

## Lichen rarities in the Routeburn

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From 21-23 February, while staying at the motel at Routeburn Station, I took the chance to acquaint myself with the forest lichens of the lower Routeburn along the track to Sylvan Lake and around Weka Flat. This brought back memories of a trip into the Olivines with Peter Smith, John Holloway and David Mitchell in November 1965 that had started from the same Sylvan Lake track. Between 1965 and 1972 I visited the lower Routeburn many times, generally on the way to or from somewhere else and consequently I have never dallied there for long, or looked carefully for lichens in the lower reaches of this lovely valley.

By great coincidence it was 76 years to the day, 21 February 1927, that the first lichenologists to collect from the Routeburn, the Swedes Prof. G. Einar Du Rietz and his wife Greta Sernander Du Rietz, gathered samples from the southern slopes of Mt Momus. These two intrepid Uppsala botanists, in company with Leonard Cockayne, Jack Scott Thomson and George Simpson spent 10 days in the Routeburn area based at the old Routeburn Huts and Kinloch, from where they visited the Harris Saddle (12.2.1927), the environs of the Routeburn Hut (11-16.2.1927), forest, subalpine scrub and grassland to 1650 m on Bold Peak above Kinloch (18,19.2.1927), and the Routeburn again and Mt Momus (20-22.2.1927). From their stay in the Routeburn, Einar and Greta Du Rietz made about 200 collections. Most of these collections have printed labels (Fig. 1), and are now held in the herbarium of the Museum of Evolution in Uppsala (UPS).

In the intervening period, only occasional lichens were gathered in the Routeburn. I collected from the North Branch, from North Col and from Sugarloaf Saddle, and the OUSSA Science Survey of May 18-25, 1968 (Westerskov 1968) included lichens in an investigation of ground and epiphytic vegetation (Irwin 1968). It was therefore high time that lichens from the lower reaches of the valley were looked at a bit more closely.

I had two things in mind: the first was to search for *Erioderma*, as its present known southern limit is east of the Routeburn, close to Chinaman Flat in the Dart. The second was to check out the local populations of *Placopsis* on rocks in the Routeburn and in grassland and forest outcrops. The *Placopsis* story will not be very easily told just yet, but I found *Erioderma* and, along with it, several cyanobacterial species of *Pseudocyphellaria* representing major southern extensions of their ranges. The range of cyanobacterial species in the area is remarkable, making this humid forest a prime site of cyanolichen diversity, comparable to the famed Valdivian rainforest at Choshuenco (Galloway 1992), and well worthy of future detailed study.

However, in the 30 years since I was last in the lower Routeburn, I noticed that introduced weeds were much more obvious than formerly, and I was astounded at the level of traffic that the road receives in a late summer weekend. Before the Dart Bridge made access so easy, the only regular motor vehicles on the road were Harry Bryant's fleet of ancient tourist buses (McKenzie 1973), and as well the farming of the riverflats was not nearly so conspicuous as it is now. Both dramatically increased road traffic

(and its associated dust) and agricultural practices will have had some effect on lichen communities in the developed areas of the lower valley.

*Erioderma soledatum* I found fairly quickly on the smooth bark of young mountain beech, but it was very rare and scattered on this substratum. It turned up a bit more frequently on the basal parts of young groves of *Phyllocladus* growing in small clearings carpeted with *Cladia retipora* and *Cladonia confusa*, although even here it is often rather sparse. It should be looked for further up the valley and across the Divide in the Eglinton Valley and in Fiordland. I didn't find its fertile counterpart, *E. leylandii*. Other cyanobacterial rarities turned up most surprisingly on mountain beech bark in humid sites (close to small streams) and included the following:

- (1) a sward of *Pseudocyphellaria mallota*, (Fig 2) a tomentose, solediate species formerly known only from southern Chile, Argentinian Tierra del Fuego and Juan Fernandez (Galloway 1986, 1992; Galloway et al. 1995). This species I know well from southern Chile, so it was most exciting to see it so happily developed on a tree 5 m from the Routeburn Road! This is a major extension of its range and joins other austral members of this genus including *P. faveolata*, *P. glabra*, *P. granulata* and *P. physciospora*.
- (2) *Pseudocyphellaria nermula* (formerly known only from its type locality at the Boyle River south of Lewis Pass); *P. pubescens* in both its green algal, and cyanobacterial states, and combined as a photosymbiodeme; and *P. sericeofulva* a rare northern species (known also from New South Wales) that occurs sporadically from Radar Bush in Northland to Mercer in the Waikato (Galloway 1988).
- (3) *Sticta limbata* parasitized by *Abrothallus parmiliarum*. This lichenicolous fungus is known from New Zealand on species of *Parmelia*, and is recognized by its scattered, black, convex ascomata that are commonly iridescent, green-pruinose at first, and by its characteristic brown, 1-septate, warted ascospores. *Sticta limbata* is a well-known host for this lichenicolous fungus in the Northern Hemisphere.
- (4) Associated cyanobacterial taxa with the above-mentioned lichens included: *Coccocarpia palmicola* and *C. pellita*; "*Dendriscoaulon dendriothamnodes*"; *Degelia duplomarginata*; *Fuscoderma amphibolum*, *F. applanatum* and *F. limbatum* (Jørgensen & Galloway 1989) many green algal species of *Pannaria* (most still maintained in *Psoroma* but soon to be transferred); *Nephroma cellulosum*; *Pseudocyphellaria ardesiaca* and *P. intricata*; and *Sticta fuliginosa*.

What this shows, I think, is that even very accessible habitats in New Zealand have considerable lichen rarities waiting to be discovered. The Routeburn does have some sort of tradition of lichen collecting, and the well-developed lichen communities to be found there would make an ideal thesis project utilising both ecology and systematics. We know these days a considerable amount about what lichens are, the next step is to find out just what they do in the landscapes they have evolved in. I have started a Routeburn lichen list and will deposit the lichens collected there in CHR and OTA.

Perhaps we should emulate the Du Rietzs and think about a lichen foray to the Routeburn.

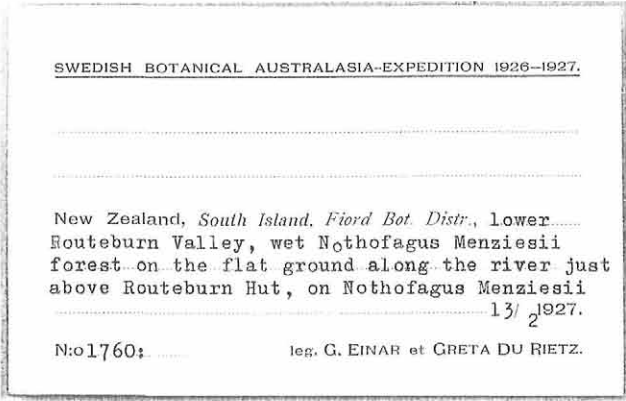
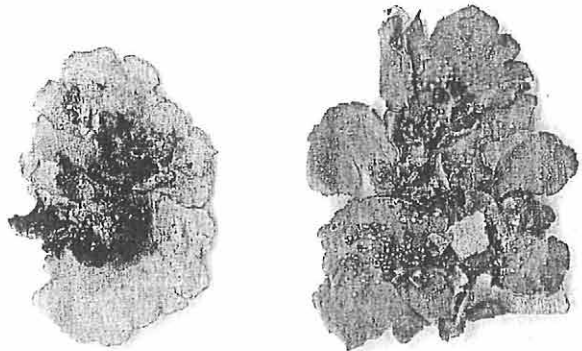


Fig 1. Printed label from the Du Rietz's 1927 Routeburn expedition, x 0.71

Fig 2. Photocopy of dried *Pseudocyphellaria mallota* from the February 2003 Routeburn collection., x 0.71



#### References

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