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## Name changes in the indigenous New Zealand Flora, 1960–1986 and Nomina Nova IV, 1983–1986\*

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**Abstract** Changes in the nomenclature of indigenous New Zealand angiosperms and gymnosperms since 1960 are listed, and commentary on some name changes is included.

Names of new taxa published here are: *Anaphalis keriensis* (Cunn.) C. Webb, *A. rupestris* C. Webb, *A. subrigida* (Colenso) C. Webb, *Brachyglottis kirkii* (Kirk) C. Webb, *B. kirkii* var. *angustior* (Allan) C. Webb, *B. turneri* (Cheeseman) C. Webb, *Chionochoa defracta* Connor, *C. lanea* Connor, *Convolvulus verecundus* Petrie subsp. *waitaha* W. Sykes, *Cortaderia turbaria* Connor, *Crasula hunua* A.P. Druce, *C. mataikona* A.P. Druce, *C. ruamahanga* A.P. Druce, *C. tetramera* (Toelken) A.P. Druce et W.R. Sykes, *Geniostoma rupestre* Forst. et Forst. f. var. *ligustrifolium* (Cunn.) Conn, *Gnaphalium polylepis* (D. Drury) C. Webb, *G. ruahanicum* (D. Drury) C. Webb, *Isolepis distigmata* (C.B. Clarke) Edgar, *Kunzea ericoides* (A. Rich.) J. Thompson var. *linearis* (Kirk) W. Harris, *K. ericoides* var. *microflora* (G. Simpson) W. Harris, *K. sinclairii* (Kirk) W. Harris, *Melicytus alpinus* (Kirk) Garnock-Jones, *M. angustifolius* (DC.) Garnock-Jones, *M. chathamicus* (F. Muell.) Garnock-Jones, *M. crassifolius* (Hook. f.) Garnock-Jones, *M. obovatus* (Kirk) Garnock-Jones, *Pachystegia minor*

(Cheeseman) Molloy, *P. rufa* Molloy, *Ranunculus altus* Garnock-Jones, *R. brevis* Garnock-Jones, *R. membranifolius* (Kirk) Garnock-Jones, *R. mirus* Garnock-Jones, *R. reflexus* Garnock-Jones, *R. scri-thalis* Garnock-Jones, *R. simulans* Garnock-Jones, *Rytidosperra australe* (Petrie) Connor et Edgar, *R. pumilum* (Kirk) Connor et Edgar, *Senecio glaucophyllus* Cheeseman subsp. *toa* C. Webb, *S. radiolatus* F. Muell. subsp. *antipodus* (Kirk) C. Webb, *Streblus banksii* (Cheeseman) C. Webb.

*Podocarpus cunninghamii*, attributed to Colenso, is not a correct name and should not be substituted for *Podocarpus hallii* Kirk.

**Keywords** New Zealand flora; new taxa; nomenclatural changes

### INTRODUCTION

The need for an updated account of nomenclatural changes that affect the New Zealand flora will always exist. Three parts attempting this have been published as *Nomina Nova Plantarum Novae-Zelandiae*. We have been asked for a consolidated account, and one set out relative to *Flora of New Zealand* Vols. I and II; we have been asked yet again to indicate authoritatively those names which must be used in New Zealand, or those which, should there be a choice, are to be preferred. No one has the authority to direct taxonomic choice. Here we report names published in accordance with the *International Code of Botanical Nomenclature*. Further, we describe realignment of genera in families, and include some new combinations which are necessary to allow an even approach in some genera.

We detect a resistance to taxonomic change and its nomenclatural consequence under unconvincing arguments for nomenclatural stability. We detect a demand for results from modern technology — SEM, gel electrophoresis, TLC, DNA sequencing — supporting and confirming observations from the older disciplines of morphology, cytology and anatomy. We detect an unwillingness

\*In appreciation of the outstanding contribution to the taxonomy of indigenous plants made by Lucy B. Moore MBE, D.Sc. (Cantuar), F.L.S., F.R.S.N.Z., (1906–1987), and of her influence on the development of botany in New Zealand.

For part I “*Nomina Nova Plantarum Novae-Zelandiae* ...” see Edgar, E. 1971 (*N.Z. J. Bot.* 9: 322–330).

For part II see Edgar, E.; Connor, H. E. 1978 (*N.Z. J. Bot.* 16: 103–118).

For part III see Edgar, E.; Connor, H. E. 1983 (*N.Z. J. Bot.* 21: 421–441).

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to accommodate the logical conclusions from such studies especially when they affect the status of names of long standing.

This consolidated version which contains all the nomenclatural decisions and taxa included in previous *Nomina Nova*, together with those for 1983–86, is arranged as in *Flora of New Zealand* Vol. I (Allan, H.H. 1961) and Vol. II (Moore, L.B. & Edgar, E. 1970); the grasses are arranged as in Clayton, W. D. & Renvoize, S. A. 1986 (*Genera Graminum: Grasses of the World. Kew Bull. Add. Ser. 13.* 389 pp.). Where recent treatments differ substantially from those in Allan and in Moore and Edgar the species therein are fully set out. Some of the citations have had to be corrected — this may involve dates, page numbers or authorities.

Of the introductory material presented in the three earlier *Nomina Nova* only the list of *Nomina Generica Conservanda* is repeated; and we include a section on orthographic changes to specific epithets used in the New Zealand flora contributed by P.J. Garnock-Jones.

In accordance with our earlier practice four kinds of names are listed:

- (i) names for taxa newly recognised at family level or below;
- (ii) names which are new combinations for taxa already recognised in the New Zealand flora;
- (iii) names which replace those which were inadmissible on nomenclatural grounds;
- (iv) names which have been revived.

Of these four types of name change only the third must be unequivocally accepted because of the obligation to conform with the rules in the *International Code of Botanical Nomenclature*. We restate, at the risk of appearing repetitive, that in all other cases there is no obligation to use a newly published name merely because it is new. One accepts a newly published name if one accepts the taxonomic conclusions on which it is based. One accepts a revived name if the taxonomic interpretation warrants it.

In Eagle, A. 1982 (*Eagle's Trees and Shrubs of New Zealand, 2nd series*) several names are revived. These include *Carmichaelia enysii* var. *orbiculata*, *Colensoa physaloides*, *Coprosma grandifolia*, *Hebe biggarii*, *H. carnosula*, *H. pimeleoides* vars *glauco-caerulea*, *minor*, and *rupestris*, *H. treadwellii*, *Helichrysum intermedium*, *H. lanceolatum*, *Hoheria ovata*, *Olearia cymbifolia*, *O. laxiflora*, *O. lineata*, *O. serpentina*, *Pimelea microphylla*, *P. urvilleana*, *Pittosporum pimeleoides* var. *maius*, *P. tenuifolium* var. *colensoi*, and *Pomaderris ericifolia*. In the same work the Australian names *Leucopogon suaveolens* and *Cyathodes dealbata* are applied to plants treated in Allan (op. cit.) as *Cyathodes colensoi* and *C. pumila* respectively.

Also in Eagle (op. cit.) are illustrations and short descriptions of entities labelled, for example, *Coprosma* sp. (v), *Coriaria* sp. (a), *Dracophyllum* sp. (a), *Hebe* sp. (t), *Olearia* sp. (a), *Pimelea* sp. (b). Only by comparison of details in the illustrations and descriptions can one ascertain their distinguishing features. Their inclusion in complete taxonomic treatments remains in abeyance; meanwhile they obscure the literature, promote regional differences and dissensions, create uncertainty, and risk disrespect for orthodox taxonomic revision.

As in the past we persist in passing no taxonomic judgements, but we include some useful background to some name changes. We caution from time to time, about inadvisable usages.

#### CATEGORIES

- (1) *New taxa* are those newly described here in this paper and are shown in **bold type**.
- (2) *New combinations* are transfers or changes in rank effected by us or by other botanists here in this paper and are shown in **bold type**.
- (3) *Additional taxa* are taxa new to the flora since 1961 but prior to this paper.
- (4) *New rank* indicates changes in rank, e.g., from subspecies to species, or the reverse, effected since publication of *Flora of New Zealand* volumes but previous to this paper.
- (5) *Transfers* are changes of taxa from one genus to another.
- (6) *Substitute names* are names replacing specific/variety names previously used.
- (7) *Reinstated names* are those previously published and restored to current usage.

The autonym, a name automatically established when a genus or species is subdivided, is included only when it applies in New Zealand, for example: *Epilobium brunnescens* (Cockayne) Raven et Engelhorn

subsp. *brunnescens*

subsp. *minutiflorum* (Cockayne) Raven et Engelhorn

Some autonyms do not apply in New Zealand and are therefore not listed, e.g., Toivonen in 1979 recognised New Zealand plants of *Carex lachenalii* Schk. as subsp. *parkeri* (Petrie) Toivonen. The autonym *C. lachenalii* subsp. *lachenalii* is a Northern Hemisphere name.

No authority is cited for autonyms.

#### Symbols and Abbreviations

≡ indicates a nomenclatural synonym, i.e., a different name based on the same type (homotypic).  
 = indicates a taxonomic synonym, i.e., a different name based on a different type (heterotypic).

Titles of periodicals are abbreviated according to Lawrence, G. H. M. et al. (eds) 1968 (*Botanico-*

*Periodicum-Huntianum*), monographs according to Stafleu, F.A. & Cowen, R.S. 1976–1985 (*Taxonomic Literature* ed. 2) and names of authors according to *Draft Index of Author Abbreviations compiled at the Herbarium Royal Botanic Gardens, Kew*, 1980; there are a few exceptions, e.g., *T.N.Z.I.* and *T.R.S.N.Z.* for the Transactions of the New Zealand Institute and of the Royal Society of New Zealand (as in volumes I, II and III of *Flora of New Zealand*), and J.W. Dawson for John Wyndham Dawson. No abbreviation is given for John Buchanan of Otago (1819–1898) in the *Kew Draft Index*; we refer to him as Buchanan to avoid confusion with John Buchanan (J. Buch.) of Natal (1855–1896).

## NOMENCLATURE

### NOMINA GENERICA CONSERVANDA

Conserved generic names are listed in the Appendix to the *International Code of Botanical Nomenclature*; the number that applies to the indigenous New Zealand flora is 58 of a total of c. 450 estimated generic names in use here for gymnosperms and angiosperms; these conserved names are set out below. The names against which these are conserved are immaterial. The list is never static. The Committee for Spermatophyta of the International Association of Plant Taxonomists, has recently published decisions on three proposals (*Taxon* 33: 297–301. 1984; *Ibid.* 36: 75. 1987).

#### 1 *Cordyline* Comm. ex R. Br.

The committee recommended unanimously that the name *Cordyline* be attributed to Commerson ex R. Brown as Jussieu's publication of *Cordyline* is invalid. The type of the genus is *C. cannifolia* R. Br.

#### 2 *Kunzea* Reichb.

Toelken, H.R. 1981 (*Taxon* 30: 350–351, and 828) proposed the conservation of *Kunzea* Reichb. over *Tillosporum* Salisb. The proposal was unanimously accepted by the Committee. Conservation of *Kunzea* affects the correct placing of the taxon known in New Zealand as *Leptospermum ericoides* A. Rich. and validates the then provisional combination *Kunzea ericoides* (A. Rich.) J. Thompson 1983 (*Telopea* 2: 379).

#### 3 *Trisetum* Pers.

Veldkamp, J. F. 1983 (*Taxon* 32: 487–488) proposed the conservation of *Trisetum* based on *T. pratense* Pers. *nom. illeg.* — the type proposed for conservation. *Acrospelion* Besser, a name never used in agrostology would be avoided by the acceptance of Veldkamp's proposal. The Committee ruled that there was no need for conservation and that Hitchcock's choice of *Trisetum*

*flavescens* (L.) P. Beauv. as type of the genus should stand and the current use of *Trisetum* be maintained.

## New Zealand Angiosperms and Gymnosperms

### Nomina Generica Conservanda

#### Gymnosperms

*Agathis*  
*Phyllocladus*  
*Podocarpus*

#### Dicotyledons

*Aristolelia*  
*Calystegia*  
*Canavalia*  
*Cassinia*  
*Celmisia*  
*Clianthus*  
*Donatia*  
*Elatostema*  
*Epacris*  
*Exocarpos*  
*Glossostigma*  
*Helichrysum*  
*Hibiscus*  
*Knightia*  
*Kunzea*  
*Laurelia*  
*Leptospermum*  
*Leucopogon*  
*Litsea*  
*Logania*  
*Muehlenbeckia*  
*Nertera*  
*Nothofagus*  
*Olearia*  
*Parsonsia*  
*Pernettya*  
*Pimelea*  
*Pittosporum*  
*Planchonella*  
*Scaevola*  
*Schefflera*  
*Spergularia*  
*Suaeda*  
*Syzygium*  
*Taraxacum*  
*Wahlenbergia*  
*Weinmannia*

#### Monocotyledons

*Astelia*  
*Bulbophyllum*  
*Cordyline*  
*Cortaderia*  
*Dendrobium*  
*Fimbristylis*

*Hierochloa*  
*Leptocarpus*  
*Libertia*  
*Luzula*  
*Luzuriaga*  
*Oplismenus*  
*Pterostylis*  
*Puccinellia*  
*Schoenoplectus*  
*Spiranthes*  
*Wolffia*  
*Zoysia*

### Nomen Rejiciendum Propositum

Garnock-Jones, P.J. 1983 (*Taxon* 32: 656–658) proposed rejection in terms of Art. 69 ICBN, of the name *Epilobium junceum* Sprengel in Biehler [*Pl. Nov. Herb. Spreng.* 17 (1807)] because that name has “.. been widely and persistently used for a taxon not including its type” — *E. billardioreanum* subsp. *cinereum* (*E. cinereum*). The decision rests with the Committee for Spermatophyta.

### ORTHOGRAPHIC CHANGES FOR NAMES OF NEW ZEALAND VASCULAR PLANTS

by

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The orthography (spelling) of botanical names is an important aspect of nomenclature because of the principle of priority among homonyms. The current *International Code of Botanical Nomenclature* (Voss, E.G. et al., 1983, herein referred to as ICBN), articles 73–75, sets out rules governing the spelling of names and the types of changes that are *required* to be made. Such changes are made without alteration of the author citation. In New Zealand, a small number of species epithets have been incorrectly constructed. Here I provide correct spellings for these, and explanations. Only names accepted in *Flora of New Zealand* Vols I, II & III or in *Nomina Nova* I, II & III have been considered. Edgar, E. 1973 (*N.Z. J. Bot.* 11: 171–172) corrected the spelling of the epithets in New Zealand *Pseudopanax*, which is masculine in gender.

The mis-spellings mostly fall into three classes, incorrect compound formation, epithets incorrectly derived from personal names, and incorrect hyphenation.

### Incorrect Compound Formation

True compounds are formed from two words (nouns or adjectives). The first is reduced to a stem and joined to the second with the insertion of a connecting vowel (*i* for Latin words, *o* for Greek

words), thus *albiflorus* from *albus* (white) and *flos* (flower). Pseudocompounds are also admissible in some cases; these are discussed by Nicolson, D.H. & Brooks, R.A. 1974 (*Taxon* 23: 163–177) and by Stearn, W.T. 1983 (*Botanical Latin*), and some examples are listed below under incorrect hyphenation.

The current rules state that:

“The use of an incorrect compounding form in an epithet is treated as an orthographic error to be corrected” (ICBN Art. 73.8). In the New Zealand flora, most mis-spellings affected by Art. 73 involve compounds formed from a generic name and a plant organ, especially a generic name ending in *-ia* or *-a*. Here the rules dictate that the *a* be deleted giving the stem of the word, then a connecting vowel is added between this stem and the second word of the compound, e.g., *Nertera dichondrifolia* (see below).

New Zealand examples to be changed are:

*Ackama rosifolia* (not *rosaefolia*). This spelling was corrected by Hoogland, R.D. 1979 (*Blumea* 25: 489) at the time of making a new combination in *Caldcluvia* for *A. rosifolia*.

*Epilobium chlorifolium* (not *chloraefolium*), *E. nummulariifolium* (not *nummularifolium*). The spelling of these two species of *Epilobium* was corrected by Raven, P.H. & Raven, T.E. 1976 (*N.Z. DSIR Bull.* 216).

*Celmisia hieraciifolia* (not *hieracifolia*).

*Cheesemaniania latisiliqua* (not *latesiliqua*). The first part of the compound, *latus*, becomes *lat-* as a stem and, since both *latus* and *siliqua* are Latin, the correct connecting vowel is *i*.

*Nertera dichondrifolia* (not *dichondraefolia*). Although the first part of the compound is derived from the Greek *chondros* (a grain), the name *Dichondra* is a scientific name and is thus to be treated as Latin (ICBN Principle V) with *i* as the connecting vowel.

*Olearia avicenniifolia* (not *avicenniaefolia*).

*O. nummulariifolia* (not *nummularifolia*).

*Scandiania rosifolia* (not *rosaefolia*). Corrected by Webb, C.J. 1984 (in Grant, W.F. (ed.) *Plant Biosystematics*, p. 256).

*Clematis australis* var. *rutifolia* and *Pleurosorus rutifolius*, although incorrectly compounded in the text of *Flora of New Zealand* Vol. I (as *rutaefolia*, *rutaefolius*) were corrected in the supplementary notes.

### Incorrect Terminations

ICBN Art. 73.10 states “the wrong use of the terminations... mentioned in Rec. 73C.1 is treated as an orthographic error to be corrected.” ICBN Rec. 73C.1 governs the formation of substantive and adjectival epithets from personal names. The common forms are summarised in Table 1. There is a

**Table 1** Formation of epithets from personal names

Personal name ending in:	Substantive epithet commemorating:		Adjectival epithet, agreeing with generic name:		
	a male	a female*	masculine	feminine	neuter
vowel					
(except -a)	-i	-ae	-anus	-ana	-anum
-a	-e	-e	-nus	-na	-num
consonant					
(except -er)	-ii	-iae	-ianus	-iana	-ianum
-er	-i	-ae	-ianus	-iana	-ianum

\*plural forms not dealt with here, see ICBN Rec. 73C.

frequent error in New Zealand examples involving personal names ending in *e* (e.g., de Labillardière, Cockayne, Petrie).

Labillardière: *Epilobium billardiereanum* (not *billardierianum*), *Grammitis billardierei*, *Lycopodium billardierei*, *Theleophyton billardierei* (not *billardieri*). See ICBN Art. 73.7, Ex. 10.

Cockayne (adjectival epithets are to be corrected): *Carex cockayneana*, *Celmisia cockayneana*, *Epilobium cockayneanum*, *Euphrasia cockayneana*, *Hebe cockayneana*, *Ourisia cockayneana* (not *cockayniana*, -um). The substantive epithet formed from Cockayne, *cockaynei*, is correct.

Petrie (adjectival epithets are to be corrected): *Luzula crinita* var. *petrieana* (not *petriana*). The substantive epithet formed from Petrie, *petriei*, is correct.

In a few examples in the New Zealand flora an incorrect form of termination itself has been used, e.g., where epithets formed from names with -or endings should be formed differently from those with -er endings, and epithets formed from the names of women take an -ae termination (-iae after a consonant except -er):

*Aciphylla hectorii* (not *hectori*), similarly *Brachyglottis hectorii*, *Carex hectorii*, *Celmisia hectorii*, *Epilobium hectorii*, *Hebe hectorii*, *Olearia hectorii*, and *Raoulia hectorii*,

*Carex edgariae* (not *edgarae*).

*Colobanthus masoniae*, similarly *Hebe pauciramosa* var. *masoniae* (not *masonae*).

*Dactylanthus taylorii* (not *taylori*).

*Epilobium margaretiae* (not *margaretae*, see Raven, P.H. & Raven, T.E., 1976 [*N.Z. DSIR Bull.* 216]).

*Gingidia baxterae* (not *baxteri*). This error was corrected and explained in Nomina Nova III.

In addition, *Pachycladon* is masculine: *P. crenatus* (not *crenata*).

The use of -ianum following a personal name ending in -er (e.g., *hookerianum*) is again considered correct following the 13th International Botanical Congress at Sydney in 1981. Because New

Zealand botanists had only rarely adopted the now incorrect -anum form (e.g., *hookeranum*), it is not necessary to list all the examples here.

In the case of Solander, substantive epithets can be formed by treating the name as latinised (e.g., *Nothofagus solandri*), or modern (e.g., *Geranium solanderi*) (ICBN Rec. 73C.2). Both are correct, and the form originally published is to be followed in each particular combination.

The epithet *stewartiae* in *Brachyglottis stewartiae* and *Ranunculus depressus* var. *stewartiae* is derived from Stewart Island. However it does not seem necessary to correct this termination as ICBN Rec. 73D.1 recommends that "An epithet derived from a geographical name is preferably an adjective and usually takes the termination -ensis, -(a)nus, -inus, or -icus." There is no obligation to change the original spelling.

### Incorrect Hyphenation

"The use of a hyphen after a compounding form in an epithet is treated as an orthographic error to be corrected" (ICBN Art. 73.9). However the notes point out that this does not apply to names of genera or higher ranks, nor to hyphens used after words which are not compounding forms, e.g., *novae-zelandiae*, *scott-thomsonii*. The Code does not treat the omission of a hyphen in *novae-zelandiae* (i.e., *novaezelandiae*) as an error which must be corrected. Thus original spelling is to be retained (Art. 73.1).

New Zealand examples to be changed are:

*Convolvulus fractosaxosa* (not *fracto-saxosa*)

*Epilobium rubromarginatum* (not *rubro-marginatum*)

*Myosotis albosericea* (not *albo-sericea*)

*Parahebe planopetiolata* (not *plano-petiolata*)

*Pimelea pseudolyallii* (not *pseudo-lyallii*)

*P. sericeovillosa* (not *sericeo-villosa*)

*Pseudognaphalium luteoalbum* (not *luteo-album*)

*Raoulia albosericea* (not *albo-sericea*)

*R. apicinigra* (not *apice-nigra*)

Most of the names in the above list have *o* as a connecting vowel even though they are mainly Latin in origin. These are pseudocompounds apparently in ablative case, as discussed in detail by Nicolson & Brooks (*op. cit.* p. 174) and Stearn (*op. cit.* p. 287). Although this formation of pseudocompounds is not recommended they do not require correction. The hyphen was probably used to indicate their irregular nature.

#### “Novae-zelandiae”

A frequent source of confusion arises from the different spellings of the epithet derived from the country New Zealand, e.g., *Acaena novae-zelandiae*, *Hydrocotyle novae-zeelandiae*, *Lycopodium novae-zelandicum*, and *Planchonella novo-zelandica*. ICBN Rec. 73D implies no obligation to change such spellings. Therefore Art. 73.1 “the original spelling of a name or epithet is to be retained, except for the correction of typographic or orthographic errors” applies. Thus:

*Hydrocotyle novae-zeelandiae* (as originally spelt by De Candolle), not *H. novae-zelandiae* (as spelt by Allan, *Flora of New Zealand*, Vol. I) (Hj. Eichler, pers. comm.).

ICBN Rec. 73E is a guideline for spelling of new epithets based on geographic names: “a new epithet should be written in conformity with the original spelling of the word or words from which it is derived and in accordance with the accepted usage of Latin and latinization.” This recommendation sanctions use of “novae-zelandiae” for new epithets.

### PTERIDOPHYTA

In Nomina Nova I, II, III, and here, ferns and fern allies are intentionally excluded. We are pleased to report a synonymic checklist of the names of New Zealand pteridophytes, by Brownsey, P.J.; Given, D.R.; Lovis, J.D. 1985 (*N.Z. J. Bot.* 23: 431–489). The net effect is that the nomenclature of native plants included in Volumes I and II of *Flora of New Zealand* has been brought up to date.

### GYMNOSPERMAE

Of the three families in New Zealand, Araucariaceae and Cupressaceae have remained unchanged in treatment since Allan, H.H. 1961 (*Fl. N.Z.* 1: 113–115); Podocarpaceae have received most attention.

#### PODOCARPACEAE

De Laubenfels, D.J. 1969 (*J. Arnold Arbor.* 50: 274–369); 1972 (*Fl. N. Caléd. et Dépend.* No. 4 Gymnospermes. Paris, Mus. Nat. Hist. Nat. pp. 15–79), and Quinn, C.J. 1982 (*Austral. J. Bot.* 30: 311–

320) have transformed the generic taxonomy of the 17 species treated in Allan, H.H. 1961 (*Fl. N.Z.* 1: 104–113). Eight genera replace the three in Allan, but the number of species is unchanged (Table 2). Chromosome numbers are in Hair, J.B. & Beuzenberg, E.J. 1958 (*Nature* 181: 1584–1586).

*Dacrycarpus* and *Prumnopitys* are segregated from *Podocarpus*; *Phyllocladus* stands as before; *Lepidothamnus* now includes Pacific species with Chilean species; *Halocarpus*, the sole endemic, and *Lagarostrobos* are new genera segregated from *Dacrydium* by Quinn (*op. cit.*).

See Markham, K.R.; Webby, R.F.; Whitehouse, L.A.; Molloy, B.P.J.; Vilain, C.; Mues, R. 1985 (*N.Z. J. Bot.* 23: 1–13) for studies on flavonoid glycosides in *Podocarpus* s.l. and their support for de Laubenfels’s recognition of the genera *Podocarpus* s.s., *Prumnopitys*, and *Dacrycarpus*.

A key to the New Zealand genera is presented here (Table 3). It is abbreviated from Quinn’s key and is unchanged except for a slight rearrangement of the original couplets 8 and 9.

PODOCARPUS L’Hér. ex Pers. emend. Laubenf. *nom. cons.*

The genus *Podocarpus* as emended by de Laubenfels, D.J. 1969 (*J. Arnold Arbor.* 50: 274–369) is characterised by:

- (i) female cones on naked peduncles with the cone bracts swelling to form a fleshy, succulent red receptacle;
- (ii) ovules solitary or paired;
- (iii) leaves with hypodermis and 1–5 resin ducts.

Four species are recognised: *P. totara*, *P. hallii* Kirk, *P. nivalis* Hook., *P. acutifolius* Kirk. All are included in sect. *Australis* Laubenf. in his taxonomic revision of *Podocarpus*, de Laubenfels, D.J. 1985 (*Blumea* 30: 251–278).

Additional taxa:

Sect. *Australis* Laubenf. *Blumea* 30: 255 (1985).

*P. totara* D. Don

var. *totara*

var. *waihoensis* Wardle *N.Z. J. Bot.* 10: 201 (1972); of hybrid origin from *P. acutifolius* and *P. totara*.

de Laubenfels (*op. cit.* 1985) listed two specific names previously unused in New Zealand: (i) *P. cunninghamii* Colenso for *P. hallii*; (ii) *P. lawrencei* Hook. f. for *P. acutifolius*. *P. lawrencei* is a Tasmanian taxon and no significant reasons are advanced for the inclusion of *P. acutifolius* of New Zealand within it.

Is *P. cunninghamii* the correct name for *P. hallii*? In terms of ICBN Article 34.1 “A name is not validly published (a) when it is not accepted by the author in the original publication; (b) when it is merely proposed in anticipation of the future

**Table 2** Names in New Zealand Podocarpaceae

After Allan 1961		After de Laubenfels, Quinn, and Keng	
<i>Podocarpus</i>	<i>nivalis</i>	<i>Podocarpus</i>	<i>nivalis</i>
	<i>totara</i>		<i>totara</i>
	<i>hallii</i>		<i>cunninghamii</i> *
	<i>acutifolius</i>		<i>lawrencei</i> *
	<i>dacrydioides</i>		<i>dacrydioides</i>
	<i>spicatus</i>	<i>Prumnopitys</i>	<i>taxifolia</i>
	<i>ferrugineus</i>		<i>ferruginea</i>
<i>Dacrydium</i>	<i>cupressinum</i>	<i>Dacrydium</i>	<i>cupressinum</i>
	<i>bidwillii</i>	<i>Halocarpus</i>	<i>bidwillii</i>
	<i>biforme</i>		<i>biformis</i>
	<i>kirkii</i>		<i>kirkii</i>
	<i>colensoi</i>	<i>Lagarostrobos</i>	<i>colensoi</i>
	<i>intermedium</i>	<i>Lepidothamnus</i>	<i>intermedium</i>
	<i>laxifolium</i>		<i>laxifolius</i>
<i>Phyllocladus</i>	<i>alpinus</i>	<i>Phyllocladus</i>	<i>aspleniifolius</i> var. <i>alpinus</i>
	<i>trichomanoides</i>		<i>trichomanoides</i>
	<i>glaucus</i>		<i>glaucus</i>

\* see commentary p. 120

acceptance of the group concerned, or of a particular circumscription, position, or rank of the group (so-called provisional name); (c) when it is merely mentioned incidentally; (d) when it is merely cited as a synonym; (e) by the mere mention of the subordinate taxa included in the taxon concerned”.

Colenso in his discursive reminiscences of his journeys in the Ruahine Mountains (*In Memoriam*, 1884) used the expression *Podocarpus cunninghamii* (on p.58) about a podocarp with bark resembling a fuchsia, collected in 1847. Specimens are WELT 24290, *Colenso 1631*, labelled *Podocarpus cunninghamiana*, duplicate at K. It is our view that Colenso (op. cit.) was simply recounting all his botanical discoveries made during his two journeys (1845 and 1847); most of his finds were described by J.D. Hooker. Where Colenso disagreed with Hooker's taxonomic treatment he was at pains to make his own views clear and added new morphological data. His reminiscent account of that podocarp would encompass, in the light of modern knowledge, plants now known as *Podocarpus hallii*. Was it his intention to introduce the name in 1884? In our view it was not. All the discussion is in the past tense as a series of historical events relating to Friday, 26 February, 1847, “I discovered ... and therefore named it *P. cunninghamii* ... we resumed our journey at 2 pm ...”. To attribute, as de Laubenfels has, the 1847 account of discovery, labelling and recording as an action contemporaneous with the publication of *In Memoriam* in 1884 is incorrect, and the conclusion derived from it unfounded.

The phrase “I therefore named it ...”, even though Colenso did not formally describe *Podocarpus cunninghamii* at that time, i.e. 1847, has no more significance with regard to *P. cunninghamii* than to five others for which he used the same phrase: *Astelia trinerva* (p. 12), *Stereocaulon botryoides* (p. 26), *Dicksonia unistipa* (p. 36), *Gleichenia hookeriana* and *Pittosporum viridis* (p. 37) — none is a correct name, yet all are accompanied by descriptive phrases of varying detail. Colenso when describing new taxa employed the discursive 25-line form. Everything in *In Memoriam* is internally inconsistent with his botanically accurate style.

Colenso had no intention of formally publishing the name — he was merely setting down the name he gave to the plant at the time he collected it. *Podocarpus cunninghamii* is not a correct name.

**DACRYCARPUS** (Endl.) Laubenf. *J. Arnold Arbor.* 50: 315 (1969) based on *Podocarpus* sect. *Dacrycarpus* Endl. *Syn. Conif.* 221 (1847).

Type species: *D. imbricatus* (Blume) Laubenf.

*Dacrycarpus* is characterised by:

- (i) female cone fused to one side of the carpidium and borne subterminally on a warty and fleshy receptacle;
- (ii) juvenile leaves bilaterally flattened, falcate and distichous.

One species in New Zealand.

Transfer:

*D. dacrydioides* (A. Rich.) Laubenf. op. cit. 337 = *Podocarpus dacrydioides* A. Rich. *Essai Fl. N.Z.* 358, t. 39 (1832).



PRUMNOPITYS Philippi *Linnaea* 30 : 731 (1861)

Type species: *P. elegans* Philippi.

See de Laubenfels, D.J. 1972 (*Fl. N. Caléd. et Dépend.* No. 4 Gymnospermes. Paris, Mus. Nat. Hist. Nat. pp. 55–59); 1978 (*Blumea* 24 : 189–190).

*Prumnopitys* is distinguished from *Podocarpus* by:

- (i) female cones borne on scaly peduncles;
- (ii) fruit drupaceous and lacking a fleshy receptacle;
- (iii) leaves lacking hypodermis and with 1 resin duct below vein.

To complete the redistribution of species formerly in *Podocarpus*, two new names were necessary in *Prumnopitys*. Sect. *Stachycarpus* of *Podocarpus* was promoted to generic rank by van Tieghem, Ph. 1891 (*Bull. Soc. Bot. France* 38 : 162, 163) who made combinations in *Stachycarpus* for the two New Zealand species (*vide infra*). de Laubenfels, D.J. 1972 (op. cit.) regarded *Stachycarpus* as a later synonym of *Prumnopitys* Philippi.

Transfers:

*P. ferruginea* (D. Don) Laubenf. *Blumea* 24 : 190 (1978) = *Podocarpus ferrugineus* D. Don in Lambert *Descr. Pinus* ed. 3, 2 (App.) (1832) = *Stachycarpus ferrugineus* (D. Don) Tieghem *Bull. Soc. Bot. France* 38 : 173 (1891).

*P. taxifolia* (D. Don) Laubenf. op. cit. 190 (1978) = *Dacrydium taxifolium* Sol. ex D. Don in Lambert *Descr. Pinus* ed. 1, 2 : 25 (1824) = *Podocarpus spicatus* R. Br. ex Mirbel *Mém. Mus. Hist. Nat.* 13 : 75 (1825) = *Stachycarpus spicatus* (Mirbel) Tieghem *Bull. Soc. Bot. France* 38 : 173 (1891) = *Prumnopitys spicata* (Mirbel) Masters *Hand-List Conif. Roy. Gard. Kew* 25 (1896). The epithet *taxifolius* was unavailable in *Podocarpus* because of *P. taxifolius* Kunth (1817); in *Prumnopitys* it becomes available and must be used.

DACRYDIUM Lambert emend. Quinn

*Dacrydium* as most recently emended by Quinn, C.J. 1982 (*Austral. J. Bot.* 30 : 311–320) is characterised by:

- (i) female cones terminal, consisting of several leaf-like bracts of which one only is usually fertile; fertile bract bearing a single ovule in a median position on the adaxial surface and inclined so that it is partly inverted when first formed;
- (ii) adult leaves with vascular fibres, strongly ribbed accessory cells and wreath cells, and undulate side walls to epidermal cells and wreath cells;
- (iii) distinctive pollen morphology of poorly developed sacchi of rough outline and overall coarsely tuberculate-rugulate sculpturing.

*D. cupressinum* Lambert, the type species for the

genus, is the sole New Zealand species among 16 recognised in *Dacrydium*.

HALOCARPUS Quinn *Austral. J. Bot.* 30 : 317 (1982)

Type species: *H. bidwillii* (Kirk) Quinn.

This genus is characterised by:

- (i) seed being inverted at maturity and invested by the epimatium without adnation;
- (ii) the fertile scales never becoming swollen or fleshy but the seed becoming surrounded by a white aril-like collar produced from the epimatium at the micropylar end;
- (iii) flat, linear juvenile foliage;
- (iv) sterile cone apex.

Transfers:

*H. bidwillii* (Kirk) Quinn op. cit. 317 = *Dacrydium bidwillii* Hook. f. ex Kirk *T.N.Z.I.* 10 : 388 (1878).

*H. bififormis* (Hook.) Quinn op. cit. 318 = *Podocarpus bififormis* Hook. *Icon. Pl.* t. 544 (1843) = *Dacrydium bififorme* (Hook.) Pilger *Pflanzenreich* 18 : 45 (1903).

*H. kirkii* (Parl.) Quinn op. cit. 318 = *Dacrydium kirkii* F. Muell. ex Parl. in DC. *Prodr.* 16 (2) : 495 (1868).

LAGAROSTROBOS Quinn *Austral. J. Bot.* 30 : 316 (1982)

Type species: *L. franklinii* (Hook. f.) Quinn op. cit. 316 = *Dacrydium franklinii* Hook. f. *London J. Bot.* 4 : 152, t. 6 (1845).

This genus is characterised by:

- (i) lax female strobili which are situated on the decurved tips of branches and which consist of 5–10, spoon-shaped, spreading fertile bracts separated by distinct internodes;
- (ii) phloem fibres present and 1 (rarely 2) fenestriiform cross-field pits in secondary xylem;
- (iii) resin ducts in adult leaves.

Transfer:

*L. colensoi* (Hook.) Quinn op. cit. 317 = *Dacrydium colensoi* Hook. *Icon. Pl.* t. 548 (1843).

LEPIDOTHAMNUS Philippi *Linnaea* 30 : 730 (1861)

Type species: *L. fonkii* Philippi.

This genus is characterised by:

- (i) female cones with 3–5 bracts with elongated bases, 1–2 of these are fertile, with an axillary erect ovule which remains so until maturity;
- (ii) presence of a large number of cupressoid cross-field pits; and
- (iii) absence of resin ducts in the leaves.

Transfers:

*L. intermedius* (Kirk) Quinn *Austral. J. Bot.* 30 : 316 (1982) = *Dacrydium intermedium* Kirk *T.N.Z.I.* 10 : 386, t. 20 (1878).

*L. laxifolius* (Hook. f.) Quinn op. cit. 316 ≡ *Dacrydium laxifolium* Hook. f. *London J. Bot.* 4: 143 (1845).

PHYLLOCLADUS Rich. ex Mirbel *nom. cons.*  
Keng, H. 1978 (*J. Arnold Arbor.* 59: 249–273) revised the genus. *Phyllocladus trichomanoides* and *P. glaucus* are retained; *P. alpinus* is reduced to varietal status in *P. aspleniifolius* of Tasmania but is endemic here.

New rank:

*P. aspleniifolius* (Labill.) Hook. f.  
var. *alpinus* (Hook. f.) H. Keng *J. Arnold Arbor.* 59: 263 (1978) ≡ *P. alpinus* Hook. f. *Fl. N.Z.* 1: 235, t. 53 (1853).

See Wardle, P. 1969 (*N.Z. J. Bot.* 7: 76–95) for discussion on lowland and timberline ecotypes in *P. alpinus*.

Keng, H. 1973 (*Taiwania* 18: 142–145) erected

the family Phyllocladaceae in the suborder Taxineae with *Phyllocladus* Mirbel the sole member. *Phyllocladus* had been included in the subfamily Phyllocladoideae Pilger, first in the Taxaceae and later in the Podocarpaceae; Allan, H.H. 1961 (*Fl. N.Z.* 1: 112–113) placed *Phyllocladus* in the Podocarpaceae.

Quinn, C.J. 1982 (*Austral. J. Bot.* 30: 311–320) treated *Phyllocladus* as a member of the Podocarpaceae, as is traditional. Quinn, C.J. 1986 (*N.Z. J. Bot.* 24: 575–579) also recorded the presence of a 3-tiered proembryo with binucleate E cells in species of *Phyllocladus*. This feature occurs in many other genera of Podocarpaceae but has not been recorded from outside it. Quinn concluded that this was a strong argument for the retention of *Phyllocladus* in the Podocarpaceae.

For the presence and structure of the characteristic flavonoid phylloflavan see Foo, L.Y.; Hrstich,

Table 3 KEY TO NEW ZEALAND GENERA IN THE PODOCARPACEAE (abbreviated but otherwise unchanged from Quinn 1982)

1	Adult leaves absent or reduced to non-photosynthetic scales; ultimate branchlets flat and leaf-like. Seeds erect and surrounded at the base by a symmetrical aril when mature .....	<b>Phyllocladus</b>	2
	Adult leaves not suppressed, ultimate branchlets not flattened and leaf-like .		
2	Adult leaves scale-like and imbricate or awl-like; female cones terminal on branchlets bearing ordinary leaves .....		3
	Adult leaves not as above, distinctly flattened in cross section, linear to ovate and sometimes falcate; female cones on short lateral branchlets that are either leafless or bear leaves of reduced size .....		7
3	Seeds erect or almost so at maturity; the epimatium (when present) forming an asymmetrical sheath around the base and no more than half the height of the seed .....		4
	Seeds inverted at maturity, the micropyle adjacent to the point of attachment; the epimatium completely investing the seed to form a carpidium .....		6
4	Bracts of immature female cone lax and spreading, separated by distinct internodes, the bracts remaining fleshy at maturity but not becoming brightly coloured; juvenile leaves distichous .....	<b>Lagarostrobos</b>	
	Bracts of immature female cone closely imbricate and often becoming succulent and red, orange, or white at maturity; juvenile leaves spreading radially ...		5
5	Seeds erect, not compressed or keeled, circular in cross section; micropyle elongated and hooked; resin ducts absent from the leaves .	<b>Lepidothamnus</b>	
	Seeds usually oblique to the cone axis, compressed and laterally keeled; micropyle short and blunt; resin ducts present in the leaves .....	<b>Dacrydium</b>	
6	Female cone bract fused to one side of carpidium and borne subterminally on a warty and fleshy receptacle; juvenile leaves bilaterally flattened, falcate and distichous .....	<b>Dacrycarpus</b>	
	Female cone bract free of carpidium; carpidium compressed, striated on both upper and lower surfaces, usually seated on fleshy, aril-like collar at maturity; juvenile leaves flattened, linear, not distichous .....	<b>Halocarpus</b>	
7	Leaves without hypodermis and containing a single resin duct below the vein; female cone borne on a scaly peduncle; no fleshy receptacle developed .....	<b>Prumnopitys</b>	
	Leaves with hypodermis and containing 1–5 resin ducts; female cone borne on a naked peduncle; cone bracts swelling to form a fleshy receptacle .....	<b>Podocarpus</b>	

L.; Vilain, C. 1985 (*Phytochemistry* 24 : 1495–1498); see also Markham, K.R.; Vilain, C.; Molloy, B.P.J. 1985 (*Ibid.* 24 : 2607–2609).

New rank:

PHYLLOCLADACEAE (Pilger) H. Keng *Taiwania* 18 : 142 (1973) = Taxaceae subfam. Phyllocladoideae Pilger *Pflanzenreich* 18 : 38 (1903) = Podocarpaceae subfam. Phyllocladoideae Pilger *Bot. Jahrb.* 54 : 33 (1916).

## ARAUCARIACEAE

AGATHIS Salisb. *nom. cons.*

Allan, H.H. 1961 (*Fl. N.Z.* 1 : 115) attributed the name for the New Zealand kauri, *Agathis australis* to R.A. Salisbury but this was corrected by L.B. Moore in Moore, L.B. & Edgar, E. 1970 (*Fl. N.Z.* 2 : 329) to *A. australis* Lindley in Loudon *Encycl. Pl.* 802 (1829). However, the kauri was first described as *Dammara australis* by D. Don in Lambert *Descr. Pinus* 2: pl. 6 (1824). There is no change in the circumscription of the species and Ecroyd, C.E. 1982 (*N.Z. J. Bot.* 20 : 17–36) correctly gave the citation as: *A. australis* (D. Don) Lindley in Loudon.

## DICOTYLEDONES

### FAMILIES AND HIGHER RANKS

Four major systems of angiosperm classification were proposed during 1980–1982:

- 1 TAKHTAJAN, A. 1980, Outline of the classification of flowering plants (Magnoliophyta) (*Bot. Rev.* 46 : 225–359);
- 2 CRONQUIST, A. 1981, *An integrated system of classification of flowering plants* Columbia University Press;
- 3 THORNE, R.F. 1981, Phytochemistry and angiosperm phylogeny: a summary statement, pp. 233–295, *In*: Young, D.A. & Seigler, D.S. (Eds) *Phytochemistry and angiosperm phylogeny* New York, Praeger;
- 4 DAHLGREN, R.M.T.; ROSENDAL-JENSEN, S.; NEILSEN, B.J. 1981, A revised classification of the angiosperms with comments on correlation between chemical and other characters, pp. 149–204, *In*: Young, D.A. & Seigler, D.S. (Eds) *op. cit.*

All of these systems are outlined and indexed by Bedell, H.G. & Reveal, J.L. 1982 (*Phytologia* 51 : 65–156). The effect of each on the classification of Australian plants had been subjected to a comparative analysis by Kanis, A. 1981 (*Fl. Austral.* 1 : 77–111).

The placement of genera of New Zealand dicotyledons has been affected, since the publication of

*Flora of New Zealand* Vol. I (Allan, 1961), by the description or revival of eight families: Alseuosmiaceae Airy Shaw (1965); Donatiaceae Dostál (1957); Griselinaceae Takht. (1970); Gunneraceae Endl. (1837); Hectorellaceae Philipson et Skipw. (1961); Menyanthaceae Dumort. (1829); Salicorniaceae J. Agardh (1858); and Viscaceae Miers (1802). Of these Thorne (*op. cit.*) recognises only the Gunneraceae, Menyanthaceae, and Viscaceae at family rank, but the Alseuosmiaceae, Donatiaceae, Gunneraceae, and Hectorellaceae are accepted by the other three authors, except that Dahlgren retains *Donatia* in the Stylidiaceae. The revived family Salicorniaceae and the new family Griselinaceae have yet to be taken up by other authors.

Also of interest for family classification of New Zealand dicotyledons is that Hutchinson, J. 1973 (*The families of flowering plants* ed. 3, p. 308) included the Elaeocarpaceae within the Tiliaceae though he had recognised it as a distinct family in previous editions. However, all the four classifications discussed above accept the Elaeocarpaceae as a separate family.

Also for the Southern Hemisphere genus *Nothofagus*, customarily placed in Fagaceae, Jones, J.H. 1986 (*Ann. Missouri Bot. Gard.* 73 : 228–275) supports the concept of family Nothofagaceae Kuprianova.

## WINTERACEAE

Vink, W. 1970 (*Blumea* 18 : 225–354) accepted the current treatment where three indigenous species are recognised in *Pseudowintera*; he lectotyped *P. axillaris* and *P. colorata*.

## LAURACEAE

BEILSCHMIEDIA Nees

Wright, A.E. 1984 (*N.Z. J. Bot.* 22 : 109–125) revised *Beilschmiedia* for New Zealand. A third species, *B. tawaroa*, from East Cape northwards and on offshore islands, is recognised.

Additional taxon:

*B. tawaroa* A. Wright *N.Z. J. Bot.* 22 : 119 (1984).

CASSYTHA L.

The Australian species of *Cassutha* were revised by Weber, J.Z. 1981 (*J. Adelaide Bot. Gard.* 3 : 187–262). For New Zealand, Allan, H.H. 1961 (*Fl. N.Z.* 1 : 137–138) treated the indigenous species as *C. paniculata* R. Br. and used the name *C. pubescens* R. Br. for a naturalised taxon. However, Weber placed *C. paniculata* in synonymy under *C. pubescens* saying “The present author, dealing with ample

material, found it impossible to subdivide the complex satisfactorily”.

### MONIMIACEAE

Philipson, W.R. 1987 (*Nord. J. Bot.* 7: 25–29) favours retention of Monimiaceae for *Laurelia novae-zelandiae* (subfamily Atherospermatoidae, Tribe Laurelieae) and for *Hedycarya arborea* (subfamily Mollinedioideae, Tribe Hedycaryeae) which is basically the view of Thorne, R.F. 1974 (*Aliso* 8: 147–209); 1976 (*Evol. Biol.* 9: 35–106).

Patel, R.N. 1973 (*N.Z. J. Bot.* 11: 587–598) reporting on wood anatomy considered that *L. novae-zelandiae* would be better included in Atherospermataceae R. Br. than in the Monimiaceae; Philipson (op. cit.) included characters of wood anatomy in his diagnoses.

### RANUNCULACEAE

#### RANUNCULUS L.

##### ALPINE:

Fisher, F.J.F. 1965 (*N.Z. DSIR Bull.* 165) revised the alpine Ranunculi in a treatment he described as “radical rather than conservative ...”; alpine sect. *Ranunculus* and lowland taxa were not discussed. Natural hybrids are carefully described.

Differences between Fisher and Allan, H.H. 1961 (*Fl. N.Z.* 1: 139–164) are:

- (i) *R. enysii* includes *R. berggrenii*, *R. enysii*, *R. novae-zelandiae* and its var. *repens* of Allan;
- (ii) *R. insignis* includes *R. lobulatus*, *R. monroi* and *R. insignis* and its var. *glabratus*;
- (iii) Fisher does not accept var. *simpsonii* of *R. sericophyllus* and var. *multifidus* of *R. buchananii* at any rank;
- (iv) *R. verticillatus* is revived for *R. clivalis* of Allan;
- (v) *R. paucifolius* is reduced to subspecific rank in *R. crithmifolius*;
- (vi) subsp. *piliferus* of *R. haastii* is described.

*R. buchananii*, *R. godleyanus*, *R. gracilipes*, *R. grahamii*, *R. lyallii*, *R. nivicola*, *R. pachyrrhizus*, and *R. pinguis* are taxonomically treated as in Allan op. cit.

A scree buttercup was illustrated, Mark, A.F. & Adams, N.M. 1973 (*New Zealand Alpine Plants* pl. 8, p. 41) as an unnamed species from the Eyre Mountains. This species, *R. scrithalis*, is described below.

Wilson, H.D. & Garnock-Jones, P.J. 1983 (*N.Z. J. Bot.* 21: 341–345) described *R. viridis* of Tin Range, Stewart I.

##### LOWLAND TO MONTANE:

Fisher, F.J.F. & Hair, J.B. 1963 (*N.Z. J. Bot.* 1: 325–335) regarded *R. petriei* Allan as a luxuriant form of *R. acaulis* DC.

P.J. Garnock-Jones (*hic comm.*): “Plants previously treated as *Ranunculus hirtus* are now assigned to four species, none of which bears the name *R. hirtus*; these are *R. altus*, *R. membranifolius*, *R. mirus*, and *R. reflexus* (see below). *R. depressus* is illegitimate and is given the new name *R. brevis*. The taxon known as *R. depressus* var. *stewartiae* is raised to species rank as *R. simulans*.”

Wilson & Garnock-Jones (op. cit.) described *R. stylosus*, from Tin Range and Deceit Peaks, Stewart I.

The subantarctic element *R. aucklandicus* Gray is treated as conspecific with *R. subscaposus* Hook. f. by Fisher & Hair (op. cit.) who also described *R. subantarcticus* as new.

New and additional taxa, substitute names and new ranks:

#### **R. altus** Garnock-Jones sp. nov.

A *R. folioso* sepalis reflexis, petalis minoribus, nectariis subbasalibus, squama lata obtectis, foliis caulinis alternis, pedunculis sulcatis; a formis magnis *R. reflexi* caulibus decumbentibus, acheniis grandioribus in capitulis globosis dispositis, laminis ternatis vel ternatifidis, habitu robusto differt.

Holotypus: Westland National Park, Copland Valley, Douglas Rock Hut, 700 m, P.J. Garnock-Jones 1754, 22 Feb. 1983, CHR 405180.

Description: Tufted perennial herb, (10)–20–35 cm tall. Stems decumbent with fine spreading hairs throughout. Basal leaves ternatifid to ternate, pale green, with dense subappressed hairs; leaflets sessile to stalked, obovate-cuneate, shallowly to deeply 3-lobed, bluntly to sharply toothed; petioles (3)–5–10 cm long, with dense, fine, spreading hairs. Stem leaves similar to basal, but smaller, becoming simple and sharply 3-toothed. Flowers 2–5 per stem, sometimes more, 12–18 mm diameter. Peduncle sulcate, with spreading hairs, short at flowering, elongating at fruiting to 7–10 cm; bracts narrowly lanceolate, acute, entire. Sepals recurved at late flowering, hairy beneath. Petals 5, pale yellow, limb usually elliptic, rarely obovate, claw very short; nectary single, 0.8–1 mm from petal base, covered by a short broad scale. Receptacle hairy. Achenes dark, 40–60, in globose heads, flattened, glabrous or bearing one or a few bristles on margin; body 2.5–3–(3.5) × 1.5–2.5–(2.8) mm; beak hooked at tip, 1–1.3 mm long.

Chromosome number: 2n = 48 (M.I. Dawson, pers. comm., J.B. Hair, *N.Z. J. Bot.* 21: 3 (1983) as *R. hirtus*, CHR 101855).

Distribution: S.: Nelson mountains, Canterbury and Westland near the main divide. Open stony places in montane forest, tussock grassland, and subalpine scrub especially on landslide debris, 800–1300–(1500) m. Endemic.

Representative specimens: Mt Hoary Head, NW

Nelson, 3800 ft, A.P. Druce, Dec. 1980, CHR 366082; Turks Head Range, 3900 ft, A.P. Druce, Jan. 1983, CHR 393762; Top west of Upper Glenroy R., S. Nelson, 3900 ft, A.P. Druce, Mar. 1984, CHR 394268; Kelly's Hill, Westland, L. Cockayne, Feb. 1895, AK 4272; Arthurs Pass, 890 m, L. Cockayne, Jan. 1898, WELT 27313.

The specific epithet *altus* refers to the height of plants of this species: it is usually taller than *R. foliosus* and *R. reflexus*, with which it has been confused.

**R. amphitrichus** Colenso *T.N.Z.I.* 17: 237 (1885) replaces *R. rivularis* DC. *Syst. Nat.* 1: 270 (1817) non Sprengel (1807); see Garnock-Jones, P.J. 1986 (*Taxon* 35: 123–128).

**R. brevis** Garnock-Jones nom. nov. replaces *R. depressus* Kirk *T.N.Z.I.* 12: 393 (1880) nom. illegit., non *R. depressus* Georgi *Beschr. Russ. Reich* 3(4): 1070 (1800). Holotype: Castle Hill Station, Waimakariri, 2400 ft, T. Kirk, WELT 326!; isotype: K!

The epithet *brevis* refers to the small stature of the plants.

**R. crithmifolius** Hook. f.

subsp. *crithmifolius*

subsp. *paucifolius* (Kirk) F. Fisher *N.Z. DSIR Bull.* 165: 126 (1965) = *R. paucifolius* Kirk *Stud. Fl. N.Z.* 11 (1899).

**R. haastii** Hook. f.

subsp. *haastii*

subsp. *piliferus* F. Fisher op. cit. 147.

**R. membranifolius** (Kirk) Garnock-Jones comb. et stat. nov. based on *R. hirtus* DC. var. *membranifolius* Kirk *Stud. Fl. N.Z.* 14 (1899). Holotype: "Jackson's, Teremakau River", Petrie, Jan. 1893, WELT 27298!, 27338! = *R. hirtus* DC. var. *stoloniferus* Kirk op. cit. 14.

**R. mirus** Garnock-Jones nom. et stat. nov. based on *R. hirtus* DC. var. *gracilis* Cheeseman *Man. N.Z. Fl.* 19 (1906). Lectotype: Mt Arthur Plateau, Nelson, Cheeseman, Jan. 1886, AK 4276!; isolectotype: WELT 27339! The epithet *gracilis* is preoccupied at species rank as *Ranunculus gracilis* Clarke.

Chromosome number:  $2n=48$  (M.I. Dawson, pers. comm.).

The epithet *mirus* is latin for wonderful, an appropriate adjective for this large-flowered small plant.

**R. reflexus** Garnock-Jones nom. nov. replaces *R. hirtus* DC. *Syst. Nat.* 1: 289 (1817) non Sprengel (1807).

The epithet refers to the reflexed sepals.

**R. scrithalis** Garnock-Jones sp. nov.

Herba rosulata in scritha subinfossa, a *R. sericophyllo* foliis paucis, hydathodis apicalibus sine penicillo, floribus minoribus, petalis plus numerosis,

acutis, angustis; a *R. haastii* scapo nudo, foliis sericeis, plus numerosis, floribus minoribus, acheniis dimidio brevioribus, petalis acutis angustis; a *R. crithmifolio* petalis plus numerosis, acutis, angustis, foliis sericeis sine foveis brunneolis, pedunculis fructuum erectis differt.

Holotypus: "Hummock Peak, Eyre Mountains, N. Southland, 4700 ft, A.F. Mark, 30.12.1969. Locally common but very inconspicuous on fine scree. NB: only leaf tips above ground level", OTA 27279; isotypes: CHR 195487, in spirit collection; OTA 27896.

Description: Perennial herb. Rhizome horizontal or ascending, 5–10 mm thick. Roots many, pale, deeply descending, 1–2 mm thick. Rosettes tufted at tips of rhizomes. Leaves few, erect, all basal; lamina dark grey to almost blackish green, fleshy, 2–3-ternatisect, (1)–1.5–3 × (0.8)–1.5–3 cm; lobes linear, 1–1.5 mm wide, subacute, all covered with moderate to dense fine silky hairs 1–2 mm long; hydathodes at tips of lobes, without hair-tufts; petiole pale, broad, 2–4 cm long, expanding below into broad sheathing membranous base 1–2 cm wide. Flowers terminal, solitary in centre of rosette, below level of leaves, 2–3 cm diam.; peduncle sericeous, erect, 1.5–4 cm long, c. 2 mm diam. Sepals narrow-oblong, subacute, membranous, glabrous above, sericeous beneath, 10–15 × 2–3 mm. Petals 12–15, linear, lemon yellow (dark brown when dry), acute, 14–17 × 1.5–2.5 mm. Nectary single, c. 6 mm from base of petal, a raised shallow annulus. Stamens 25–35, 5–8 mm long. Achenes 70–100 in a globose head, sparsely clothed in fine silky hairs 0.5–1 mm long; body obovoid, 2–2.5 × 1–1.5 mm; beak flattened when dry, straight or weakly curved, c. 3–3.5 × 0.7–1 mm. Receptacle glabrous.

Distribution: Confined to the Eyre Mountains, Southland. Stable fine clay in screes, 1100–1900 m. Representative specimens: Jane Pk, Eyre Mts, N. Southland, 1700 m, Mark, 30.3.1975, OTA 36290; Upper Eyre Ck, Eyre Mts, N. Southland, 4300 ft, Mark, 26.11.1970, OTA 29866; Eyre Mts, Head of Gorge Burn, 4600 ft, Macdonald, 31.12.1985, CHR 420514.

The epithet *scrithalis* is derived from *scritha*, scree, and refers to the habitat.

**R. simulans** Garnock-Jones nom. et stat. nov. based on *R. depressus* Kirk var. *stewartiae* Simpson et J. Thomson *T.R.S.N.Z.* 73: 155 (1943). Holotype: Banks of Freshwater River, Stewart Island, Simpson, 1940, CHR 59452!; isotypes: AK 22910!, 22897! The locality given for collection of the holotype is probably an error (Wilson & Garnock-Jones op. cit. 345).

The epithet refers to the close similarity to *R. cheesemanii*.

- R. *stylosus* H. Wilson et Garnock-Jones *N.Z. J. Bot.* 21: 341 (1983).  
 R. *subantarcticus* F. Fisher et Hair *Ibid.* 1: 332 (1963)  
   subsp. *subantarcticus*  
   subsp. *campbellensis* F. Fisher et Hair op. cit. 334.  
 R. *verticillatus* Kirk *Stud. Fl. N.Z.* 13 (1899) is reinstated for *R. clivalis* Allan *Fl. N.Z.* 1: 149 (1961).  
 R. *viridis* H. Wilson et Garnock-Jones op. cit. 342.

## MYOSURUS L.

New rank:

M. *minimus* L.

- subsp. *novae-zelandiae* (W. Oliver) Garnock-Jones *N.Z. J. Bot.* 24: 352 (1986) = *M. novae-zelandiae* W. Oliver *T.N.Z.I.* 56: 4 (1926).

## CLEMATIS L.

Gardner, R.O. 1981 (*N.Z. J. Bot.* 19: 327) noted that the name *Clematis parviflora* Cunn. (1840) was antedated by *C. parviflora* DC. (1823); the next available name is *C. cunninghamii* Turcz.

Sneddon, B.V. 1975 (*N.Z. J. Bot.* 13: 557–565) described a species from north-west Nelson.

Additional taxon and substitute name:

- C. *cunninghamii* Turcz. *Bull. Bot. Soc. Mosc.* 36: 545 (1863).  
 C. *marmoraria* Sneddon *N.Z. J. Bot.* 13: 557 (1975).

CERATOCEPHALUS Pers. *Syn. Pl.* 1: 341 (1805)Type species: *C. falcatus* (L.) Pers.

This genus is newly recognised in New Zealand by Garnock-Jones, P.J. 1984 (*N.Z. J. Bot.* 22: 135–137); the single endemic species is found in dry inland basins of Mackenzie Country and Central Otago.

Additional taxon:

- C. *pungens* Garnock-Jones *N.Z. J. Bot.* 22: 135 (1984).

## PIPERACEAE

## MACROPIPER Miq.

Smith, A.C. 1975 (*J. Linn. Soc., Bot.* 71: 1–38) revised the genus *Macropiper* and maintained its generic status rather than its reduction to sectional rank in *Piper* as he had proposed in 1943 (*J. Arnold Arbor.* 24: 347–361). The sole New Zealand species is *M. excelsum* (Forst. f.) Miq.

Two forms are recognised in *M. excelsum*, the comparatively smaller-leaved f. *excelsum* for North, South, and Chatham Is and the comparatively larger-leaved f. *psittacorum* for Norfolk, Lord Howe, Kermadec, Poor Knights, Three Kings, and Mokohinau Is, which was treated by Sykes, W.R.

1977 (*N.Z. DSIR Bull.* 219: 217) as *M. excelsum* var. *psittacorum* (Endl.) Laing.

New rank:

M. *excelsum* (Forst. f.) Miq.f. *excelsum*

f. *psittacorum* (Endl.) A.C. Smith *J. Linn. Soc., Bot.* 71: 33 (1975) = *Piper psittacorum* Endl. *Prodr. Fl. Norfolk.* 37 (1833).

## CRUCIFERAE or BRASSICACEAE

## LEPIDIUM L.

The name *L. oleraceum* is usually attributed to Forst. f. 1786 (*Pl. Esc.* 69) as in Allan, H.H. 1961 (*Fl. N.Z.* 1: 177), however, an earlier publication by Sparrman has priority. There is no change in the circumscription of the species, even though a lectotype has not been chosen from the type collection. The citation is: *L. oleraceum* Sparrman *Nova Acta Regiae Soc. Sci. Upsal.* 3: 193 (1780).

## RORIPPA Scop.

Substitute name:

- R. *gigantea* (Hook.) Garnock-Jones *N.Z. J. Bot.* 16: 119 (1978) = *Arabis gigantea* Hook. *Icon. Pl.* t. 259 (1840) replaces *Rorippa stylosa* (DC.) Allan *Fl. N.Z.* 1: 188 (1961) a later homonym of *R. stylosa* (Pers.) Mansf. et Rothm. (1940).

## VIOLACEAE

## MELICYTUS Forst. et Forst. f.

Green, P.S. 1970 (*J. Arnold Arbor.* 51: 218–220) revised the shrubby members of the Violaceae from Norfolk and Lord Howe Is, transferring three species formerly in *Hymenanthera* R. Br. to *Melicytus* on the basis of evidence presented by Beuzenberg, E.J. 1961 (*N.Z. J. Sci.* 4: 337–349).

At the same time Green transferred one New Zealand species from *Hymenanthera* to *Melicytus*. Five further transfers to *Melicytus* are made here by P.J. Garnock-Jones. *Melicytus* comprises 10 species here, four were already placed in *Melicytus* by Allan, H.H. 1961 (*Fl. N.Z.* 1: 191–193), *M. lanceolatus* Hook. f., *M. macrophyllus* Cunn., *M. micranthus* Hook. f., and *M. ramiflorus* Forst. et Forst. f.

New combinations and transfer:

- M. *alpinus* (Kirk) Garnock-Jones comb. nov. based on *Hymenanthera dentata* var. *alpina* Kirk *Stud. Fl. N.Z.* 44 (1899).  
 M. *angustifolius* (DC.) Garnock-Jones comb. nov. based on *Hymenanthera angustifolia* R. Br. ex DC. *Prodr.* 1: 315 (1824).  
 M. *chathamicus* (F. Muell.) Garnock-Jones comb. nov. based on *Hymenanthera latifolia* var. *chathamica* F. Muell. *Veg. Chatham Is.* 9 (1864).

- M. crassifolius** (Hook. f.) Garnock-Jones comb. nov. based on *Hymenanthera crassifolia* Hook. f. *Fl. N.Z. 1*: 17, t. 7 (1852).
- M. novae-zelandiae** (Cunn.) P. Green *J. Arnold Arbor. 51*: 219 (1970) ≡ *Scaevola novae-zelandiae* Cunn. *Ann. Nat. Hist. 2*: 52 (1839).
- M. obovatus** (Kirk) Garnock-Jones comb. nov. based on *Hymenanthera obovata* Kirk *T.N.Z.I. 27*: 350 (1895).
- M. ramiflorus** Forst. et Forst. f.  
subsp. *ramiflorus* — see Kellogg, E.A. & Weitzman, A.L. 1985 (*J. Arnold Arbor. 66*: 491–502) for subspecific status.

## CRASSULACEAE

## CRASSULA L. — TILLAEA L.

Toelken, H.R. 1981 (*J. Adelaide Bot. Gard. 3*: 57–90) revised Australian species of *Crassula* fusing *Tillaea* within it. In early Australian treatments species were placed in *Tillaea* because they had 4-merous flowers, as opposed to 5-merous, and were annual rather than perennial as are most *Crassula* spp. These characters used to segregate genera were often inconsistent through the family.

Toelken placed *Tillaea purpurata* in synonymy under *Crassula pedunculatis* of South America. *Crassula helmsii* has been found in Australia; Toelken designated its lectotype.

CRASSULA L. *Sp. Pl.* 282 (1753)

Type species: *C. perfoliata* L.

Of the ten indigenous species treated as *Tillaea* in Allan, H.H. 1961 (*Fl. N.Z. 1*: 197–200), names are available in *Crassula* for four: *C. helmsii* (Kirk) Cockayne; *C. moschata* Forst. f.; *C. peduncularis* (Smith) F. Meigen.; *C. sieberiana* (Schultes et Schultes f.) G.C. Druce.

Druce, A.P. & Given, D.R. 1985 (*N.Z. J. Bot. 22*: 583, 1984) made combinations in *Crassula* for the remaining six species, but three are corrected below by A.P. Druce.

A.P. Druce and W.R. Sykes (*hic comm.*): “We regard plants known in Australia as *C. sieberiana* subsp. *tetramera* as indigenous to New Zealand and occurring in North I. and eastern South I. We accord them specific rank as *C. tetramera*. This differs from *C. sieberiana* in being annual with erect stems, and narrower leaves.

We also regard *C. colorata* subsp. *tuberculata* of Australia as indigenous to New Zealand. It occurs in Marlborough and is distinct from other indigenous species in having 5 corolla lobes and in having tubercles on the mature fruit.”

Transfers, substitute names, new combination, and additional taxon:

*C. colorata* (Nees) Ostenf.

subsp. *tuberculata* Toelken *J. Adelaide Bot. Gard. 3*: 81 (1981).

**C. hunua** A.P. Druce nom. nov. replaces *C. pusilla* (Kirk) A.P. Druce et D.R. Given *N.Z. J. Bot. 22*: 583 (1985) non Schönl. (1913) ≡ *Tillaea pusilla* Kirk *Stud. Fl. N.Z. 143* (1899).

The specific epithet, *hunua*, alludes to Hunua, a locality near Auckland, where the species occurs. The type locality is given as “Auckland”.

**C. kirkii** (Allan) A.P. Druce et D.R. Given loc. cit. ≡ *Tillaea kirkii* Allan *Fl. N.Z. 1*: 199 (1961).

**C. mataikona** A.P. Druce nom. nov. replaces *C. debilis* (Hook. f.) A.P. Druce et D.R. Given *N.Z. J. Bot. 22*: 583 (1985) non Thunb. (1811) ≡ *Tillaea debilis* Hook. f. *Fl. N.Z. 1*: 75 (1852).

The specific epithet, *mataikona*, alludes to Mataikona, a locality on the east coast of North Island near which the species occurs. The type locality is given as “East Coast”.

**C. multicaulis** (Petrie) A.P. Druce et D.R. Given loc. cit. ≡ *Tillaea multicaulis* Petrie *T.N.Z.I. 19*: 324 (1887).

**C. ruamahanga** A.P. Druce nom. nov. replaces *C. acutifolia* (Kirk) A.P. Druce et D.R. Given loc. cit. non Lam. (1786) ≡ *Tillaea acutifolia* Kirk loc. cit.

The specific epithet, *ruamahanga*, alludes to Ruamahanga R., Wairarapa, beside which the type locality, the old Maori site of Hurunuiorangi, is situated.

**C. sinclairii** (Hook. f.) A.P. Druce et D.R. Given loc. cit. ≡ *Tillaea sinclairii* Hook. f. *Handb. N.Z. Fl. 62* (1864).

**C. tetramera** (Toelken) A.P. Druce et W. Sykes comb. et stat. nov. based on *C. sieberiana* (Schultes et Schultes f.) G.C. Druce subsp. *tetramera* Toelken *J. Adelaide Bot Gard. 3*: 77 (1981).

## DROSERACEAE

## DROSERA L.

Conn, B.J. 1981 (*J. Adelaide Bot. Gard. 3*: 91–100) reviewed the variation in the *Drosera peltata* – *D. auriculata* complex in Australia and New Guinea. He reduced *D. auriculata* to subspecific rank in *D. peltata*.

New rank:

**D. peltata** Thunb.

subsp. *auriculata* (Planchon) Conn *J. Adelaide Bot. Gard. 3*: 98 (1981) ≡ *D. auriculata* Backh. ex Planchon *Ann. Sci. Nat. Bot. ser. 3, 9*: 295 (1848) ≡ *D. circinervia* Colenso *T.N.Z.I. 26*: 314 (1894) = *D. stylosa* Colenso *Ibid. 28*: 593 (1896).

## AIZOACEAE

## DISPHYMA N.E. Brown

Both Allan, H.H. 1961 (*Fl. N.Z. 1*: 204) and Chin-

nock, R.J. 1971 (*N.Z. J. Bot.* 9: 333) attributed to J.M. Black 1932 (*Trans. & Proc. Roy. Soc. S. Austral.* 56: 40) the combination *Disphyma australe*, but Venning, J. 1984 (*Fl. Austral.* 4: 36) and Black, J.M. 1948 (*Fl. S. Austral.* ed. 2: 339) cited an earlier combination by N.E. Brown. There is no change in the circumscription of the species and the citation is: *D. australe* (Aiton) N.E. Br. *Gard. Chron.* ser. 3, 87: 14 (1930).

Additional taxa:

*D. australe* (Aiton) N.E. Br.

subsp. *australe*

subsp. *stricticaule* Chinn. *N.Z. J. Bot.* 14: 77 (1976).

*D. papillatum* Chinn. *Ibid.* 9: 337 (1971).

Intergeneric hybrids between *Carpobrotus edulis*, *C. aequilaterus* and *Disphyma australe* are reported by Chinnock, R.J. 1973 (*N.Z. J. Bot.* 10: 615–625).

#### HECTORELLACEAE

This family, described by Philipson, W.R. and Skipworth, J.P. 1961 (*T.R.S.N.Z., Bot.* 1: 31) comprises two monotypic endemic genera, *Hectorella* of South I, New Zealand and *Lyallia* of Kerguelen Is, which were previously assigned to either the Caryophyllaceae or the Portulacaceae.

Some taxonomists accept Hectorellaceae (*vide supra* p. 124) but doubts as to its position have been expressed in a review of the classification of the order Centrospermae by Rodman, J.E. et al. 1984 (*Syst. Bot.* 9: 297–323) who regard *Hectorella* and *Lyallia* as “*incertae sedis* in superfamily Portulacianae” of suborder Chenopodiineae. Unlike some other members of the Portulacaceae, *Hectorella* and *Lyallia* lack leaf flavonoids, Nyananyo, B.L. 1986 (*Biochem. Syst. Ecol.* 14: 633–635).

HECTORELLACEAE Philipson et Skipw. *T.R.S.N.Z., Bot.* 1: 31 (1961).

#### PORTULACACEAE

During the last 25 years the generic status of the Australasian taxon treated by Allan, H.H. 1961 (*Fl. N.Z. 1: 219–220*) as *Claytonia australasica* Hook. f. has varied. The most recent revision is that of McNeill, J. 1975 (*Canad. J. Bot.* 53: 789–809) who recognised two genera — *Claytonia* and *Montia*, this latter in nine sections corresponding to Nilsson's segregate genera: Nilsson, Ö. 1966 (*Bot. Not.* 119: 265–285, 464–468, 469); 1970 (*Ibid.* 123: 119–148); 1971 (*Ibid.* 124: 87–121, 187–207); all papers were summarised in 1971 (*Acta Univ. Upsal. No. 185: 1–6*). McNeill places the Australasian plants in *Montia* sect. *Australienses* (Poelln.) Pax et K. Hoffm. comprising one species *Montia australasica* (Hook. f.) Pax et K. Hoffm.

There are currently two treatments available, one in *Montia* following McNeill, the other in *Neopaxia*, following Nilsson:

(i) *Montia australasica* (Hook. f.) Pax et K. Hoffm.

(ii) *Neopaxia australasica* (Hook. f.) Ö. Nilss.

NEOPAXIA Ö. Nilss. *Bot. Not.* 119: 469 (1966) = *Paxia* Ö. Nilss. op. cit. 274 a later homonym of *Paxia* Gilg (1891)

Type species: *N. australasica* (Hook. f.) Ö. Nilss.

Transfer:

*N. australasica* (Hook. f.) Ö. Nilss. op. cit. 469 = *Claytonia australasica* Hook. f. *Icon. Pl.* t. 293 (1840) = *Montia australasica* (Hook. f.) Pax et K. Hoffm. *Pflanzenfam.* ed. 2 16C: 259 (1934) = *Paxia australasica* (Hook. f.) Ö. Nilss. op. cit. 274, *nom. illegit.*

#### POLYGONACEAE

##### RUMEX L.

Garnock-Jones, P.J. 1986 (*Taxon* 35: 123–128) pointed out that though the name *R. flexuosus* is usually attributed to Hooker, J.D. 1853 (*Fl. N.Z. 1: 211*) as in Allan, H.H. 1961 (*Fl. N.Z. 1: 226*) an earlier publication by Sprengel has priority. There is no change in the circumscription of the species and the citation is: *R. flexuosus* Sprengel in Biehler *Pl. Nov. Herb. Spreng.* 16 (1807).

#### AMARANTHACEAE

##### ALTERNANTHERA Forsskal

Mears, J.A. 1977 (*Proc. Acad. Nat. Sci. Philadelphia* 129: 1–21) referred *Alternanthera denticulata* R. Br. of Australia and New Zealand to synonymy under the widespread *A. sessilis* (L.) DC., with the remark “not sufficiently distinct”.

#### CHENOPODIACEAE

Scott, A.J. 1978 (*Feddes Repert.* 89: 1–11) erected the new subtribe Rhagodiineae of the Chenopodiaceae to include three genera with succulent pericarps and predominantly unisexual flowers. *Einadia*, one of these genera, is defined by smooth stems, thin glabrous leaves, polygamous flowers with 1–3 stamens and a spongy berry in contrast to the ribbed stems, thick pubescent leaves, unisexual flowers with 5 stamens and the fleshy berry of *Rhagodia*. *Rhagodia* comprises shrubby species, and *Einadia* either herbs or suffruticose perennials. The taxon usually known in New Zealand as *Rhagodia triandra* was transferred by Scott (op. cit.) to *Einadia*, and Wilson, P.G. 1983 (*Nuytsia* 4: 135–262) transferred *Chenopodium allanii* to *Einadia*.



EINADIA Raf. *Fl. Tellur.* 4: 121 (1838)

Type species: *E. linifolia* (R. Br.) Raf.

Transfers:

*E. allanii* (Aellen) P.G. Wilson *Nuytsia* 4: 210 (1983) = *Chenopodium allanii* Aellen *Candollea* 8: 7 (1939).

*E. triandra* (Forst. f.) Scott *Feddes Repert.* 89: 5 (1978) = *Chenopodium triandrum* Forst. f. *Prodr.* 21 (1786).

### SALICORNIAEAE

Scott, A.J. 1978 (*J. Linn. Soc., Bot.* 75: 357–374, 1977) reinstated the family Salicorniaceae J. Agardh, usually included in the Chenopodiaceae as Tribe Salicornieae, separating it on such characters as spike-like inflorescences of sessile 3-flowered cymes, with reduced flowers that usually consist of a 2–4 lobed calyx tube with 1–2 stamens and a subannular or curved embryo.

SARCOCORNIA A.J. Scott *J. Linn. Soc., Bot.* 75: 366 (1978)

Type species: *S. perennis* (Miller) A.J. Scott.

Scott, A.J. (op. cit.) erected the new world-wide genus *Sarcocornia* to include 15 species, one of which occurs in salt marshes in New Zealand. Species of *Sarcocornia* had been formerly distributed between *Salicornia* and *Arthrocnemum*. *Sarcocornia* differs from *Arthrocnemum* in: (i) seeds lacking endosperm, (ii) membranous, hairy testa, and (iii) flowers exserted, and from *Salicornia* in being perennial and having flowers of equal height.

Transfer:

*S. quinqueflora* (Ung.-Sternb.) A.J. Scott op. cit. 368 = *Salicornia quinqueflora* Bunge ex Ung.-Sternb. *Versuch Syst. Salicornieen* 59 (1866)

subsp. *quinqueflora* of New Zealand, New Caledonia and Australia.

This species has been known in New Zealand as *Salicornia australis* Sol. ex Benth. *Fl. Austral.* 5: 205 (1870) but this is a later synonym of *S. quinqueflora* Ung.-Sternb. [See also Wilson, P.G. 1972 (*Nuytsia* 1: 277–288); Eichler, Hj. 1963 (*Taxon* 12: 296)].

Wilson, P.G. 1980 (*Nuytsia* 3: 3–154) chose to follow the traditional and broader concept of subfamily Salicornioideae in the Chenopodiaceae.

### GERANIACEAE

GERANIUM L.

Carolin, R.C. 1965 (*Proc. Linn. Soc. N.S.W.* 89: 326–361) revised *Geranium* for the southwestern Pacific region.

Of the five species in Allan, H.H. 1961 (*Fl. N.Z.* 1: 233–237):

(i) *G. traversii* of the Chatham Is is retained;

(ii) *G. homeanum* is the correct name for the taxon to which the name *G. australe* was misapplied;

(iii) *G. solanderi* is a substitute name for *G. pilosum*;

(iv) New Zealand plants of *G. sessiliflorum* are assigned subspecific rank;

(v) *G. potentilloides* is revived as an earlier correct name for *G. microphyllum*, and the two varieties of *G. microphyllum* — var. *obtusatum* and var. *discolor* — are not upheld.

In addition,

(vi) *G. retrorsum* is regarded as indigenous to New Zealand.

Yeo, P.F. 1984 (*J. Linn. Soc., Bot.* 89: 1–36) included Australasian taxa in sect. *Geranium* of subgenus *Geranium*; in this section mericarps possess a horny setiferous tubercule at the base which is visible after dehiscence; empty mericarps normally remain attached to the columella. The seed is forcibly discharged but retained by the rigid tubercule and flexible bristles in the pre-explosive interval.

Taxa recognised by Carolin:

*G. homeanum* Turcz. *Bull. Soc. Imp. Naturalistes Moscou* 36: 591 (1863).

*G. potentilloides* DC. *Prodr.* 1: 639 (1824) = *G. microphyllum* Hook. f. *Fl. Antarct.* 1: 8, t. 5 (1844) = *G. microphyllum* Hook. f. var. *obtusatum* G. Simpson et J. Thomson *T.R.S.N.Z.* 73: 156 (1943) = *G. microphyllum* Hook. f. var. *discolor* G. Simpson et J. Thomson loc. cit.

*G. sessiliflorum* Cav.

subsp. *novae-zelandiae* Carolin *Proc. Linn. Soc. N.S.W.* 89: 356 (1965)

var. *novae-zelandiae* = *G. sessiliflorum* Cav.  
var. *maculatum* G. Simpson et J. Thomson op. cit. 157

var. *arenarium* (G. Simpson et J. Thomson) Carolin op. cit. 356 = *G. sessiliflorum* Cav.  
var. *arenarium* G. Simpson et J. Thomson op. cit. 158.

*G. solanderi* Carolin op. cit. 350 = *G. pilosum* Sol. in Forst. f. *Prodr.* 91 (1786) nom. nud. et non Cav. (1788).

*G. traversii* Hook. f. *Handb. N.Z. Fl.* 726 (1867).  
See also Gardner, R.O. 1984 (*N.Z. J. Bot.* 22: 127–134) for further notes on some New Zealand species.

### OXALIDACEAE

OXALIS L.

*Oxalis* sect. *Corniculatae* was revised on a world basis by Lourteig, A. 1979 (*Phytologia* 42: 57–198). Her treatment of New Zealand taxa in sect. *Cor-*

niculatae differed from that of Allan, H.H. 1961 (*Fl. N.Z. 1*: 238–240):

- (i) *O. perennans* Haw. is the correct name for the taxon treated by Allan as *O. stricta*;
- (ii) most other New Zealand specimens of sect. Corniculatae are placed in *O. exilis* Cunn.;
- (iii) a few New Zealand specimens are referred to cosmopolitan *O. corniculata* L. subsp. *corniculata* and its var. *villosa* (M. Bieb.) Hohen.;
- (iv) one specimen is cited as naturalised and belonging in *O. fontana* Bunge.

For all species Lourteig gave full synonymies and she accounted for all names cited in Allan (op. cit.).

One taxon in New Zealand does not belong in sect. Corniculatae; Allan (op. cit. 238) applied the name *O. lactea* Hook. to Australasian plants, distinguishing them from the South American *O. magellanica* Forst. f., but Veldkamp, J.F. 1972 (*Fl. Males. ser. 1, 7*: 151–178. 1971) from a comparative study of Chilean, Australasian, and Papuan specimens believed that only one species is present, for which *O. magellanica* is the earliest available name.

Four indigenous species of *Oxalis* are therefore recognised in the treatments of Lourteig and Veldkamp:

- O. corniculata* L. *Sp. Pl. 1*: 435 (1753)  
subsp. *corniculata*.
- O. exilis* Cunn. *Ann. Nat. Hist. 3*: 316 (1839). A combination was made within *Xanthoxalis* for *Oxalis exilis*: *X. exilis* (Cunn.) Holub *Folia Geobot. Phytotax. 11*: 83 (1976) based on *Oxalis exilis* Cunn. loc. cit. The genus *Xanthoxalis* Small is equivalent to *Oxalis* sect. Corniculatae DC.
- O. magellanica* Forst. f. *Commentat. Soc. Regiae Sci. Gott. 9*: 33 (1789).
- O. perennans* Haw. *Misc. Nat. 181* (1803).

#### HALORAGACEAE

Orchard, A.E. 1975 (*Bull. Auckland Inst. Mus. 10*: 1–299) revised five New Zealand and/or Australian genera of Haloragaceae. Allan, H.H. 1961 (*Fl. N.Z. 1*: 241–254) included *Haloragis*, *Gunnera*, and *Myriophyllum* in the Haloragaceae, but Orchard placed *Gunnera* in the separate family Gunneraceae. He also revived the genus *Gonocarpus* Thunb. previously included by most authors in *Haloragis*.

Moore in Allan (loc. cit.) recognised seven species of *Haloragis*, but Forde, M.B. 1964 (*N.Z. J. Bot. 2*: 425–453) did not support the segregation of *H. colensoi* from *H. erecta*. For New Zealand only *H. erecta* is admitted by Orchard to *Haloragis*; the remaining species are treated as *Gonocarpus*. See also Orchard, A.E. 1980 (*Brunonia 2*: 247–

287) for a key to *Haloragis* and *Gonocarpus* in New Zealand.

GONOCARPUS Thunb. *Nov. Gen. Pl. 55* (1783)

Type species: *G. micranthus* Thunb.

Orchard, A.E. 1975 (*Bull. Auckland Inst. Mus. 10*: 165, 267) characterised *Gonocarpus* relative to *Haloragis* by:

- (i) ovary at anthesis full-sized, ornamented, and with a dry crustaceous wall;
- (ii) septa composed of loosely interwoven, hyphae-like cells crushed during development of the single seed;
- (iii) flowers borne singly in axils of primary bracts.

Orchard (i) reinstated *Gonocarpus micranthus* on which *Haloragis micrantha* was based and (ii) indicated that the name *H. depressa* was formerly misapplied in New Zealand to *H. aggregata*.

Taxa according to Orchard:

*G. aggregatus* (Buchanan) Orch. *Bull. Auckland Inst. Mus. 10*: 180 (1975) = *H. aggregata* Buchanan *T.N.Z.I. 4*: 224, t. 13 (1872).

*G. incanus* (Cunn.) Orch. op. cit. 213 = *Cercodia incana* Cunn. *Ann. Nat. Hist. 3*: 30 (1839).

*G. micranthus* Thunb. *Nov. Gen. Pl. 55* (1783) = *H. micrantha* (Thunb.) Siebold et Zucc. *Fl. Jap. Fam. Nat. 1*: 133 (1845)

subsp. *micranthus*; New Zealand, Australia, Indo-Malaysia, and East Asia.

*G. montanus* (Hook. f.) Orch. op. cit. 172 = *H. montana* Hook. f. *London J. Bot. 6*: 475 (1847) = *H. procumbens* Cheeseman *T.N.Z.I. 42*: 202 (1910). All North I specimens, and a few from South I, are regarded as intermediate between *G. montanus* and *G. incanus*.

HALORAGIS Forst. et Forst. f.

Orchard, A.E. 1975 (*Bull. Auckland Inst. Mus. 10*: 165, 267) characterised *Haloragis* relative to *Gonocarpus*:

- (i) ovary at anthesis relatively small, unornamented, ± succulent, with 4 locules separated by substantial septa;
- (ii) during fruit development and maturation the ovary increases in size 2–3 times, the septa and pericarp become ± woody and the exocarp may become spongy or form wings or protuberances;
- (iii) flowers 3–7 in dichasia in axils of primary bracts.

Orchard retained one New Zealand species in *Haloragis*, *H. erecta* (Banks ex Murray) Oken, using an earlier authority for the binomial. He included within it *H. colensoi* as a synonym, and *H. cartilaginea* as a subspecies.

Taxa according to Orchard:

- H. erecta* (Murray) Oken *Allg. Naturgesch.* 3: 1871 (1841)  
 subsp. *erecta* = *H. colensoi* Skotts. *Nat. Hist. Juan Fernandez* 2: 153 (1922)  
 subsp. *cartilaginea* (Cheeseman) *Orch. Bull. Auckland Inst. Mus.* 10: 78 (1975) = *H. cartilaginea* Cheeseman *T.N.Z.I.* 29: 390 (1897).

#### MYRIOPHYLLUM L.

The only other genus in New Zealand admitted to the Haloragaceae by Orchard, A.E. 1980 (*Brunonia* 2: 247–287) is *Myriophyllum*. He described and illustrated the five indigenous species as in Allan, H.H. 1961 (*Fl. N.Z.* 1: 252–254), *M. pedunculatum* as the endemic subsp. *novae-zelandiae*, *M. propinquum*, *M. robustum*, *M. votschii*, and *M. triphyllum* for plants hitherto treated in New Zealand as *M. elatinoides*.

New rank and substitute name:

- M. pedunculatum* Hook. f.  
 subsp. *novae-zelandiae* *Orch. Brunonia* 2: 274 (1980).  
*M. triphyllum* *Orch. op. cit.* 259.

#### GUNNERACEAE

The family Gunneraceae, erected by Endlicher 1837 (*Gen. Pl.* 285), is monogeneric and based on the genus *Gunnera*, see Orchard, A.E. 1975 (*Bull. Auckland Inst. Mus.* 10: 1–299).

See Behnke, H.-D. 1986 (*Pl. Syst. Evol.* 151: 215–222) for support of family Gunneraceae.

#### ONAGRACEAE

##### EPILOBIUM L.

Raven, P.H. & Raven, T.E. 1976 (*N.Z. DSIR Bull.* 216: 1–321) revised *Epilobium* and incorporated new taxa published by Raven, P.H. & Engelhorn, T. 1971 (*N.Z. J. Bot.* 9: 345–350).

*Epilobium* as treated by Allan, H.H. 1961 (*Fl. N.Z.* 1: 254–281) comprised 50 species. Raven & Raven recognised 37 species. Among these:

- (i) *E. gunnianum* and *E. margaretae* were not listed by Allan;
- (ii) *E. komarovianum* A. Lév., not listed in Allan, is accepted following Brockie, W.B. 1966 (*N.Z. J. Bot.* 4: 366–391); *E. inornatum* Melville is included as its synonym, as is *E. nerteroides* var. *minimum*; *E. nerteroides* var. *nerteroides* sensu Allan (1961) is also included here;
- (iii) 18 species are substantially the same as in Allan's account, viz. *E. brevipes*, *E. chionanthum*, *E. forbesii*, *E. gracilipes*\*, *E. hirtigerum*, *E. insulare*, *E. macropus*, *E. matthewsii*, *E. microphyllum*\*, *E. pallidiflorum*, *E. pernitens*, *E. pictum*, *E. porphyrium*,

*E. purpuratum*, *E. pycnostachyum*, *E. rostratum*\*, *E. rotundifolium*, *E. tasmanicum*.

(iv) 13 species are remodelled thus:

- E. alsinoides* consists of 3 subspecies —  
 subsp. *alsinoides* includes *thymifolium*,  
 subsp. *atriplicifolium* includes *novae-zelandiae*, *cockayneanum*, and *findlayi* var. *pubescens*,  
 subsp. *tenuipes* includes *elegans*;  
*E. billardioreanum* — includes *cinereum*, and consists of subsp. *billardioreanum*, *cinereum*, *intermedium*;  
*E. chlorifolium* — includes *perplexum*;  
*E. confertifolium* — includes *findlayi* var. *findlayi*, *dawbinii*;  
*E. crassum* — includes *antipodum*;  
*E. glabellum* — includes *erubescens*, *vernicosum*, *rubromarginatum*;  
*E. hectorii* — includes *krulleanum* s.s., *simulans*;  
*E. melanocaulon*\* — includes *polyclonum*;  
*E. nerteroides* — includes *pedunculare* var. *viride*;  
*E. nummulariifolium* — includes *caespitosum*;  
*E. pedunculare* — includes *linnaeoides*;  
*E. pubens* — includes var. *strictum* and excludes var. *astonii*;  
*E. wilsonii* — includes *chlorifolium* var. *kai-kourense*, *wilsonii* var. *pallidum*.  
 (v) three species are based on varieties in Allan viz. *E. angustum* on *E. nerteroides* var. *angustum*, *E. astonii* on *E. pubens* var. *astonii*, *E. brunnescens* subsp. *brunnescens* on *E. pedunculare* var. *brunnescens* and *E. brunnescens* subsp. *minutiflorum* on *E. pedunculare* var. *minutiflorum*.  
 (vi) *E. erectum* Petrie is a mixture of two naturalised species *E. obscurum* Schreb. and *E. ciliatum* Raf.

See also Garnock-Jones, P.J. 1983 (*Taxon* 32: 656–658) about the rejection of the name *E. junceum*; see also p. 118. See also Lovis, J. & Ward, J.M. 1982 (*Mauri Ora* 10: 67–72) for a tabular comparison of Raven & Raven's treatment with that of Allan (op. cit.) and Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* ed. 2: 599–617).

In all indigenous taxa of *Epilobium*  $n = 18$  or  $2n = 36$ ; Hair, J.B. 1977 (*N.Z. J. Bot.* 15: 5–15). See also Hair, J.B.; Raven, P.H.; Seavey, S.R. 1977 (*Ibid.* 15: 1–4) for meiotic chromosomal arrangement in experimentally produced  $F_1$  hybrids.

\* varieties in Allan subsumed

## Additional taxa and new rank:

- E. alsinoides* Cunn.  
 subsp. *alsinoides*  
 subsp. *atriplicifolium* (Cunn.) Raven et Engelhorn *N.Z. J. Bot.* 9: 348 (1971) = *E. atriplicifolium* Cunn. *Ann. Nat. Hist.* 3: 32 (1839)  
 subsp. *tenuipes* (Hook. f.) Raven et Engelhorn op. cit. 349 = *E. tenuipes* Hook. f. *Fl. N.Z.* 1: 59 (1852).
- E. angustum* (Cheeseman) Raven et Engelhorn op. cit. 349 = *E. nummulariifolium* Cunn. var. *angustum* Cheeseman *Man. N.Z. Fl.* 180 (1906).
- E. astonii* (Allan) Raven et Engelhorn op. cit. 349 = *E. pubens* var. *astonii* Allan *Fl. N.Z.* 1: 280, 970 (1961).
- E. billardioreanum* Ser.  
 subsp. *billardioreanum*  
 subsp. *cinereum* (A. Rich.) Raven et Engelhorn op. cit. 349 = *E. cinereum* A. Rich. *Essai Fl. N.Z.* 330 (1832)  
 subsp. *intermedium* Raven et Engelhorn op. cit. 348.
- E. brunnescens* (Cockayne) Raven et Engelhorn op. cit. 350 = *E. pedunculare* Cunn. var. *brunnescens* Cockayne *T.N.Z.I.* 50: 171 (1918)  
 subsp. *brunnescens*  
 subsp. *minutiflorum* (Cockayne) Raven et Engelhorn op. cit. 350 = *E. pedunculare* (Cunn.) var. *minutiflorum* Cockayne *T.N.Z.I.* 50: 172 (1918).
- E. margaretiae* Brockie *N.Z. J. Bot.* 3: 24 (1965).

## NYCTAGINACEAE

## PISONIA L.

Allan, H.H. 1961 (*Fl. N.Z.* 1: 286) treated the sole New Zealand representative of Nyctaginaceae as *Heimerliodendron brunonianum* (Endl.) Skottsb. Green, P.S. 1986 (*J. Arnold Arbor.* 67: 109–122) reverted to the name *Pisonia brunoniana*, as in Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 414).

## Reinstated name:

*P. brunoniana* Endl. *Prodr. Fl. Norfolk.* 43 (1833).

## THYMELAEACEAE

PIMELEA Sol. ex Gaertner *nom. cons.*

## Additional taxa:

- P. oreophila* Burrows *T.R.S.N.Z. Bot.*, 1: 217 (1962).  
*P. pulvinaris* Burrows op. cit. 219.

## PROTEACEAE

Johnson, L.A.S. & Briggs, B.G. 1975 (*J. Linn. Soc., Bot.* 70: 83–182), in a classification of the Proteaceae, placed *Knightsia* as a monotypic endemic in the tribe Knightieae, together with two related gen-

era *Darlingia* and *Eucarpha*. All three are small genera and considered to be relicts.

Johnson and Briggs split *Persoonia* into four genera. One of these, *Toronia*, consists of the monotypic New Zealand endemic *T. toru* (*Persoonia toru*). *Toronia* is distinguished from other members of subtribe Persooniinae by: inflorescence racemose with flowers in the axils of bracts; perianth segments slightly curved but not saccate; tepal margins incurved; anther connective lacking an appendage; ovary sessile; styles short not equalling the anthers, thick and straight, bearing a wide ± oblique stigma; ovules 2, 1-seeded.

## New ranks:

## Proteaceae

## Subfamily Grevilleoideae

tribe Knightieae L. Johnson et B. Briggs (*J. Linn. Soc., Bot.* 70: 172 (1975)

subtribe Knightiinae L. Johnson et B. Briggs loc. cit., includes *Knightsia*.

Subfamily Persoonioideae L. Johnson et B. Briggs op. cit. 170

## tribe Persoonieae

subtribe Persooniinae L. Johnson et B. Briggs op. cit. 170, includes *Toronia*.

TORONIA L. Johnson et B. Briggs *J. Linn. Soc., Bot.* 70: 174 (1975)

Type species: *T. toru* L. Johnson et B. Briggs.

## Transfer:

*T. toru* (Cunn.) L. Johnson et B. Briggs op. cit. 174 = *Persoonia toru* Cunn. in Hook. *Curtis Bot. Mag.* 63: sub t. 3513 (1836).

## PITTOSPORACEAE

PITTOSPORUM Banks ex Gaertner *nom. cons.*

## New rank:

- P. pimeleoides* R. Cunn.  
 subsp. *pimeleoides*  
 subsp. *major* (Cheeseman) R.C. Cooper *Ann. Missouri Bot. Gard.* 43: 152 (1956) = *P. pimeleoides* var. *major* Cheeseman *Man. N.Z. Fl.* 60 (1906).

## PASSIFLORACEAE

PASSIFLORA L. — TETRAPATHAEA Reichb. Green, P.S. 1972 (*Kew Bull.* 26: 539–558) preferred *Passiflora tetrandra* Banks et Sol. ex DC. over *Tetrapathaea tetrandra* (Banks et Sol. ex DC.) Cheeseman as used by Allan, H.H. 1961 (*Fl. N.Z.* 1: 318), on the grounds that the dioecious habit and tetramerous flowers are not unique and do not constitute evidence for the segregation of a separate genus. Subgenus *Tetrapathaea* of *Passiflora*, characterised by tetramerous flowers and the

absence of an operculum (inner corona) and of petiolar glands, is proposed to accommodate the sole New Zealand species.

Wilde, W.J.J.O. de 1974 (*Blumea* 22: 37–50) accepted *Tetrapathaea* as a monotypic genus in the tribe Passifloreae; petiolar glands are reported as 0 or 1 pair, at the base of the blade.

New rank:

Passiflora subgenus *Tetrapathaea* (DC.) P. Green op. cit. 553 = sect. *Tetrapathaea* DC. *Mém. Soc. Phys. Genève* 1 (2): 435 (1822); *Prodr.* 3: 323 (1828).

## CUCURBITACEAE

### SICYOS L.

W.R. Sykes (*hic comm.*): “*Sicyos australis* Endl. is the name to be applied to the plant treated as *S. angulata* L. by Allan, H.H. 1961 (*Fl. N.Z.* 1: 319). *S. australis*, of eastern Australia and New Zealand, is now probably extinct on Norfolk I., from where it was originally described. Though recorded from Lord Howe I., it is probably extinct there too, and in New Zealand it occurs mainly on northern offshore islands and the Kermadecs. Eastern North American *S. angulata* L. occurs from southern Canada to Texas; records of this species from Melanesia, tropical Polynesia, or Central and South America, are erroneous and refer to other species of *Sicyos*. *S. australis* shows more resemblance to *S. angulata* than to other species in the intervening areas, but is not clammy or viscid, and has smaller flowers, and smaller, less hairy fruits with shorter bristles than *S. angulata*.”

Reinstated name:

*S. australis* Endl. *Prodr. Fl. Norfolk.* 67 (1833).

## MYRTACEAE

KUNZEA Reichb. *Consp.* 175 (1828) *nom. cons.*

Type species: *K. capitata* (Smith) Heynh. Traditionally manuka and kanuka have been treated as two species of *Leptospermum*, as *L. scoparium* and *L. ericoides*. Thompson, J. 1983 (*Telopea* 2: 379–383) placed *L. ericoides* in *Kunzea* as *K. ericoides* and left *L. scoparium* in *Leptospermum*; she treated *L. sinclairii* as a synonym of *Kunzea ericoides*. Androecial characteristics especially emphasised in *Kunzea* are stamens longer than petals, filaments inflexed in the bud so that anthers are below the stigma and little or no thickening of cells at the back of the anther. The conservation of *Kunzea* has been accepted, as indicated above in “*Nomina Generica Conservanda*”.

W. Harris (*hic comm.*): “The third species included in Allan, H.H. 1961 (*Fl. N.Z.* 1: 323) as *Leptospermum sinclairii*, although reduced by

Thompson (op. cit.) to synonymy under *K. ericoides* should be retained at specific rank because of its shrub habit, wider branching, broader, more rigid and pubescent leaves, and larger flowers and capsules. The appropriate transfer is made together with the varieties of *K. ericoides*”.

Transfers:

*K. ericoides* (A. Rich.) J. Thompson *Telopea* 2: 379 (1983) = *L. ericoides* A. Rich. *Essai Fl. N.Z.* 338 (1832)

var. *ericoides*

var. *linearis* (Kirk) W. Harris comb. nov. based on *Leptospermum ericoides* A. Rich. var. *lineare* Kirk *Forest Fl. N.Z.* 125, t. 69, f. 2 (1889)

var. *microflora* (G. Simpson) W. Harris comb. nov. based on *Leptospermum ericoides* A. Rich. var. *microflorum* G. Simpson *T.R.S.N.Z.* 75: 189 (1945).

*K. sinclairii* (Kirk) W. Harris comb. nov. based on *Leptospermum sinclairii* Kirk *Stud. Fl. N.Z.* 158 (1899).

METROSIDEROS Banks ex Gaertner *nom. cons.*

Dawson, J.W. 1976 (*Blumea* 23: 7–11) redefined the genus *Metrosideros*, including within it the genus *Mearnsia*. Dawson’s earlier informal groupings (*Blumea* 18: 441–452; *Blumea* 20: 327–329) are formalised.

An additional species of *Metrosideros*, *M. bartlettii*, was first discovered in 1975 at North Cape (Dawson, J.W. *N.Z. J. Bot.* 23: 607–610. 1985, published 1986).

Additional infrageneric ranks:

Subgenus *Metrosideros* J.W. Dawson *Blumea* 23: 8 (1976) includes *M. excelsa*, *M. kermadecensis*, *M. robusta*, *M. umbellata*, and *M. bartlettii*

Subgenus *Mearnsia* (Merr.) J.W. Dawson op. cit. 9 = *Mearnsia* Merr. *Philipp. J. Sci.* 2: 284 (1907)

Sect. *Mearnsia*

Subsect. *Crasavenis* J.W. Dawson loc. cit., includes *M. parkinsonii* and *M. fulgens*

Subsect. *Trivalvis* J.W. Dawson loc. cit., includes *M. diffusa*, *M. colensoi*, *M. albiflora*, and *M. carminea*

Sect. *Calyptropetala* J.W. Dawson loc. cit.

Subsect. *Exsertis* J.W. Dawson op. cit. 10, includes *M. perforata*.

Additional taxon:

*M. bartlettii* J.W. Dawson *N.Z. J. Bot.* 23: 607 (1986).

SYZYGIUM Gaertner *Fruct. Sem. Pl.* 1: 166, t. 33 (1788) *nom. cons.*

Type species: *S. caryophyllaceum* Gaertner.

Transfer:

*S. maire* (Cunn.) Sykes et Garnock-Jones *J. Arnold*

*Arbor.* 60: 400 (1979) ≡ *Eugenia maire* Cunn.  
*Ann. Nat. Hist.* 3: 114 (1839).

## ELAEOCARPACEAE

## ELAEOCARPUS L.

Coode, M.J.E. 1984 (*Kew Bull.* 39: 509–586) in a revision of Australasian *Elaeocarpus* made no changes to the status of the two New Zealand species; a limited array of material was seen. Informal, i.e. non-nomenclatural, grouping of species is proposed. The indigenous taxa are included in Group V, Subgroup D with two Australian species and distinguished by 2-loculate ovary, petals up to 9 mm long, glabrous or hairy on margin, inflorescence few- to many-flowered borne amongst leaves, stamens 20 or fewer but up to 25, flower-buds ± ovoid or ellipsoid.

## ARISTOTELIA L'Hér.

Coode, M.J.E. 1985 (*Kew Bull.* 40: 479–507) reviewed *Aristolelia*. He made no changes to the status of the two New Zealand species. For *Aristolelia fruticosa* Hook. f. he presumed that Hooker's var. *α suberecta* (*Fl. N.Z.* 1: 34. 1852) must be taken as the typical variety but cited no lectotype.

## MALVACEAE

## PLAGIANTHUS Forst. et Forst. f.

Substitute name:

*P. regius* (Poit.) Hochr. *Annuaire Conserv. Jard. Bot. Genève* 10: 16 (1907) ≡ *Phyllipodendrum regium* Poit. *Ann. Sci. Nat. Bot. ser. 2*, 8: 184, t. 3 (1837) replaces *P. betulinus* Cunn. *Ann. Nat. Hist.* 4: 25 (1840). This substitution was recommended by Melville, R. 1967 (*Kew Bull.* 20: 511–516).

## EUPHORBIACEAE

Hutchinson, J. 1969 (*Amer. J. Bot.* 56: 738–758), describing the tribes of the Euphorbiaceae, distinguished *Oreoporanthera* as a genus of the tribe Poranthereae. Radcliffe-Smith, A. 1983 (*Kew Bull.* 38: 307–308) reassigned *Euphorbia glauca* Forst. f. to *Euphorbia* sect. *Esula*.

OREOPORANTHERA Hutch. *Amer. J. Bot.* 56: 747 (1969)

Type species: *O. alpina* (Hook. f.) Hutch.

Transfer:

*O. alpina* (Hook. f.) Hutch. op. cit. 747 ≡ *Poranthera alpina* Cheeseman ex Hook. f. *Hooker's Icon. Pl. t.* 1366B (1881).

See Orchard, A.E. & Davies, J.B. 1985 (*Pap. & Proc. Roy. Soc. Tasmania* 119: 61–63) for *O. petalifera* of Tasmania. *Oreoporanthera* is no longer endemic or monotypic.

## CUNONIACEAE

Hoogland, R.D. 1979 (*Blumea* 25: 481–505), reduced *Ackama* Cunn. and other austral genera to synonymy under *Caldcluvia*, considering that these genera have in common as the most significant characters: valvate sepals, entire petals, obdiplostemonous bisexual flowers, and loosely connate carpels separating while dehiscing with a ventral split.

Godley, E.J. 1983 (*N.Z. J. Bot.* 21: 455–456) on the basis of fruit morphology rejected Hoogland's inclusion of *Ackama* in *Caldcluvia*. *Weinmannia* fruit was also illustrated.

Dickison, W.C. 1984 (*J. Arnold Arbor.* 65: 149–190) discussed fruits and seeds of the Cunoniaceae and noted that seed morphology and fruit dehiscence are the only apparent characters which would argue against a merger of *Weinmannia* and *Caldcluvia*. Australasian species formerly included in *Ackama* have hairy seeds in which the epidermal cells have conspicuously undulate anticlinal walls; in all other taxa included in *Caldcluvia* by Hoogland the seeds are winged, frequently papillate, with striate or non-striate epidermal cells. Thorne, R.F. 1983 (*Nord. J. Bot.* 3: 85–117) commented (p. 92) that current work by Dickison on wood anatomy does not support the inclusion of *Ackama* in *Caldcluvia*.

## CALDCLUVIA D. Don

Transfer:

*C. rosifolia* (Cunn.) Hoogl. *Blumea* 25: 489 (1979) ≡ *Ackama rosifolia* Cunn. *Ann. Nat. Hist.* 2: 358 (1839).

For chromosome numbers see Hair, J.B. & Beuzenberg, E.J. 1960 (*N.Z. J. Sci.* 3: 432–440; n = 15 in *Weinmannia*, and n = 16 in *Ackama rosifolia*).

## ESCALLONIACEAE

Three genera, *Quintinia*, *Ixerba*, and *Carpodetus* are attributed to this family in New Zealand by Allan, H.H. 1961 (*Fl. N.Z.* 1: 349–351). All seem doubtful there. Of these, *Ixerba* is sometimes regarded as a member of the Brexiaceae Lindley (1830), see Philipson, W.R. 1974 (*J. Linn. Soc., Bot.* 68: 89–108). Pragłowski, J. & Grafström, E. 1985 (*Grana* 24: 11–21) described *Carpodetus* as enigmatic in the Escalloniaceae and noted that *C. serratus*, the New Zealand endemic, has pollen morphologically distinct from that of New Guinean species. For *Quintinia*, Philipson (op. cit.) reported that the ovule of *Q. serrata* was bitegmic and tenuinucellate and therefore intermediate between the conditions usual in the Escalloniaceae and the Brexiaceae respectively.

## ROSACEAE

## ACAENA L.

Additional taxon and new rank:

- A. *dumicola* B. Macmillan *N.Z. J. Bot.* 23: 338 (1985).  
 A. *profundeincisa* (Bitter) B. Macmillan *N.Z. J. Bot.* 21: 347 (1983) = *A. sanguisorbae* (L. f.) M. Vahl subsp. *profundeincisa* Bitter *Biblioth. Bot.* 74: 270 (1911).

## PAPILIONACEAE

## CAVALIA L.

Verdcourt, B. 1971 (*Fl. Trop. E. Africa Leg. Papil.* 576–577) clarified the synonymy of the common tropical species found on the Kermadec Is.

Substitute name:

- C. *rosea* (Sw.) DC. *Prodr.* 2: 404 (1825) = *Dolichos roseus* Sw. *Nov. Gen. & Sp. Prodr.* 105 (1788) = *Canavalia maritima* Thouars *J. Bot. Agric.* 1: 80 (1813) non *Dolichos maritimus* Aublet (1775) = *Canavalia obtusifolia* (Lam.) DC. *Prodr.* 2: 404 (1825) = *Dolichos obtusifolius* Lam. *Encycl.* 2: 295 (1786) non Jacq. (1768).

## CHORDOSPARTIUM Cheeseman

Purdie, A.W. 1985 (*N.Z. J. Bot.* 23: 157–161) described a rare and endangered species from Marlborough; it is the second species in this endemic genus.

Additional taxon:

- C. *muritai* Purdie *N.Z. J. Bot.* 23: 157 (1985).

## MORACEAE

STREBLUS Lour. *Fl. Cochinch.* 599, 614 (1790)

Type species: *S. asper* Lour.

Corner, E.J.H. 1962 (*Gard. Bull. Singapore* 19: 187–252) revised the Moraceae. *Paratrophis* as in Allan, H.H. 1961 (*Fl. N.Z.* 1: 401–402) is represented by three endemic species; Corner (op. cit.) referred them to *Streblus* sect. *Paratrophis*.

C.J. Webb (*hic comm.*): “Corner (op. cit.) treated *P. banksii* as *S. heterophyllus* var. *ellipticus* because of reputed hybrids between *P. banksii* and *P. microphylla* (= *Streblus heterophyllus*). The few collections of putative hybrids between these taxa are, at best, of doubtful authenticity. *P. banksii* should be transferred to *Streblus* at specific rank; both it and *S. heterophyllus* are distinct throughout their overlapping distribution”.

Transfers and new combination:

- S. *banksii* (Cheeseman) C. Webb comb. nov. based on *Paratrophis banksii* Cheeseman *Man. N.Z. Fl.* 633 (1906) = *S. heterophyllus* var. *ellipticus* (Kirk) Corner *Gard. Bull. Singapore* 19: 222

(1962) = *Paratrophis heterophylla* var. *elliptica* Kirk *T.N.Z.I.* 29: 500, t. 46 (1897).

- S. *heterophyllus* (Blume) Corner op. cit. 221 (1962) = *Paratrophis heterophylla* Blume *Ann. Mus. Bot. Lugduno-Batavum* 2: 81 (1852) = *Epicarpurus microphyllus* Raoul *Ann. Sci. Nat. Bot. ser.* 3, 2: 117 (1844) = *Paratrophis microphylla* (Raoul) Cockayne *Rep. Scen. Pres. (C.-6)* 3 (1915); the combination in *Streblus* based on *Epicarpurus microphyllus* Raoul is unavailable because of the earlier *S. microphyllus* Kurz (1877).  
 S. *smithii* (Cheeseman) Corner op. cit. 224 = *Paratrophis smithii* Cheeseman *T.N.Z.I.* 20: 148 (1888).

## URTICACEAE

## BOEHMERIA Jacq.

New rank:

B. *australis* Endl.

var. *dealbata* (Cheeseman) Sykes *N.Z. DSIR Bull.* 219: 148 (1977) = *B. dealbata* Cheeseman *T.N.Z.I.* 24: 410 (1892).

## ICACINACEAE

## PENNANTIA Forst. et Forst. f.

A Three Kings Is endemic discovered by G.T.S. Baylis was described by Oliver, W.R.B. 1948 (*Rec. Auckland Inst. Mus.* 3: 224–226) as the genus *Plectomirtha* with one species *P. baylisiana*. Oliver placed this monotypic genus in the Anacardiaceae. Sleumer, H. 1970 (*Blumea* 18: 217–218) recognised the taxon as *Pennantia*.

Baylis, G.T.S. 1977 (*N.Z. J. Bot.* 15: 511–512) transferred the Three Kings species to *Pennantia*.

Transfer:

- P. *baylisiana* (W. Oliver) Baylis *N.Z. J. Bot.* 15: 511 (1977) = *Plectomirtha baylisiana* W. Oliver *Rec. Auckland Inst. Mus.* 3: 225 (1948).

## VISCACEAE

Barlow, B.A. 1965 (*Proc. Linn. Soc. N.S.W.* 89: 268–272) reviewed the classification of Loranthaceae *sens. lat.* and accepted Viscaceae Miquel 1856 (*Fl. Ned. Ind.* 1: 803) as a distinct family rather than as subfamily Viscoideae of Loranthaceae as it was earlier treated by many authors including Allan, H.H. 1961 (*Fl. N.Z.* 1: 411–412). The family is represented in New Zealand by *Korthalsella*. The genus was revised by Danser, B.H. 1937 (*Bull. Jard. Bot. Buitenzorg ser.* 3, 14: 115–159); his treatment was followed by Allan (loc. cit.). In a supplementary paper Danser, B.H. 1940 (*Ibid.* 16: 329–342) modified his treatment of *Korthalsella* and recognised *K. clavata* as distinct and not simply a variety

of *K. lindsayi*. Danser's later treatment was followed by Moore, L.B. & Irwin, J.B. 1978 (*Oxford Book N.Z. Plants* 32).

#### KORTHALSELLA Tieghem

Reinstated name:

*K. clavata* (Kirk) Cheeseman *Man. N.Z. Fl.* 1151 (1906) = *Viscum clavatum* Kirk *T.N.Z.I.* 24 : 429 (1892)

### LORANTHACEAE

Barlow, B.A. 1966 (*Austral. J. Bot.* 14 : 421–499) revised Australian and New Zealand mistletoes, reinstating them in genera earlier erected by Van Tieghem 1894 (*Bull. Soc. Bot. France* 41 : 481–490, 497–511, 597–605) and 1895 (*Ibid.* 42 : 23–30). Compared with the treatment of subfamily Loranthoideae in Allan, H.H. 1961 (*Fl. N.Z.* 1 : 412–416, where all synonyms are listed); Barlow's arrangement is:

(i) *Tupeia* alone remains unchanged as *T. antarctica*;

(ii) three taxa are treated as endemic monotypic genera,

(a) *Ileostylus* Tieghem with *I. micranthus* (Hook. f.) Tieghem replacing *Loranthus micranthus*,

(b) *Trilepidea* Tieghem with *T. adamsii* (Cheeseman) Tieghem replacing *Elytranthe adamsii*,

(c) *Alepis*. Tieghem with *A. flavida* (Hook. f.) Tieghem replacing *Elytranthe flavida*;

(iii) the genus *Peraxilla* Tieghem is recognised, with two species, *P. colensoi* (Hook. f.) Tieghem replacing *Elytranthe colensoi*, and *P. tetrapetala* (L. f.) Tieghem replacing *Elytranthe tetrapetala*.

The two collections referred by Allan (op. cit. 416) to *Phrygilanthus raoulii* are discussed by Barlow under *Muellerina* Tieghem but he regards these New Zealand records as doubtful.

### ARALIACEAE

#### PSEUDOPANAX K. Koch

Philipson, W.R. 1965 (*N.Z. J. Bot.* 3 : 333–341) transferred to *Pseudopanax*, the earliest valid generic name, the species treated as *Neopanax* in Allan, H.H. 1961 (*Fl. N.Z.* 1 : 433–436). All had been for a time in *Nothopanax*, see Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 633–637).

Edgar, E. 1973 (*N.Z. J. Bot.* 11 : 171–172) formally made one new varietal combination. Sykes, W.R. 1977 (*N.Z. DSIR Bull.* 219 : 76) reduced the Kermadec Is plant which Philipson (op. cit.) had treated as *P. kermadecensis* to varietal rank in *Pseudopanax arboreus*. Wardle, P. 1968 (*N.Z. J.*

*Bot.* 6 : 226–236) revised *P. colensoi*, recognising three varieties.

All species once treated as *Nothopanax* or *Neopanax* now reside in *Pseudopanax*. Full synonymies are in Philipson (op. cit.). The eight species placed in *Pseudopanax* by Allan, H.H. 1961 (*Fl. N.Z.* 1 : 436–440) remain there viz. *P. chathamicus*, *P. crassifolius*, *P. discolor*, *P. edgerleyi*, *P. ferox*, *P. gilliesii*, *P. lessonii*, *P. linearis*.

Transfers and additional taxa:

*P. anomalus* (Hook.) Philipson *N.Z. J. Bot.* 3 : 338 (1965) = *Panax anomalus* Hook. *London J. Bot.* 2 : 422, t. 12 (1843).

*P. arboreus* (Murray) Philipson op. cit. 338 = *Panax arboreus* Murray *Syst. Veg.* ed. 14 : 920 (1784). var. *arboreus*

var. *kermadecensis* (W. Oliver) Sykes *N.Z. DSIR Bull.* 219 : 76 (1977) = *Nothopanax kermadecensis* W. Oliver *T.N.Z.I.* 56 : 4 (1926) = *Pseudopanax kermadecensis* (W. Oliver) Philipson op. cit. 338.

*P. colensoi* (Hook. f.) Philipson op. cit. 338 = *Panax colensoi* Hook. f. *Fl. N.Z.* 1 : 94, t. 21 (1852) var. *colensoi*

var. *fiordensis* Wardle *N.Z. J. Bot.* 6 : 230 (1968) var. *ternatus* Wardle op. cit. 230.

*P. kermadecensis* (W. Oliver) Philipson op. cit. 338 = *Nothopanax kermadecensis* W. Oliver loc. cit.

*P. laetus* (Kirk) Philipson op. cit. 338 = *Panax arboreus* var. *laetus* Kirk *Stud. Fl. N.Z.* 219 (1899).

*P. macintyreii* (Cheeseman) Wardle *N.Z. J. Bot.* 6 : 522 (1968) = *Nothopanax macintyreii* Cheeseman *Man. N.Z. Fl.* 636 (1925).

*P. simplex* (Forst. f.) Philipson op. cit. 338 = *Panax simplex* Forst. f. *Prodr.* 75 (1786) var. *simplex*

var. *sinclairii* (Hook. f.) Edgar *N.Z. J. Bot.* 11 : 172 (1973) = *Panax sinclairii* Hook. f. *Handb. N.Z. Fl.* 103 (1964).

For shoot morphology see Philipson, W.R. 1971 (*J. Indian Bot. Soc.* 50A : 188–195).

For wood vessel element morphology and relationship to informal infrageneric grouping of Philipson (op. cit.) see Butterfield, B.G.; Philipson, W.R.; Meylan, B.A.; Ohtani, J. 1984 (*N.Z. J. Bot.* 22 : 509–514).

### GRISELINIACEAE

This monogeneric family was erected by Takhtajan, A. 1970 (*Proiskh. i Rassel. Tsvetk. Rast.*) for *Griselinia* Forst. f. which is represented in New Zealand by two species. Takhtajan elevated to family rank tribe Griselinieae of Cornaceae recognised by Wangerin, W. 1910 (*Pflanzenreich* 41 : 94).



## UMBELLIFERAE or APIACEAE

## HYDROCOTYLE L.

Webb, C.J. & Johnson, P.N. 1982 (*N.Z. J. Bot.* 20: 163–168) revised the trifoliolate species of *Hydrocotyle* in New Zealand. Three taxa are recognised:

- (i) *H. hydrophila* revived from varietal treatment in *H. tripartita*, see Allan, H.H. 1961 (*Fl. N.Z.* 1: 446);
- (ii) *H. sulcata* described as an additional taxon;
- (iii) *H. tripartita* A. Rich. naturalised from eastern Australia.

Webb, C.J. 1984 (*Canty Bot. Soc. J.* 18: 70–71) reinstated *H. heteromeria*.

Additional taxon and reinstated names:

- H. hydrophila* Petrie *T.N.Z.I.* 29: 425 (1897).
- H. sulcata* C. Webb et P. Johnson *N.Z. J. Bot.* 20: 165 (1982).
- H. heteromeria* A. Rich. *Ann. Sci. Phys.* 4: 200 (1820).

*ACTINOTUS* Labill. *Nov. Holl. Pl.* 1: 67, t. 92 (1805)

Type species: *A. helianthii* Labill.

Webb, C.J. 1980 (*N.Z. J. Bot.* 18: 343–345) re-examined the status of the New Zealand taxon referred to as *Hemiphues suffocata* var. *novae-zelandiae* and concluded that it was better placed in *Actinotus*. New Zealand plants differ markedly from Tasmanian *A. suffocatus*. *A. novaezelandiae* is suggested as the most appropriate binomial for the New Zealand taxon.

Transfer:

*A. novaezelandiae* (Petrie) Petrie *T.N.Z.I.* 13: 324 (1881) based on *Hemiphues novaezelandiae* Petrie *T.N.Z.I.* 12: 355 (1880).

Gynoecial morphology led Magin, N. 1978 (*in* Cauwet-Marc, A.M. & Carbonnier, J. (ed.) *Actes du 2ème Symposium Internationale sur les Ombellifères* 749–764) to conclude that *Actinotus* would be better aligned with Cornales s.l. rather than the Apiaceae.

## APIUM L.

Short, P.S. 1979 (*J. Adelaide Bot. Gard.* 1: 205–235) assigned New Zealand plants of *Apium* to subspecies and varieties of one Australasian species, *A. prostratum*, and considered that *A. australe* Thouars, in which Allan, H.H. 1961 (*Fl. N.Z.* 1: 462–463) placed plants with 2–3-pinnate leaves, was restricted to South America.

In New Zealand:

- (i) *A. prostratum* var. *prostratum* is found in northern Northland;
- (ii) *A. prostratum* var. *filiforme* occurs all around the New Zealand coast and includes most of Allan's *A. australe* and *A. filiforme*;

(iii) *A. prostratum* subsp. *denticulatum* occurs in Chatham Is.

Treatment after Short:

- A. prostratum* Labill. ex Vent. *Jard. Malm.* t. 81 (1804/5)
  - subsp. *prostratum*
  - var. *prostratum*
  - var. *filiforme* (A. Rich.) Kirk *Stud. Fl. N.Z.* 196 (1899) = *Petroselinum filiforme* A. Rich. *Essai Fl. N.Z.* 278 (1832)
  - subsp. *denticulatum* P. Short *J. Adelaide Bot. Gard.* 1: 228 (1979).

## LILAEOPSIS E. Greene

Affolter, J.M. 1985 (*Syst. Bot. Monogr.* 6: 1–140) recognised two species for New Zealand, uniting *L. lacustris* and *L. orbicularis*, as in Allan, H.H. 1961 (*Fl. N.Z.* 1: 463–465), with *L. novae-zelandiae* and erecting one additional species *L. ruthiana*.

Taxa according to Affolter:

- L. novae-zelandiae* (Gand.) A.W. Hill *J. Linn. Soc., Bot.* 47: 549 (1927) = *Crantzia novae-zelandiae* Gand. *Bull. Soc. Bot. France* 65: 31 (1918) = *L. lacustris* A.W. Hill op. cit. 550 = *L. orbicularis* A.W. Hill *Kew Bull.* for 1928, 267 (1928).
- L. ruthiana* Affolter *Syst. Bot. Monogr.* 6: 113 (1985).

## ACIPHYLLA Forst. et Forst. f.

Dawson, J.W. & Le Comte, J.R. 1978 (*Tuatara* 23: 49–67) provided a useful synopsis.

Le Comte, J.R. & Webb, C.J. 1981 (*N.Z. J. Bot.* 19: 187–191) after an experimental study treated *A. townsonii* Cheeseman as a juvenile form of *A. hookeri* Kirk.

Dawson, J.W. 1979 (*Ibid.* 17: 339–351) re-examined four related species with once-pinnate leaves and simple stipules:

- (i) *A. montana* is revived and distinguished from *A. lyallii* Hook. f. in which it had been included;
- (ii) *A. gracilis* is reduced to varietal status in *A. montana*;
- (iii) *A. lecomtei* is described.

Additional taxa and new rank:

- A. lecomtei* J.W. Dawson *N.Z. J. Bot.* 17: 343 (1979).
- A. montana* J.F. Armstr. *T.N.Z.I.* 4: 290 (1872)
  - var. *montana*
  - var. *gracilis* (W. Oliver) J.W. Dawson op. cit. 342 = *A. gracilis* W. Oliver *T.R.S.N.Z.* 84: 10 (1956).
- A. stannensis* J.W. Dawson *N.Z. J. Bot.* 18: 119 (1980).

For description of the intergeneric hybrid *Aciphylla* × *Gingidia* see Webb, C.J. & Druce, A.P. 1984 (*N.Z. J. Bot.* 22: 403–411).

## GINGIDIA J.W. Dawson — ANISOTOME Hook. f. — ANGELICA L.

Allan, H.H. 1961 (*Fl. N.Z. 1* : 443, 487–505) placed within tribe Ammineae (= Apieae) of subfamily Apioideae the genus *Anisotome* to which he referred 16 New Zealand species, and he placed the genus *Angelica* within tribe Peucedaneae of subfamily Apioideae, referring 5 species to it. However, the species he referred to these two tribes form part of a closely related group of five genera of uncertain affinity according to Webb, C.J. 1986 (*in* Barlow, B.A. (ed.) *Flora and Fauna of Alpine Australasia*, CSIRO, Melbourne, 383–399).

Dawson, J.W. 1974 (*Kew Bull.* 29 : 476) completed his reassessment, begun in 1961 (*Univ. Calif. Publ. Bot.* 33 (1) : 6), of 12 species formerly included in *Anisotome* and/or *Angelica* by Allan, H.H. (loc. cit.). The generic name *Gingidia* as used by Dawson 1971 (*in* Heywood, V.H. (ed.) *Biology and Chemistry of the Umbelliferae*, p. 44) was validated. Webb, C.J. 1977 (*N.Z. J. Bot.* 15 : 639–643) promoted one of Dawson's varieties to specific rank. Of the treatment in Allan (op. cit.) of *Angelica* and *Anisotome*:

- (i) there are now no species of *Angelica* indigenous to New Zealand;
- (ii) 2 species are treated as species of *Scandia* — *S. geniculata* and *S. rosifolia* formerly in *Angelica*;
- (iii) 2 species are treated as species of *Lignocarpa* — *L. carnosula* and *L. diversifolia* formerly in *Anisotome*;
- (iv) 6 species are now treated as species of *Gingidia* — three each from *Anisotome* and *Angelica*;
- (v) 15 are treated as *Anisotome* including *A. filifolia* and *A. deltoidea* removed earlier and restored later by Dawson 1971 (op. cit. 51), and three are additional species.

## ANISOTOME Hook. f.

Additional taxa and new rank:

- A. cauticola* J.W. Dawson *Univ. Calif. Publ. Bot.* 33 : 49 (1961).  
*A. flexuosa* J.W. Dawson op. cit. 51 = *A. aromatica* var. *dissecta* Allan *Fl. N.Z. 1* : 492, 965 (1961).  
*A. imbricata* (Hook. f.) Cockayne  
 var. *imbricata*  
 var. *prostrata* J.W. Dawson op. cit. 59.  
*A. lanuginosa* (Kirk) J.W. Dawson op. cit. 54 ≡ *Ligusticum aromaticum* var. *lanuginosum* Kirk *Stud. Fl. N.Z.* 204 (1899).

GINGIDIA J.W. Dawson *Kew Bull.* 29 : 476 (1974) replaces *Gingidium* Forst. et Forst. f. *Char. Gen. Pl.* 41 (1775) a later homonym of *Gingidium* Hill (1756)

Type species: *G. montana* (Forst. et Forst. f.) J.W. Dawson.

Transfers and new rank:

- G. baxterae* (J.W. Dawson) C. Webb *N.Z. J. Bot.* 15 : 639 (1977) ≡ *Gingidium enysii* (Kirk) J.W. Dawson var. *baxterae* J.W. Dawson *N.Z. J. Bot.* 5 : 108 (1967).  
*G. decipiens* (Hook. f.) J.W. Dawson *Kew Bull.* 29 : 476 (1974) ≡ *Angelica decipiens* Hook. f. *Handb. N.Z. Fl.* 98 (1864) = *Anisotome petraea* (Cheeseman) Cheeseman *Man. N.Z. Fl.* 679 (1925).  
*G. enysii* (Kirk) J.W. Dawson loc. cit. ≡ *Ligusticum enysii* Kirk *T.N.Z.I.* 9 : 548 (1877).  
*G. flabellata* (Kirk) J.W. Dawson loc. cit. ≡ *Ligusticum flabellatum* Kirk *Stud. Fl. N.Z.* 205 (1899).  
*G. montana* (Forst. et Forst. f.) J.W. Dawson loc. cit. ≡ *Gingidium montanum* Forst. et Forst. f. *Char. Gen. Pl.* 42, t. 21 (1775).  
*G. trifoliolata* (Hook. f.) J.W. Dawson loc. cit. ≡ *Ligusticum* (?) *trifoliolatum* Hook. f. *Handb. N.Z. Fl.* 97 (1864).

LIGNOCARPA J.W. Dawson *N.Z. J. Bot.* 5 : 400 (1967)

Type species: *L. carnosula* (Hook. f.) J.W. Dawson.

Transfers:

- L. carnosula* (Hook. f.) J.W. Dawson op. cit. 405 ≡ *Ligusticum carnosulum* Hook. f. *Handb. N.Z. Fl.* 96 (1864).  
*L. diversifolia* (Cheeseman) J.W. Dawson op. cit. 405 ≡ *Ligusticum diversifolium* Cheeseman *Man. N.Z. Fl.* 1139 (1906).

SCANDIA J.W. Dawson *N.Z. J. Bot.* 5 : 407 (1967)

Type species: *S. geniculata* (Forst. f.) J.W. Dawson.

Transfers:

- S. geniculata* (Forst. f.) J.W. Dawson op. cit. 410 ≡ *Peucedanum geniculatum* Forst. f. *Prodr.* 22 (1786).  
*S. rosifolia* (Hook.) J.W. Dawson op. cit. 410 ≡ *Angelica rosifolia* Hook. *Icon. Pl.* t. 581 (1843).

## ERICACEAE

GAULTHERIA Kalm ex L.

Additional taxa:

- G. depressa* Hook. f.  
 var. *depressa*  
 var. *novae-zelandiae* Franklin *T.R.S.N.Z., Bot.* 1 : 163 (1962).

PERNETTYA Gaudich. *nom. cons.*

Additional taxon:

- P. alpina* Franklin *T.R.S.N.Z., Bot.* 1 : 164 (1962).

See also Franklin, D.A. 1964 (*N.Z. J. Bot.* 2: 34–43; 367–379) for hybrids, and see Sleumer, H. 1985 (*Bot. Jahrb.* 105: 449–480) for taxonomic review of the genus. The New Zealand species are unchanged.

#### EPACRIDACEAE

##### CYATHODES Labill.—STYPHELIA Smith

Sleumer, H. 1963 (*Blumea* 12: 145–171) revised the family Epacridaceae from Asia, Malaysia and the Pacific. Species included in *Cyathodes* in Allan, H.H. 1961 (*Fl. N.Z.* 1: 514–518) are transferred, without comment, to *Styphelia* subgenus *Leucopogon* and subgenus *Cyathodes* (Table 4).

For descriptions of pollen see McGlone, M.S. 1978 (*N.Z. J. Bot.* 16: 91–101) who used names available in *Leucopogon* and *Cyathodes*.

Transfers and substitute names in *Styphelia* after Sleumer:

- S. fasciculata (Forst. f.) Sleumer *Blumea* 12: 153 (1963) = *Epacris fasciculata* Forst. f. *Prodr.* 13 (1786).
- S. minuta Sleumer op. cit. 156; the combination based on *Cyathodes pumila* Hook. f. *Handb. N.Z. Fl.* 735 (1867) is unavailable because of *Styphelia pumila* (R. Br.) Sprengel (1824).
- S. nesophila (DC.) Sleumer op. cit. 153 = *Leucopogon nesophilus* DC. *Prodr.* 7: 752 (1839) = *L. fraseri* Cunn. *Ann. Nat. Hist.* 2: 47 (1838); the combination based on *Leucopogon fraseri* is unavailable because of *Styphelia fraseri* F. Muell. (1867).
- S. robusta (Hook. f.) Sleumer op. cit. 159 = *Cyathodes robusta* Hook. f. *Handb. N.Z. Fl.* 177 (1864).
- S. taxifolia Sleumer op. cit. 156; the combination based on *Androstoma empetrifolia* Hook. f. *Fl. Antarct.* 1: 44 (1844) is unavailable because of *Styphelia empetrifolia* (R. Br.) F. Muell. (1874).

#### SAPOTACEAE

##### PLANCHONELLA Pierre *nom. cons.*

Green, P.S. 1986 (*J. Arnold Arbor.* 67: 109–122) reduced *Planchonella novo-zelandica* (F. Muell.) Allan (*Fl. N.Z.* 1: 539, 1961) to synonymy in *P. costata*.

Substitute name:

- P. costata (Endl.) Pierre ex H.J. Lam *Blumea* 5: 5 (1942) = *Achras costata* Endl. *Prodr. Fl. Norfolk.* 49 (1833).

#### OLEACEAE

##### NESTEGIS Raf. *Sylva Tellur.* 10 (1838)

Type species: *N. apetalata* (M. Vahl) L. Johnson.

Transfers:

- N. apetalata* (M. Vahl) L. Johnson in Degener *New Ill. Fl. Hawaiian Is.* 300 (1958) = *Olea apetalata* M. Vahl *Symb. Bot.* 3: 3 (1794).
  - N. cunninghamii* (Hook. f.) L. Johnson loc. cit. = *Olea cunninghamii* Hook. f. *Fl. N.Z.* 1: 175 (1853).
  - N. lanceolata* (Hook. f.) L. Johnson loc. cit. = *Olea lanceolata* Hook. f. *Fl. N.Z.* 1: 176 (1853).
  - N. montana* (Hook. f.) L. Johnson loc. cit. = *Olea montana* Hook. f. *Fl. N.Z.* 1: 176 (1853).
- See also Green, P.S. 1963 (*J. Arnold Arbor.* 44: 377–389) where the four species are discussed at length. Johnson, L.A.S. 1957 (*Contr. N.S.W. Natl. Herb.* 2: 395–418) had placed all New Zealand species in *Gymnelaea* (Endl.) Spach, see Allan, H.H. 1961 (*Fl. N.Z.* 1: 1025), but this name is antedated by *Nestegis*.

#### LOGANIACEAE

##### GENIOSTOMA Forst. et Forst. f.

Conn, B.J. 1980 (*Blumea* 26: 245–364) monographed *Geniostoma* subgenus *Geniostoma*. He treated *G. ligustrifolium* Cunn., previously regarded as a species endemic to New Zealand, as the New Zealand variety of *G. rupestre* which occurs throughout Malesia and the Pacific. New Zealand material differs from *G. rupestre* s.s. in having corolla indumentum only in the mouth and on the inner surface of the lobes, but never in the tube, and in having mostly apiculate stipules, features which however appear at times in *G. rupestre* s.s.

Conn did not recognise *G. ligustrifolium* var. *crassum* as a distinct taxon, but in making the new combination for New Zealand plants he used, as he was then obliged to, the varietal epithet *crassum* because it was the earliest published at that rank. In terms of the "Sydney Code" (1983 — Art. 26.2) the description of *G. ligustrifolium* var. *crassum* by Cheeseman in 1897 automatically established the autonym *G. ligustrifolium* var. *ligustrifolium*; the varietal epithet to be applied to the New Zealand material of *G. rupestre* must be based on var. *ligustrifolium* and the new combination required is provided by B.J. Conn.

New combination:

- G. rupestre* Forst. et Forst. f.  
var. **ligustrifolium** (Cunn.) Conn comb. nov.  
based on *G. ligustrifolium* Cunn. *Ann. Nat. Hist.* 2: 46 (1839) = *G. rupestre* Forst. et Forst. f.  
var. *crassum* (Cheeseman) Conn *Blumea* 26: 294 (1980) = *G. ligustrifolium* Cunn. var. *crassum* Cheeseman *T.N.Z.I.* 29: 392 (1897).

**Table 4** THREE TREATMENTS OF NEW ZEALAND STYPHELOID EPACRID; the option *Leucopogon/Cyathodes* is based on the assumption that all taxa are endemic except *L. parviflorus* and *C. juniperina*.

Allan (1961)	Sleumer (1963)	<i>Leucopogon/Cyathodes</i>
<b><i>Cyathodes</i></b>	<b><i>Styphelia</i></b>	<b><i>Leucopogon</i></b>
	Subgenus <i>Leucopogon</i>	
<i>C. fasciculata</i> (Forst. f.) Allan	<i>S. fasciculata</i> (Forst. f.) Sleumer	<i>L. fasciculatus</i> (Forst. f.) A. Rich.
<i>C. parviflora</i> (Andrews) Allan	—	<i>L. parviflorus</i> (Andrews) Lindley
<i>C. colensoi</i> (Hook. f.) Hook. f.	<i>S. suaveolens</i> (Hook. f.) Warb.	<i>L. colensoi</i> Hook. f.
<i>C. fraseri</i> (Cunn.) Allan	<i>S. nesophila</i> (DC.) Sleumer	<i>L. fraseri</i> Cunn.
var. <i>muscosa</i> (G. Simpson) Allan	—	var. <i>muscosus</i> G. Simpson
	Subgenus <i>Cyathodes</i>	<b><i>Cyathodes</i></b>
<i>C. empetrifolia</i> (Hook. f.) Hook. f.	<i>S. taxifolia</i> Sleumer	<i>C. empetrifolia</i> (Hook. f.) Hook. f.
<i>C. pumila</i> Hook. f.	<i>S. minuta</i> Sleumer	<i>C. pumila</i> Hook. f.
<i>C. juniperina</i> (Forst. et Forst. f.) G.C. Druce	<i>S. juniperina</i> (Forst. et Forst. f.) Pers.	<i>C. juniperina</i> (Forst. et Forst. f.) G.C. Druce
var. <i>oxycedrus</i> (Labill.) Allan	<i>S. oxycedrus</i> Labill. var. <i>oxycedrus</i>	var. <i>oxycedrus</i> (Labill.) Allan
<i>C. robusta</i> Hook. f.	<i>S. robusta</i> (Hook. f.) Sleumer	<i>C. robusta</i> Hook. f.

## ALSEUOSMIACEAE

Airy Shaw, H.K. 1965 (*Kew Bull.* 18 : 249) erected this family to include *Alseuosmia* from New Zealand (formerly placed in the Caprifoliaceae), and New Caledonian genera. Gardner, R.O. 1978 (*Blumea* 24 : 138–142) amended Airy Shaw's diagnosis. Steenis, C.G.G.J. van 1984 (*Blumea* 29 : 387–394) recognised three genera in the family — *Alseuosmia*, *Wittsteinia* and *Crispiloba* — and extended the distribution of the family to include Australia and Papua-New Guinea. Dickison, W.C. 1986 (*Syst. Bot.* 11 : 214–221) stated that wood anatomy lends strong support for the familial concept of Steenis. He also noted that no support remains for the idea that the Alseuosmiaceae are related to the Caprifoliaceae and he indicated a relationship between Alseuosmiaceae and woody Saxifragaceae.

## ALSEUOSMIA Cunn.

Gardner, R.O. 1978 (*N.Z. J. Bot.* 16 : 271–277) revised *Alseuosmia*, recognising four species, *A. banksii*, *A. macrophylla*, *A. pusilla*, and *A. turneri* as new; *A. ×quercifolia* is given hybrid status. Four names used in Allan, H.H. 1961 (*Fl. N.Z.* 1 : 554–

558) have been submerged in *A. banksii* viz: *A. atriplicifolia* and *A. palaeiformis* in var. *banksii*, and *A. linariifolia* and *A. ligustrifolia* in var. *linariifolia*; all were Allan Cunningham names.

Additional taxon and new rank:

*A. banksii* Cunn.

var. *banksii*

var. *linariifolia* (Cunn.) R. Gardner *N.Z. J. Bot.* 16 : 272 (1978) ≡ *A. linariifolia* Cunn. *Ann. Nat. Hist.* 2 : 209 (1839).

*A. ×quercifolia* Cunn. hybrid status.

*A. turneri* R. Gardner op. cit. 271.

## RUBIACEAE

COPROSMA Forst. et Forst. f.

*Coprosma* as treated in Allan, H.H. 1961 (*Fl. N.Z.* 1 : 559–588) comprises 45 species. L.B. Moore raised one variety of *C. petriei* to specific rank, and with R. Mason described *C. talbrockiei*.

Orchard, A.E. 1987 (*Brunonia* 9 : 119–138) revised the Australasian and subantarctic *C. pumila* complex:

(i) *C. niphophila* is recognised as a new species

from Mt Kosciusko and is also reported from South Island;

(ii) *C. pumila* is restricted to Tasmania;

(iii) *C. perpusilla* is revived, as two subspecies, for other elements formerly known as *C. pumila*;

(iv) *C. atropurpurea* is accepted in the complex.

A.P. Druce (*hic comm.*): "The use of *C. australis* as in Allan (op. cit.) is incorrect because the type of *C. australis* (A. Rich.) Robinson, based on *Ronabea australis* A. Rich. at Pl, matches *C. lucida* Forst. et Forst. f. The next available name for the plants known here as *C. australis* is *C. grandifolia* Hook. f.

Four other species in Allan (op. cit.) do not merit that rank and should be reduced to synonymy thus: *C. brunnea* should fall within *C. acerosa*, *C. banksii* in *C. colensoi*, *C. astonii* in *C. cuneata*, and *C. antipoda* in *C. rugosa*.

All these usages are in Beuzenberg, E.J. 1983 (*N.Z. J. Bot.* 21: 9–12), and in Wilson, R.D. 1984 (*N.Z. J. Bot.* 22: 195–200) and, for subgenus *Coprosma*, in Aziz, K. & Rattenbury, J.A. 1985 (*Pak. J. Bot.* 17: 173–180)."

Additional taxa, new rank, reinstated names:

*C. atropurpurea* (Cockayne et Allan) L. Moore in Moore & Mason *N.Z. J. Bot.* 12: 141 (1974) = *C. petriei* Cheeseman var. *atropurpurea* Cockayne et Allan *T.N.Z.I.* 56: 22 (1926).

*C. grandifolia* Hook. f. *Fl. N.Z.* 1: 104 (1852).

*C. niphophila* Orchard *Brunonia* 9: 134 (1987).

*C. perpusilla* Colenso *T.N.Z.I.* 22: 466 (1890) subsp. *perpusilla*

subsp. *subantarctica* Orchard op. cit. 133.

*C. talbrockiei* L. Moore et R. Mason op. cit. 137.

#### GALIUM L.

McGillivray, D.J. 1983 (*Telopea* 2: 355–377) revised Australasian *Galium*. Of the three species listed in Allan, H.H. 1961 (*Fl. N.Z.* 1: 591–593):

(i) *G. perpusillum* is treated as *Asperula* (*vide infra*);

(ii) *G. propinquum* Cunn. is unchanged;

(iii) *G. trilobum* Colenso *T.N.Z.I.* 20: 192 (1888) is revived to replace *G. tenuicaule* Cunn. *Ann. Nat. Hist.* 2: 205 (1839), a later homonym of *G. tenuicaule* Krockner (1823).

#### ASPERULA L.

Reinstated name:

*A. perpusilla* Hook. f. *Fl. N.Z.* 1: 114 (1852); see McGillivray, D.J. 1983 (*Telopea* 2: 376).

### COMPOSITAE or ASTERACEAE

#### TRIBE ASTEREA

#### BRACHYCOME Cass. *nom. cons.*

C.J. Webb (*hic comm.*): "Allan, H.H. 1961 (*Fl. N.Z.*

1: 604) noted that although type specimens for species of *Brachycome* described by Simpson & Thomson are cited from the herbarium of Botany Division (now CHR) they had not been located there. They are still unlocated. I restore two species described by Simpson & Thomson which Allan had listed in *incertae sedis*; both require neotypification. As there does not appear to be any extant Simpson material of *B. humilis*, a recent specimen, which matches the original description and is from the type locality, is selected. The type locality for *B. longiscapa* is Upper Shag Valley, near Kyeburn, so the earliest dated specimen from that area in Simpson's collections, and labelled by him as *B. longiscapa*, is chosen."

Reinstated names:

*B. humilis* G. Simpson et J. Thomson *T.R.S.N.Z.* 73: 167 (1943)

Neotypus: Rock and Pillar Range, Otago, 3900 ft, S 145: 79-26-, A.F. Mark, 1.12.1969, CHR 199636.

*B. longiscapa* G. Simpson et J. Thomson op. cit. 168

Neotypus: Dunback-Kyeburn road near Kyeburn, G. Simpson, 8.1.1946, CHR 112471.

#### LAGENIFERA Cass.

Drury, D.G. 1974 (*N.Z. J. Bot.* 12: 365–395) revised the genus usually known in New Zealand as *Lagenophora*, but Cassini's original spelling is *Lagenifera*. Some species of *Lagenifera* have at times been segregated into the separate genera *Solenogyne* and *Microcalia*, but Drury did not find that these genera deserved to be maintained as distinct and treated them as infrageneric groups of *Lagenifera*.

Allan, H.H. 1961 (*Fl. N.Z.* 1: 605–609) listed five species, two of them with varieties, and discussed a further four taxa under "Incertain Sedes". Drury's revision recognises eight indigenous species thus:

(i) *Lagenifera cuneata* and *L. lanata* remain as in Allan;

(ii) *L. pumila* is treated as in Allan but has no varieties;

(iii) *L. pinnatifida* is unchanged except that its var. *tenuifolia* Cockayne is identified as *L. stipitata* (Labill.) G.C. Druce, and reported as possibly naturalised here;

(iv) *L. petiolata* Hook. f. includes *L. purpurea* Kirk and *L. barkeri* var. *multidentata* G. Simpson et J. Thomson;

(v) *L. barkeri* Kirk and *L. strangulata* Colenso are reinstated;

(vi) *L. montana* Hook. f. is recognised as indigenous to New Zealand as well as to Australia.

CELMISIA Cass. *nom. cons.*

### Subgenera and Sections

Given, D.R. 1969 (*N.Z. J. Bot.* 7: 400–418) treated *Celmisia* at the infrageneric level raising in rank some of the sectional names of Allan, H.H. 1961 (*Fl. N.Z.* 1: 611–612). The genus is interpreted as five subgenera including the typical one. See also Given, D.R. & Gray, M. 1986 (*in* Barlow, B.A. (ed.) *Flora and Fauna of Alpine Australasia*, CSIRO, Melbourne, 451–470). Given (*vide infra*) raised subgenus *Ionopsis* to generic rank as *Damnamenia*.

New rank:

#### C. Subgenus *Celmisia*

Sect. *Celmisia*

Sect. *Nanae* (Allan) Given *N.Z. J. Bot.* 7: 404 (1969) = *Celmisia* sect. *Lignosae* subsect. *Imbricatae* series *Nanae* Allan *Fl. N.Z.* 1: 966 (1961)

Sect. *Pulvinatae* Given *op. cit.* 404.

#### C. Subgenus *Lignosae* (Allan) Given *op. cit.* 406 = *Celmisia* sect. *Lignosae* Allan *op. cit.* 966

Sect. *Lignosae*

Series *Angustifoliae* Given *op. cit.* 408

Sect. *Rosulatae* (Allan) Given *op. cit.* 408 = *Celmisia* sect. *Lignosae* subsect. *Rosulatae* Allan *op. cit.* 966

Series *Montanae* Given *op. cit.* 408

Sect. *Serratae* (Allan) Given *op. cit.* 408 = *Celmisia* sect. *Celmisia* subsect. *Serratae* Allan *op. cit.* 966.

#### C. Subgenus *Glandulosae* (Allan) Given *op. cit.* 409 = *Celmisia* sect. *Celmisia* subsect. *Stoloniferae* series *Glandulosae* Allan *op. cit.* 966.

#### C. Subgenus *Caespitosae* (Allan) Given *op. cit.* 409 = *Celmisia* sect. *Celmisia* subsect. *Caespitosae* Allan *op. cit.* 966.

#### C. Subgenus *Pelliculatae* (Allan) Given *op. cit.* 410 = *Celmisia* sect. *Celmisia* subsect. *Pelliculatae* Allan *op. cit.* 966

Sect. *Pelliculatae*

Series *Pelliculatae*

Series *Linearifoliae* Given *op. cit.* 412

Sect. *Petiolatae* (Allan) Given *op. cit.* 412 = *Celmisia* sect. *Celmisia* subsect. *Petiolatae* Allan *op. cit.* 966.

### Species

Given, D.R. 1980 (*N.Z. J. Bot.* 18: 127–140) revised *Celmisia* subgenus *Pelliculatae* series *Lanceolatae* (2 spp.) and series *Pelliculatae* (6 spp.). Given, D.R. 1984 (*Ibid.* 22: 139–158) revised subgenus *Pelliculatae* sect. *Petiolatae* (6 spp.). Lee, W.G. & Given, D.R. 1985 (*Ibid.* 22: 585–592, 1984) re-examined the status of *C. spedenii* and described *C. markii*.

Of Allan's treatment (*op. cit.* 611–656):

(i) plants known as *C. lanceolata* Cockayne are

- treated as *C. coriacea* (Forst. f.) Hook. f.;
- (ii) plants treated as *C. coriacea* belong in *C. semicordata* of which there are three subspecies;
- (iii) *C. petiolata* and *C. rigida* are interpreted as synonyms of *C. verbascifolia*;
- (iv) *C. praestans* Allan is regarded as a synonym of *C. traversii* Hook. f.;
- (v) *C. rutlandii* Kirk is placed in subgenus *Pelliculatae* series *Pelliculatae*;
- (vi) *C. spedenii* G. Simpson is recognised as endemic to ultramafites.
- (vii) Five additional species are described.

### Subspecies

Given, D.R., both in 1972 (*N.Z. J. Bot.* 10: 180–194) and 1984 (*Ibid.* 22: 139–158), departed from the treatment of *C. spectabilis* in Allan (*op. cit.* 632–634) by:

- (i) merging var. *angustifolia* with subsp. *spectabilis*;
- (ii) identifying var. *albomarginata* and recognising it as a synonym of subsp. *spectabilis*;
- (iii) reinstating at subspecific rank, var. *lanceolata*;
- (iv) treating *C. ruahinensis* as a synonym of subsp. *spectabilis*.

Additional taxa and new rank:

- C. inaccessa* Given *N.Z. J. Bot.* 9: 526 (1971).
- C. markii* W. Lee et Given *Ibid.* 22: 587 (1985).
- C. philocremna* Given *Ibid.* 9: 529 (1971).
- C. semicordata* Petrie subsp. *semicordata* subsp. *aurigans* Given *Ibid.* 18: 134 (1980)
- subsp. *stricta* (Cockayne) Given *op. cit.* 134 = *C. coriacea* var. *stricta* Cockayne *T.N.Z.I.* 45: 252 (1913).
- C. similis* Given *N.Z. J. Bot.* 7: 393 (1969).
- C. spectabilis* Hook. f. subsp. *spectabilis* = *C. spectabilis* var. *angustifolia* W. Martin *T.R.S.N.Z.* 65: 184 (1935) = *C. spectabilis* var. *albomarginata* W. Martin *op. cit.* 183 = *C. ruahinensis* Colenso *T.N.Z.I.* 27: 388 (1895)
- subsp. *lanceolata* (Hook. f.) Given *N.Z. J. Bot.* 22: 146 (1984) = *C. spectabilis* var. *lanceolata* Hook. f. *Fl. N.Z.* 1: 122 (1852)
- subsp. *magnifica* (Allan) Given *op. cit.* 146 = *C. spectabilis* var. *magnifica* Allan *T.R.S.N.Z.* 76: 592 (1947).
- C. verbascifolia* Hook. f. subsp. *verbascifolia* = *C. petiolata* Hook. f. *Handb. N.Z. Fl.* 134 (1864) = *C. brownii* F. Chapman *T.N.Z.I.* 22: 444 (1890)
- subsp. *membranacea* (Kirk) Given *N.Z. J. Bot.* 22: 150 (1984) = *C. petiolata* var. *membranacea* Kirk *Stud. Fl. N.Z.* 286 (1899)

subsp. *rigida* (Kirk) Given op. cit. 151 = *C. petiolata* var. *rigida* Kirk op. cit. 286 = *C. rigida* (Kirk) Cockayne *Rep. Bot. Surv. Stewart I.* 44 (1909).

*C. vespertina* Given *N.Z. J. Bot.* 7: 389 (1969).

For interspecific hybrids in subgenus *Pelliculatae* sect. *Petiolatae* in particular see Given, D.R. 1984 (*N.Z. J. Bot.* 22: 139–158); the widespread species *C. spectabilis*, *C. traversii* and *C. verbascifolia* are commonly involved.

**DAMNAMENIA** Given *N.Z. J. Bot.* 11: 786 (1973) = *Celmisia* subgenus *Ionopsis* Hook. f. *Fl. Antarct.* 1: 34 (1844) = *Celmisia* sect. *Antarcticae* Allan *Fl. N.Z.* 1: 965 (1961)

Type species: *D. vernicosa* (Hook. f.) Given.

Given, D.R. 1973 (*N.Z. J. Bot.* 11: 785–796) erected the genus *Damnamenia* to include the monotypic, endemic, subantarctic species *Celmisia vernicosa*. *Damnamenia* is distinguished from *Celmisia* by: eglandular, glossy leaves; disc florets purple; style arms in disc florets short and wide; stamen appendages obtuse and stamen filament with tapering collar; pappus bristles plumose, achenes obovate; see also Given 1969 (*N.Z. J. Bot.* 7: 400–418).

Transfer:

*D. vernicosa* (Hook. f.) Given *N.Z. J. Bot.* 11: 787 (1973) = *Celmisia vernicosa* Hook. f. *Fl. Antarct.* 1: 34, t. 26 & 27 (1844).

**OLEARIA** Moench *nom. cons.* — **PLEUROPHYLLUM** Hook. f.

Drury, D.G. 1969 (*N.Z. J. Bot.* 6: 459–466, 1968) discussed the resemblances between *Pleurophyllum* and macrocephalous species of *Olearia*, in inflorescence morphology and floral anatomy. He considered that generic boundaries between *Olearia* and *Pleurophyllum* were misplaced and suggested that all six large-headed species of *Olearia* viz. *O. angustifolia*, *O. chathamica*, *O. colensoi*, *O. lyallii*, *O. oporina* and *O. semidentata*, might be transferred to *Pleurophyllum*. No one has as yet followed his suggestion.

**PACHYSTEGIA** Cheeseman

B.P.J. Molloy (*hic comm.*) “Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* ed. 2: 910–911) erected the genus to include endemic plants earlier placed by Hooker, J.D. 1855 (*Fl. N.Z.* 2: 331) under *Olearia*, transferring *O. insignis* and its var. *minor* to *Pachystegia*.

Martin, W. 1938 (*T.R.S.N.Z.* 67: 414–425) and Metcalf, L.J. 1972 (*Cultivation N.Z. Trees and Shrubs*, p. 200) suggested that *P. insignis* var. *minor* was sufficiently distinct to warrant elevation to specific rank; likewise Molloy, B.P.J. and Simpson, M.J.A. 1980 (*N.Z. J. Ecol.* 3: 1–3), who also drew attention to other entities in *Pachystegia*. How-

ever, no formal descriptions have been made. *Pachystegia insignis* var. *minor* is confined to coastal, faulted hills and valleys between the Clarence and Puhipuhi Rivers, Marlborough. Although later flowering, it overlaps with *P. insignis* at the Clarence River and putative wild hybrids are formed. Despite interpopulation variation in size and leaf shape in particular, it can be distinguished readily by the characters furnished by Cheeseman, T.F. 1916 (*T.N.Z.I.* 48: 210–211) and additional ones provided under *Pachystegia* C by Molloy and Simpson (op. cit.), and should be treated at specific rank.

Another taxon, similar to *P. insignis* var. *minor* but less variable throughout its range, larger overall, and with conspicuous red tomentum throughout, is confined to the Haldon Hills, Marlborough, where it overlaps with *P. insignis* and flowers simultaneously forming putative wild hybrids. This taxon, of considerable horticultural merit, can be readily distinguished and deserves specific status. New combination, new taxon:

***Pachystegia minor*** (Cheeseman) Molloy comb. et stat. nov. based on *Olearia insignis* Hook. f. var. *minor* Cheeseman *T.N.Z.I.* 48: 210 (1916) = *Pachystegia insignis* (Hook. f.) Cheeseman var. *minor* (Cheeseman) Cheeseman *Man. N.Z. Fl.* 911 (1925).

Illustration: Eagle, A. 1982 (*Eagle's Trees and Shrubs of New Zealand, 2nd series*, Plates 244, 245, as *Pachystegia* C).

Chromosome number: 2n = 108 (E.J. Beuzenberg pers. comm.).

***Pachystegia rufa*** Molloy sp. nov.

*P. minori* similis, differt autem foliis grandioribus, plerumque obovatis, basi acutis vel cuneatis, pagina superiore perviridi, inferiore tomento rubiginoso induta. Capitula rubiginosa grandiora, floribus pluribus. Tomentum rufum surculos, petiolos, pedunculosque obtegens; styli rami florum radii ligulaeque rufescentes.

Holotypus: CHR 388290, Beaumont Ck, Haldon Hills, Marlborough, greywacke outcrop at 270 m, mixed scrub, B.P.J. Molloy, 6–1–1981; isotypi, K, AK, WELT, CANB.

Similar to *P. minor* but with larger, usually obovate leaves with acute to cuneate bases, dark green above, with rust-coloured tomentum below. Capitula rust-coloured, larger, with more numerous florets. Red tomentum on young stems, petioles and peduncles; sometimes style arms and ligules of ray florets tinged with red.

Distribution: Confined to gorges and adjacent slopes of tributaries of the Blind River, draining the northern fault block of the Haldon Hills, east of Fells Hill, Marlborough. Surrounded by and overlapping with populations of *P. insignis*.

Ecology: Rupestral; on well-drained, greywacke rock outcrops, steep rocky bluffs and cemented gravels; in sun or in shade. Now associated with secondary mixed shrubland, grassland, and hardwood forest communities; formerly in well-lit openings of primary mixed conifer/hardwood forests.

The specific epithet *rufa*, red, describes the distinctive tomentum.

Other specimens: CHR 388289, Beaumont Ck, Haldon Hills, greywacke rock outcrop, 260 m, B.P.J. Molloy and M.J.A. Simpson, 14–12–1978; CHR 355762 A, Haldon Hills, 300 ft, B.B. Given and V. Gamble, 31–12–1978; CHR 286265, Stirling Brook, Haldon Hills, rock bluff at 250 m, B.P.J. Molloy and A. Kennington, 19–1–1979; CHR 385855, Stace Stm, Haldon Hills, rock outcrop, B.P.J. Molloy, 6–1–1981; CHR 385835, Blind R., Haldon Hills, rock outcrop at 270 m, B.P.J. Molloy, 6–1–1981.

Chromosome number:  $2n = 108$ , as for *P. insignis* and *P. minor* (E.J. Beuzenberg, pers. comm.).

Illustration: Eagle, A. 1982 (*Eagle's Trees and Shrubs of New Zealand, 2nd series*, Plate 246, *Pachystegia* D).

Conservation status: A local species, confined to freehold land, with a remarkably restricted distribution; smaller in numbers than any other species of *Pachystegia*. Subject to depletion by over-collecting, burning, application of herbicides, and browsing by sheep, goats, possums and rabbits. Formal protection of natural populations, and controlled introduction to horticulture are advocated”.

#### TRIBE ANTHEMIDEAE

LEPTINELLA Cass. *Bull. Sci. Soc. Phil. Paris* 1822, 127 (1822)

Type species: *L. scariosa* Cass. loc. cit.

Although Lloyd, D.G. 1972 (*N.Z. J. Bot.* 10: 277–372) revised *Cotula* sect. *Leptinella* only, placing the New Zealand species in series *Elongata* and *Radiata* corresponding to the informal Groups I and II of Edgar, E. 1958 (*T.R.S.N.Z.* 85: 367–372), Lloyd, D.G. & Webb, C.J. 1987 (*N.Z. J. Bot.* 25: 99–105) have reinstated the genus *Leptinella* to include species previously treated in that section. *Leptinella* is distinguished from *Cotula* sections *Cotula* and *Strongylosperma* by the conspicuous, “inflated” corollas of the female florets and by chromosome numbers based on  $x = 26$ , where known. Most species are also distinguished by a suite of habit characters which give a very different appearance to the plants.

In *Cotula* sect. *Leptinella*, Allan, H.H. 1961 (*Fl. N.Z.* 1: 677–692) recognised 22 species, 2 of which each comprised 2 varieties, and *C. dioica* with 5 varieties. Lloyd & Webb (op. cit.) based their revision of *Leptinella* on Lloyd’s earlier taxonomic treatment of *Cotula* sect. *Leptinella*. They recog-

nised 24 species for New Zealand:

(i) there is no change in the circumscription of 7 species, as compared to Allan’s treatment of *Cotula*:

*L. albida* ( $\equiv$  *C. sericea*), *L. filiformis*, *L. goyenii*, *L. lanata*, *L. maniototo*, *L. plumosa*, *L. potentillina*;

(ii) 5 of the species listed in Allan are not upheld at that level:

*C. renwickii* becomes a synonym of *L. featherstonii* and *C. angustata* is synonymous with *L. pusilla*; *C. linearifolia* is treated at varietal rank within *L. pyrethrifolia*, and *C. villosa* and *C. willcoxii* at subspecific rank in *L. pectinata*.

(iii) New treatments are presented:

*L. atrata* — includes subsp. *luteola* as additional; *Cotula atrata* var. *dendyi* is recognised as *L. dendyi*;

*L. dioica* — includes *Cotula dioica* vars *crenatifolia* and *obscura*; of the two other varieties of *C. dioica* recognised by Allan, var. *pulchella* is referred to *L. traillii* and var. *rotundata* is treated as *L. rotundata*;

*L. pectinata* — includes *Cotula willcoxii* as subsp. *willcoxii*, and *C. villosa* as subsp. *villosa*;

*L. pusilla* — includes *Cotula angustata*;

*L. pyrethrifolia* — includes *Cotula linearifolia* as a variety; *C. pyrethrifolia* var. *robusta* is synonymous with *L. pyrethrifolia* var. *pyrethrifolia*;

*L. squalida* — includes subsp. *mediana* as additional;

*L. traillii* — includes *Cotula pulchella* as a subspecies;

*L. minor* — replaces *Cotula haastii*; plants treated by Allan as *C. minor* are placed in *Leptinella dispersa*, *L. tenella* and *L. nana*.

(iv) 8 additional species are recognised relative to Allan’s treatment of *Cotula*:

*L. calcarea*, *L. dendyi*, *L. dispersa*, *L. intermedia*, *L. nana*, *L. rotundata*, *L. serrulata*, *L. tenella*.

Transfers and reinstated names:

• Subgenus *Leptinella*  $\equiv$  *Cotula* sect. *Leptinella* series *Elongata* D. Lloyd *N.Z. J. Bot.* 10: 301 (1972)

Subgenus *Radiata* (D. Lloyd) D. Lloyd et C. Webb *N.Z. J. Bot.* 25: 103 (1987)  $\equiv$  *Cotula* sect. *Leptinella* series *Radiata* D. Lloyd op. cit. 339.

*L. albida* (D. Lloyd) D. Lloyd et C. Webb op. cit. 103  $\equiv$  *Cotula pectinata* var. *sericea* Kirk *Stud. Fl. N.Z.* 326 (1899)  $\equiv$  *C. sericea* (Kirk) Cockayne et Allan *T.N.Z.I.* 57: 52 (1927) non L. f. (1781)  $\equiv$  *C. albida* D. Lloyd op. cit. 353.

*L. atrata* (Hook. f.) D. Lloyd et C. Webb op. cit. 103  $\equiv$  *Cotula atrata* Hook. f. *Handb. N.Z. Fl.* 142 (1864)



- subsp. atrata  
 subsp. luteola (D. Lloyd) D. Lloyd et C. Webb  
 op. cit. 103 ≡ *Cotula atrata* subsp. *luteola* D.  
 Lloyd op. cit. 350.
- L. calcarea (D. Lloyd) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula calcarea* D. Lloyd op. cit. 334.
- L. dendyi (Cockayne) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula dendyi* Cockayne *T.N.Z.I.* 47: 118  
 (1915).
- L. dioica Hook. f. *Fl. N.Z. 1*: 129 (1852) ≡ *Cotula*  
*dioica* (Hook. f.) Hook. f. *Handb. N.Z. Fl.* 143  
 (1864)  
 subsp. dioica  
 subsp. monoica (D. Lloyd) D. Lloyd et C. Webb  
 op. cit. 102 ≡ *Cotula dioica* subsp. *monoica* D.  
 Lloyd op. cit. 319.
- L. dispersa (D. Lloyd) D. Lloyd et C. Webb op. cit.  
 102 ≡ *Cotula dispersa* D. Lloyd op. cit. 312  
 subsp. dispersa  
 subsp. rupestris (D. Lloyd) D. Lloyd et C. Webb  
 op. cit. 102 ≡ *Cotula dispersa* subsp. *rupestris*  
 D. Lloyd op. cit. 313.
- L. featherstonii F. Muell. *Veg. Chatham Is.* 27, t.  
 5 (1864) ≡ *Cotula featherstonii* (F. Muell.)  
 Hook. f. *Handb. N.Z. Fl.* 733 (1867) ≡ *C. ren-*  
*wickii* Cockayne *T.N.Z.I.* 47: 119 (1915).
- L. filiformis (Hook. f.) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula filiformis* Hook. f. *Handb. N.Z. Fl.*  
 142 (1864).
- L. goyenii (Petrie) D. Lloyd et C. Webb op. cit. 103  
 ≡ *Cotula goyenii* Petrie *T.N.Z.I.* 18: 295 (1886).
- L. intermedia (D. Lloyd) D. Lloyd et C. Webb op.  
 cit. 103 ≡ *Cotula intermedia* D. Lloyd op. cit.  
 336.
- L. lanata Hook. f. *Fl. Antarct. 1*: 26, t. 19 (1844)  
 ≡ *Cotula lanata* (Hook. f.) Hook. f. *Handb. N.Z.*  
*Fl.* 141 (1864).
- L. maniototo (Petrie) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula maniototo* Petrie *T.N.Z.I.* 14: 362  
 (1882).
- L. minor Hook. f. *Fl. N.Z. 1*: 129 (1852) ≡ *Cotula*  
*minor* (Hook. f.) Hook. f. *Handb. N.Z. Fl.* 142  
 (1864) = *C. haastii* Kirk *Stud. Fl. N.Z.* 325  
 (1899).
- L. nana (D. Lloyd) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula nana* D. Lloyd op. cit. 340.
- L. pectinata (Hook. f.) D. Lloyd et C. Webb op. cit.  
 103 ≡ *Cotula pectinata* Hook. f. *Handb. N.Z. Fl.*  
 142 (1864)  
 subsp. pectinata  
 subsp. villosa (D. Lloyd) D. Lloyd et C. Webb  
 op. cit. 103 ≡ *Cotula pectinata* subsp. *villosa* D.  
 Lloyd op. cit. 356  
 subsp. willcoxii (Cheeseman) D. Lloyd et C.  
 Webb op. cit. 103 ≡ *Cotula willcoxii* Cheeseman  
*T.N.Z.I.* 48: 212 (1916) ≡ *C. pectinata* subsp.  
*willcoxii* (Cheeseman) D. Lloyd op. cit. 357.
- L. plumosa Hook. f. *Fl. Antarct. 1*: 26, t. 20 (1844)  
 ≡ *Cotula plumosa* (Hook. f.) Hook. f. *Handb.*  
*N.Z. Fl.* 141 (1864).
- L. potentillina F. Muell. *Veg. Chatham Is.* 28, t. 6  
 (1864) ≡ *Cotula potentillina* (F. Muell.) G.C.  
 Druce *Rep. Bot. Exch. Club Brit. Isles for 1916*:  
 617 (1917).
- L. pusilla Hook. f. *Fl. N.Z. 1*: 129 (1852) ≡ *Cotula*  
*perpusilla* Hook. f. *Handb. N.Z. Fl.* 143 (1864)  
 non *L. perpusilla* Fischer et C. Meyer (1836) =  
*Cotula angustata* G. Simpson *T.R.S.N.Z.* 79:  
 435 (1952).
- L. pyrethrifolia (Hook. f.) D. Lloyd et C. Webb op.  
 cit. 103 ≡ *Cotula pyrethrifolia* Hook. f. *Handb.*  
*N.Z. Fl.* 142 (1864)  
 var. pyrethrifolia  
 var. linearifolia (Cheeseman) D. Lloyd et C.  
 Webb op. cit. 103 ≡ *Cotula linearifolia* Cheese-  
 man *T.N.Z.I.* 15: 299 (1883) ≡ *C. pyrethrifolia*  
 var. *linearifolia* (Cheeseman) D. Lloyd op. cit.  
 362.
- L. rotundata (Cheeseman) D. Lloyd et C. Webb op.  
 cit. 102 ≡ *Cotula dioica* var. *rotundata* Cheese-  
 man *Man. N.Z. Fl.* 359 (1906) ≡ *C. rotundata*  
 (Cheeseman) D. Lloyd op. cit. 314.
- L. serrulata (D. Lloyd) D. Lloyd et C. Webb op.  
 cit. 103 ≡ *Cotula serrulata* D. Lloyd op. cit. 332.
- L. squalida Hook. f. *Fl. N.Z. 1*: 129 (1852) ≡ *Cotula*  
*squalida* (Hook. f.) Hook. f. *Handb. N.Z. Fl.* 143  
 (1864)  
 subsp. squalida  
 subsp. mediana (D. Lloyd) D. Lloyd et C. Webb  
 op. cit. 103 ≡ *Cotula squalida* subsp. *mediana*  
 D. Lloyd op. cit. 327.
- L. tenella (Cunn.) D. Lloyd et C. Webb op. cit. 102  
 ≡ *Soliva tenella* Cunn. *Ann. Nat. Hist.* 2: 128  
 (1839) ≡ *Cotula membranacea* D. Lloyd op. cit.  
 310.
- L. traillii (Kirk) D. Lloyd et C. Webb op. cit. 102  
 ≡ *Cotula traillii* Kirk *Stud. Fl. N.Z.* 324 (1899)  
 subsp. traillii  
 subsp. pulchella (Kirk) D. Lloyd et C. Webb op.  
 cit. 102 ≡ *Cotula pulchella* Kirk *Stud. Fl. N.Z.*  
 328 (1899) ≡ *C. traillii* subsp. *pulchella* (Kirk) D.  
 Lloyd op. cit. 324.

TRIBE INULEAE - subtribe Gnaphaliinae

GNAPHALIUM L.

Drury, D.G. 1972 (*N.Z. J. Bot.* 10: 112-179)  
 revised New Zealand native species of sect. Euchi-  
 ton, validating his earlier, 1970 (*Ibid.* 8: 222-248)  
 informal groupings into gnaphalioid, achyroclin-  
 oid, and anaphalioid cudweeds. Drury 1971 (*Ibid.*  
 9: 157-185) presented a key to the groups and to  
 the sections in the gnaphalioid group. All indige-  
 nous species in the gnaphalioid group, i.e., *G. trav-*  
*ersii*, *G. paludosum*, *G. nitidulum*, *G. collinum*, and

*G. involucreatum* in Allan, H.H. 1961 (*Fl. N.Z. 1*: 696–701) fall into sect. Euchiton.

Drury added four new species to Allan's list viz. *G. audax* with two subspecies, *G. delicatum*, *G. ensifer*, *G. limosum*, and revived *G. mackayi*, and recognised *G. sphaericum* as distinct from *G. involucreatum*, one new variety was recognised in *G. paludosum*.

*G. collinum* Labill. is an illegitimate name.

C.J. Webb (*hic comm.*): "Because *G. audax* subsp. *audax* and subsp. *ruahinicum* both occur throughout New Zealand and can usually be distinguished readily by the characters provided by Drury (op. cit.), they are more appropriately treated at species rank.

Likewise, *G. paludosum* var. *paludosum* and var. *polylepis* which have overlapping distributions and are readily distinguished, are more appropriately treated at specific rank. Appropriate combinations are made."

*Gnaphalium* sect. Euchiton comprises:

- G. audax* D. Drury *N.Z. J. Bot.* 10: 136 (1972).
- G. delicatum* D. Drury op. cit. 148.
- G. ensifer* D. Drury op. cit. 150.
- G. gymnocephalum* DC. *Prodr.* 6: 235 (1838).
- G. involucreatum* Forst. f. *Prodr.* 55 (1786).
- G. limosum* D. Drury op. cit. 133.
- G. mackayi* (Buchanan) Cockayne *Veg. N.Z.* ed. 2: 439 (1928).
- G. nitidulum* Hook. f. *Handb. N.Z. Fl.* 154 (1864).
- G. paludosum* Petrie *T.N.Z.I.* 22: 441 (1890).
- G. polylepis* (D. Drury) C. Webb comb. et stat. nov. based on *G. paludosum* var. *polylepis* D. Drury *N.Z. J. Bot.* 10: 155 (1972).
- G. ruahinicum* (D. Drury) C. Webb comb. et stat. nov. based on *G. audax* subsp. *ruahinicum* D. Drury *N.Z. J. Bot.* 10: 140 (1972).
- G. sphaericum* Willd. *Enum. Pl.* 867 (1809).
- G. traversii* Hook. f. *Handb. N.Z. Fl.* 154 (1864).

The five remaining species in Allan (op. cit.) were not fully treated by Drury. Of these *G. luteoalbum* is the only achyroclinoid species in New Zealand; the other four, *G. trinerve*, *G. kerienne*, *G. hookeri*, and *G. subrigidum* are anaphalioid.

ANAPHALIS DC. *Prodr.* 6: 271 (1838)

Type species: *A. nubigena* DC.

C.J. Webb (*hic comm.*): "Four indigenous species treated by Allan (op. cit.) in *Gnaphalium* are misplaced in that genus and I agree with Drury's (*N.Z. J. Bot.* 8: 222–248, 1970) grouping with *Anaphalis*. Although it has been suggested that this group of indigenous species should be treated within *Anaphalioides* (Benth.) Kirpiczn., the genera are not as yet clearly enough defined in this part of the Inuleae for this narrower view to be accepted. These species are therefore transferred to the more broadly defined *Anaphalis* DC.

Drury, D.J. 1971 (*N.Z. J. Bot.* 9: 160) noted that *Helichrysum bellidioides* (Forst. f.) Willd. is probably an anaphalioid cudweed. This species hybridises with, and is clearly closely related to species referred here to *Anaphalis*. It also hybridises freely with several other species currently treated in New Zealand within *Helichrysum*; it would therefore be premature to transfer *H. bellidioides* to *Anaphalis* before the affinities of the other New Zealand species of *Helichrysum* are determined."

Transfers:

- A. keriensis** (Cunn.) C. Webb comb. nov. based on *Gnaphalium kerienne* Cunn. *Ann. Nat. Hist.* 2: 130 (1839) = *Anaphalioides kerienne* (Cunn.) Kirpiczn. *Acta Bot. V.F. Komarov Acad. Sci. SSSR ser. 1, 9: 33* (1950).
- A. rupestris** C. Webb nom. nov. based on *Gnaphalium hookeri* Allan *Fl. N.Z. 1*: 971 (1961) non *A. hookeri* C.B. Clarke ex Hook. f. (1881).
- A. subrigida** (Colenso) C. Webb comb. nov. based on *Gnaphalium subrigidum* Colenso *T.N.Z.I.* 17: 245 (1885).
- A. trinervis** (Forst. f.) F. Muell. *Trans. Roy. Soc. Victoria New Ser. 1* (2): 9 (1889) = *Gnaphalium trinerve* Forst. f. *Prodr.* 55 (1786).

PSEUDOGNAPHALIUM Kirpiczn. *Trudy Bot. Inst. Akad. Nauk SSSR ser. 1, 9: 33* (1950)

Type species: *P. oxyphyllum* (DC.) Kirpiczn.

Hilliard, O.M. & Burt, B.L. 1981 (*J. Linn. Soc., Bot.* 82: 181–232) discussing generic concepts in Gnaphaliinae, surveyed South African species of *Gnaphalium*, *Helichrysum*, and related genera. They extended the genus *Pseudognaphalium* to include perhaps 40–50 species including the widespread *G. luteoalbum* which they place in subgenus Laphangium. *Pseudognaphalium* is distinguished from *Gnaphalium* in details of the involucre bracts. In habit *Pseudognaphalium* resembles *Helichrysum* but subgenus Laphangium has spatulate leaves and urceolate heads clustered in glomerules as in *Gnaphalium*.

Transfer and new rank:

- P. subgenus Laphangium** Hilliard et B.L. Burt *J. Linn. Soc., Bot.* 82: 205 (1981) = *Gnaphalium* sect. *Calolepis* Kirpiczn. *Not. Syst.* 20: 309 (1960).
- P. luteoalbum** (L.) Hilliard et B.L. Burt op. cit. 206 = *Gnaphalium luteoalbum* L. *Sp. Pl.* 851 (1753).

RAOULIA Hook. f.

Ward, J.M. 1982 (*Mauri Ora* 10: 11–19) provided a key to the species of *Raoulia* and gave a tabular comparison of her treatment with that of Allan, H.H. 1961 (*Fl. N.Z. 1*: 701–712).

HELICHRYSUM L. *nom. cons.*

Substitute names:

- H. aggregatum Yeo *Taxon* 19: 946 (1970) replaces *H. glomeratum* (Raoul) Kirk *Stud. Fl. N.Z.* 311 (1899) a later homonym of *H. glomeratum* Klatt (1896); varieties not transferred.
- H. parvifolium Yeo loc. cit. replaces *H. microphyllum* (Hook. f.) Kirk *Stud. Fl. N.Z.* 312 (1899), a later homonym of *H. microphyllum* (Willd.) Cambess. (1827).

## TRIBE SENECEONEAE

Senecioneae in Allan, H.H. 1961 (*Fl. N.Z.* 1: 729–758) included four genera *Erechtites*, *Senecio*, *Brachyglottis*, and *Traversia*. All have received attention, and in all except monotypic, endemic *Traversia* there have been significant changes in treatment particularly at generic level.

## SENECIO L.

Drury, D.G. 1975 (*N.Z. J. Bot.* 12: 513–540. 1974) revised native and naturalised erectitoid senecios in New Zealand. Allan 1961 (*Fl. N.Z.* 1: 729–736) had maintained *Erechtites* as a genus separate from *Senecio* and did not follow Belcher, R.O. 1956 (*Ann. Missouri Bot. Gard.* 43: 37–73). Drury, like Belcher, placed those taxa in *Senecio*. One variety of Belcher's, *S. hispidulus* var. *scaberulus*, was raised to specific rank by Drury. *S. scaberulus* (Hook. f.) D. Drury comprises *E. scaberula* var. *chathamica* Allan and part of *E. scaberula* var. *scaberula* sensu Allan; the remainder of *E. scaberula* sensu Allan falls within *S. hispidulus* A. Rich. None of the six varieties listed in Allan is sustained and *E. quadridentata* var. *traversii* Allan is regarded as belonging in *S. glomeratus* Desf. ex Poiret together with *E. arguta*, and *E. quadridentata* var. *lanceola* Kirk is referred to *S. dunedinensis* Belcher.

Sykes, W.R. 1971 (*N.Z. J. Bot.* 9: 534) described a variety of *Senecio lautus* from L'Esperance, the southernmost of the Kermadec Is.

Chromosome numbers of all but three species of indigenous *Senecio*, including those treated by Allan as *Erechtites*, were reported by Beuzenberg, E.J. & Groves, B.E. 1974 (*N.Z. J. Bot.* 12: 211–217) and Beuzenberg, E.J. 1975 (*Ibid.* 13: 345–353):  $2n = 40, 60, 80, 100$ .

C.J. Webb (*hic comm.*): "Allan (op. cit.) accepted *S. radiolatus* and *S. antipodus*. The two taxa have the same leaf form and habit, the same chromosome number ( $2n = 40$ ), and the same lanate hairs which distinguish them from other members of the *S. lautus* group. Plants from the Antipodes Is are generally more robust, but differ significantly from those of Chatham Is only in the absence of ligulate florets and the reduction of the achene hairs. Neither of these characters is considered sufficient to

accord the taxa specific rank within this group of *Senecio*, and they are therefore treated as subspecies.

Ornduff, R. 1960 (*T.R.S.N.Z.* 88: 63–77) recognised four subspecies in *Senecio glaucophyllum* Cheeseman. He described subsp. *basinudus* as new, and based subsp. *raoulii* on J.D. Hooker's *S. lautus* var.  $\beta$  *Raouli* pro parte. Ornduff noted that all of Hooker's specimens labelled "var.  $\beta$  *Raouli*" corresponded to his own concept of subsp. *raoulii* except the plant to which Spach apparently gave the manuscript name *S. Raouli*, which latter specimen was collected by Raoul at Akaroa. Ornduff regarded it as an erectitoid *Senecio*.

Ornduff selected a Colenso specimen (No. 4 on Sheet 3-H 1232/55, Colenso No. 85) from Hooker's herbarium as the lectotype for *S. glaucophyllum* subsp. *raoulii* (Hook. f.) Ornd. Unfortunately, and as noted by Ali, S.I. 1964 (*Austral. J. Bot.* 12: 282–291), the Raoul specimen excluded by Ornduff must be the holotype of *S. lautus* var. *raoulii* Hook. f. as it is the only specimen mentioned by Hooker. This specimen Akaroa, Raoul (K!), is not an erectitoid *Senecio* but a specimen of *S. glaucophyllum* subsp. *basinudus* Ornd. As Ornduff's *S. glaucophyllum* subsp. *raoulii* is based on Hooker's *S. lautus* var. *raoulii* it must have as its type the specimen Akaroa, Raoul. The two subspecies *basinudus* and *raoulii* are nomenclatural synonyms. As both species were published simultaneously neither has priority. The least disruptive procedure is to describe plants called subsp. *raoulii* by Ornduff under a new name."

New taxon, new combination, additional taxa:

*Senecio glaucophyllum* Cheeseman

subsp. *glaucophyllum*

subsp. *toa* C. Webb subsp. nov.

Differt a subsp. *glaucophyllo*, subsp. *basinudo* et subsp. *discoideo* foliis profunde pinnatifidis, a subsp. *discoideo* etiam capitula radiata.

Holotypus: CHR 17696, East of Taupo, (S.F.S. Run 90), c. 2000 ft open grassy gully, K.W. Allison, 18.12.1934.

subsp. *toa* corresponds to the plant described as subsp. *raoulii* (Hook. f.) Ornd. *T.R.S.N.Z.* 88: 72 (1960) but excluding the type.

subsp. *basinudus* Ornd. *T.R.S.N.Z.* 88: 71 (1960) = *S. lautus* var.  $\beta$  *raoulii* Hook. f. *Fl. N.Z.* 1: 145 (1852) = *S. glaucophyllum* subsp. *raoulii* (Hook. f.) Ornd. *T.R.S.N.Z.* 88: 72 (1960).

*S. lautus* Willd.

var. *lautus*

var. *esperensis* Sykes *N.Z. J. Bot.* 9: 534 (1971).

*S. radiolatus* F. Muell. *Veg. Chatham Is.* 24 (1864)

subsp. *radiolatus*

subsp. *antipodus* (Kirk) C. Webb comb. et stat. nov. based on *S. antipodus* Kirk *Stud. Fl. N.Z.* 341 (1899).

*S. scaberulus* (Hook. f.) D. Drury *N.Z. J. Bot.* 12: 535 (1975) = *Erechtites scaberula* Hook. f. *Handb. N.Z. Fl.* 157 (1864).

For discussion on the *S. lautus* complex see Ali, S.I. 1964 (*Austral. J. Bot.* 12: 282–291; 292–316; *Ibid.* 14 (1966): 317–327; *Phyton (Horn)* 13 (1968): 53–62) and Ornduff, R. 1960 (*T.R.S.N.Z.* 88: 63–77; *Ibid. (Bot.)* 1 (1962): 225–229; *Evolution* 18 (1964): 349–360); the two treatments do not coincide.

#### BRACHYGLOTTIS—UROSTEMON—DOLICHOGLOTTIS—SENECIO

A progress report on an investigation into generic and sectional limits in *Senecio* s.l. was made by Jeffrey, C. et al. 1977 (*Kew Bull.* 32: 47–67) who surveyed the genus for a large number of characters and their states. On the basis of syndromes of rather loosely associated character-states they subdivided *Senecio* s.l. into 16 groups, one of which, Group XV, corresponds to *Brachyglottis* as emended by Drury, D.G. 1973 (*N.Z. J. Bot.* 11: 740–744) but with the addition of *S. kirkii*. The remaining New Zealand species of *Senecio*, apart from coastal *S. lautus* and its allies, would fall into three groups in the system of Jeffrey et al., all near to the group containing *Brachyglottis*.

Nordenstam, B. 1978 (*Opera Bot.* 44: 1–84) placed all New Zealand species included in *Senecio* by Allan, H.H. 1961 (*Fl. N.Z.* 1: 736–757), within the “cacalioid” (from the name *Cacalia*) complex of tribe Senecioneae, apart from the *S. lautus* group, and *S. banksii*, *S. colensoi* and *S. turneri*. Nordenstam regards the following features as being of special importance in distinguishing “cacalioid” taxa from “senecioid” taxa: (i) the anther filament in cacalioids has a cylindrical collar narrower than the filament, (ii) the style branches in cacalioids bear fused stigmatic areas, (iii) the endothelial cells of the anther are thickened on the horizontal walls in cacalioids (“polarized” tissue, see Dormer, K.J. 1962 *New Phytol.* 61: 150–153); in senecioids the anther filament collar is basally enlarged, the stigmatic areas are discrete and the endothelial cells of the anther have thickenings on the vertical walls (“radial” tissue). Nordenstam, B. 1977 (in Heywood, V.H. et al. *The biology and chemistry of the Compositae* pp. 799–830) earlier drew attention to differences in chromosome numbers between cacalioids with  $n = 30$ , and senecioids with  $n = 20, 40, 50$ , but  $n = 30$  applies to some species in *Senecio* s.s. see Beuzenberg, E.J. & Groves, B.E. 1974 (*N.Z. J. Bot.* 12: 211–217).

Nordenstam transferred all but one (*S. turneri*) of the cacalioid taxa in New Zealand placed in *Senecio* by Allan (op. cit.) to *Brachyglottis*. He created an oligotypic genus *Dolichoglottis* for *S. lyallii*

and *S. scorzonerooides*, and a monotypic genus, *Urostemon*, for *S. kirkii*.

Jeffrey, C. 1979 (*Kew Bull.* 34: 49–58) followed Nordenstam with a modified version of his earlier system and commented on Nordenstam’s decisions. In this second attempt, New Zealand members of *Senecio* s.l. fall largely within group AII “woody cacalioids” in three clusters: (i) “*Senecio* 55” comprising *Brachyglottis* and *S. kirkii*, (ii) “*Senecio* 56” composed of *S. hectorii*, *S. laxifolius*, *S. lagopus*, *S. perdicoides*, (iii) “*Senecio* 57” containing New Zealand species not listed in full, but which can be equated with the informal Group V of Drury, D.G. 1973 (*N.Z. J. Bot.* 11: 525–554). Jeffrey also placed *Traversia* among the “woody cacalioids”, maintaining it as a separate genus, as had Drury and Nordenstam. The distinctive features of *Traversia* are listed as the discoid capitula, deeply lobed corollas, coarse pappus, and a unique combination of anatomical features. In Group AIII “herbaceous cacalioids” Jeffrey placed the cluster “*Senecio* 54” consisting of *S. lyallii* and presumably *S. scorzonerooides*. Finally, the erechitoid senecios and *S. lautus* and its allies fall within Jeffrey’s Group CIX “Eusenecioids” near to *Senecio* s.s. Jeffrey, in comparing his system with Nordenstam’s, expressed strong support for *Dolichoglottis* which is his cluster “*Senecio* 54” and he gave qualified support for the recircumscription of *Brachyglottis* which he agreed was overdue, but he considered that the distinction between *Brachyglottis* and the Madagascan and South American species of *Senecio* remains as yet unclear. Jeffrey did not support Nordenstam’s segregation of *S. kirkii* into the monotypic genus *Urostemon*, nor does C.J. Webb who effects the transfer to *Brachyglottis* below (p. 150).

#### BRACHYGLOTTIS Forst. et Forst. f. emend. B. Nordenstam

Drury, D.G. 1973 (*N.Z. J. Bot.* 11: 740–744) revised *Brachyglottis*; see also Drury, D.G. 1973 (*Ibid.* 11: 525–554) for anatomical data. He accepted three species: *B. arborescens* which is resurrected; *B. myrianthos*, a transfer from *Senecio*; and *B. repanda* in which Drury unites var. *rangiora* (Buchanan) Allan with var. *repanda*, and describes as a new variety the plant commonly associated with the name *B. rangiora* by New Zealand gardeners.

Drury, D.G. 1973 (*N.Z. J. Bot.* 11: 731–784) provided an annotated key to the New Zealand shrubby members of Tribe Senecioneae in which he described *Senecio pentacopus*, known only from Mt Percy, east Wairarapa. Those species and interspecific hybrids are now mostly referred to *Brachyglottis*.

Nordenstam, B. 1978 (*Opera Bot.* 44: 1–84) has a much wider concept of *Brachyglottis* than Drury,

D.G. 1973 (*N.Z. J. Bot.* 11: 740–744), tolerating more variation in leaf and node anatomy than Drury did. He transferred to *Brachyglottis* most “cacalioid” New Zealand species referred to *Senecio* by Allan 1961 (loc. cit.), apart from those in the two new genera mentioned above, and also *S. pentacopus* and the Tasmanian *S. brunonis*. Nordenstam noted that true senecios are represented in New Zealand by the *S. lautus* complex, *S. glaucophyllus*, *S. rufiglandulosus*, and *S. antipodus*.

Three species, *S. banksii*, *S. colensoi*, and *S. turneri* were not discussed by Nordenstam (op. cit.); in all three  $2n = 60$ , Beuzenberg, E.J., 1974 (*N.Z. J. Bot.* 13: 345–353). Under the criteria employed by Nordenstam, *B. turneri* is cacalioid, and *S. banksii* and *S. colensoi* are senecionoid. Accordingly, *S. turneri* is transferred to *Brachyglottis*; the others have correct names in *Senecio*.

*Brachyglottis* emend. B. Nordenstam comprises 30 species. Four species already had names in *Brachyglottis*, viz. *B. arborescens*, *B. myrianthos*, *B. repanda*, and *B. rotundifolia* (*Senecio reinoldii* in Allan). Some taxa are regarded as hybrids, and new combinations of hybrid binomials are provided. *Senecio bennettii* is submerged in *B. buchananii*.

Transfers, new combinations, and reinstated name:

- B. adamsii* (Cheeseman) B. Nordenstam *Opera Bot.* 44: 30 (1978)  $\equiv$  *Senecio adamsii* Cheeseman *T.N.Z.I.* 28: 536 (1896).
- B. arborescens* W. Oliver *Rec. Auckland Inst. Mus.* 3: 236 (1948).
- B. bellidioides* (Hook. f.) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bellidioides* Hook. f. *Fl. N.Z.* 1: 144 (1852)
- var. *bellidioides*
- var. *angustata* (Kirk) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bellidioides* var. *angustatus* Kirk *Stud. Fl. N.Z.* 339 (1899)
- var. *crassa* (G. Simpson et J. Thomson) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bellidioides* var. *crassus* G. Simpson et J. Thomson *T.R.S.N.Z.* 73: 171 (1943)
- var. *orbiculata* (G. Simpson et J. Thomson) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bellidioides* var. *orbiculatus* G. Simpson et J. Thomson *T.R.S.N.Z.* 72: 36 (1942)
- var. *setosa* (G. Simpson et J. Thomson) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bellidioides* var. *setosus* G. Simpson et J. Thomson *T.R.S.N.Z.* 72: 37 (1942).
- B. bidwillii* (Hook. f.) B. Nordenstam op. cit. 29  $\equiv$  *Senecio bidwillii* Hook. f. *Fl. N.Z.* 1: 150 (1852)
- var. *bidwillii*
- var. *viridis* (Cheeseman) B. Nordenstam op. cit. 29  $\equiv$  *Senecio bidwillii* var. *viridis* Cheeseman *Man. N.Z. Fl.* 383 (1906).
- B. bifistulosa* (Hook. f.) B. Nordenstam op. cit. 30  $\equiv$  *Senecio bifistulosus* Hook. f. *Fl. N.Z.* 1: 144 (1852).
- B. buchananii* (J.B. Armst.) B. Nordenstam op. cit. 29  $\equiv$  *Senecio buchananii* J.B. Armst. *N.Z. Country J.* 3: 56 (1879)  $\equiv$  *S. bennettii* G. Simpson et J. Thomson *T.R.S.N.Z.* 72: 39 (1942).
- B. cassinioides* (Hook. f.) B. Nordenstam op. cit. 30  $\equiv$  *Senecio cassinioides* Hook. f. *Handb. N.Z. Fl.* 163 (1864).
- B. ×christensenii* (Cockayne) B. Nordenstam op. cit. 31  $\equiv$  *Senecio christensenii* Cockayne *T.N.Z.I.* 49: 60 (1917). = *B. bellidioides*  $\times$  *B. monroi*.
- B. cockaynei* (G. Simpson et J. Thomson) B. Nordenstam op. cit. 29  $\equiv$  *Senecio cockaynei* G. Simpson et J. Thomson *T.R.S.N.Z.* 72: 38 (1942).
- B. compacta* (Kirk) B. Nordenstam op. cit. 29  $\equiv$  *Senecio compactus* Kirk *T.N.Z.I.* 12: 395 (1880).
- B. elaeagnifolia* (Hook. f.) B. Nordenstam op. cit. 29  $\equiv$  *Senecio elaeagnifolius* Hook. f. *Fl. N.Z.* 1: 150 (1852).
- B. greyi* (Hook. f.) B. Nordenstam op. cit. 29  $\equiv$  *Senecio greyi* Hook. f. *Fl. N.Z.* 1: 148, t. 38 (1852).
- B. haastii* (Hook. f.) B. Nordenstam op. cit. 31  $\equiv$  *Senecio haastii* Hook. f. *Handb. N.Z. Fl.* 159 (1864).
- B. hectorii* (Buchanan) B. Nordenstam op. cit. 29  $\equiv$  *Senecio hectorii* Buchanan *T.N.Z.I.* 5: 348 (1873).
- B. huntii* (F. Muell.) B. Nordenstam op. cit. 30  $\equiv$  *Senecio huntii* F. Muell. *Veg. Chatham Is.* 23, t. 3 (1864).
- B. kirkii* (Kirk) C. Webb comb. nov. based on *Senecio kirkii* Hook. f. ex Kirk *Stud. Fl. N.Z.* 344 (1899)  $\equiv$  *Urostemon kirkii* (Kirk) B. Nordenstam op. cit. 33
- var. *kirkii*
- var. *angustior* (Allan) C. Webb comb. nov. based on *Senecio kirkii* var. *angustior* Allan *Fl. N.Z.* 1: 976 (1961)  $\equiv$  *Urostemon kirkii* var. *angustior* (Allan) B. Nordenstam op. cit. 33.
- B. lagopus* (Raoul) B. Nordenstam op. cit. 31  $\equiv$  *Senecio lagopus* Raoul *Ann. Sci. Nat. Bot. Ser.* 3, 2: 119, t. 18 (1844).
- B. ×lapidosa* (Cheeseman) B. Nordenstam op. cit. 31  $\equiv$  *Senecio lapidosus* Cheeseman *T.N.Z.I.* 48: 212 (1916). = *B. haastii*  $\times$  *B. monroi*.
- B. laxifolia* (Buchanan) B. Nordenstam op. cit. 29  $\equiv$  *Senecio laxifolius* Buchanan *T.N.Z.I.* 2: 89 (1870).
- B. ×matthewsii* (Petrie) B. Nordenstam op. cit. 31  $\equiv$  *Senecio matthewsii* Petrie *T.N.Z.I.* 55: 434 (1924). = *B. cassinioides*  $\times$  *B. haastii*.
- B. monroi* (Hook. f.) B. Nordenstam op. cit. 29  $\equiv$  *Senecio monroi* Hook. f. *Fl. N.Z.* 2: 333 (1855)

- var. *monroi*  
 var. *elongata* (Allan) B. Nordenstam op. cit. 29  
 = *Senecio monroi* var. *elongatus* Allan *Fl. N.Z.*  
*1*: 753, 976 (1961).
- B. *myrianthos* (Cheeseman) D. Drury *N.Z. J. Bot.*  
*11*: 741 (1973) = *Senecio myrianthos* Cheese-  
 man *T.N.Z.I.* 7: 348 (1875).
- B. *pentacopa* (D. Drury) B. Nordenstam op. cit. 30  
 = *Senecio pentacopus* D. Drury *N.Z. J. Bot.* *11*:  
 761 (1973).
- B. *perdicoides* (Hook. f.) B. Nordenstam op. cit.  
 30 = *Senecio perdicoides* Hook. f. *Fl. N.Z.* *1*:  
 149 (1852)  
 var. *perdicoides*  
 var. *distincta* (Colenso) B. Nordenstam op. cit.  
 30 = *Senecio distinctus* Colenso *T.N.Z.I.* *27*: 390  
 (1895).
- B. *repanda* Forst. et Forst. f.  
 var. *repanda* = *B. rangiora* Buchanan *T.N.Z.I.*  
*14*: 357 (1882) = *B. repanda* var. *rangiora*  
 (Buchanan) Allan *Fl. N.Z.* *1*: 757 (1961)  
 var. *fragrans* D. Drury *N.Z. J. Bot.* *11*: 743  
 (1973).
- B.  $\times$ *remotifolia* (Petrie) B. Nordenstam op. cit. 31  
 = *Senecio remotifolius* Petrie *T.N.Z.I.* *55*: 96,  
 435 (1924). = *B. elaeagnifolia*  $\times$  *B. repanda*.
- B. *revoluta* (Kirk) B. Nordenstam op. cit. 30 =  
*Senecio revolutus* Kirk *Stud. Fl. N.Z.* 348 (1899).
- B. *rotundifolia* Forst. et Forst. f.  
 var. *rotundifolia*  
 var. *ambigua* (Cheeseman) B. Nordenstam op.  
 cit. 29 = *Senecio rotundifolius* var. *ambiguus*  
 Cheeseman *Man. N.Z. Fl.* 1026 (1925).
- B. *saxifragoides* (Hook. f.) B. Nordenstam op. cit.  
 31 = *Senecio saxifragoides* Hook. f. *Fl. N.Z.* *1*:  
 144 (1852).
- B. *sciadophila* (Raoul) B. Nordenstam op. cit. 30  
 = *Senecio sciadophilus* Raoul *Ann. Sci. Nat. Bot.*  
*Ser.* 3, 2: 119 (1844).
- B. *southlandica* (Cockayne) B. Nordenstam op. cit.  
 31 = *Senecio southlandicus* Cockayne *T.N.Z.I.*  
*47*: 118 (1915)  
 var. *southlandica*  
 var. *albidula* (Allan) B. Nordenstam op. cit. 31  
 = *Senecio southlandicus* var. *albidulus* Allan *Fl.*  
*N.Z.* *1*: 740, 976 (1961).
- B.  $\times$ *spedenii* (Petrie) B. Nordenstam op. cit. 31 =  
*Senecio spedenii* Petrie *T.N.Z.I.* *55*: 434 (1924).  
 = *B. cassinioides*  $\times$  *B. revoluta*.
- B. *stewartiae* (J.B. Armst.) B. Nordenstam op. cit.  
 30 = *Senecio stewartiae* J.B. Armst. *T.N.Z.I.* *13*:  
 339 (1881).
- B. *traversii* (F. Muell.) B. Nordenstam op. cit. 31  
 = *Senecio traversii* F. Muell. *Trans. Bot. Soc.*  
*Edinburgh* 7: 154 (1861).
- B. *turneri* (Cheeseman) C. Webb comb. nov. based

on *Senecio turneri* Cheeseman *T.N.Z.I.* 43: 176  
 (1911).

2n = 60, Beuzenberg, E.J. 1975 (*N.Z. J. Bot.* *13*:  
 345–353).

DOLICHOGLOTTIS B. Nordenstam *Opera Bot.*  
*44*: 33 (1978)

Type species: *D. lyallii* (Hook. f.) B. Nordenstam.  
 Nordenstam, B. 1978 (*Opera Bot.* *44*: 33–36)  
 erected *Dolichoglottis* to include two herbaceous  
 species, *Senecio lyallii* and *S. scorzoneroideis*. This  
 genus differs from the herbaceous members of  
*Brachyglottis* by the leafy stem, lanceolate parallel-  
 veined leaves, biseriate involucre, acute achenial  
 hairs and uniseriate pappus bristles.

Transfers:

*D. lyallii* (Hook. f.) B. Nordenstam op. cit. 36 =  
*Senecio lyallii* Hook. f. *Fl. N.Z.* *1*: 146 (1852).

*D. scorzoneroideis* (Hook. f.) B. Nordenstam op. cit.  
 36 = *Senecio scorzoneroideis* Hook. f. *Fl. N.Z.* *1*:  
 146 (1852).

UROSTEMON B. Nordenstam

Nordenstam, B. 1978 (*Opera Bot.* *44*: 31–33) com-  
 mented on the singularity of *Senecio kirkii* which  
 was noted by Drury, D.G. 1973 (*N.Z. J. Bot.* *11*:  
 525–554). Drury, D.G. 1975 (*Ibid.* *13*: 769–780)  
 had compared it with woody “Senecios” from warm  
 oceanic islands, i.e., *S. insularis* of Lord Howe I.  
 and two species from St Helena, concluding that  
 all were very discrete. Nordenstam treated all four  
 as monotypic genera — *Urostemon*, *Lordhowea*,  
*Pladoroxylon*, and *Lachanodes* respectively. He  
 noted that the tiered appendages of the eglandular  
 hairs, clavate pappus tips, papillate asymmetric  
 anther tails, and the unusual combination of white  
 ray florets and a smooth ligule epidermis are unique  
 characters distinguishing *Urostemon* from *Brachy-*  
*glottis*. Jeffrey, C. 1979 (*Kew Bull.* *34*: 49–58) found  
 it difficult to see on what basis Nordenstam seg-  
 regated *Urostemon* from *Brachyglottis*, regarding  
 the first two characters as non-significant.

C.J. Webb (*hic comm.*): “As noted by Norden-  
 stam (1978), white ray florets also occur in *Brachy-*  
*glottis*. Furthermore, the combination of white rays  
 and a smooth ligule epidermis, rather than the pap-  
 illose epidermis usually associated with white or  
 purple rays, indicates that *Urostemon* is less, not  
 more, distinct from yellow-rayed species of  
*Brachyglottis* which all have smooth ligules. Also,  
 as Jeffrey commented, of all the plants considered  
 by Drury, *S. kirkii* is the one most closely related  
 to *Brachyglottis* in its typical sense [see Druce, A.P.  
 in Eagle, A. 1982 (*Eagle’s Trees and Shrubs of New*  
*Zealand, 2nd series*, p. 326)]. I have therefore placed  
*Urostemon* in synonymy under *Brachyglottis*”.

## Transfers:

U. kirkii (Kirk) B. Nordenstam op. cit. 33 = *Senecio kirkii* Hook. f. ex Kirk *Stud. Fl. N.Z.* 344 (1899)

var. kirkii

var. angustior (Allan) B. Nordenstam op. cit. 33 = *Senecio kirkii* var. *angustior* Allan *Fl. N.Z.* 1: 748, 976 (1961).

## TRIBE LACTUCEAE (CICHORIEAE)

## SONCHUS L.

P.J. Garnock-Jones (*hic comm.*): "Boulos, L. in Eichler, Hj. 1965 (*Suppl. Black's Fl. S. Austral.* 331) described *S. hydrophilus* as a new species from New Guinea, Australia and New Zealand. Koster, J. 1976 (*Blumea* 23: 165-166) placed *S. hydrophilus* within *S. asper* as *S. asper* f. *hydrophilus*. New Zealand specimens cited by Boulos as *S. hydrophilus* lack the diagnostic features of that species and belong in *S. kirkii*.

*Sonchus megalocarpus* (Hook. f.) Black was recorded for New Zealand by Boulos, L. 1976 (*Bot. Not.* 127: 427), as *Embergeria megalocarpa* (Hook. f.) Boulos, based on one specimen (C. Terawhiti, T. Kirk, K). On the determinavit slip Boulos noted "achenes not typical" a view with which I concur. In its achenes and other respects this specimen matches *S. kirkii* Hamlin".

## Substitute name:

*S. kirkii* Hamlin *N.Z. J. Bot.* 14: 279 (1976) replaces *S. littoralis* (Kirk) Allan *Fl. N.Z.* 1: 760 (1961) and *S. littoralis* (Kirk) Cockayne *Rep. Bot. Surv. Kapiti Id C.-8*: 21 (1907) both based on *S. oleraceus* var.  $\gamma$  *littoralis* Kirk *T.N.Z.I.* 26: 265 (1894), and both later homonyms of *S. littoralis* Reichb. (1831).

EMBERGERIA Boulos in Eichler *Suppl. Black's Fl. S. Austral.* 332 (1965)

Type species: *E. grandifolia* (Kirk) Boulos.

Boulos, L. 1965 (in Eichler *Suppl. Black's Fl. S. Austral.* 332) erected *Embergeria* to distinguish plants with coriaceous leaves and large achenes from herbaceous-leaved, small-fruited species of *Sonchus*. For Boulos' record of *E. megalocarpa* from New Zealand see note under *Sonchus*.

## Transfer:

*E. grandifolia* (Kirk) Boulos loc. cit. 332 = *Sonchus grandifolius* Kirk *T.N.Z.I.* 26: 266 (1894); see Lander, N.S. 1976 (*Telopea* 1: 132-133) for lectotypification.

TARAXACUM Wigg. *nom. cons.*

Doll, R. 1982 (*Feddes Repert.* 93: 481-624) in a discussion on evolution in *Taraxacum* refers the New Zealand endemic *T. zealandicum* to sect. *Arctica* Dahlst. subsect. *Antarctica*, in the *T. rhusiocarpum* group.

## New rank and additional taxon:

*T.* sect. *Arctica* Dahlst.

subsect. *Antarctica* (Hand.-Mazz.) Doll *Feddes Repert.* 93: 533 (1982) = sect. *Antarctica* Hand.-Mazz. *Monogr. Taraxacum* 54 (1907).

*T. zealandicum* Dahlst. *Ark. Bot.* 6 (12): 3 (1907).

The type is a Berggren specimen from Porters Pass, Canterbury. No one has accounted for this name in New Zealand taxonomic treatments. *T. magellanicum* Comm. ex Schultz-Bip. (1855) is the name used here.

## MENYANTHACEAE

Cronquist, A. 1981 (*Syst. Class. Flow. Pl.* p. 902) places *Liparophyllum* in Menyanthaceae rather than in the Gentianaceae as in Allan, H.H. 1961 (*Fl. N.Z.* 1: 764-765); Menyanthaceae differ from the Gentianaceae in having alternate leaves, more dissected stele without internal phloem, cellular endosperm, integumentary tapetum, and the absence of gentiopicroside. *Liparophyllum* is one of five genera in this family.

## GENTIANACEAE

GENTIANA L. — GENTIANELLA Moench — OREOPHYLAX (Endl.) Kusn.

Allan, H.H. 1961 (*Fl. N.Z.* 1: 766) briefly discussed the generic status of plants referred to *Gentiana* and concluded that "Further study of the N.Z. spp. is required before they are definitely assigned to *Gentianella*". Philipson, W.R. 1975 (in Murty, Y. S. et al. (ed.) *Advances in Plant Morphology* 417-422. 1972) examined the generic status of Southern Hemisphere gentians in relation to the many groups found in the Northern Hemisphere, and concluded that "... it would be premature to propose new combinations under *Gentianella* for all New Zealand gentians, though this has been done for most species in southern regions". Five species of New Zealand *Gentiana* were transferred to *Gentianella* by Holub, J. 1967 (*Folia Geobot. Phytotax.* 2: 115-120), 1968 (*Ibid.* 3: 217-218) without comment. Löve, A. 1983 (*Taxon* 32: 511), reporting chromosome counts from New Zealand material, transferred eight species of *Gentiana* to *Oreophylax* without comment.

Wood, C.E. & Weaver, R.E. 1982 (*J. Arnold Arbor.* 63: 441-487) when defining North American genera in the Gentianaceae, indicated that New Zealand species fit in *Gentianella*. Massias, M.; Carbonnier, J.; Molho, D. 1981 (*Phytochemistry* 20: 1577-1578) based on the distribution of xanthones and flavones also favour the inclusion of New

Zealand species of *Gentiana* in *Gentianella* sect. *Antarctophylla*.

Names are now available in three genera for some species but for 15 of the species listed in Allan (op. cit.) valid names are available in *Gentiana* only.

GENTIANELLA Moench *nom. cons.*

Transfers:

- G. *bellidifolia* (Hook. f.) Holub *Folia Geobot. Phytotax.* 3: 218 (1968) = *Gentiana bellidifolia* Hook. f. *Icon. Pl.* 7: t. 635 (1844).  
 G. *corymbifera* (Kirk) Holub loc. cit. = *Gentiana corymbifera* Kirk *T.N.Z.I.* 27: 336 (1895).  
 G. *montana* (Forst. f.) Holub *Ibid.* 2: 117 (1967) = *Gentiana montana* Forst. f. *Prodr.* 21 (1786).  
 G. *patula* (Kirk) Holub *Ibid.* 3: 218 (1968) = *Gentiana bellidifolia* Hook. f. var. *patula* Kirk *T.N.Z.I.* 27: 336 (1895) = *Gentiana patula* (Kirk) Cheeseman *Man. N.Z. Fl.* 452 (1906).  
 G. *saxosa* (Forst. f.) Holub loc. cit. = *Gentiana saxosa* Forst. f. *Kongl. Vetensk. Acad. Handl.* 38: 184 (1777).

OREOPHYLAX (Endl.) Kusn.

Transfers:

- O. *antarcticus* (Kirk) A. Löve *Taxon* 32: 511 (1983) = *Gentiana antarctica* Kirk *T.N.Z.I.* 27: 339 (1895).  
 O. *bellidifolius* (Hook. f.) A. Löve loc. cit. = *Gentiana bellidifolia* Hook. f. *Icon. Pl.* 7: t. 635 (1844).  
 O. *grisebachii* (Hook. f.) A. Löve loc. cit. = *Gentiana grisebachii* Hook. f. *Icon. Pl.* 7: t. 636 (1844).  
 O. *lineatus* (Kirk) A. Löve loc. cit. = *Gentiana lineata* Kirk *T.N.Z.I.* 27: 334, t. 27 (1895).  
 O. *montanus* (Forst. f.) A. Löve loc. cit. = *Gentiana montana* Forst. f. *Prodr.* 21 (1786).  
 O. *saxosus* (Forst. f.) A. Löve loc. cit. = *Gentiana saxosa* Forst. f. *Kongl. Vetensk. Acad. Handl.* 38: 184 (1777).  
 O. *serotinus* (Cockayne) A. Löve loc. cit. = *Gentiana serotina* Cockayne *T.N.Z.I.* 47: 113 (1915).  
 O. *vernicosus* (Cheeseman) A. Löve loc. cit. = *Gentiana vernicosa* Cheeseman *Man. N.Z. Fl.* 1145 (1906).  
 Godley, E.J. 1982 (*N.Z. J. Bot.* 20: 405–420) and Webb, C.J. 1984 (in Grant, W.F. (ed.) *Plant Biosystematics* pp. 249–270) have suggested new characters which may help define species of *Gentiana* more precisely, i.e., ovules per ovary, relative level of anthers and stigmas, anther orientation, and the extent of protandry.

#### STYLIDIACEAE

Whether *Donatia* is most closely related to the Saxifragaceae or to the Stylidiaceae, or whether it

should stand in a monogeneric family, the Donatiaceae, was long debated. Philipson, W.R. and Philipson, M.N. 1973 (*N.Z. J. Bot.* 11: 449–459) concluded that features of the ovule and embryology of *Donatia* established its close affinity with the Stylidiaceae but that there was sufficient evidence to support the recognition of the monogeneric family Donatiaceae. However, Philipson, W.R. 1987 (*J. Linn. Soc., Bot.* 95: 19–25) considered it preferable to emphasise the close affinity of *Donatia* to the Stylidiaceae by treating it as a subfamily rather than according it family status.

#### BORAGINACEAE

MYOSOTIS L.

Additional taxon:

- M. *brockiei* L. Moore et M. Simpson *N.Z. J. Bot.* 11: 163 (1973).

#### SOLANACEAE

SOLANUM L.

New rank and additional taxa:

- S. series *Avicularia* Herasim. *Novosti Sist. Vyssh Rast.* 7: 270 (1971)  
 Type species: *S. aviculare* Forst. f.  
 S. series *Laciniata* Herasim. op. cit. 273  
 Type species: *S. laciniatum* Aiton.  
 S. *baylisii* Herasim. op. cit. 272.  
 S. *cheesemanii* Herasim. op. cit. 271.  
 S. *laciniatum* Aiton  
 f. *laciniatum*  
 f. *novozelandicum* Herasim. *Rast. Resurs.* 3: 365 (1971).  
 S. *nodiflorum* Jacq.  
 subsp. *nutans* R. Henderson *Contr. Queensland Herb.* 16: 30 (1974).

#### CONVOLVULACEAE

CONVOLVULUS L.

W.R. Sykes (*hic comm.*): "The type of *C. verecundus* Petrie is from Cass River, Lake Tekapo, and apart from the specimen cited below all those seen from inland areas of the South Island above 350 m from Marlborough to Otago belong to subsp. *verecundus*. Their consistently hairier leaves and larger flowers distinguish them from plants collected in the Wellington and Cape Palliser areas, coastal and lowland Marlborough, and Canterbury, below c. 150 m. Plants from these lower altitudes are here separated from the inland higher altitude populations as a new subspecies. In addition, one small incomplete specimen (CHR 83968) from Hawea Flat, Central Otago, Connor, 11 Nov. 1950, apparently belongs to the new subspecies."



New taxon:

*C. verecundus* Petrie

subsp. *verecundus*

subsp. *waitaha* W. Sykes subsp. nov.

"Differt a subsp. *verecundo* foliorum laminis supra glabris, corolla 0.8–1.3 × 0.9–1.5 cm, et seminibus porcis tuberculatis dense ornatis.

Holotypus: Motukarara, Canterbury, grassy knoll on loess, R. Melville, E.J. Godley and R. Mason, 31.10.1961, CHR 129450.

Aerial stems usually 5–20 cm long; leaves with lamina glabrous above and sparsely hairy or glabrate below; corolla 0.8–1.3 × 0.9–1.5 cm; seed densely tuberculately ridged."

IPOMOEA L.

Sykes, W.R. 1970 (*N.Z. J. Bot.* 8: 249–253) treated strand plants of *Ipomoea* from the Kermadec Is and North Auckland as *I. pes-caprae* subsp. *brasiliensis* (L.) Ooststr. following Ooststroom, S.J. van 1940 (*Blumea* 3: 481–582), but St John, H. 1970 (*Bot. Jahrb.* 89: 563–583) prefers to give this common pan-tropical plant specific rank as *I. brasiliensis* (L.) Sweet. Ooststroom (op. cit.) revived *I. cairica* as an earlier correct name for *I. palmata*.

Substitute name:

*I. cairica* (L.) Sweet *Hort. Brit.* 287 (1827) = *Convolvulus cairicus* L. *Syst. Nat.* ed. 10: 922 (1759) = *I. palmata* Forsskal *Fl. Aegypt. Arab.* 43 (1775).

## SCROPHULARIACEAE

TRIBE RHINANTHEAE

EUPHRASIA L.

Barker, W.R. 1982 (*J. Adelaide Bot. Gard.* 5: 1–304) revised the infrageneric classification of *Euphrasia*, and the taxonomy of the Australian plants.

The sectional treatment corresponds with the synoptic treatment of Ashwin, M.B. in Allan, H.H. 1961 (*Fl. N.Z.* 1: 849–850).

New rank:

E. sect. *Cuneatae* W.R. Barker *J. Adelaide Bot. Gard.* 5: 80 (1982)

Holotype: *E. cuneata* Forst. f.

E. sect. *Pauciflorae* W.R. Barker op. cit. 81

subsect. *Pauciflorae* W.R. Barker op. cit. 82

Holotype: *E. revoluta* Hook. f.; other New Zealand species are *E. monroi*, *E. laingii*, *E. drucei*, *E. townsonii*, *E. petriei*.

E. sect. *Novaezeelandiae* (Du Rietz) W.R. Barker op. cit. 87 = E. subsect. *Novaezeelandiae* Du Rietz *Svensk Bot. Tidskr.* 42: 361 (1948)

Lectotype: *E. zelandica* Wettst.; other New Zealand species are *E. cockayneana*, *E. australis*, *E. cheesemanii*.

E. sect. *Anagosperrae* (Hook. f.) W.R. Barker op. cit. 88 = E. subgenus *Anagosperrae* Hook. f. *Hooker's Icon. Pl.* 13: 65, t. 1283 (1879) = *Siphonidium* J.B. Armstr. *T.N.Z.I.* 13: 340 (1881)

Holotype: *E. disperma* Hook. f.; other New Zealand species are *E. dyeri*, *E. repens*, *E. integrifolia*.

TRIBE DIGITALEAE

OURISIA Comm. ex A.L. Juss.

Arroyo, M.T. Kalin 1984 (*N.Z. J. Bot.* 22: 447–463) described new species and made several combinations in *Ourisia*. In comparison with the treatment by Moore, L.B. in Allan, H.H. 1961 (*Fl. N.Z.* 1: 861–870):

(i) four species are additional;

(ii) *O. sessiliflora* var. *simpsonii* and *O. macrophylla* var. *lactea* are treated as species;

(iii) *O. caespitosa* var. *gracilis* and *O. macrocarpa* var. *meadii* are not recognised;

(iv) all other varieties are promoted to subspecies.

The genus in New Zealand now comprises 14 species and thus no previously named varieties are recognised at that rank.

Additional taxa and new rank:

*O. confertifolia* Arroyo *N.Z. J. Bot.* 22: 447 (1984).

*O. goulandiana* Arroyo op. cit. 451.

*O. lactea* (L. Moore) Arroyo op. cit. 459 = *O. macrophylla* Hook. var. *lactea* L. Moore in Allan *Fl. N.Z.* 1: 863 (1961)

subsp. *lactea*

subsp. *drucei* (L. Moore) Arroyo op. cit. 459 = *O. macrophylla* Hook. var. *drucei* L. Moore in Allan op. cit. 863.

*O. macrocarpa* Hook. f.

subsp. *macrocarpa*

subsp. *calycina* (Colenso) Arroyo op. cit. 460 = *O. calycina* Colenso *T.N.Z.I.* 21: 97 (1889).

*O. macrophylla* Hook.

subsp. *macrophylla*

subsp. *robusta* (Colenso) Arroyo op. cit. 461 = *O. robusta* Colenso *T.N.Z.I.* 17: 246 (1885).

*O. remotifolia* Arroyo op. cit. 449.

*O. sessilifolia* Hook. f.

subsp. *sessilifolia*

subsp. *splendida* (L. Moore) Arroyo op. cit. 462 = *O. sessilifolia* Hook. f. var. *splendida* L. Moore in Allan op. cit. 870.

*O. simpsonii* (L. Moore) Arroyo op. cit. 462 = *O. sessilifolia* Hook. f. var. *simpsonii* L. Moore in Allan op. cit. 869.

*O. spathulata* Arroyo op. cit. 451.

TRIBE VERONICEAE

See Hong, D. 1984 (*Opera Bot.* 75: 1–60) for tax-

onomy and evolution in the tribe. New Zealand genera are placed in the informal *Hebe* group.

CHIONOHEBE B. Briggs et Ehrend. *Contr. Herb. Austral.* 25: 1 (1976) replaces *Pygmea* Hook. f. *Handb. N.Z. Fl.* 217 (1864) non Stackh. (1809)  
Type species: *C. ciliolata* (Hook. f.) B. Briggs et Ehrend.

Briggs, B.G. & Ehrendorfer, F. 1976 (*Contr. Herb. Austral.* 25: 1–4), because they regard *Pygmaea* Stackh. (1809) and *Pygmea* Hook. f. (1864) as orthographic variants, proposed another generic name for *Pygmea* Hook. f. New combinations were made for all species but not for the infraspecific units, and not for *Pygmea armstrongii* (Buchanan) Ashwin.

Transfers:

C. *ciliolata* (Hook. f.) B. Briggs et Ehrend. op. cit. 2 = *Pygmea ciliolata* Hook. f. loc. cit.; varieties not transferred.

C. *densifolia* (F. Muell.) B. Briggs et Ehrend. op. cit. 2 = *Paederota densifolia* F. Muell. *Trans. Philos. Soc. Victoria* 1: 107 (1855) = *Logania tetragona* Hook. f. *Handb. N.Z. Fl.* 188 (1864) = *Pygmea tetragona* (Hook. f.) Ashwin in *Allan Fl. N.Z.* 1: 874 (1961).

C. *mysotoides* (Ashwin) B. Briggs et Ehrend. op. cit. 2 = *Pygmea mysotoides* Ashwin in *Allan Fl. N.Z.* 1: 873.

C. *pulvinaris* (Hook. f.) B. Briggs et Ehrend. op. cit. 2 = *Pygmea pulvinaris* Hook. f. op. cit. 217.

C. *thomsonii* (Buchanan) B. Briggs et Ehrend. op. cit. 2 = *Pygmea thomsonii* Buchanan *T.N.Z.I.* 14: 353, t. 32, f. 3 (1882).

PARAHEBE W. Oliver

Garnock-Jones, P.J. & Langer, H.J. 1980 (*N.Z. J. Bot.* 18: 285–298) revised the infraspecific taxonomy of *P. catarractae*. Four subspecies are recognised. Garnock-Jones, P.J. 1977 (*Ibid.* 14: 285–289) revised the infraspecific taxonomy of *P. linifolia* recognising two subspecies.

Additional taxa and new ranks:

*P. catarractae* (Forst. f.) W. Oliver  
subsp. *catarractae*  
subsp. *diffusa* (Hook. f.) Garnock-Jones in Garnock-Jones et Langer *N.Z. J. Bot.* 18: 292 (1980) = *Veronica catarractae* Forst. f. var. *diffusa* Hook. f. *Handb. N.Z. Fl.* 216 (1864)

subsp. *lanceolata* (Benth.) Garnock-Jones in Garnock-Jones et Langer op. cit. 294 = *Veronica lanceolata* Benth. in DC. *Prodr.* 10: 462 (1846)  
subsp. *martinii* Garnock-Jones in Garnock-Jones et Langer op. cit. 295.

*P. linifolia* (Hook. f.) W. Oliver  
subsp. *linifolia*  
subsp. *brevistylis* Garnock-Jones *N.Z. J. Bot.* 14: 288 (1977).

HEBE Comm. ex A.L. Juss.

Garnock-Jones, P.J. & Molloy, B.P.J. 1983 (*N.Z. J. Bot.* 20: 391–399. 1982) reviewed the *H. amplexicaulis* complex in which *H. allanii* is reduced to synonymy as the hairy morph, forma *hirta*.

Additional taxon and new rank:

*H. amplexicaulis* (J.B. Armst.) Cockayne et Allan f. *amplexicaulis*  
f. *hirta* Garnock-Jones et Molloy *N.Z. J. Bot.* 20: 395 (1983) = *H. allanii* Cockayne *T.N.Z.I.* 56: 25 (1926).

*H. pareora* Garnock-Jones et Molloy op. cit. 398.

## LENTIBULARIACEAE

### UTRICULARIA L.

A completely new subdivision of the genus into 2 subgenera and 30 sections, was proposed by Taylor, P. 1986 (*Kew Bull.* 41: 1–18). New Zealand species which have sterile bracts subtending flowers, are placed within the new sect. *Meionula*, other indigenous species fall within sect. *Pleiochasia* Kam.

Additional taxon:

U. sect. *Meionula* (Raf.) P. Taylor *Kew Bull.* 41: 5 (1986) = *Meionula* Raf. *Fl. Tellur.* 4: 108 (1838).

## MYOPORACEAE

### MYOPORUM Forst. f.

Sykes, W.R. 1977 (*N.Z. DSIR Bull.* 219: 115) referred the Kermadec ngaio to *M. obscurum* Endl. of Norfolk I.

Additional taxon:

*M. obscurum* Endl. *Prodr. Fl. Norfolk.* 54 (1833)

## VERBENACEAE

### TEUCRIDIDIUM Hook. f.

New rank:

*T. parvifolium* Hook. f.  
f. *parvifolium*  
f. *luxurians* (Cheeseman) Mold. *Phytologia* 48: 444 (1981) based on *T. parvifolium* var. *luxurians* Cheeseman *Man. N.Z. Fl.* 764 (1925).

## MONOCOTYLEDONES

### FAMILIES AND HIGHER RANKS

In addition to the four main systems of angiosperm classification listed above (p. 124), two extensive character surveys of the Monocotyledons have appeared: Dahlgren, R.M.T. & Clifford, H.T. 1982

(*The Monocotyledons: a comparative study*) and Dahlgren, R.M.T.; Clifford, H.T.; Yeo, P.F. 1985 (*The families of Monocotyledons*). Relative to *Flora of New Zealand* Vol. II (Moore & Edgar, 1970), the situation with new or revived families which may apply to New Zealand plants is as complex for monocotyledons as for dicotyledons.

The family Hydatellaceae Hamann (1976) and the order Hydatellales are accepted by all authors except Thorne who treats them among Taxa Incertae Sedis. Dahlgren; Clifford; Yeo (op. cit.) accept the Hydatellales remarking that their closest relationship must still be considered unsettled, and they place the Centrolepidaceae, with which Hydatellaceae have been generally associated, with the Poales. Among the four authors of major angiosperm classification, Dahlgren alone has followed the treatment of Liliales s.l., by Huber, H. 1969 (*Mitt. Bot. Staatssamml. München* 8: 219–538) who placed the core families in this group within either the order Asparagales or the Liliales. Dahlgren; Clifford; Yeo (op. cit.) in adopting this treatment, recognise many smaller families to which New Zealand genera are referred; further modifications are in Henderson, R.F.J. & Clifford, H.T. 1984 (*Taxon* 33: 423–427) on Phormiaceae, and Conran, J.G. & Clifford, H.T. 1985 (*Nord. J. Bot.* 5: 215–219) on Ripogonaceae.

Two genera are of uncertain alliance viz. *Herpolirion* and *Xeronema*. This latter was omitted from the Phormiaceae by Henderson & Clifford (op. cit.) but H.T. Clifford (pers. comm.) suggests to us that it may belong to the Iridaceae. Dahlgren & Clifford (op. cit.) see the Doryanthaceae as a possible family for *Herpolirion*.

The disposition of liliifloreal genera according to these recent views is:

#### Asparagales

- (1) Ripogonaceae Conran & Cliff. (1985), *Ripogonum*;
- (2) Luzuriagaceae Dostál (1957), *Luzuriaga*;
- (3) Asteliaceae Dumort. (1829), *Astelia*, *Collospermum*, *Cordyline*;
- (4) Hypoxidaceae, *Hypoxis*;
- (5) Phormiaceae J. Agardh (1858), *Phormium*, *Dianella*;
- (6) Asphodelaceae A.L. Juss. (1789), *Bulbinella*;
- (7) Anthericaceae J. Agardh (1858), *Arthropodium*;

#### Liliales

- (1) Colchicaceae DC. (1805), *Iphigenia*;
- (2) Iridaceae, *Libertia*.

Authorities and dates are noted for families revived in these recent treatments. In the treatment of Dahlgren; Clifford; Yeo (op. cit.) no New Zealand genus is referred to Agavaceae, for *Phormium* falls within Phormiaceae and *Cordyline* in Asteliaceae.

## ZOSTERACEAE

### ZOSTERA L.

*Zostera novazelandica* is recognised as distinct by den Hartog, C. 1970 (*Verh. Kon. Ned. Akad. Wetensch., Afd. Natuurk., Ser. 2* (59): 1–275). Moore in Moore, L.B. & Edgar, E. 1970 (*Fl. N.Z.* 2: 8–10) treated it as a synonym of Australian *Z. muelleri*.

Reinstated name:

*Z. novazelandica* Setch. *Proc. Natl. Acad. U.S.A.* 19: 816 (1933).

## RIPOGONACEAE

Conran, J.G. & Clifford, H.T. 1985 (*Nord. J. Bot.* 5: 215–219) erected the monogeneric family Ripogonaceae, after a study of the phenetic relationships of *Ripogonum* and the Smilacaceae, the family to which *Ripogonum* is usually referred, and other related families with reticulate-veined leaves.

RIPOGONACEAE Conran et Cliff. *Nord. J. Bot.* 5: 219 (1985).

## PHORMIACEAE

This family, erected by Agardh, J.G. 1858 (*Theoria Syst. Pl.* 7), was accepted by Dahlgren, R.M.T. & Clifford, H.T. 1982 (*Monocotyledons* 28) for *Phormium* and possibly for *Xeronema*, but Henderson, R.F.J. & Clifford, H.T. 1984 (*Taxon* 33: 423–427) in recircumscribing the family include *Dianella* but exclude *Xeronema*.

### PHORMIUM Forst. et Forst. f.

Reinstated name at new rank:

*P. cookianum* Le Jolis  
subsp. *cookianum*  
subsp. *hookeri* (Hook. f.) Wardle *N.Z. J. Bot.* 17: 196 (1979) ≡ *P. hookeri* R. Gunn ex Hook. f. *Curtis Bot. Mag.* 114: t. 6973 (1888).

## LEMNACEAE

WOLFFIA Horkel ex Schleiden *nom. cons.*  
den Hartog, C. & van der Plas, F. 1972 (*Blumea* 20: 151–153) regarded New Zealand plants as belonging to a distinct Australasian species *W. australiana*.

New rank:

*W. australiana* (Benth.) den Hartog et van der Plas  
op. cit. 151 ≡ *W. arrhiza* var. *australiana* Benth. *Fl. Austral.* 7: 162 (1878).

## JUNCACEAE

LUZULA DC. *nom. cons.*  
Edgar, E. 1975 (*N.Z. J. Bot.* 13: 781–802) revised

Australasian species of *Luzula*. No taxa are common to New Zealand and Australia. The additional species for New Zealand differs from all indigenous taxa in having a long seed-caruncle.

Additional taxon:

*L. decipiens* Edgar *N.Z. J. Bot.* 13: 797 (1975).

#### HYDATELLACEAE

Hamann, U. 1976 (*N.Z. J. Bot.* 14: 193–196) segregated a new family Hydatellaceae from the Centrolepidaceae and placed within it two genera, *Trithuria* (three Australian species) and *Hydatella* (two West Australian, one Tasmanian, and one New Zealand species — *H. inconspicua* (Cheeseman) Cheeseman). Embryological differences as well as the differences in pollen morphology and seed anatomy were discussed in Hamann, U. 1975 (*Bot. Jahrb.* 96: 154–191).

New rank:

HYDATELLACEAE Hamann *N.Z. J. Bot.* 14: 195 (1976) = Centrolepidaceae tribe Trithurieae Hamann *Engler's Syllabus Pflanzenfamilien* ed. 12, 2: 559 (1964).

#### RESTIONACEAE

EMPODISMA L. Johnson et D. Cutler *Kew Bull.* 28: 383 (1974)

Type species: *E. minus* (Hook. f.) L. Johnson et D. Cutler.

Johnson, L.A.S. & Cutler, D.F. 1974 (*Kew Bull.* 28: 381–385; 1973) segregated *Empodisma*, a genus of two species, from Tasmanian *Calorophus*. One species of *Empodisma* is endemic to south-west Australia, the other is widespread in south-east Australia, Tasmania, and New Zealand.

Transfer:

*E. minus* (Hook. f.) L. Johnson et D. Cutler loc. cit. = *Calorophus minor* Hook. f. *Fl. N.Z.* 1: 267 (1853).

#### IRIDACEAE

LIBERTIA Sprengel *nom. cons.* – SISYRINCHIUM L.

The Papuan-Australasian taxon generally treated as *Libertia pulchella* (R. Br.) Spreng. was treated as *Sisyrrinchium pulchellum* (R. Br.) F. Muell. (*Fragm. Phyt. Austral.* 7: 92. 1870) by Geerinck, D.J.L. 1977 (*Flora Males.* ser. 1, 8: 80–81). He chose to place it in *Sisyrrinchium* because the flowers have tepals more or less similar, rather than dimorphic as in *Libertia*.

Southern Hemisphere species of *Sisyrrinchium*

have basic numbers  $x = 8$ ,  $x = 9$  according to Kenton, A.Y.; Rudall, P.J.; Johnson, A.R. 1986 (*Bot. Gaz.* 147: 342–354); in *Libertia*  $x = 19$  and in *L. pulchella*  $2n = 38$ , Hair, J.B.; Beuzenberg, E.J.; Pearson, B. 1967 (*N.Z. J. Bot.* 5: 185–196). Rudall, P. 1986 (*Nord. J. Bot.* 6: 277–289) commented that evidence from leaf anatomy supports the view that *L. pulchella* is closer to *Libertia* than to *Sisyrrinchium*.

#### PALMAE or ARECACEAE

Dransfield, J. & Uhl, N.W. 1986 (*Principes* 30: 3–11) outlined a new classification of the palms publishing new names for some tribes and subtribes; among these is the new subtribe Archontophoenicinae which includes *Rhopalostylis*.

Additional taxon:

Areceaceae subfamily Arecoideae tribe Areceae subtribe Archontophoenicinae J. Dransfield & N. Uhl *Principes* 30: 8 (1986).

RHOPALOSTYLIS Wendl. et Drude

Sykes, W.R. 1977 (*N.Z. DSIR Bull.* 219: 184–186) reduced to the rank of variety in *R. baueri*, the Kermadec I nikau palm.

New rank:

*R. baueri* (Hook. f.) H.A. Wendl. et Drude var. *cheesemaniae* (Cheeseman) Sykes *N.Z. DSIR Bull.* 219: 184 (1977) = *R. cheesemaniae* Becc. ex Cheeseman *T.N.Z.I.* 49: 47 (1917).

#### PANDANACEAE

FREYCINETIA Gaudich.

Stone, B.C. 1973 (*N.Z. J. Bot.* 11: 241–246) found no reason for retaining New Zealand plants as separate species relative to Norfolk I. despite differences in the colour of flowering bracts and the length and breadth of leaves.

Two subspecies are recognised, one endemic to New Zealand, the other, subsp. *baueriana*, to Norfolk I.

New rank:

*F. baueriana* Endl. subsp. *banksii* (Cunn.) Stone *N.Z. J. Bot.* 11: 242 (1973) = *F. banksii* Cunn. *Companion Bot. Mag.* 2: 377 (1837).

#### HYPOXIDACEAE

HYPOXIS L.

Substitute name:

*H. hookeri* Geer. *Bull. Jard. Bot. Nat. Belg.* 39: 79 (1969) replaces *Hypoxis pusilla* Hook. f. *Fl. Tasman.* 2: 36, t. 130 B (1858) a later homonym of *H. pusilla* Kunth (1816).

## ORCHIDACEAE

## CALADENIA R. Br.

Hallé, N. 1977 (*Fl. N. Caléd. et Dépend.* No. 8. Orchidacees. Paris, Mus. Nat. Hist. Nat.) reduced the taxon with pink, red, or green flowers described as *Caladenia carnea*, to a form in the white-flowered *C. catenata*. Curtis, W. M. 1980 (*Stud. Fl. Tasm. 4A*: 133) placed *C. minor* and *C. minor* var. *exigua* as varieties within *C. catenata*, rather than *C. carnea*.

New rank:

*C. catenata* (Smith) G.C. Druce

f. *carnea* (R. Br.) Hallé *Fl. N. Caléd. et Dépend.* 8: 460 (1977) = *C. carnea* R. Br. *Prodr.* 324 (1810)

var. *exigua* (Cheeseman) W.M. Curtis *Stud. Fl. Tasm. 4A*: 133 (1980) = *C. minor* Hook. f. var. *exigua* Cheeseman *Man. N.Z. Fl.* 688 (1906)

var. *minor* (Hook. f.) W.M. Curtis op. cit. 133 = *C. minor* Hook. f. *Fl. N.Z. 1*: 247, t. 56b (1853) = *C. carnea* R. Br. var. *minor* (Hook. f.) Hatch *T.R.S.N.Z.* 75: 368 (1945).

## CORYBAS Salisb.

The genus was subdivided into two sections by van Royen, P. 1983 (*The Genus Corybas (Orchidaceae) in its eastern areas.* Cramer). The New Zealand species are distributed thus — sect. *Corybas*: *C. aconitiflorus* (type of genus), *C. oblongus*; sect. *Steleocorys*: *C. unguiculatus*, *C. cryptanthus*, *C. macranthus*, *C. rivularis*, *C. acuminatus* and *C. trilobus*.

Transfer and substitute name:

*C.* sect. *Steleocorys* (Endl.) P. Royen *Genus Corybas*, 20 (1983) = *Corysanthes* R. Br. sect. *Steleocorys* Endl. *Gen. Pl.* 218 (1837).

*C.* *acuminatus* M. Clements et Hatch *N.Z. J. Bot.* 23: 491 (1985); a new name for plants treated by Moore in Moore, L.B. & Edgar, E. 1970 (*Fl. N.Z. 2*: 118) as *C. rivularis*. But the true *C. rivularis* (Cunn.) Reichb. f. matches plants treated by Moore (op. cit. 118–119) as *C. orbiculatus* (Colenso) L. Moore, and because *C. rivularis* is the earlier name it must be applied.

PARACALEANA Blaxell *Contr. N.S.W. Natl. Herb.* 4: 280 (1972)

Type species: *P. minor* (R. Br.) Blaxell.

Blaxell, D.F. 1972 (*Contr. N.S.W. Natl. Herb.* 4: 275–283) segregated *Paracaleana* from *Caleana* R. Br.

Transfer:

*P. minor* (R. Br.) Blaxell op. cit. 281 = *Caleana minor* R. Br. *Prodr.* 329 (1810).

PTEROSTYLIS R. Br. *nom. cons.*

Additional taxon:

*P. cardiostigma* D. Cooper *N.Z. J. Bot.* 21: 97 (1983).

SPIRANTHES Rich. *nom. cons.*

Kitamura, S. 1964 (*Acta Phytotax. Geobot.* 21: 23–24) recognised *Spiranthes australis* as a subspecies of very widespread *S. sinensis*.

New rank:

*S. sinensis* (Pers.) Ames

subsp. *australis* (R. Br.) Kitam. *Acta Phytotax. Geobot.* 21: 23 (1964) = *Neottia australis* R. Br. *Prodr.* 319 (1810) = *S. australis* (R. Br.) Lindley *Edward's Bot. Reg.* 10: sub t. 823 (1824).

## CYPERACEAE

## SUBFAMILY CYPEROIDEAE

Soják, J. 1972 (*Čas. Nár. Mus., Odd. Přír.* 141: 61–63) made combinations for *Scirpus* spp. in *Scirpoides*, *Bolboschoenus*, *Schoenoplectus*, and *Isolepis* without comment and again in 1979 (*Ibid.* 148: 193–209) transferred other *Scirpus* spp. to *Eleogiton*, *Isolepis*, and *Schoenoplectus*.

The treatment of *Scirpus* L. was reconsidered by Wilson, K.L. 1981 (*Telopea* 2: 153–172) in a synopsis of the Australian species. She elected to place the species of *Scirpus* s.l. occurring in Australia in four genera. Many of these species occur in New Zealand as well and under Wilson's treatment they would fall within *Bolboschoenus* (Asch.) Palla, *Schoenoplectus* Palla *nom. cons.*, *Isolepis* R. Br., and *Scirpus* L.

Healy, A.J. & Edgar, E. 1980 (*Fl. N.Z.* 3: 191–200) admit 26 species of *Scirpus* s.l. — 20 as native and six as naturalised. Wilson's treatment would yield:

- 1 *Scirpus* s.s.; characterised by leafy involucre bracts, inflorescence branches scabrous, spikelets <1 cm long, hypogynous bristles present: *S. georgianus*, *S. polystachyus*;
- 2 *Bolboschoenus*; characterised by leafy involucre bracts, inflorescence branches smooth, spikelets 1–4 cm long, hypogynous bristles present: *B. caldwellii*, *B. fluvialilis*, *B. medianus*; see below for the new combinations made by Soják;
- 3 *Schoenoplectus*; characterised by 1(–2) culm-like involucre bracts, hypogynous bristles present, and on being stout perennials; *S. pungens* (M. Vahl) Palla, *S. validus* (M. Vahl) A. Löve et D. Löve — the circumpacific taxon segregated from *Scirpus lacustris* s.l.;
- 4 *Isolepis*; characterised by 1(–2) culm-like involucre bracts, hypogynous bristles absent and in being annual, or slender aquatic perennials: indigenous species — *I. aucklandica*, *I. basilaris*, *I. caligenis*, *I. cernua*, *I. crassiuscula*, *I. fluitans*, *I. habra*, *I. inundata*, *I. nodosa*, *I. pott-*

*sii*, *I. praetextata*, *I. prolifer*, *I. reticularis*, *I. subtilissima*; naturalised species — *I. marginata* (Thunb.) A. Dietr., *I. platycarpa*, *I. sepulcralis* Steudel, *I. setacea*.

In *Isolepis*, *I. marginata* is the accepted name for the taxon known in New Zealand as either *Scirpus cartilagineus* or *S. antarcticus*; *I. sepulcralis* is the accepted name for the taxon known in New Zealand as either *Scirpus chlorostachyus* or *S. antipodus*. A combination in *Isolepis* is made here for the New Zealand endemic *Scirpus sulcatus* var. *distigmatosus*.

**BOLBOSCHOENUS** (Asch.) Palla in Hallier & Brand Koch's *Syn. Deut. Schweiz. Fl.* ed. 3, 2: 2531 (1907)

Type species: *B. maritimus* (L.) Palla.

Transfers:

*B. caldwelii* (V. Cook) Soják *Čas. Nár. Mus., Odd. Přír.* 141: 62 (1972) ≡ *Scirpus caldwelii* V. Cook *T.R.S.N.Z.* 76: 568 (1947).

*B. fluviatilis* (Torrey) Soják op. cit. 62 ≡ *Scirpus maritimus* L. var. *fluviatilis* Torrey *Ann. Lyceum Nat. Hist. New York* 3: 324 (1836).

*B. medianus* (V. Cook) Soják op. cit. 63 = *Scirpus medianus* V. Cook op. cit. 569.

**ELEOGITON** Link

Wilson (op. cit.) regards *Eleogiton* Link as no more than an aquatic specialisation of *Isolepis*.

Transfer:

*E. crassiuscula* (Hook. f.) Soják *Čas. Nár. Mus., Odd. Přír.* 148: 193 (1979) ≡ *Isolepis crassiuscula* Hook. f. *Fl. Tasman.* 2: 86 (1858).

**ISOLEPIS** R. Br. *Prodr.* 221 (1810)

Type species: *I. setacea* (L.) R. Br.

New combination and transfers:

*I. caligenis* (V. Cook) Soják *Čas. Nár. Mus., Odd. Přír.* 148: 194 (1979) ≡ *Scirpus caligenis* V. Cook *T.R.S.N.Z.* 81: 158 (1953).

*I. distigmatosa* (C.B. Clarke) Edgar comb. nov. based on *Scirpus sulcatus* Thouars var. *distigmatosus* C.B. Clarke in Cheeseman *Man. N.Z. Fl.* 775 (1906).

*I. habra* (Edgar) Soják op. cit. 194 ≡ *Scirpus habrus* Edgar *N.Z. J. Bot.* 4: 199 (1966).

*I. pottsii* (V. Cook) Soják op. cit. 194 ≡ *Scirpus pottsii* V. Cook *T.R.S.N.Z.* 81: 157 (1953).

*I. praetextata* (Edgar) Soják op. cit. 194 ≡ *Scirpus praetextatus* Edgar *N.Z. J. Bot.* 4: 196 (1966).

Names in *Isolepis* are available for all other New Zealand taxa.

**SCIRPOIDES** Séguier

Wilson, K.L. 1981 (*Telopea* 2: 162) notes that *Scirpoides* is a particular problem. *Scirpoides* Séguier is an earlier name for the genus *Holoschoenus* Link

in which *Scirpus nodosus* is often placed. The generic delimitation of *Scirpoides* is uncertain, and the two austral species referred to it, viz. *Scirpus nodosus* and *S. prolifer*, both vary from typical *Scirpoides*. Flavonoid profiles indicate that these two species are better placed in *Isolepis*, see Harborne, J.B.; Williams, C.A.; Wilson, K.L. 1985 (*Phytochemistry* 24: 751–766).

Transfer:

*S. nodosa* (Rottb.) Soják *Čas. Nár. Mus., Odd. Přír.* 141: 62 (1972) ≡ *Scirpus nodosus* Rottb. *Descr. Icon. Rar. Pl.* 52 (1773) = *Isolepis nodosa* (Rottb.) R. Br. *Prodr.* 221 (1810).

SUBFAMILY CARICOIDEAE

The delimitation of genera within subfamily Caricoideae, which includes the two large genera *Carex* and *Uncinia*, has attracted considerable attention, see for example, Haines, R.W. & Lye, K.A. 1972 (*Bot. Not.* 125: 331–343), Eiten, L.T. 1976 (*Ann. Missouri Bot. Gard.* 63: 81–112), Smith, D.L. & Faulkner, J.S. 1976 (*Bot. Rev.* 42: 53–81), and Kukkonen, I. & Timonen, T. 1979 (*Symb. Bot. Upsal.* 22: 166–176), but the elucidation of the relationship between *Kobresia*, *Schoenoxiphium*, *Uncinia*, and *Carex* with its subgenera *Carex*, *Primocarex*, *Indocarex*, and *Vignea* is by no means complete. Soják, J. 1979 (*Čas. Nár. Mus., Odd. Přír.* 148: 193–209) recognises *Vignea* as a distinct genus and lists new combinations without discussion.

**UNCINIA** Pers.

This genus was revised for Malesia and Australia by Nooteboom, H.P. 1978 (*Blumea* 24: 511–520). He recognised three species for the region, *U. riparia* R. Br., *U. tenella* R. Br., and *U. compacta* R. Br. Hamlin, B.G. 1959 (*Bull. Dom. Mus. Wellington* 19: 1–106) and Edgar, E. in Moore, L.B. & Edgar, E. 1970 (*Fl. N.Z.* 2: 215–235) regarded all 32 New Zealand species of *Uncinia* as distinct from those of Australia, but Nooteboom placed three New Zealand species in synonymy under *U. riparia*, and 15 New Zealand species and their synonyms under *U. compacta*; 14 other species currently recognised in New Zealand are not discussed.

**CAREX** L.

Bipolar *Carex lachenalii* was examined by Toivonen, H. 1979 (*Ann. Bot. Fenn.* 16: 151–156). New Zealand plants were found to differ from those of the Northern Hemisphere and a new subspecies was erected for them based on a name of Petrie's.

New rank:

*C. lachenalii* Schk.

subsp. *parkeri* (Petrie) Toivonen *Ann. Bot. Fenn.* 16: 154 (1979) ≡ *C. parkeri* Petrie *T.N.Z.I.* 13: 332 (1881).

See also under *Vignea*.

## VIGNEA P. Beauv. ex Lestib. f.

For New Zealand a treatment in *Vignea* is incomplete, because, of the species listed in *Carex* subgenus *Vignea* in Healy, A.J. & Edgar, E. 1980 (*Fl. N.Z.* 3: 147–148), only four of the 16 indigenous species have names in *Vignea* — those listed below and *V. echinata* Fourr.; of the 10 naturalised species only *Carex longii* lacks a name in *Vignea*.  
Transfers:

- V. diandra* (Schrank) Soják *Čas. Nár. Mus., Odd. Přír.* 148: 195 (1979) ≡ *Carex diandra* Schrank *Cent. Bot. Anmerk.* 57 (1781).  
*V. inversa* (R. Br.) Soják op. cit. 195 ≡ *Carex inversa* R. Br. *Prodr.* 242 (1810).  
*V. lachenalii* (Schk.) Soják op. cit. 195 ≡ *Carex lachenalii* Schk. *Beschr. Riedgräs.* 51 (1801).

## GRAMINEAE or POACEAE

Clayton, W.D. & Renvoize, S.A. 1986 (*Genera Graminum: Grasses of the World, Kew Bull. Add. Ser.* 13) presented a conspectus of grass classification; we follow here their arrangement of tribes. They recognised 651 genera in 40 tribes distributed among six subfamilies.

Twenty three genera with New Zealand representatives retain their customary circumscription, viz. *Austrofestuca*, *Bromus*, *Cenchrus*, *Chionochloa*, *Cortaderia*, *Deschampsia*, *Dichelachne*, *Echinopogon*, *Festuca*, *Hierochloa*, *Imperata*, *Isachne*, *Koeleria*, *Lepturus*, *Oplismenus*, *Paspalum*, *Poa*, *Puccinellia*, *Pyrrhanthera*, *Simplicia*, *Spinifex*, *Trisetum*, *Zoysia*.

*Lachnagrostis*, *Deyeuxia*, *Cockaynea*, *Anemantbele*, *Amphibromus* are Southern Hemisphere segregates from large genera; none is accepted by Clayton and Renvoize (q.v.), all are discussed below. New Zealand Agropyrons are regarded as *Elymus*, and *Microlaena* as *Ehrharta* (*vide infra*). *Erythranthera*, a ditypic genus erected by Zotov in 1963, is directly referred to *Rytidosperma*.

The type of *Kampmannia zeylandica* attributed by Steudel to New Zealand remains lost; Clayton and Renvoize suggest it may be a species of *Cortaderia*.

## TRIBE EHRHARTEAE

MICROLAENA R. Br. — EHRHARTA Thunb.  
*nom. cons.*

Willemse, L.P.M. 1982 (*Blumea* 28: 181–194) examined the generic criteria for *Microlaena* R. Br., and its nomenclaturally invalid New Zealand segregate *Petriella* Zotov non Curzi (1930) as well as *Tetrarrhena* R. Br. and *Ehrharta* Thunb. and considered that they did not allow any satisfactory delimitation among the four. Accordingly the New Zealand taxa were placed in *Ehrharta*, the first

available generic name. Clayton & Renvoize (op. cit. 77) concur with this generic treatment. The possible generic solution into *Microlaena* and *Tetrarrhena* proffered by Connor, H.E.; Edgar, E. 1986 (*in* Barlow, B.A. ed. *Flora and Fauna of Alpine Australasia*, CSIRO, Melbourne, p. 429) would clearly be unacceptable to Clayton and Renvoize.

Under Willemse's treatment:

- (i) *E. diplax* F. Muell. *Fragm.* 7: 90 (1870) is the revived name for *M. avenacea* (Raoul) Hook. f. *Handb. N.Z. Fl.* 320 (1864), a combination in *Ehrharta* based on Raoul's epithet is unavailable because of *E. avenacea* Schultes et Schultes f. (1830);  
(ii) *M. carsei* Stapf in Cheeseman *T.N.Z.I.* 47: 47 (1915) is merged in *E. diplax*; Zotov, V.D. 1943 (*T.N.Z.I.* 43: 235) treated it as a variety.  
(iii) *E. stipoides* Labill. *Nov. Holl. Pl.* 1: 91, t. 118 (1805) is revived for *M. stipoides* (Labill.) R. Br. *Prodr.* 210 (1810); New Zealand plants are included in var. *stipoides*.  
(iv) *M. thomsonii* (Petrie) Petrie in Chilton *Subantarct. Is. N.Z.* 2: 472 (1909) and *M. colensoi* (Hook. f.) J.C. Smith *T.N.Z.I.* 43: 253 (1911) are not discussed though both are based on names in *Ehrharta*.  
(v) *M. polynoda* (Hook. f.) Hook. f. *Handb. N.Z. Fl.* 320 (1864) was included in "nomina dubia" by Willemse as he had seen two specimens only. He did not comment on *E. multinoda* F. Muell. *Fragm.* 7: 90 (1870) nom. illeg. which was proposed for *Diplax polynoda* Hook. f. *Fl. N.Z.* 1: 290 (1853).

Zotov, V.D. 1965 (*Rec. Dom. Mus. Wellington* 5 (15): 101–146) restored to *Microlaena*, as *M. thomsonii*, one species he had earlier, Zotov, V.D. 1943 (*T.R.S.N.Z.* 73: 236) placed in a segregate but invalid genus *Petriella* Zotov.

## TRIBE STIPEAE

## STIPA L.

Substitute name:

- S. stipoides* (Hook. f.) Veldk. *Blumea* 22: 11 (1974) ≡ *Dichelachne stipoides* Hook. f. *Fl. N.Z.* 1: 294, t. 66 (1853) which antedates *S. teretifolia* Steudel *Syn. Pl. Glumac.* 1: 128 (1854), the name usually applied to this Australasian taxon.

ANEMANTHELE Veldk. *Acta Bot. Neerl.* 34: 107 (1985)

Type species: *A. lessoniana* (Steudel) Veldk. Veldkamp, J.F. 1985 (*Acta Bot. Neerl.* 34: 105–109) proposed the new monotypic genus *Anemantbele* for plants known in New Zealand as *Stipa arundinacea* (Hook. f.) Benth., see Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 148), or sometimes as *Oryzopsis rigida* (A. Rich.) Zotov (*T.R.S.N.Z.* 73: 235).

1943); Veldkamp, J.F. 1974 (*Blumea* 22 : 11) had corrected the specific epithet *rigida* to *lessoniana*. *Anemanthele* is characterised by:

- (i) laterally subcompressed florets which remain membranous at maturity;
  - (ii) lemma 3-nerved, with margins overlapping above;
  - (iii) callus bearded, conical and obtuse;
  - (iv) hilum small, elliptic, in lower 1/6 of caryopsis.
- Clayton & Renvoize (op. cit. 84) reduced *Anemanthele* to synonymy in *Stipa*.

Transfer:

- A. *lessoniana* (Steudel) Veldk. op. cit. 108 ≡ *Agrostis lessoniana* Steudel *Nomencl. Bot.* ed. 2, 1 : 41 (1840) ≡ *Oryzopsis lessoniana* (Steudel) Veldk. *Blumea* 22 : 11 (1974).

#### TRIBE POEAE

##### POA L.

Edgar, E. 1986 (*N.Z. J. Bot.* 24 : 425–503) revised New Zealand *Poa*; the subantarctic members had been treated earlier by Zotov, V.D. 1965 (*Rec. Dom. Mus. Wellington* 5 (15) : 101–146).

Edgar's treatment comprises:

- P. *acicularifolia* Buchanan *Indig. Grasses N.Z.* t. 49A (1880)  
 subsp. *acicularifolia*  
 subsp. *ophitalis* Edgar *N.Z. J. Bot.* 24 : 444 (1986).
- P. *anceps* Forst. f. *Prodr.* 8 (1786)  
 subsp. *anceps*  
 subsp. *polyphylla* (Hackel) Edgar op. cit. 452 ≡ *P. polyphylla* Hackel *T.N.Z.I.* 35 : 383 (1903).
- P. *antipoda* Petrie in Chilton *Subantarct. Is N.Z.* 2 : 478 (1909).
- P. *astonii* Petrie *T.N.Z.I.* 38 : 423 (1906) = *P. oraria* Petrie *T.N.Z.I.* 42 : 196 (1910).
- P. *aucklandica* Petrie in Chilton op. cit. 478  
 subsp. *aucklandica*  
 subsp. *campbellensis* (Petrie) Edgar op. cit. 467 ≡ *P. campbellensis* Petrie *T.N.Z.I.* 50 : 211 (1918)  
 subsp. *rakiura* Edgar op. cit. 467.
- P. *breviglumis* Hook. f. *Fl. Antarct.* 1 : 101 (1845).
- P. *buchananii* Zotov *T.R.S.N.Z.* 73 : 236 (1943).
- P. *celsa* Edgar op. cit. 463.
- P. *chathamica* Petrie *T.N.Z.I.* 34 : 394 (1902).
- P. *cita* Edgar op. cit. 446 ≡ *P. caespitosa* Sprengel in Biehler *Pl. Nov. Herb. Spreng.* 7 (1807) non Poirlet (1804).
- P. *cockayneana* Petrie *T.N.Z.I.* 45 : 274 (1913).
- P. *colensoi* Hook. f. *Handb. N.Z. Fl.* 340 (1864) = *P. intermedia* Buchanan op. cit. t. 48A non Koeher (1802) = *P. guthrie-smithiana* Petrie *T.N.Z.I.* 45 : 275 (1913).
- P. *cookii* (Hook. f.) Hook. f. *Philos. Trans.* 168 : 22 (1879) ≡ *Festuca cookii* Hook. f. *Fl. Antarct.* 2 : 382, t. 139 (1846) = *P. hamiltonii* Kirk *T.N.Z.I.* 27 : 353 (1895).

- P. *dipsacea* Petrie *T.N.Z.I.* 26 : 271 (1894) = *P. cheesemanii* Hackel *T.N.Z.I.* 35 : 383 (1903) = *P. wallii* Petrie *T.N.Z.I.* 54 : 571 (1923).
- P. *foliosa* (Hook. f.) Hook. f. *Handb. N.Z. Fl.* 338 (1864) ≡ *Festuca foliosa* Hook. f. *Fl. Antarct.* 1 : 99, t. 55 (1845).
- P. *hesperia* Edgar op. cit. 442.
- P. *imbecilla* Sprengel in Biehler op. cit. 9 = *P. matthewsii* Petrie var. *minor* Petrie *T.N.Z.I.* 34 : 393 (1902).
- P. *incrassata* Petrie *T.N.Z.I.* 34 : 394 (1902) = *P. exigua* Hook. f. *Handb. N.Z. Fl.* 338 (1864) non Dumort. (1823).
- P. *intrusa* Edgar op. cit. 463.
- P. *kirkii* Buchanan op. cit. t. 51B = *P. mackayi* Buchanan op. cit. t. 51A.
- P. *lindsayi* Hook. f. *Handb. N.Z. Fl.* 340 (1864).
- P. *litorosa* Cheeseman *Man. N.Z. Fl.* 1156 (1906) ≡ *Festuca scoparia* Hook. f. *Fl. Antarct.* 1 : 98 (1845); the combination in *Poa* was preoccupied by *P. scoparia* Kunth (1832).
- P. *maia* Edgar op. cit. 470.
- P. *maniototo* Petrie *T.N.Z.I.* 22 : 443 (1890).
- P. *matthewsii* Petrie *T.N.Z.I.* 34 : 392 (1902) = *P. matthewsii* Petrie var. *tenuis* Petrie op. cit. 393.
- P. *novae-zelandiae* Hackel *T.N.Z.I.* 35 : 381 (1903).
- P. *pusilla* S. Berggren *Minneskr. Fisiogr. Sällsk. Lund. Art.* 8 : 31 (1878) = *P. seticulmis* Petrie *T.N.Z.I.* 34 : 391 (1902).
- P. *pygmaea* Buchanan op. cit. t. 50A.
- P. *ramosissima* Hook. f. *Fl. Antarct.* 1 : 101 (1845).
- P. *senex* Edgar op. cit. 477.
- P. *sublimis* Edgar op. cit. 465.
- P. *subvestita* (Hackel) Edgar op. cit. 436 ≡ *P. novae-zelandiae* var. *subvestita* Hackel *T.N.Z.I.* 35 : 382 (1903).
- P. *sudicola* Edgar op. cit. 437.
- P. *tennantiana* Petrie in Chilton op. cit. 476.
- P. *tonsa* Edgar op. cit. 477.

AUSTROFESTUCA (Tzvelev) E. Aleks. *Bjull. Moskovsk. Obsč. Isp. Prir., Otd. Biol.* 81 : 55 (1976) based on *Festuca* L. subgenus *Austrofestuca* Tzvelev *Bot. Žurn. (Moscow & Leningrad)* 56 : 1257 (1971)

Type species: *A. littoralis* (Labill.) E. Aleks. Alekseev, E.B. 1976 (*Bjull. Moskovsk. Obsč. Isp. Prir., Otd. Biol.* 81 : 55–60) raised *Festuca* subgenus *Austrofestuca* to generic rank for the coastal Australasian taxon known sometimes as *Festuca littoralis* or as *Poa triodioides*. Characters of the genus which separate it from *Festuca* include:

- (i) pubescent lodicules;
- (ii) lower lemma 7-nerved;
- (iii) pubescent callus;
- (iv) caryopsis with a short oval hilum.

Transfer:

- A. *littoralis* (Labill.) E. Aleks. op. cit. 55 ≡ *Festuca*



*littoralis* Labill. *Nov. Holl. Pl.* 1: 22, t. 27 (1805) = *Arundo triodioides* Trin. *Spec. Gram.* t. 351 (1836) = *Poa triodioides* (Trin.) Zotov *T.R.S.N.Z.* 73: 236 (1943).

2n = 28; "... at least four of the eight pairs of submedian chromosomes are distinctly more heterobrachial than elements of the same class in the other [*Poa*] tetraploids." (Hair, J.B. *N.Z. J. Bot.* 6: 267-276. 1968).

#### TRIBE AVENEAE

##### AMPHIBROMUS Nees

Jacobs, S.W.L. & Lapinuro, L. 1986 (*Telopea* 2: 715-729) revised Australian species of *Amphibromus*. The sole New Zealand species *A. fluitans* Kirk is regarded as occurring in Australia, and *A. gracilis* P.F. Morris of southern New South Wales, Victoria and Tasmania, is placed in synonymy within *A. fluitans*. Clayton & Renvoize (op. cit. 123-124) treat *Amphibromus* as a synonym of northern hemisphere *Helictotrichon* Schultes, noting that the glabrous ovary in *Amphibromus* seems an inadequate basis for generic separation.

##### HIEROCHLOE Gmelin ex R. Br. *nom. cons.*

Zotov, V.D. 1973 (*N.Z. J. Bot.* 11: 561-579) revised New Zealand *Hierochloe*, recognising seven species, three of them new, and the fourth involving a change in rank. The name *H. novae-zelandiae* Gand. is used for the plants described in Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 147) as *H. fraseri* Hook. f., and *H. brunonis* Hook. f. includes material from Auckland and Campbell Is as in Cheeseman's Manual, but also a specimen from Waipapa Point near Invercargill.

The type of *H. redolens* (M. Vahl) Roemer et Schultes is attributed by Zotov to the New Zealand collections of the Forsters and not to their Fuegian material cited by Vahl. De Paula, M.E. 1975 (*Darwiniana* 19: 422-457) concluded that the type of *H. redolens* was from Forster's collection from Tierra del Fuego, and that the name *H. redolens* should be applied to South American material which is distinct from New Zealand plants.

Schouten, Y. & Veldkamp, J.F. 1985 (*Blumea* 30: 319-351) found no differences between populations from New Zealand and South America, and concluded that "... the actual provenance of Forster's material must remain a mystery." Nevertheless, "Because of tradition we have here assumed that Forster's collections, at least the one studied by Vahl, did come from South America, and as we have assumed that only a single species is involved, its origin is of little importance to us."

Zotov's treatment comprises:

*H. brunonis* Hook. f. *Fl. Antarct.* 1: 93, t. 52 (1845).  
*H. cuprea* Zotov *N.Z. J. Bot.* 11: 571 (1973).

*H. equisetata* Zotov op. cit. 568; the description and illustration of Buchanan, J. 1879 (*Indig. Grasses N.Z.* t. 35) under the name *Danthonia buchananii* Hook. f. apply to *H. equisetata*.

*H. fusca* Zotov op. cit. 576.

*H. novae-zelandiae* Gand. *Bull. Soc. Bot. France* 66: 300 (1920).

*H. recurvata* (Hackel) Zotov op. cit. 566 based on *H. fraseri* var. *recurvata* Hackel in Cheeseman *Man. N.Z. Fl.* 856 (1906).

*H. redolens* (M. Vahl) Roemer et Schultes *Syst. Veg.* 2: 514 (1817) = *Anthoxanthum redolens* (M. Vahl) P. Royen *Alpine Fl. N. Guinea* 2: 1185, f. 382 (1980), *vide supra*.

##### ANTHOXANTHUM L.

Schouten, Y. & Veldkamp, J.F. 1985 (*Blumea* 30: 319-351) concluded that it is impossible to uphold the classical concept of *Anthoxanthum* and *Hierochloe* as separate genera.

*Anthoxanthum* is the older name and species of *Hierochloe* are transferred to it; exceptions are the indigenous New Zealand taxa described by Zotov (*vide supra sub Hierochloe*) "... as we feel that another revision of the material is needed". The widespread *H. redolens* was earlier transferred to *Anthoxanthum* by van Royen (loc. cit.).

Clayton & Renvoize (op. cit. 133) find *Anthoxanthum* sufficiently distinct from *Hierochloe* to justify generic status.

The basic number (*x*) is regarded as 7 in *Hierochloe*, and as 5 (or 10) in *Anthoxanthum* Löve, A. & Löve, D. 1975 (*Cytotaxonomical Atlas of the Arctic Flora*. Cramer, Vaduz).

Transfer:

*A. redolens* (M. Vahl) P. Royen *Alpine Fl. N. Guinea* 2: 1185, f. 382 (1980) = *Holcus redolens* M. Vahl *Symb. Bot.* 2: 102 (1791).

##### AGROSTIS L.

Veldkamp, J.F. 1982 (*Blumea* 28: 199-228) placed in *Agrostis avenacea*, as had Vickery, J.W. 1941 (*Contr. N.S.W. Natl. Herb.* 1: 112), plants usually known as *Deyeuxia forsteri* or as *D. filiformis*. Zotov, V.D. 1965 (*Rec. Dom. Mus. Wellington* 5(15): 101-146) treated these plants as *Lachnagrostis* (*vide infra*). Clayton & Renvoize (op. cit. 134) concur with Veldkamp's generic treatment.

Reinstated name:

*A. avenacea* J. Gmelin *Syst. Nat.* 2, 1: 171 (1791) = *Avena filiformis* Forst. f. *Prodr.* 9 (1786).

LACHNAGROSTIS Trin. *Fund. Agrost.* 128 (1822)

Type species: *L. filiformis* Trin.

Zotov, V.D. 1965 (*Rec. Dom. Mus. Wellington* 5(15): 101-146) reinstated *Lachnagrostis* Trin. (1822) to accommodate some taxa treated in New

Zealand as *Deyeuxia forsteri* and its varieties, and in Australia and South Africa as *Agrostis*. *Lachnagrostis* is also recognised in South America. The genus is based on: panicle delicate, fragile and diffuse with branches naked below and  $\pm$  equal to length of main axis; glumes much exceeding florets; lemmas rather delicate, softly hairy, with dorsal awn mostly geniculate; epidermal cells of lemma lacking scalariform thickenings; palea 2/3 to c. as long as lemma; rachilla mostly present above the floret, bifariously hairy.

Veldkamp, J.F. 1982 (*Blumea* 28: 199–228) treated *Lachnagrostis filiformis* Trin. as a synonym of *Agrostis avenacea* J. Gmelin; both are based on the same type but a combination in *Agrostis* is preoccupied by *A. filiformis* Villars (1787). Clayton & Renvoize (op. cit. 134) concur with Veldkamp's treatment.

Transfers and substitute name:

*L. filiformis* Trin.

var. *filiformis*

var. *littoralis* (Hackel) Zotov *Rec. Dom. Mus. Wellington* 5(15): 142 (1965)  $\equiv$  *Deyeuxia forsteri* var. *littoralis* Hackel in Cheeseman *Man. N.Z. Fl.* 869 (1906)

var. *semiglabra* (Hackel) Zotov op. cit. 142  $\equiv$  *Deyeuxia forsteri* var. *semiglabra* Hackel in Cheeseman op. cit. 869.

*L. leptostachys* (Hook. f.) Zotov op. cit. 143  $\equiv$  *Agrostis leptostachys* Hook. f. *Fl. Antarct.* 1: 94 (1845).

*L. lyallii* (Hook. f.) Zotov op. cit. 142  $\equiv$  *Agrostis lyallii* Hook. f. *Fl. N.Z.* 1: 297 (1853).

*L. richardii* Zotov op. cit. 143 replaces *Agrostis pilosa* A. Rich. *Essai Fl. N.Z.* 134 (1832) non Retz. (1791).

*L. striata* (Colenso) Zotov op. cit. 142  $\equiv$  *Agrostis striata* Colenso *T.N.Z.I.* 21: 107 (1889).

DEYEUZIA Clar. ex P. Beauv.

New rank:

*D. aucklandica* (Hook. f.) Zotov *Rec. Dom. Mus. Wellington* 5(15): 139 (1965)  $\equiv$  *Agrostis aucklandica* Hook. f. *Fl. Antarct.* 1: 96 (1845); plants of this taxon were known as *D. setifolia* Hook. f.

*D. tenuis* (Petrie) Zotov op. cit. 139  $\equiv$  *D. billardi-erei* var. *tenuis* Petrie in Cheeseman *Man. N.Z. Fl.* 870 (1906).

Clayton & Renvoize (op. cit. 135–136) treat *Deyeuxia* as a synonym of *Calamagrostis* Adans.

SIMPLICIA Kirk

Zotov, V.D. 1971 (*N.Z. J. Bot.* 9: 539–544) reported the rediscovery of *Simplicia laxa* Kirk (*T.N.Z.I.* 29: 497, t. 44. 1897) in Otago on the Old Man Range, and raised *S. laxa* var. *buchananii* to specific rank. The ditypic genus is endemic.

New rank:

*S. buchananii* (Zotov) Zotov op. cit. 542  $\equiv$  *S. laxa* Kirk var. *buchananii* Zotov *T.R.S.N.Z.* 73: 236 (1943) = *Poa uniflora* Buchanan *Indig. Grasses N.Z.* t. 49 B (1880) non Muhlenb. (1817).

DICHELACHNE Endl.

Veldkamp, J.F. 1974 (*Blumea* 22: 5–12) revised the small genus *Dichelachne*. Three species all occurring in New Zealand were recognised: *D. crinita*, *D. rara* (R. Br.) Vick., and *D. micrantha* which replaces *D. sciurea*, the name generally used for this plant in New Zealand.

Edgar, E. & Connor, H.E. 1982 (*N.Z. J. Bot.* 20: 303–309) also revised *Dichelachne* for New Zealand. Five taxa were recognised: three indigenous and shared with Australia, viz *D. crinita*, *D. micrantha* and *D. inaequiglumis*; two naturalised from Australia, *D. rara* and *D. sieberiana* Trin. et Rupr.

Treatment according to Edgar & Connor:

*D. crinita* (L. f.) Hook. f. *Fl. N.Z.* 1: 293 (1853)  $\equiv$  *Anthoxanthum crinitum* L. f. *Suppl. Syst. Veg.* 13: 90 (1782).

*D. inaequiglumis* (Hackel) Edgar et Connor *N.Z. J. Bot.* 20: 307 (1982)  $\equiv$  *D. sciurea* (R. Br.) Hook. f. var. *inaequiglumis* Hackel in Cheeseman *Man. N.Z. Fl.* 1: 874 (1906).

*D. micrantha* (Cav.) Domin *Biblioth. Bot.* 85: 353 (1915)  $\equiv$  *Stipa micrantha* Cav. *Icon.* 5: 4, t. 467, f. 2 (1799) = *Agrostis sciurea* R. Br. *Prodr.* 171 (1810).

TRIBE TRITICEAE

ELYMUS L. *Sp. Pl.* 83 (1753)

Type species: *E. sibiricus* L.

Löve, A. & Connor, H.E. 1982 (*N.Z. J. Bot.* 20: 169–186) studied the genomic constitution of New Zealand taxa referred in the past (Cheeseman, T.F. (*Man. N.Z. Fl.* 209–212. 1925) to *Agropyron* and *Asprella* (Cockayne). All taxa have genomes characterised by haplomes H and S, and are referred to *Elymus*, and to two sections in that genus: thus *Elymus* includes five species formerly recognised in *Agropyron*, as well as the two species of the genus more recently known as *Cockaynea*. Clayton & Renvoize (op. cit. 150) accept the *Elymus* decision but place *Cockaynea* somewhat insecurely in *Hystrix* Moench.

One additional species is recognised, *E. apricus*, from Central Otago.

The familiar name *Agropyron scabrum* applies to an eastern Australian taxon with short awns; plants of this type do not occur in New Zealand. The name, *E. rectisetus*, applies here to the common long-awned plants of the tussock grasslands.

Transfers, new rank, additional taxon:

*E. sect. Stenostachys* (Turcz.) Löve et Connor *N.Z.*

- J. Bot.* 20: 183 (1982) = *Stenostachys* Turcz. *Bull. Soc. Imp. Naturalistes Moscou* 35: 330 (1862) = *Cockaynea* Zotov *T.R.S.N.Z.* 73: 233 (1943).
- E. apricus* Löve et Connor op. cit. 182.
- E. ensyis* (Kirk) Löve et Connor op. cit. 183 = *Asprella aristata* Petrie *T.N.Z.I.* 26: 272 (1894) a later homonym of *A. aristata* (L.) Kuntze *Revis. Gen. Pl.* 2: 762 (1891) = *Agropyron ensyis* Kirk *T.N.Z.I.* 27: 352 (1895).
- E. laevis* (Petrie) Löve et Connor op. cit. 184 = *Asprella laevis* Petrie *T.N.Z.I.* 27: 406 (1895).
- E. multiflorus* (Hook. f.) Löve et Connor op. cit. 183 = *Triticum multiflorum* Banks et Sol. ex Hook. f. *Fl. N.Z.* 1: 311 (1853); (the synonym *Agropyron kirkii* Zotov, used for this taxon, was superfluous at publication)
- var. *multiflorus*
- var. *longisetus* (Hackel) Löve et Connor op. cit. 183 = *Agropyron multiflorum* var. *longisetum* Hackel in Cheeseman *Man. N.Z. Fl.* 922 (1906).
- E. narduroides* (Turcz.) Löve et Connor op. cit. 184 = *Stenostachys narduroides* Turcz. *Bull. Soc. Imp. Naturalistes Moscou* 35: 330 (1862) = *Gymnostichum gracile* Hook. f. *Fl. N.Z.* 1: 312, t. 70 (1853); (a combination in *Elymus* based on *G. gracile* Hook. f. is unavailable because of the earlier homonym *E. gracilis* Philippi 1864).
- E. rectisetus* (Nees) Löve et Connor op. cit. 183 = *Vulpia rectiseta* Nees in Lehm. *Pl. Preiss.* 2: 107 (1846) = *Triticum solandri* Steudel *Syn. Pl. Glumac.* 1: 347 (1854) = *Triticum youngii* Hook. f. *Handb. N.Z. Fl.* 343 (1864) = *Agropyron youngii* (Hook. f.) Candargy *Arch. Biol. Végét. Athènes* 1: 20, 39 (1901).
- E. tenuis* (Buchanan) Löve et Connor op. cit. 183 = *Agropyron scabrum* (R. Br.) P. Beauv. var. *tenue* Buchanan *Indig. Grasses N.Z.* (V-VI) t. 57b et Add. & Corr. 11 (1880).
- E. × wallii* (Connor) Löve et Connor op. cit. 183 = *Agropyron × wallii* Connor *T.R.S.N.Z.* 84: 757 (1957).

## TRIBE ARUNDINEAE

Zotov, V.D. 1963 (*N.Z. J. Bot.* 1: 78–136) synoptically revised the New Zealand members of the subfamily Arundinoideae. Five genera were recognised, four of them new, viz *Chionochloa*, *Noto-danthonia*, *Erythranthera*, and *Pyrhranthera* — all segregate genera from *Danthonia* and included in the Danthoniaceae.

See Renvoize, S.A. 1981 (*Kew Bull.* 36: 85–102) for discussion on tribal arrangement where all New Zealand genera are placed in tribe Arundineae. See also Philipson, M.N. & Connor, H.E. 1984 (*Bot. Gaz.* 145: 78–82) who prefer to include *Cortaderia* together with *Chionochloa*, *Erythranthera*, *Pyrhranthera* and *Rytidosperma* in tribe Danthoniaceae

rather than in tribe Arundineae. See also Hilu, K.W. 1985 (*Taxon* 34: 102–114) and Tomlinson, K.L. 1985 (*Aliso* 11: 97–114) favouring Danthoniaceae.

CHIONOCHLOA Zotov *N.Z. J. Bot.* 1: 87 (1963)

Type species: *C. rigida* (Raoul) Zotov.

The snow tussocks of New Zealand described by Zotov (op. cit.) as *Chionochloa* consisted of 19 species mostly found in the alpine zone. Two new species of *Chionochloa* are described here; in both the sheaths are densely hairy, but the sheaths of *C. defracta* fracture into segments on drying and those of *C. lanea* persist entire. In *C. defracta* the lamina is shed with a sheath segment and takes the ligule with it, but in *C. lanea* the lamina disarticulates exactly at the ligule. *Chionochloa defracta* occurs in the ultramafic zone in northwest Nelson and Marlborough. *C. lanea* is endemic to Stewart Island.

Transfers, new taxa and additional taxa:

*C. acicularis* Zotov op. cit. 101.

*C. antarctica* (Hook. f.) Zotov op. cit. 99 = *Bromus antarcticus* Hook. f. *Fl. Antarct.* 1: 97, t. 54 (1845). 2n = 42, Beuzenberg, E.J. & Hair, J.B. 1983 (*N.Z. J. Bot.* 21: 13–20).

*C. australis* (Buchanan) Zotov op. cit. 103 = *Danthonia raoulii* subsp. *australis* Buchanan *T.N.Z.I.* 4: 224 (1872).

*C. beddiei* Zotov op. cit. 90.

*C. bromoides* (Hook. f.) Zotov op. cit. 90 = *Danthonia bromoides* Hook. f. *Fl. N.Z.* 1: 303 (1853).

*C. cheesemanii* (Hackel) Zotov op. cit. 95 = *Danthonia raoulii* var. *cheesemanii* Hackel in Cheeseman *Man. N.Z. Fl.* 887 (1906).

*C. conspicua* (Forst. f.) Zotov op. cit. 92 based on *Arundo conspicua* Forst. f. *Prodr.* 9 (1786)

subsp. *conspicua*

subsp. *cunninghamii* (Hook. f.) Zotov op. cit. 94 = *Danthonia cunninghamii* Hook. f. *Handb. N.Z. Fl.* 332 (1864).

*C. crassiuscula* (Kirk) Zotov op. cit. 103 = *Danthonia crassiuscula* Kirk *T.N.Z.I.* 17: 224 (1885).

*C. defracta* Connor sp. nov.

Gramen caespites crassos rigidos scabellum simulantibus efficiens; vaginae pilis numerosis caducis longis, in siccitate crispatae in segmenta defractae. Lamina a vagina praefringens, supra et in marginibus scabrescens, prope ligulam adaxialiter pilis densis brevibus velata. Culmi internodi pilis densis vestiti; nodi glabri. Inflorescentia ramisque scabri, ad axillas aliquot pilis longis praediti. Lemma pilis longis utrinsecus nervum centralem et in marginibus, saepe inter nervos omnes quoque instructum, lobis lateralibus acutis vel aristatis, lemma ± aequantibus.

Holotypus: "Dun Mt Nelson 2600'. Open slopes between Windy Point & Coppermine Saddle", A.W.

Purdie, 14.1.74. CHR 322084A; isotype CHR 322084B.

Distribution: Montane and subalpine in Nelson and Marlborough; in grasslands, scrub, and forest on ultramafic rocks and soils.

Representative Specimens: CHR 180214 Lord; CHR 187683 Ritchie & Ritchie; CHR 262909A, 321067 Purdie; CHR 365494, 387390, 387485 Druce; OTA 34379, 34404 Meurk.

The epithet *defracta* describes the manner in which sheaths break into short segments although it is a character not unique to this taxon.

Tall stiff tussock with abundantly long hairy sheaths and culm internodes; leaves stiff, scabrous, breaking from sheath below ligule, > culms; innovations intravaginal. Sheaths to 25 cm, breaking into short segments on drying, with long and short deciduous hairs above, margin long hairy above. Lamina to 75 cm × 5 mm, terete, stiff, abaxially with long hairs aside keel near base, becoming very scabrid above, adaxially with web of short crisped hairs above ligule and abundant prickly teeth, margin with very long interlocking hairs below, becoming scabrid above. Culms to 65 cm; lower internodes densely hairy, less so above; nodes glabrous. Inflorescence to 20 cm, narrow and strict, very scabrid with a few long hairs at branch axils and below spikelets. Spikelets with up to 6 florets. Glumes unequal, acute or shortly awned, scabrous on nerves above, lower to 11 mm, 3-nerved, upper to 13 mm, 5–7-nerved. Lemma to 5.5 mm, 9-nerved, densely long hairy at margin and aside central nerve and often between all nerves, hairs sometimes few or absent, > sinus; lateral lobes to 4.5 mm, including 2 mm awn, or acute, scabrous above; central awn to 11 mm from twisting column.

Plants from Red Hills, Marlborough, lack hairy internodes on culms.

*C. elata* (Petrie) Connor in Connor & Purdie *N.Z. J. Bot.* 19: 166 (1981) ≡ *Danthonia oreophila*

Petrie var. *elata* Petrie *T.N.Z.I.* 45: 274 (1913).

*C. flavescens* Zotov op. cit. 97.

*C. flavicans* Zotov op. cit. 91.

*C. juncea* Zotov op. cit. 101 = *Danthonia raoulia* Hook. f. var. *teretifolia* Petrie *T.N.Z.I.* 54: 571 (1923) ≡ *D. rigida* var. *teretifolia* (Petrie) Zotov *T.R.S.N.Z.* 73: 234 (1943).

*C. lanca* Connor sp. nov.

Gramen caespites proceros graciles scabellum simulantes efficiens; vaginae compressae, integrae, persistentes, copiose floccosae. Lamina nitens, ad ligulam disarticulans. Inflorescentia ramique copiose pilis longis vestiti. Lemma lobos laterales ± aequans, pilis longis utrinsecus nervum centalem sparsim obsitum, alibi glabrum pilis longis ad marginem exceptis; arista ad columnae tortissimae apicem.

Holotypus: “Trig D, Tin Range, Stewart I, 1600 ft, grassland”, P. Wardle 20.2.66, CHR 166731.

Distribution: Montane to subalpine southern Stewart Island; grassland and scrub in wet, boggy or peaty sites, reaching sea-level along cliff tops and some stream sides.

Representative specimens: CHR 153937 Bell; CHR 156802, 156803, 156804 Ritchie; CHR 188037 Dugdale; CHR 261891 Johnson; CHR 321068 Purdie.

The epithet *lanca* reflects the fleece-like sheath hairs.

Tall slender tussock with abundantly long hairy, dull sheaths; leaves shining, slender, disarticulating at ligule, > culms; innovations intravaginal. Sheaths to 15 cm, compressed, entire, persistent, densely floccose. Lamina to 45 cm × 2 mm, convolute or V-shaped, abaxially striate, smooth, adaxially with short crisped hairs near ligule and prickly teeth above, margin smooth. Culms to 60 cm, glabrous. Inflorescence to 10 cm, abundantly long hairy. Spikelets with up to 6 florets. Glumes unequal, glabrous, acute, lower to 10 mm, 3-nerved, upper to 14 mm, 5-nerved. Lemma to 5 mm, 9-nerved, densely long hairy at margin and sparsely hairy aside central nerve, glabrous elsewhere; lateral lobes to 6 mm, linear-triangular, acute; central awn to 15 mm from very twisted column.

This is 615 *Chionochloa* “fine” in Wilson, H.D. 1982 (*Field Guide Stewart Island Plants* p. 374), and that reported in Connor, H.E. & Purdie, A.W. 1981 (*N.Z. J. Bot.* 19: 167) as containing the triterpene methyl ethers arundoin and miliacin.

*C. macra* Zotov *N.Z. J. Bot.* 8: 91 (1970).

*C. oreophila* (Petrie) Zotov *N.Z. J. Bot.* 1: 104 (1963) ≡ *Danthonia oreophila* Petrie *T.N.Z.I.* 27: 406 (1895).

*C. ovata* (Buchanan) Zotov op. cit. 104 ≡ *Danthonia ovata* Buchanan *Indig. Grasses N.Z.* t. 29 (2) (1879).

*C. pallens* Zotov op. cit. 99.

*C. pungens* (Cheeseman) Zotov op. cit. 103 ≡ *Danthonia pungens* Cheeseman *Man. N.Z. Fl.* 887 (1906).

*C. rigida* (Raoul) Zotov op. cit. 96 ≡ *Danthonia rigida* Raoul *Ann. Sci. Nat. Bot. ser. 3*, 2: 116 (1844).

*C. rubra* Zotov op. cit. 96.

*C. spiralis* Zotov op. cit. 100.

*C. teretifolia* (Petrie) Zotov op. cit. 100 ≡ *Danthonia teretifolia* Petrie *T.N.Z.I.* 46: 36 (1914).

RYTIDOSPERMA Steudel *Syn. Pl. Glumac.* 1: 425 (1854)

Type species: *R. lechleri* Steudel.

Connor, H.E. & Edgar, E. 1979 (*N.Z. J. Bot.* 17:

311–337) presented a full treatment of *Rytidosperma* in the place of the synoptic arrangement by Zotov, V.D. 1963 (*N.Z. J. Bot.* 1: 78–136; as *Notodanthonia*). *Rytidosperma*, as indicated by Nicora, E.G. 1973 (*Darwiniana* 18: 80–106) is the earliest correct name for taxa which Zotov (loc. cit.) included in *Notodanthonia* Zotov, and which earlier were known here as *Danthonia* (Cheeseman, T.F. *Man. N.Z. Fl.* 171–179. 1925).

Zotov's earlier conclusions at the specific level are upheld except that *N. stricta* (Buchanan) Zotov is reduced to synonymy in *R. clavatum*; three new species are described and an additional species recognised as naturalised here. The genus in New Zealand comprises 15 endemic species, one shared by New Zealand and Australia, and 9 species naturalised here from Australia. The names in *Notodanthonia* are listed in synonymy here to allow continuity between Zotov (op. cit.) and Connor & Edgar (op. cit.).

Veldkamp, J.F. 1980 (*Taxon* 29: 293–298) proposed the conservation of the name *Notodanthonia* Zotov against *Plinthanthesis* Steudel, *Rytidosperma* Steudel, and *Monostachya* Merr. The Committee for Spermatophyta of the International Association of Plant Taxonomy (IAPT) unanimously rejected it (*Taxon* 32: 280. 1983).

Clayton & Renvoize (op. cit. 175) maintain *Rytidosperma* but include in it *Erythranthera* and some African and New Guinean genera; its circumscription is therefore wider and more heterogeneous than ours. We agree about *Erythranthera* and make appropriate combinations here.

Transfers, new combinations and additional taxa:

- R. australe** (Petrie) Clayton et Renvoize ex Connor et Edgar comb. nov. based on *Triodia australis* Petrie *T.N.Z.I.* 22: 442 (1890) = *Erythranthera australis* (Petrie) Zotov *N.Z. J. Bot.* 1: 125 (1963).
- R. buchananii** (Hook. f.) Connor et Edgar *N.Z. J. Bot.* 17: 320 (1979) = *Danthonia buchananii* Hook. f. *Handb. N.Z. Fl.* 333 (1864) = *Notodanthonia buchananii* (Hook. f.) Zotov *N.Z. J. Bot.* 1: 110 (1963).
- R. biannulare** (Zotov) Connor et Edgar op. cit. 324 = *Notodanthonia biannularis* Zotov op. cit. 116.
- R. clavatum** (Zotov) Connor et Edgar op. cit. 326 = *Notodanthonia clavata* Zotov op. cit. 119 = *Notodanthonia stricta* (Buchanan) Zotov op. cit. 121.
- R. corinum** Connor et Edgar op. cit. 317.
- R. gracile** (Hook. f.) Connor et Edgar op. cit. 330 = *Danthonia gracilis* Hook. f. *Fl. N.Z.* 1: 303, t. 69 B (1853) = *Notodanthonia gracilis* (Hook. f.) Zotov op. cit. 123.
- R. maculatum** (Zotov) Connor et Edgar op. cit. 320 = *Notodanthonia maculata* Zotov op. cit. 108.

- R. merum** Connor et Edgar op. cit. 328.
- R. nigricans** (Petrie) Connor et Edgar op. cit. 331 = *Danthonia semiannularis* (Labill.) R. Br. var. *nigricans* Petrie *T.N.Z.I.* 46: 37 (1914) = *Notodanthonia nigricans* (Petrie) Zotov op. cit. 123.
- R. nudum** (Hook. f.) Connor et Edgar op. cit. 322 = *Danthonia nuda* Hook. f. *Fl. N.Z.* 2: 337 (1855) = *Notodanthonia nuda* (Hook. f.) Zotov op. cit. 112.
- R. petrosum** Connor et Edgar op. cit. 317.
- R. pulchrum** (Zotov) Connor et Edgar op. cit. 321 = *Notodanthonia pulchra* Zotov op. cit. 111.
- R. pumilum** (Kirk) Clayton et Renvoize ex Connor et Edgar comb. nov. based on *Atropis pumila* Kirk *T.N.Z.I.* 14: 379 (1882) = *Erythranthera pumila* (Kirk) Zotov *N.Z. J. Bot.* 1: 124 (1963).
- R. setifolium** (Hook. f.) Connor et Edgar op. cit. 316 = *Danthonia semiannularis* (Labill.) R. Br. var. *setifolia* Hook. f. *Fl. N.Z.* 1: 304 (1853) = *Notodanthonia setifolia* (Hook. f.) Zotov op. cit. 108.
- R. tenue** (Petrie) Connor et Edgar op. cit. 321 = *Danthonia buchananii* Hook. f. var. *tenuis* Petrie *T.N.Z.I.* 46: 37 (1914) = *Notodanthonia tenuis* (Petrie) Zotov op. cit. 111.
- R. thomsonii** (Buchanan) Connor et Edgar op. cit. 322 = *Danthonia thomsonii* Buchanan *Indig. Grasses N.Z.* t. 36 (2) (1880) = *Notodanthonia thomsonii* (Buchanan) Zotov op. cit. 112.
- R. unarede** (Raoul) Connor et Edgar op. cit. 328 = *Danthonia unarede* Raoul *Ann. Sci. Nat. Bot.* ser. 3, 2: 116 (1844) = *Notodanthonia unarede* (Raoul) Zotov op. cit. 122.
- R. viride** (Zotov) Connor et Edgar op. cit. 316 = *Notodanthonia viridis* Zotov op. cit. 108.

#### NOTODANTHONIA Zotov

Section and subsection names of Zotov, V.D. 1963 (*N.Z. J. Bot.* 1: 78–136) were not used by Connor, H.E. & Edgar, E. 1979 (*Ibid.* 17: 311–337), but remain available.

New rank:

- N. Sect. Buchanania** Zotov op. cit. 107  
 Subsect. *Maculatae* Zotov op. cit. 108  
 Subsect. *Nudae* Zotov op. cit. 111  
 Subsect. *Setifoliae* Zotov op. cit. 107  
 Subsect. *Thomsoniae* Zotov op. cit. 112.  
**Sect. Notodanthonia**  
 Subsect. *Clavatae* Zotov op. cit. 119  
 Subsect. *Notodanthoniae* containing the type of the genus was inadvertently published by Zotov (op. cit. 122) as subsect. *Unaredia*.  
**Sect. Semiannularia** Zotov op. cit. 112.

**ERYTHRANTHERA** Zotov *N.Z. J. Bot.* 1: 124 (1963)

Type species: *E. australis* (Petrie) Zotov.

## Transfers:

*E. australis* (Petrie) Zotov op. cit. 125 ≡ *Triodia australis* Petrie *T.N.Z.I.* 22 : 442 (1890).

*E. pumila* (Kirk) Zotov op. cit. 124 ≡ *Atropis pumila* Kirk *T.N.Z.I.* 14 : 379 (1882).

Clayton & Renvoize (op. cit. 175) treat *Erythranthera* as *Rytidosperma* (q. v.).

**PYRRHANTHERA** Zotov *N.Z. J. Bot.* 1 : 125 (1963)

Type species: *P. exigua* (Kirk) Zotov.

## Transfer:

*P. exigua* (Kirk) Zotov op. cit. 126 ≡ *Triodia exigua* Kirk *T.N.Z.I.* 14 : 378 (1882).

**CORTADERIA** Stapf *Gard. Chron.* ser. 3, 22 : 378, 396 (1897) *nom. cons.*

Type species: *C. selloana* (Schultes et Schultes f.) Asch. et Graebner.

Zotov, V.D. 1963 (*N.Z. J. Bot.* 1 : 83) erected the tribe Cortaderiinae to accommodate *Cortaderia* alone. Conert, H.J. 1961 (*Die Systematik und Anatomie der Arundineae*. Weinheim) treated *Cortaderia* in the subtribe Cortaderiinae. His treatment of *Cortaderia* itself is discordant with that of Zotov (op. cit.) and with that of Connor, H.E. & Edgar, E. 1974 (*Taxon* 23 : 595–605), especially as Conert places all New Zealand plants within the one species *Cortaderia conspicua* (Forst. f.) Conert, a combination superfluous to *C. conspicua* (Forst. f.) Stapf which is based on a specimen of *Chionochloa*.

## Transfers, additional taxa and new taxon:

*C. fulvida* (Buchanan) Zotov *N.Z. J. Bot.* 1 : 84 (1963) ≡ *Arundo fulvida* Buchanan *T.N.Z.I.* 6 : 242 (1874).

*C. richardii* (Endl.) Zotov op. cit. 84 ≡ *Arundo richardii* Endl. *Ann. Wiener Mus. Naturgesch.* 1 : 158 (1836).

*C. splendens* Connor *N.Z. J. Bot.* 9 : 519 (1971).

*C. toetoe* Zotov op. cit. 85.

*C. turbaria* Connor sp. nov.

*C. splendens* Connor affinis sed vaginis, laminis, paniculae ramis pedicellisque, glumis pilosis, et floribus semper hermaphroditis non gynodioecis diagnoscenda.

Holotypus: Rakeinui, east end of lake, Chatham Island, D.R. Given 13899, 24 Feb. 1985, CHR 417471.

Tall tussocks with stout shoots and culms up to 2 m tall, with sheaths, laminae, panicle branches, pedicels, glumes and palea all long hairy. Lamina up to 1 cm wide, densely hairy above ligule, strongly scabrid above. Panicle up to 30 cm long. Glumes c. 20 mm long, exceeding florets. Lateral lemma lobes up to 1 mm. Palea 5–7 mm long. Flowers hermaphrodite; anthers 2.5 mm long. Caryopsis 3 mm long.

*C. turbaria* is endemic to Chatham and Pitt Is.

Specimens: WELT 33756 Travers; WELT 40353 T. Kirk; CHR 187596, 187578, Ritchie and Ritchie; CHR 176529, Entomology Division Expedition; CHR 230671, 356692, S. & P. Woods; CHR 398069, 436615, 436616, S. Courtney; CHR 417469, 417470, 417473, 417544, 417549, 420420, D.R. Given; CHR 436401, M. Bellingham.

The epithet *turbaria*, peat, describes the typical habitat. See also Connor op. cit. (1971) for a preliminary assessment of this taxon.

## TRIBE CYNODONTEAE

**ZOYSIA** Willd. *nom. cons.*

Zotov, V.D. 1972 (*N.Z. J. Bot.* 9 : 639–644. 1971) revised New Zealand *Zoysia*; the former treatment in Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 137) referred all New Zealand plants to *Z. pungens* Willd., but Zotov considers that *Z. pungens* does not occur here. He recognises three species:

*Z. minima* (Colenso) Zotov *T.R.S.N.Z.* 73 : 237 (1943).

*Z. pauciflora* Mez *Feddes Repert.* 17 : 145 (1921).

*Z. planifolia* Zotov *N.Z. J. Bot.* 9 : 641 (1972).

## TRIBE PANICEAE

**OPLISMENUS** P. Beauv. *nom. cons.*

The name *O. undulatifolius* P. Beauv. as used in Cheeseman, T.F. 1925 (*Man. N.Z. Fl.* 141) applies to a Northern Hemisphere New World taxon; a new name(s) is needed for our plants.

Davey, J.C. & Clayton, D.W. 1978 (*Kew Bull.* 33 : 147–157) examined pantropical *Oplismenus*; in this revision five species are recognised and New Zealand mainland plants would fall into *O. hirtellus*. Some plants from the Kermadec Is fall into *O. compositus* (W.R. Sykes pers. comm.). Scholz, U. 1981 (*Phan. Monogr.* 13 : 1–213) treated the genus again. New Zealand material is referred to *O. aemulus* var. *flaccidus*. Davey & Clayton regarded *O. aemulus* as a synonym of *O. hirtellus* but the variety based on *O. flaccidus* R. Br. is not discussed. Kermadec Is material is treated by Scholz as f. *imbecillis* of *O. hirtellus*.

Fosberg, F.R. & Sachet, M. H. 1982 (*Micronesica* 18(2) : 45–102) found neither treatment completely satisfactory for Micronesian plants and made some taxonomic adjustments of their own at varietal rank.

The predicament is not resolved by the following, but the simplest treatment is that of Davey & Clayton.

After Davey & Clayton (1978):

*O. compositus* P. Beauv. *Ess. Agrostogr.* 54, 169 (1812).

*O. hirtellus* (L.) P. Beauv. *Ess. Agrostogr.* 54, 170 (1812).

- After Scholz (1981):  
*O. aemulus* (R. Br.) Roemer et Schultes *Syst. Veg.*  
 2: 487 (1817)  
 var. *flaccidus* (R. Br.) Domin *Biblioth. Bot.* 85:  
 328 (1915).  
*O. hirtellus* (L.) P. Beauv. subsp. *imbecillis* (R. Br.)  
 U. Scholz op. cit. 127  
 f. *imbecillis*.  
 After Fosberg & Sachet (1982):  
*O. hirtellus* (L.) P. Beauv.  
 var. *imbecillis* (R. Br.) Fosb. et Sachet *Micro-*  
*nesica* 18(2): 78 (1982).

#### SPINIFEX L.

- Craig, G.F. 1984 (*Nuytsia* 5: 67-74) reinstated *S. sericeus* R. Br. as the name for the coastal sand dune plant known in New Zealand and eastern Australia as *S. hirsutus* Labill.; *S. hirsutus* as lectotypified by Craig is a Western Australian taxon. Reinstated name:  
*S. sericeus* R. Br. *Prodr.* 198 (1810).

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