

Flora of Goulard Downs, Mt Goul and Mt Perry, N. W. Nelson.

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GOULARD DOWNS is a down-faulted remnant of a stripped Lower Tertiary surface. "The surface of the Downs, an area of approximately 12 square miles, slopes gently to the north but is cut by a series of more or less north trending faults which have produced a shallow, stepped, graben-like structure with individual steps up to 100 feet high. To the north, the peneplain surface of the Downs is upthrown 800 ft at the steep east-west scarp of the Slate Range Fault, on the summit of which the peneplain surface is also preserved. Small mesas of Lower Tertiary covering strata—limestone underlain by a few feet of quartz grit—remain in a few places on the peneplain surface, and being forested, stand out conspicuously. Elsewhere the leached quartzose rocks of the peneplain surface, coupled with the excessive rainfall, have inhibited the development of an appreciable soil horizon. What soil there is consists of a thin covering of gritty, impervious clay, resulting in the unusual vegetative cover for this altitude of flax, snow tussock and stunted scrub. Although the interfluves are broad, flat and waterlogged, the streams are incised in steep narrow gorges with numerous small waterfalls and cascades." (Bishop, 1968)

We present here a list of vascular plants growing on the Goulard Downs, altitude c. 600 m, Mt Perry, c. 1200m, and Mt Goul, c. 1400 m, in the western part of the North-West Nelson Forest Park. The list is based on an unpublished list prepared by the late Mr W. B. Brockie, and Mr H. Talbot, from records made during three visits to the area, in 1954, 1956 and 1961-62, incorporated with a list compiled from records made by the Wellington Botanical Society in January 1973 and by one of us (A.P.D.) in January 1969.

Although the popular Heaphy Track is walked by hundreds of people each year the plants of the Goulard Downs are not well known. Cotton (1916) has described the geomorphology, and Bishop (1968) the complicated structure of the Paleozoic rocks which form the substrata. F. G. Gibbs, his brother Sidney, and friend A. G. Talbot made their way from Brown River to Goulard Downs and Karamea in January 1887 under what must have been very difficult conditions (Mann, 1954). Mr J. Dall, after whom *Carex dallii* was named, was an early botanical explorer of the area, but though he brought to the attention of botanists some of

his discoveries he did not write of the plants himself. Professor Arnold Wall, who traversed the area in 1927, wrote of some of the plants in his booklet *Botanical Journeys*. Judith and Graham Petterson visited Perry's Pass in 1963 and wrote an account of their botanical trip in *Wellington Botanical Society Bulletin* 35 (1968). Most of the pioneer botanical exploration of the Downs, however, was done by Mr W. B. Brockie and Mr H. Talbot, of Richmond, Nelson, who visited the area together for the first time for a period of ten days in January 1954. On this and subsequent trips they were based at the Goulard Downs Hut maintained by the Collingwood County Council. Their first two trips were made with packhorses and it is of interest to compare the conditions of access in those days with the well-kept track of today. An excerpt from Mr Brockie's diary, dated 7.1.1954, reads: "Left Browns River with two packhorses about 3 p.m. (Lewis Langford riding a hack). Bush track in bad condition for packhorses and very frequently we had to cut our way through fallen trees. Near the highest point of the track a very large fallen red beech made further progress by our packhorses impossible. The hack managed to make it but one of the packhorses attempting the same detour fell over the bank and luckily came to rest on the track . . . we carried our gear past the obstruction but the two packhorses would not follow."

Live plants were brought out on each of these trips to be grown and studied at the Otari Open Air Native Plant Museum in Wellington; and H. Talbot collected material for a representative herbarium collection. In 1954 "one of the packhorses bumped its load — a kerosene case of Harry's plants — against a projecting rock, throwing it into a panic. The case on the other side was thrown off, the horse bashing it to splinters with a well directed kick It was fortunate that my plants were mostly in one heap though some of the small parcels were twenty feet below among cut-over scrub. Harry's plants remained in the case but we transferred all plants to two sacks. It was a miracle that the horse did not go over the bank which had a 30 ft very steep drop to the track." Brockie reported briefly on the first two trips in *Wellington Botanical Society Bulletin* 29 (1957). For their third trip in 1962 they were transported to the Downs by helicopter. One of the main objectives of this last trip was to collect live plants and herbarium specimens of a species they considered belonged to a new genus of Rubiaceae. The plants on Slate Range, the only place where it was found, were few but they got what they wanted, and both live plants and dried material were delivered to Botany Division, D.S.I.R. (This species appears in our present list as *Coprosma talbrockiei*.)

The Wellington Botanical Society party in January 1973 was based in the new Perry's Saddle Hut. The Downs were visited on two separate days, and collections and records were made from

Mt Perry, Mt Goul, and the Gorge Creek tributary of the Aorere R., below the hut.

Forest encircles the Goulard Downs. The track from Perry's Saddle winds through this forest to break dramatically on the tussock-covered clearing. Red tussock (*Chionochloa rubra*) and wire-rush (*Calorophus minor*), the predominant species, give the landscape a distinctive red-brown colour. The few tongues of residual limestone are forested with silver and mountain beech (*Nothofagus menziesii* and *N. solandri* var. *cliffortioides*). The red-tussock community includes many microhabitats and overall is rich in species. In boggy places the local endemic, *Bulbinella talbotii*, is common; this species can also be found around shallow pools on the broad, flat summit north of Mt Goul at 1200 m. Brockie (1957) thought that the genus *Aciphylla* was unrepresented on the Downs. Recently, however, Mr M. L. Gibbs of Nelson collected specimens, not readily identifiable, from the banks of the Shiner Brook, and our party also found some along the stream banks. All proved to be drawn-up plants of *Aciphylla hookeri* with little of its usual coriaceous and "three-dimensional" appearance. Possibly seeds get washed down from the tops.

In 1973 all plants of mountain cabbage-tree (*Cordyline indivisa*) along the track were disfigured, with the leaves eaten and chewed well back, presumably by opossums. Gorse (*Ulex europaeus*) is present on the Downs, in some places forming dense stands and in others occurring as a solitary plant, but probably it has already reached the limit of its distribution here.

Brockie and Talbot, when they climbed Mt Goul from the Goulard Downs Hut, discovered the native sow-thistle, *Sonchus littoralis*, on limestone rocks on the margin of an isolated area of bush at the foot of the mountain, about 5 km from the hut. Unfortunately their specimens deteriorated before they could be preserved. We did not see this species, nor any comparable plant, in 1973.

On the lower slopes of Mt Perry there are small, shallow, lobed terracettes and here the low-growing plants *Mitrasacme novae-zelandiae*, *Hemiphues suffocata* var. *novae-zelandiae*, *Astelia linearis* var. *linearis*, and *A. subulata*, are to be found. This record of *Astelia subulata* is only the third on the mainland and extends the known distribution to the north.

Although Goulard Downs is at the same latitude as Waikanae in the North Island, many of the plants found in the area do not cross Cook Strait — 78 species and about 18 varieties altogether. Another significant fact is that some 50 of the species that do cross are not known from the Tararua Range, only reappearing at various latitudes further north, e.g. *Metrosideros parkinsonii*, *Dracophyllum traversii*, and *Pittosporum anomalum*. In contrast there are some



Gouland Downs from the foot of Slate Range, looking S.E. From left to right: Slopes of Mt Perry, Perry's Saddle, unnamed mountain, Kaka Saddle, Mt Goul.

10 species that reach the Tararua Range but do not extend further north, e.g. *Coprosma ciliata*, *Dracophyllum uniflorum*, and *Senecio adamsii*. Apart from *Bulbinella talbotii*, already mentioned, three other plants are possibly locally endemic to the Goulard Downs area — *Carex* sp.(b), *Craspedia* sp.(b), and *Ourisia* sp.(a) (aff. *O. colensoi*). The first two are calcicoles, the last a plant of moist river banks.

ACKNOWLEDGEMENTS

The late Mr W. B. Brockie presented his diary, notebooks and working lists to Botany Division, D.S.I.R., and full use has been made of these in the compilation of this list. Specimens, totalling about 500 sheets, prepared by Mr H. Talbot and deposited in the herbarium, Botany Division, have been used to back up the working lists. Mr Talbot has contributed much helpful discussion. Mrs B. McCulloch prepared the map, and all the photographs were taken by Mrs Y. J. Cave.

VASCULAR PLANTS IN VICINITY OF GOULARD DOWNS, MT GOUL¹, AND MT PERRY², N. W. NELSON, 550-1400 M

¹Grid. ref. S7 807720

²Grid. ref. S7 827770

(L) — seen only in limestone areas

(G) — seen only on Mt Goul

(S) — seen only on Slate Range

(unc) — uncommon

§ — voucher specimen in Botany
Division Herbarium, Lincoln

INDIGENOUS PLANTS (448 SPECIES)

GYMNOSPERM TREES AND SHRUBS

- §*Dacrydium bidwillii*
- §*D. biforme*
- §*D. colensoi* (unc)
- D. cupressinum* (mostly below 550m,
few to 600m)
- §*D. intermedium* (unc S)
- D. laxifolium*
- §*D. intermedium* × *D. laxifolium*
- Libocedrus bidwillii*
- §*Phyllocladus alpinus*
- §*Podocarpus acutifolius* (unc)
- P. ferrugineus*
- §*P. hallii*
- §*P. nivalis*
- §*P. hallii* × *P. acutifolius* (?) (unc)
(CHR 222743)
- §*P. nivalis* × *P. acutifolius* (?) (unc)
(CHR 222744)

MONOCOT TREES

- Cordyline indivisa* (unc)
- C. banksii* × *C. indivisa* (unc)

DICOT TREES

- Carpodetus serratus*
- Dracophyllum townsonii*
- §*D. traversii* var. *traversii*
- Elaeocarpus hookerianus*
- Fuchsia excorticata*
- Griselinia littoralis*
- §*Metrosideros parkinsonii* (S)
- §*M. umbellata*
- Myrsine salicina*
- §*Nothofagus fusca*
- N. menziesii*
- N. solandri* var. *cliffortioides*
- N. truncata* (to 650m)
- §*Pseudopanax colensoi* s.s. (unc)
- §*P. crassifolius*
- §*P. linearis*
- P. simplex*
- §*P.* sp. (unnamed; included in *P. colensoi* as var. *ternatus* by Wardle 1968)
- §*Quintinia acutifolia*
- Schefflera digitata*
- Weinmannia racemosa* var. *racemosa*

DICOT SHRUBS

- §*Alseuosmia macrophylla*
Archeria traversii
Aristotelia fruticosa var. (unc)
 §*Cassinia vauvilliersii* var. (cf. var. *serpentina*)
 §*C. cheesemanii* s.s.
 §*C. ciliata*
 §*C. colensoi* (incl. *C. banksii*)
 §*C. crenulata*
 §*C. depressa*
 §*C. foetidissima*
 §*C. linariifolia* (unc L)
C. lucida s.s. (unc)
C. microcarpa
 §*C. propinqua*
 §*C. pseudocuneata* var. (lvs narrower than in var. *pseudocuneata*)
C. pumila
C. rhamnoides (incl. *C. polymorpha*)
C. rugosa
 §*Coprosma talbrockiei* (unc)
 §*C. sp.* (a) (unnamed; included in *C. parviflora* by Oliver, 1935, and others) (If undersurface not covered in minute hairs as in *C. parviflora*; drupes clear, or tinged pink or pale yellow) (CHR 222745)
 §*C. sp.* (b) (unnamed; included in *C. parviflora*, as var. *dumosa*, by Cheeseman, 1906, and later authors) (CHR 222746)
 §*C. sp.* (c) (unnamed; aff. *C. antipoda*) (*Plagianthus linariifolia* Buchanan) (CHR 197088-90, 222778-9)
 §*C. colensoi* × *C. foetidissima* (unc)
 §*Coriaria plumosa*
 §*Cyathodes dealbata* (syn. *C. pumila*)
C. empetrifolia
 §*C. fasciculata* var.
 §*C. fraseri*
 §*C. juniperina* var.
 §*Dracophyllum filifolium* var.
 §*D. pubescens*
 §*D. proum*
 §*D. palustre*
D. uniflorum
 §*D. filifolium* var. × *D. palustre*
 §*Epacris alpina*
 §*E. pauciflora* (unc)
 §*Exocarpus bidwillii*
Gaultheria antipoda
G. crassa
G. rupestris (incl. *G. subcorymbosa*) (unc)
G. sp. (unnamed; included in *G. depressa*, as var. *novae-zelandiae*, by Franklin 1962)
G. antipoda × *G. rupestris* (unc)
G. a × *G. sp.* (unnamed) (unc)
G. a × *Pernettya macrostigma* (unc)
 §*G. rupestris* × *Pernettya macrostigma* (unc)
G. sp. (unnamed) × *Pernettya macrostigma* (unc)
Hebe albicans (L)
H. canterburiensis (G)
H. macrantha var. *brachyphylla* (G)
H. salicifolia
H. tetragona var. (*H. coarctata*) (G)
H. traversii
 §*H. venustula* (incl. *H. brachysiphon*)
 §*H. sp.* (a) (*H. odora* agg.) (lvs not very coriaceous; fls <1cm diam.; n = 21) (CHR 103137, 197047, 222780)
 §*H. sp.* (b) (*H. odora* agg.) (lvs coriaceous, larger than in *H. sp.* b; fls >1cm diam.; n = 63) (CHR 103040, 190978-9)
 §*H. salicifolia* × *H. traversii*
 §*Hymenanthera alpina* (L)
Leptospermum ericoides (unc)
 §*L. scoparium*
Muehlenbeckia axillaris (unc)
Myrsine divaricata
 §*M. nummularia*
Neomyrtus pedunculata
 §*Olearia arborescens*
 §*O. capillaris* (unc)
 §*O. colensoi* var. *colensoi*
O. lacunosa var. *lacunosa* (unc L)
 §*O. virgata* var. *implicita*
O. arborescens × *O. capillaris* (unc)
 §*O. a.* × *O. ilicifolia* (unc)
 §*O. a.* × *O. lacunosa* var. *lacunosa* (unc)
 §*Pentachondra pumila*
 §*Peraxilla tetrapetala* (unc S)
 §*Pernettya macrostigma*
 §*Pimelea oreophila* (unc)
 §*P. gnidia* (unc)
 §*Pittosporum anomalum*
 §*P. rigidum* (incl. *P. r.* var. *majus* and *P. crassaule*)
Pseudopanax anomalus
 §*Pseudowintera colorata*
 §*P. traversii*
 §*Rubus parvus* (unc)
 §*Senecio adamsii* (G)
S. bidwillii var. *viridis* (G)
 §*S. elaeagnifolius* var. (cf. *S. cockaynei*) (CHR 190991, 222770)

LIANES

- Clematis paniculata* (unc)
C. sp. (undetermined) (unc)
Metrosideros diffusa
 §*Muehlenbeckia australis* (unc)
Parsonia sp. (undetermined) (unc)
Rubus cissoides var. *lflts* broader
 than in var. *cissoides*)
 §*R. schmidelioides* var. *schmidelioides*
 (L)

PSILOPOIDS AND LYCOPODS

- §*Tmesipteris sp.* (*T. tannensis* agg.)
 (unc) (CHR 222742)
 §*Lycopodium australianum* (unc)
 §*L. fastigiatum*
 §*L. laterale* (incl. *L. ramulosum*)
 §*L. scariosum*
 §*L. varium* (incl. *L. billardieri* and
L. novae-zelandicum) (unc)
 §*L. volubile* (unc)

FERNS

- Adiantum cunninghamii* (unc.)
Asplenium anomodum (L)
A. bulbiferum
A. lucidum (L)
A. sp. (*A. flaccidum* agg.) (common
 forest sp., usually epiphytic)
 §*Blechnum discolor*
 §*B. fluviatile*
 §*B. membranaceum* (L)
 §*B. penna-marina*
B. procerum (syn. *B. minor* | auct.
 N.Z.)
B. vulcanicum
B. sp. (a) (*B. capense* agg.) (com-
 mon sp; lower pinnae reduced in
 length)
 §*B. sp.* (b) (*B. capense* agg.) (moun-
 tain sp; lower pinnae not re-
 duced) (CHR 190984)
B. sp. (a) × *B. sp.* (b)
Cyathea colensoi
C. smithii
 §*Cystopteris fragilis* (L)
Dicksonia lanata s.s.
 §*Gleichenia cunninghamii*
G. dicarpa
Grammitis armstrongii
 §*G. billardieri*
G. sp. (cf. *G. ciliata*) (L)
Histiopteris incisa
 §*Hymenophyllum armstrongii*
H. demissum
H. flabellatum
 §*H. lyallii* (unc)
 §*H. malingii*

- §*H. multifidum*
 §*H. peltatum*
 §*H. pulcherrimum* (unc)
H. rarum
 §*H. rufescens*
H. sanguinolentum (incl. *H. vil-
 losum*)
H. scabrum
Hypolepis millefolium (unc L)
 §*H. rufobarbata*
 §*Lindsaea trichomanoides*
Ophioglossum sp. (cf. *O. coriaceum*)
Paesia scaberula
Phymatodes diversifolium
Polystichum vestitum
Pteridium aquilinum var. *esculentum*
Pyrrosia serpens
 §*Schizaea sp.* (cf. *S. australis* and *S.
 fistulosa*)
Todea superba

ORCHIDS

- §*Acianthus viridis*
 §*Adenochilus gracilis* (unc)
 §*Aporostylis bifolia*
 §*Caladenia carnea* (unc)
 §*C. lyallii* (unc)
 §*Chiloglottis cornuta*
 §*Corybas orbiculatus* (L)
C. trilobus
 §*Dendrobium cunninghamii*
 §*Earina autumnalis* (unc)
E. mucronata (unc)
Gastrodia sesamoides (unc L)
 §*Lyperanthus antarcticus*
 §*Microtis oligantha* (unc)
 §*Prasophyllum colensoi*
 §*Pterostylis australis*
 §*P. banksii*
 §*P. irsoniana* (unc L)
 §*P. venosa*
 §*P. sp.* (cf. *P. areolata*) (unc S)
Thelymitra formosa (unc)
T. hatchii (unc)
 §*T. longifolia* (unc)
 §*T. pulchella*
 §*T. venosa*

GRASSES

- Agrostis dyeri*
 §*A. pallescens* (unc)
A. sp. (cf. *perennans*)
 §*Chionochloa australis*
 §*C. cheesemanii*
 §*C. conspicua* subsp. *conspicua*
 §*C. juncea* (unc)
C. pallens var. (lvs broader than in
 var. *pallens*)
 §*C. rubra*

- §*C. sp.* (unnamed) (*C. flavescens* auct. South Island, non *C. flavescens* Zotov) (G) (CHR 222759)
 §*C. conspicua* subsp. *conspicua* × *C. rubra* (unc)
 §*C. pallens* var. × *C. rubra*
 §*Deschampsia tenella*
 §*Deyeuxia aucklandica*
 D. aenoides (incl. *D.a.* var. *brachyantha*)
 §*Festuca sp.* (unnamed) (CHR 197062-4, 222764)
 §*Hierochloa novae-zelandiae*
 §*Microlaena avenacea*
 §*M. colensoi*
 M. stipoides
 §*M. thomsonii* (unc)
 §*Notodanthonia buchananii*
 §*N. gracilis*
 §*N. nigricans*
 §*N. setifolia*
 §*Poa breviglumis* s.s.
 §*P. colensoi* (incl. *P.c.* var. *breviligulata*)
 §*P. mackayi* (G)
 §*P. pusilla* (unc)
 §*P. seticulmis* (incl. *P. anceps* var. *gracilis?*) (unc)
 §*P. sp.* (a) (unnamed; aff. *P. imbecilla*) (unc L) (CHR 197028)
 §*P. sp.* (b) (unnamed; aff. *P. breviglumis*) (CHR 197004-6, 222765-7)
 §*Simplicia buchananii* (unc L)
 §*Trisetum sp.* (unnamed) (plant slender; lf sheath glabrous or nearly so) (L) (CHR 197053, 222777)

SEDGES

- §*Baumea teretifolia* (unc)
 §*Carex acicularis*
 C. breviculmis (unc)
 §*C. capillacea* (unc)
 §*C. carsei*
 §*C. cockayneana*
 §*C. dallii*
 §*C. dissita*
 §*C. echinata*
 §*C. gaudichaudiana*
 §*C. sinclairii*
 §*C. uncifolia*
 §*C. sp.* (a) (cf. *C. lessoniana*) (CHR 222748-50)
 §*C. sp.* (b) (unnamed) (discussed by Edgar 1970, p. 282) (L) (CHR 197097)
 §*Carpha alpina*
 §*Eleocharis acuta*

- §*E. gracilis*
 §*Gahnia pauciflora*
 §*G. procer*
 G. rigida (unc)
 §*Lepidosperma australe*
 §*Oreobolus impar*
 §*O. pectinatus*
 §*O. strictus*
 §*Schoenus maschalinus* (unc)
 §*S. pauciflorus* (slender form)
 §*Scirpus aucklandicus*
 §*S. caligenis* (L)
 §*S. habrus*
 §*S. reticularis* (unc)
 §*S. subtilissimus*
 §*Uncinia affinis*
 §*U. angustifolia*
 §*U. astonii*
 §*U. clavata*
 §*U. distans*
 U. divaricata
 §*U. egmontiana*
 §*U. filiformis*
 §*U. gracilent*
 §*U. involuta* (G)
 §*U. rubra*
 §*U. rupestris*
 §*U. silvestris*
 §*U. uncinata*
 §*U. zotovii*
 §*U. sp.* (unnamed; aff. *U. nervosa*) (more slender than *U. nervosa*; see Edgar 1970, p. 231) (CHR 197065-6, 222773)

RUSHES AND RUSH-LIKE PLANTS

- §*Calorophus minor*
 §*Centrolepis ciliata*
 §*Gaimardia setacea*
 §*Juncus antarcticus*
 J. gregiflorus
 §*J. novae-zelandiae*
 J. pusillus (unc)
 J. planifolius (unc)
 Luzula colensoi
 L. migrata
 §*L. sp.* (unnamed; included in *L. picta*, as var. *limosa*, by Edgar 1966)
 L. colensoi × *L. migrata*

MONOCOT HERBS (OTHER THAN ORCHIDS, GRASSES, SEDGES, RUSHES, AND RUSH-LIKE PLANTS)

- §*Arthropodium candidum* (L)
 §*Astelia fragrans*
 §*A. linearis* var. *linearis*
 §*A. nervosa* s.s.
 A. nivicola s.s.

- §*A. skottsbergii*
- §*A. subulata*
- §*A. trinervia* (to 650m)
- §*A.* sp. (a) (unnamed; included in *A. nivicola*, as var. *moriceae*, by Moore 1966)
- §*A.* sp. (b) (unnamed; aff. *A. nervosa*) (lvs not conspicuously white adaxially as in *A. nervosa*) (CHR 222754)
- §*Bulbinella talbotii*
- §*Dianella nigra*
- §*Herpolirion novae-zelandiae*
- §*Libertia ixioides*
- §*L. peregrinans* (unc)
- §*L. pulchella*
- §*Luzuriaga parviflora*
- §*Phormium cookianum*
- §*Potamogeton suboblongus* (unc)
- §*Triglochin striatum* (unc L)

COMPOSITE HERBS

- §*Abrotanella caespitosa*
- §*A. linearis*
- §*Brachycome radicata* var. *radicata* (unc)
- §*Celmisia armstrongii*
- §*C. coriacea* var. *lanceifolia*
- §*C. dallii*
- §*C. incana* (incl. *C. discolor*)
- §*C. laricifolia* (G)
- §*C. parva*
- §*C. petriei* (G)
- §*C. sessiliflora*
- §*C. similis*
- §*C. spectabilis* var. *spectabilis*
- §*C.* sp. (unnamed) (lvs linear to linear lanceolate, up to 20 × 0.8 cm, glabrous, or thinly covered with cottony hairs abaxially) (CHR 197044, 222771-2)
- §*C. armstrongii* × *C. dallii* (Brockie 1957)
- §*C.a.* × *C. similis*
- §*C. dallii* × *C. parva* (Pettersen 1968)
- §*Cotula squalida* subsp. *mediana*
- §*Craspedia minor* var. *minor* (unc L)
- §*C.* sp. (a) (unnamed) (bog plant; lf blade narrowing rather abruptly to petiole) (CHR 197091, 222757)
- §*C.* sp. (b) (unnamed) (calcicole; lf blade narrowing gradually to petiole) (L) (CHR 222751)
- §*Gnaphalium delicatum* (unc)
- §*G. limosum* (unc)
- §*G. paludosum* s.s.
- §*G.* sp. (a) (*G. luteo-album* agg.)

- §*G.* sp. (b) (unnamed; included in *G. audax*, as var. *ruhinicum*, by Drury 1972) (L)
- §*G.* sp. (c) (unnamed; aff. *G. kerienne*) (lvs shorter, and capitula smaller, than in *G. kerienne*) (CHR 190993, 222758)
- §*Helichrysum bellidioides* s.s.
- §*H. filicaule* (unc)
- §*H. bellidioides* × *Gnaphalium* sp. (c) (unc)
- §*Lagenophora cuneata*
- §*L. petiolata* (incl. *L. pumila* var. *multidentata*)
- §*L. pumila* s.s.
- §*L. strangulata*
- §*Microseris scapigera* var.
- §*Raoulia glabra* (unc)
- §*R. grandiflora*
- §*R. eximia* (incl. *R. rubra*) (G)
- §*R. tenuicaulis* (incl. *R.t.* var. *dimorpha* and *R.t.* var. *pusilla*)
- §*Senecio bellidioides*
- §*S. glaucophyllus* subsp. *glaucophyllus* (unc L)
- §*S. minimus* (incl. *S. heterophyllus*)
- §*S. wairauensis* (L)
- §*Sonchus littoralis* (unc L)

DICOT HERBS (OTHER THAN COMPOSITES)

- §*Acaena anserinifolia*
- §*A. novae-zelandiae* (near hut — probably adventive) (unc)
- §*Aciphylla colensoi* (unc G)
- §*A. hookeri* (unc)
- §*A.* sp. (unnamed; aff. *A. polita*)
- §*Anisotome aromatica*
- §*A. deltoidea*
- §*A. haastii* (unc)
- §*A.* sp. (unnamed; included in *A. imbricata*, as var. *prostrata*, by Dawson 1961)
- §*Caltha novae-zelandiae*
- §*Cardamine* sp. (a) ("Narrow Petal" of Pritchard 1957) (CHR 197084, 197184)
- §*C.* sp. (b) ("Glossy Leaf" of Pritchard) (CHR 197083)
- §*C.* sp. (c) ("Tussock Race" of Pritchard) (CHR 222763)
- §*C.* sp. (d) (calcicole) (L) (CHR 197082)
- §*Centella uniflora*
- §*Colobanthus affinis* (L)
- §*C. apetalus* (incl. *C.a.* var. *alpinus*)
- §*C. canaliculatus* (G)
- §*Donatia novae-zelandiae*
- §*Drapetes dieffenbachii*

- §*D. laxus*
 Drosera arcturi
 §*D. spatulata*
 §*D. stenopetala*
 Epilobium alsinoides s.s.
 §*E. brunnescens* s.s.
 §*E. cockayneanum*
 §*E. gracilipes* (incl. *E.g.* var. *con-*
 cinnum) (L)
 §*E. insulare*
 E. linnaeoides (L)
 §*E. nerteroides* (incl. *E. pedunculare*
 var. *viride*)
 §*E. pernitens*
 §*E. pubens* (incl. *E.p.* var. *strictum*)
 (unc L)
 §*E. rotundifolium* (L)
 Euphrasia cheesemanii (G)
 §*E. monroi*
 §*E. townsonii*
 §*Forstera mackayi*
 §*F. tenella*
 §*F. sp.* (unnamed) (smaller than
 named spp., slightly glaucous)
 (G) (CHR 222753)
 §*Galium perpusillum* s.s.
 G. trilobum
 §*Gentiana bellidifolia* s.s.
 §*G. gracilifolia* (incl. *G. vernicosa*)
 §*G. spenceri*
 §*G. sp.* (cf. *G. montana* and *G.*
 patula) (G)
 §*Geranium microphyllum*
 §*Geum leiосpermum* (unc)
 §*G. uniflorum* (G)
 §*Gingidium enysii* var. *baxteri* (unc
 L)
 §*Gratiola nana*
 §*Gunnera dentata* var. *dentata* (unc)
 §*G. monoica* var. *monoica* (incl. *G.*
 strigosa)
 §*G. prorepens* (incl. *G. flavida*)
 Holoragis depressa
 H. micrantha
 §*Hemiphysa suffocata* var. *novae-*
 zelandiae
 §*Hydrocotyle hydrophila*
 §*H. microphylla*
 §*H. moschata* (L)
 §*Hypericum japonicum* (unc L)
 §*Jovellana repens*
 §*Liparophyllum gunnii*
 §*Mentha cunninghamii*
 §*Mitrasacme novae-zelandiae*
 Montia fontana s.s. (unc)
 §*Myosotis elderi* (fls up to 12mm
 diam; cf. 'c. 6 mm' given by
 Moore 1961) (G) (CHR
 222760)
 §*M. venosa* (unc L)
- §*M. sp.* (a) (unnamed; included in
 M. pygmaea, as var. *drucei*, by
 Moore 1961) (unc)
 M. sp. (b) (*M. forsteri* agg.) (unc
 L)
 §*Myriophyllum pedunculatum*
 §*Neopaxia sp.* (*Claytonia calycina*,
 svn. *C. australasica* var. *biflora*)
 (G) (CHR 222761)
 §*Nertera balfouriana*
 N. ciliata
 §*N. depressa* (incl. *N. cunninghamii*)
 §*N. scapanioides*
 N. setulosa (unc L)
 §*N. sp.* (unnamed; aff. *N. dichondrae*
 folia) (CHR 222829)
 §*Oreomyrrhis colensoi* (incl. *O.c.* var
 hispidula and *O.c.* var. *multifida*)
 §*Oreostylidium subulatum*
 §*Ourisia macrocarpa* var. (cf. var.
 macrocarpa) (G) (CHR 222869,
 256544)
 §*O. modesta* (unc L)
 §*O. sp.* (a) (unnamed; aff. *O.*
 colensoi) (lvs small, 2-4 cm.
 long; calyx lobes c.5 mm long)
 (CHR 252285, 256545-7)
 §*O. sp.* (b) (unnamed; included in
 O. sessilifolia, as var. *simpsonii*,
 by Moore 1961) (G)
 §*O. sp.* (h) × *O. sp.* (undetermined)
 (CHR 222870, 227872)
 Oxalis lactea
 §*O. sp.*
 §*Parahebe lyallii*
 §*Phyllachne colensoi*
 §*Plantago novae-zelandiae*
 §*P. uniflora*
 §*P. sp.* (unnamed) (discussed by
 Moore 1961, p. 784) (L) (CHR
 197058, 221363, 222774-6)
 Pratia angulata
 §*Pygmea pulvinaris* (G)
 §*Ranunculus verticillatus* (unc)
 §*R. sp.* (a) (unnamed) (CHR
 197059-70, 222755-6)
 §*R. sp.* (b) (unnamed; included in
 R. hirtus, as var. *stoloniferus*, by
 Kirk 1899) (L) (CHR 222952)
 §*Schizilema nitens*
 §*S. trifoliolatum* (L)
 §*Scleranthus brockiei* (unc L)
 §*Stellaria parviflora* (incl. *S. minuta*)
 Urtica incisa (L)
 Viola cunninghamii
 §*V. filicaulis*
 §*V. lyallii* (L)
 §*Wahlenbergia albomarginata* var.
 (cf. *W. laxa*) (unc)

ADVENTIVE PLANTS (32 SPECIES)

(T) — seen only on tracks and near huts

DICOT SHRUBS

Ulex europaeus

GRASSES

Agrostis stolonifera

A. tenuis

Anthoxanthum odoratum

Dactylis glomerata (T)

Festuca arundinacea s.l. (T)

F. rubra subsp. *commutata* (T)

Holcus lanatus

Lolium perenne (T)

Poa annua (T)

P. pratensis

SEDGES

Carex ovalis

§*Scirpus setaceus* (unc T)

RUSHES

Juncus articulatus

J. bufonius (T)

J. effusus

J. tenuis (T)

§*Luzula congesta* (unc T)

COMPOSITE HERBS

Bellis perennis (L)

Hypochoeris radicata

Leontodon taraxacoides

Mycelis muralis

Taraxacum officinale s.l.

DICOT HERBS (OTHER THAN COMPOSITES)

Cerastium holosteoides

Lotus pedunculatus

Plantago lanceolata (T)

Prunella vulgaris (L)

Sagina procumbens

Stellaria media (L)

Trifolium dubium

T. repens

§*Veronica serpyllifolia*

DOUBTFUL AND ERRONEOUS RECORDS NOT INCLUDED IN MAIN LIST

RECORD	PROBABLE IDENTITY OF PLANT ON WHICH RECORD BASED
<i>Aciphylla polita</i> (Brockie 1957)	<i>Aciphylla</i> sp. (unnamed)
<i>Anisotome flexuosa</i> (Petterson 1968, as <i>A. aromatica</i> var. <i>dissecta</i>)	<i>Anisotome aromatica</i>
<i>Astelia petriei</i> (form) (Brockie 1957)	<i>Astelia skottsbergii</i>
<i>Baumea rubiginosa</i> (Brockie 1957, as <i>Cladium glomeratum</i>)	<i>Baumea teretifolia</i>
<i>Celmisia alpina</i> (Petterson 1968)	<i>Celmisia armstrongii</i>
<i>C. lanceolata</i> (Petterson 1968)	<i>Celmisia armstrongii</i> × <i>C. similis</i>
<i>C. armstrongii</i> × <i>C. laricifolia</i> (Brockie 1957)	
<i>Dracophyllum rosmarinifolium</i> (Petterson 1968)	<i>Dracophyllum uniflorum</i>
<i>D. densum</i> × <i>D. filifolium</i> × <i>D. pubescens</i> (Brockie 1957)	
<i>Epilobium glabellum</i> (Petterson 1968)	
<i>Forstera sedifolia</i> (Petterson 1968)	<i>Forstera mackayi</i>
<i>Gaultheria depressa</i> (Petterson 1968)	<i>Gaultheria</i> sp. (unnamed)
<i>Hebe macrocarpa</i> (Petterson 1968)	
<i>Oreobolus</i> sp. (unnamed) Brockie 1957)	<i>Oreobolus impar</i>
<i>Plantago triantha</i> (Brockie 1957, as <i>P. brownii</i>)	<i>Plantago novae-zelandiae</i>

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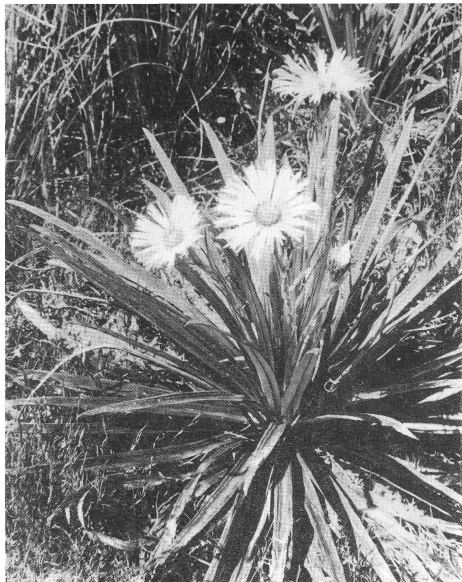
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Celmisia dallii

**PLANTS OF GOULAND DOWNS AREA,
N.W. NELSON FOREST PARK**

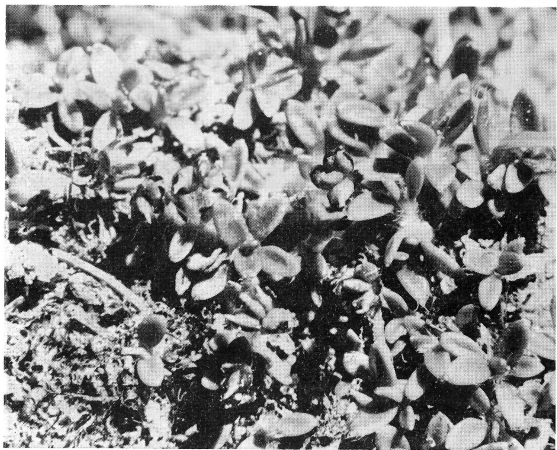
A selection of photographs by Yvonne J. Cave



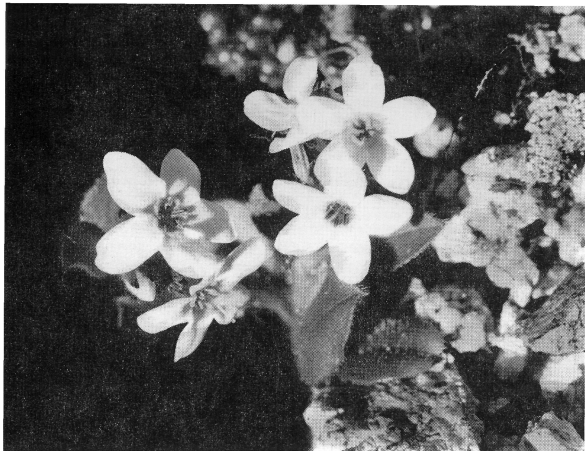
Celmisia armstrongii



Celmisia incana



Above: *Astelia linearis* var. *linearis*; below: *Hemisphaera suffocata* var. *novae-zelandae*



Myosotis elderi



Gentiana spenceri

Aciphylla hookeri (male)



Aciphylla hookeri (female)





Mitrasacme novae-zelandiae