book is that it deals with all kinds of implications of the usage of plants including possibilities for economic development, political and social consequences, future directions that could be taken, or are necessary, and conservation. The chemistry of the plants also receives some coverage.

**Crowe, A.** 1990. *A Field Guide to Native Edible Plants*. Godwit, Auckland. 192 pp.

A comprehensive list, with illustrations, of the edible plants, including seaweeds and mushrooms. Includes poisonous species which must be avoided.

**Hinds, H.V., Reid, J.S.** 1957. *Forest Trees and Timbers of New Zealand*. Government Printer, Wellington (N.Z. Forest Service Bulletin No. 12). 211 pp. O.P.

A concise reference to the main timber tree species and timbers of New Zealand, native and exotic (the latter all conifers). Includes facts relevant to timber properties and quality, availability of the trees and some simplified distribution maps. The information is generally outdated.

**Moore, L.B.** 1966. *The Economic Importance of Seaweeds*. N.Z. D.S.I.R. Bulletin No 85. 40 pp. O.P.

Many aspects of the exploitation and use of these plants are examined and potentially useful species listed. Line drawings illustrate these.

**Walsh, R.S.** 1978. *Nectar and Pollen Sources of New Zealand*. National Beekeepers Association of New Zealand, Upper Hutt. O.P.

Lists the native and introduced plants that bees visit.

### DPB (DEFINITIONS FOR PUZZLED BOTANISTS)

**Endemic** – any species found naturally only in a defined area (which could be a small area, or a whole country; e.g. *Heliohebe lavaudiana* on Banks Peninsula; *Aristotelia serrata* in New Zealand). New Zealand has numerous endemic species and many endemic genera, but no endemic families (check the standard floras). The nearest thing to an endemic family here is Hectorellaceae which contains only *Hectorella caespitosa* – a high alpine cushion plant of the Southern Alps, and *Lyallia* of Kerguelen Islands.

**Indigenous** – any species that is native to a defined area, or a whole country, i.e. has not been introduced, deliberately or accidentally, by human agency. Most indigenous New Zealand species are also endemic but some are shared with other countries, e.g. *Leptospermum scoparium* with Australia, *Montia fontana* with many other parts of the world, in Northern and Southern Hemispheres.

Species which arrive in New Zealand naturally (i.e. without any form of human assistance), e.g. by floating in the sea, or the air, or through attachment to migratory birds, can be regarded as indigenous. The propagules of some orchids (tiny seeds) and ferns (tiny spores) are thought to have blown across the Tasman Sea, from Australia, quite recently. Probably there is a continual, slow accretion of species to the country by such means. However, foreign species arrive much more rapidly, associated in some way with human activities.

**Naturalised** – any species that was introduced deliberately, or accidentally and has subsequently increased of its own accord, forming large, self-sustaining populations. Adventive has a similar meaning. There is an implication that naturalised species are now permanent inhabitants of the country. Long distance and local spread of seeds or vegetative propagules of introduced species is often assisted by human actions (e.g. transport of soil or gravel or hay; as contaminants in seed mixes; on machinery such as bulldozers or boats; attached to, or in the guts of travelling stock; on human clothing or footwear). They are more locally spread, naturally, by wind, or birds, or water.