

Rare and threatened plants in the Bay of Plenty – Graeme Jane

Taxon (Current CMS status) and (Most recent recorded sighting).

Pterostylis micromega

Christella "dentata: thermal"

Dicranopteris linearis,

Pterostylis puberula (E) 1955 (Hynes and Knowlton)

Euphorbia glauca (V) 1992 (A. Wright pers. comm.)

Lepidium oleraceum (V) 1955 (Hynes and Knowlton)

Pimelea tomentosa (V)

Marattia salicina (R) 1926 (Allan and Dalrymple)

Nephrolepis "cf. cordifolia"

Ranunculus macropus (V) 1926 (Sladden)

Rorippa divaricata (V)

Hibiscus trionum "NZ" (V)

Pisonia brunonina (R)

Sicyos australis (L) 1955 (AK herbarium voucher)

Corybas cryptanthus (I) 1930 (Lucy Moore record, B. Irwin)

Key: CMS, Conservation Management Strategy; E, endangered; V, vulnerable; R, rare; L, local; I, indeterminate.

Reference: D Given, *Rare and endangered plants of New Zealand*. Reed, 1981.



Fig. *Christella dentata*

(From: PJ Brownsey and JC Smith-Dodsworth, *New Zealand Ferns and Allied Plants* 2000.)

Fungus Workshop, 20 July 2002

On a sunny Saturday afternoon sixteen keen would-be mycologists gathered in the downstairs Botany laboratory to learn from David Orlovich how to identify fungi to herbarium standard. First, David explained the importance of a line drawing or photograph of fresh specimens showing several fruiting bodies of representative ages, including the base of the stalk and with a transverse section and a size scale. He highlighted the need to collect at least 3 of each species and to process them fresh before dehydrating them to preserve them. David also warned us not to handle any specimens by the stalk, except at the very base, so as not to obliterate fragile features.

Next, using a video attached to a dissecting microscope he pointed out relevant macroscopic features to note:- colour (using a standard soil colour chart), texture and shape of the cap (**pileus**), stalk (**stipe**), gills and spores (from a spore-print). A generous handout with a comprehensive glossary of descriptive terms used internationally greatly increased our mycological vocabulary and the precision of our descriptions.

Then David went on to show us how to use the high power microscopes to look at relevant features of gills and gill squashes, revealing the sterile **cystidia**, the **basidia** to which spores are attached, and the spores themselves. Again, the video camera attached to the microscope gave us a good idea of what to look for.

Once all the details were assembled we could have a go at using the key to the genera of New Zealand *agarics*, *boletes* and related genera in the handout. It was all so fascinating that the keenest stayed on til after dark. Special thanks to those who brought fresh specimens and many thanks to David for setting such an enthusiastic and professional standard, and to the Botany Department for making available the laboratory, microscopes and other equipment. **Note:** A reference copy of the Fungal Workshop handout is available in the Herbarium, Botany Department, University of Otago. .
 – Allison Knight

Brief Fungal Glossary

– Allison Knight

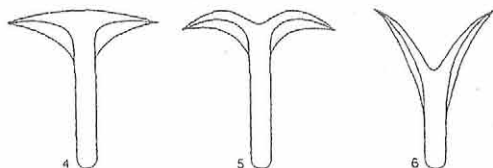
The following excerpts from fungal and lichen glossaries give some idea of the terminology used to properly describe a fungal collection for the herbarium. They are given in the order of terms used in Slaven Kljucanin's description on the next page.

habit: the natural form or appearance of an organism
omphaloid: gills (**lamellae**) descending down the stalk (**stipe**). (See fig below)
pileus: cap of mushroom or toadstool
hygrophanous: having a water-soaked appearance when wet
lamellae: gills (vertical radiating plates covered with **hymenium**, under the cap)
decurrent: gills descending down the stalk.
lamellulae: short gills that don't go all the way from the cap margin to the stalk.
stipe: stalk of fungal fruiting body (basidioma or ascoma)
(sub)globose: (sub)spherical, or nearly so.
apiculus: the projection which connects the spore to the **sterigma**
amyloid ridges: ornamentation on spores (see *Lactarius*, fig a)
basidia: spore-bearing structures in the **hymenium** (see *Lactarius*, fig b)
hyaline: colourless, transparent
clavate: club-shaped
sterigmata (singular **sterigma**): apical extensions on the **basidia** which bear the spores
cystidia: sterile, differentiated terminal elements in the spore-producing layer. (see *Lactarius*, fig c)
fusiform: spindle-like, wide in the middle and narrow at both ends
hymenium: the spore-producing layer in a fungal fruiting body

References:

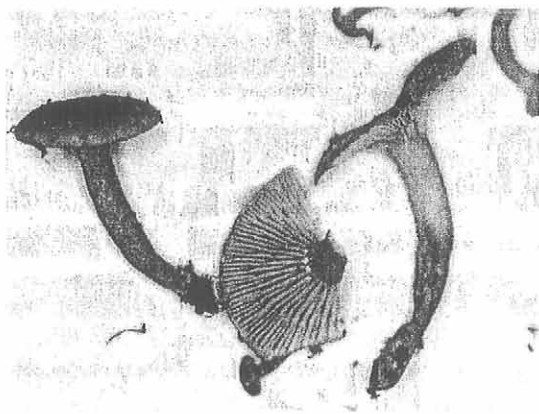
1. *Flora Agaricina Neerlandica*, vol 1. Ed C Bas et al 1988. Ch 8, *Glossary*, E Vellinga.
2. W Malcolm & D Galloway, 1997. *New Zealand Lichens: Checklist, Key and Glossary*

Fig. Omphaloid habit, with decurrent gills (from ref. 1.)

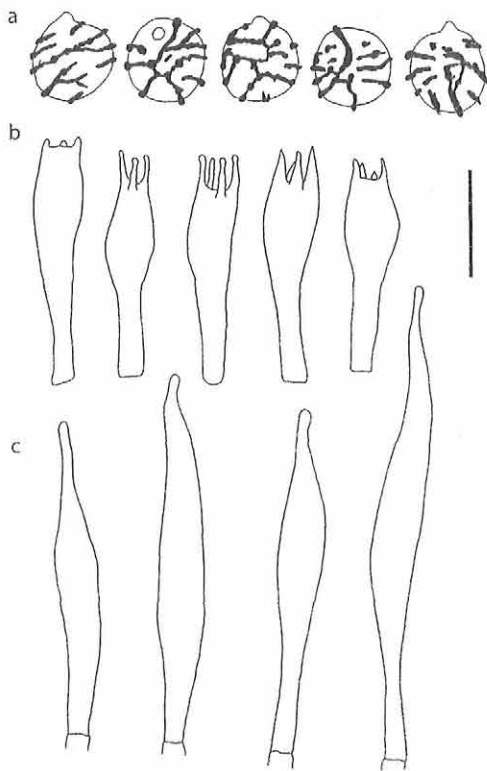


***Lactarius* sp. aff. *umerensis* (McNabb). Russulaceae (Lotsy 1907)**

Habit omphalioid. **Pileus** circular, 10-30 mm diameter, salmon, dark red (Munsell 10R 4/6), convex in younger specimens, centrally depressed or applanate, surface dry, rough, not hygrophanous, margin regular. **Lamellae** creamy pink (Munsell 5YR 7/3), crowded, subdecurrent or decurrent, 3-4 sets of lamellulae, when damaged exude white latex that changes to creamy yellow on exposure to air. **Stipe** central, breaks like chalk, dark red, slightly lighter towards pileus, 1-4 cm long, 2-5 mm diameter, hollow in some mature specimens. Flesh continuous in cap and stem, texture brittle, exuding latex (same as above). Photograph x 1.25.



Spores (a) creamy white, subglobose, 6.5-8 x 6.5-8 μm , measured from dried lamellae mounted in KOH, obliquely apiculate, apiculus to 1 μm , ornamentation of amyloid ridges up to 1 μm high. **Basidia** (b) hyaline, narrowly clavate, 36-46 x 6-13 μm , 4 spored, sterigmata to 6 μm long, clamp connections not present. **Cystidia** (c) narrowly fusiform, filled with contents giving appearance of shattered glass, 56-90 x 5-10 μm , clamp connections not present. Scale bar: (a)= 10 μm , (b,c)= 20 μm .



Notes: *Lactarius umerensis* McNabb has much smaller cystidia than this collection (25-60 x 3.5-6 μm), the spores of *L. umerensis* as described by McNabb (1971) are broadly elliptical; 8-10.5 x 6.5-9 μm . *L. umerensis* McNabb has latex that is unchanging on exposure to air, but dries pallid cream. This collection had latex that changed from white to creamy yellow within 30 minutes of exposure to air.

Collection: Collected 6. v. 2002. Cascade Forest, South Westland, New Zealand in *Nothofagus* forest. Collector: Slaven Kljucanin.

Reference: McNabb, R. F. R. (1971) The Russulaceae of New Zealand 1. *Lactarius* DC ex S. F. Gray. *New Zealand Journal of Botany* 9, 46-66.

Description and figures by *Slaven Kljucanin*, 4th year student, Botany Dept., Otago Uni.