

Lichens from the Southern Alps, New Zealand II, Records from the Mt. Cook District¹

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IN RECENT YEARS there has been a growing interest in the lichen flora of New Zealand. Papers have appeared containing records of lichens from the subantarctic islands (Fineran 1969, 1971), Stewart Island and neighboring offshore islands (Fineran 1966*a, b*, in press; Galloway 1968*a, b*), Fiordland (Murray 1963, Galloway 1966), Otago (Galloway 1968*c*, Martin 1970), and Canterbury (Burrows and Orwin 1971; Fineran and Dodge 1970; Orwin 1970, 1972). However, despite this interest our knowledge of the distribution, ecology, and taxonomy of New Zealand lichens is still fragmentary. Information is especially meager on lichens from alpine regions in the Southern Alps. The paucity of collections from high mountains is perhaps understandable: access to the peaks is often difficult; experience in mountaineering is normally required to negotiate the terrain; and the lichens are frequently difficult to remove from the rock surfaces where most of them grow. Furthermore, the weight of the rock samples containing the lichens limits the amount of material that can be carried out to habitation.

In the present paper lichens collected between about 2,340 m to 3,137 m from high peaks in the Mt. Cook district, South Island, New Zealand, are recorded (Table 1). The collection was made in January 1967 during mountaineering expeditions to the head of the Fox Glacier and in the Jollie Valley (Fineran 1967*a, b*). The specimens were collected by B. A. Fineran with the assistance of P. J. Dossor and R. G. Cunninghame who was climbing with another party in the area at the same time (Tunzelman 1967). The collection was subsequently identified by C. W. Dodge who has described two

new taxa, *Psora medusula* and *Rinodina microspora*, from the collection (Dodge 1970).

At the time the present collection was made, as far as we knew, lichens had not previously been collected above 3,000 m in New Zealand. However, during a recent botanical survey of the Mt. Cook National Park, H. Wilson and C. Livesey have collected lichens at 3,500 m on Mt. Cook (*The Press*, Christchurch, 7 March 1972).

LOCALITIES AND HABITAT

Lichens from the head of the Fox Glacier were collected from: the summit rocks of Mt. Haidinger, 3,065 m, and on the Main Divide ridge below the summit at 2,925 m, 7 January; the high peak of Mt. Haast, 3,137 m, 4 and 10 January; the west peak of Mt. Haast, 3,078 m, and the col between the west and middle peaks, at approximately 2,950 m, 10 January; the middle peak of Mt. Haast, at approximately 3,070 m, 9 January; and from about the site of the Pioneer Hut, 2,530 m, Mt. Alack ridge, 11 January. P. J. Dossor collected the specimens from the high peak of Mt. Haast on 10 January. All the material from the middle to west peaks of Mt. Haast was gathered by R. G. Cunninghame who also collected a specimen from the summit of Douglas Peak, 3,084 m, on 7 January. A single specimen from the west ridge of Torres Peak was collected by H. H. Gifford on 8 January at an altitude of about 3,040 m. The specimens from the Jollie Valley were collected from the summit of Brass Peak, 2,340 m, on 16 January.

The location of the peaks at the head of the Fox Glacier, Westland, are shown on the New Zealand 1 inch to 1 mile map series (NZMS 1 S79 MT. COOK). Mt. Haidinger lies on the Main Divide between Pioneer Pass and Douglas Peak. Mt. Haast is situated between Lendenfeld Peak and Pioneer Pass and comprises three

¹ Manuscript received 1 December 1972.

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TABLE 1

LICHENS COLLECTED BETWEEN 2,340 TO 3,137 METERS FROM HIGH PEAKS IN THE MOUNT COOK DISTRICT, SOUTH ISLAND, NEW ZEALAND

SPECIES	MT. ALACK RIDGE SITE OF PIONEER HUT		MT. HAIDINGER		MT. HAAST				HABITAT
	CATALOG NUMBER	HABITAT	CATALOG NUMBER	HABITAT	HIGH PEAK	MIDDLE PEAK	COL BETWEEN MIDDLE AND WEST PEAKS	WEST PEAK	
					CATALOG NUMBERS				
<i>Acarospora gyrodes</i> Magn.	-	-	-	-	2,446	-	-	-	sr
	-	-	-	-	-	-	-	2,456	sr
<i>Acarospora otagensis</i> Magn.	-	-	-	-	2,441	-	-	-	err
	-	-	-	-	-	2,504	-	-	sr
	-	-	-	-	-	-	2,494	-	rr
	-	-	-	-	-	-	-	2,458	sr
	-	-	-	-	-	-	-	2,462	sr
	-	-	-	-	-	-	-	2,463	sr
	-	-	-	-	-	-	-	2,465	sr
	-	-	-	-	-	-	-	2,470	sr
	-	-	-	-	-	-	-	2,471	sr
<i>Aspicilia composita</i> Dodge	2,382	err	-	-	-	-	-	-	-
	2,383	err	-	-	-	-	-	-	-
	2,389 (?)	srbr	-	-	-	-	-	-	-
<i>Agyrophora zabbruckneri</i> (Frey) Llano	2,344	urr	2,411	esr	2,434	-	-	-	err
	2,370-2,372	err	-	-	2,435	-	-	-	srbr
	-	-	-	-	2,438	-	-	-	err
	-	-	-	-	2,439	-	-	-	srr
	-	-	-	-	2,450	-	-	-	sr
	-	-	-	-	2,451	-	-	-	sr
	-	-	-	-	-	2,510	-	-	sr
	-	-	-	-	-	-	2,496	-	rr
	-	-	-	-	-	-	2,499	-	rr
	-	-	-	-	-	-	2,500	-	rr
	-	-	-	-	-	-	-	2,453	sr
	-	-	-	-	-	-	-	2,460	sr
	-	-	-	-	-	-	-	2,470	sr
<i>Bacidia leucothalamia</i> (Nyl.) Hellb.	2,386-2,388	srbr	-	-	-	-	-	-	-
	2,390	srbr	-	-	-	-	-	-	-
<i>Blastenia alboflavida</i> Zahlbr.	-	-	2,517	sr	-	-	-	-	-
<i>Buellia atroflavella</i> (Nyl.) Müll. Arg.	-	-	-	-	-	-	2,486	-	rr
<i>Buellia citrina</i> Magn.	-	-	-	-	-	-	2,478	-	rr

TABLE 1 (continued)

SPECIES	MT. ALACK RIDGE SITE OF PIONEER HUT		MT. HAIDINGER		MT. HAAST				HABITAT
	CATALOG NUMBER	HABITAT	CATALOG NUMBER	HABITAT	HIGH	MIDDLE	COL BETWEEN	WEST	
					PEAK	PEAK	MIDDLE AND WEST PEAKS	PEAK	
<i>Buellia ferax</i> Müll. Arg.	-	-	-	-	2,431	-	-	-	err
	-	-	-	-	2,443	-	-	-	err
	-	-	-	-	-	-	2,491	-	rr
	-	-	-	-	-	-	-	2,464	sr
	-	-	-	-	-	-	-	2,465	sr
<i>Buellia mawsonii</i> Dodge	-	-	-	-	-	-	2,489	-	rr
<i>Buellia otagensis</i> Zahlbr.	2,384	err	-	-	2,447	-	-	-	sr
	-	-	-	-	2,448	-	-	-	sr
	-	-	-	-	-	-	-	2,455	sr
	-	-	-	-	-	-	-	2,459	sr
	-	-	-	-	-	-	-	2,461	sr
	-	-	-	-	-	-	-	2,467	sr
	-	-	-	-	-	-	2,492	-	rr
<i>Buellia thomsoni</i> Dodge	2,398	err	-	-	-	-	-	2,468	sr
	2,401	srbr	-	-	-	-	-	-	-
<i>Catillaria rudolphi</i> Dodge	2,385	srbr	-	-	-	-	-	-	-
<i>Cbiodecton macquariensis</i> Dodge	2,380	err	-	-	-	-	-	-	-
<i>Lecanora albidorufa</i> Zahlbr.	-	-	-	-	-	-	2,476	-	rr
<i>Lecanora brownii</i> Dodge	-	-	2,419	esr	-	-	2,489	-	rr
	-	-	2,421 (?)	esr	-	-	-	-	-
<i>Lecanora (Aspicilia) novae-zelandiae</i> Magn.	-	-	2,512	sr	-	-	-	2,456	sr
	-	-	2,513	sr	-	-	-	-	-
<i>Lecanora periflavida</i> Nyl.	-	-	-	-	2,441	-	-	-	err
	-	-	-	-	-	-	-	2,454	sr
	-	-	-	-	-	-	2,492	-	rr
<i>Lecanora prolifera</i> Dodge	-	-	-	-	-	-	2,475	-	rr
<i>Lecanora subglaucoidea</i> (Krmplhbr.) Zahlbr.	-	-	2,518	rr	-	-	-	-	-
<i>Lecidea (Biatora) allanii</i> Zahlbr.	-	-	-	-	-	-	-	2,453	sr
	-	-	-	-	-	-	-	2,463	sr
	-	-	-	-	-	-	2,481	-	rr
<i>Lecidea (Biatora) brownii</i> Dodge	-	-	-	-	-	-	-	2,455	sr
<i>Lecidea chalybeiza</i> Nyl.	2,393	err	-	-	2,432	-	-	-	err
	-	-	-	-	2,442	-	-	-	err
	-	-	-	-	-	-	2,485	-	rr
	-	-	-	-	-	-	-	2,457	sr
<i>Lecidea dunedina</i> Zahlbr.	-	-	-	-	-	-	-	2,454	sr

<i>Lecidea aurietzii</i> Magn.	-	-	-	-	-	-	2,487	-	rr
	-	-	-	-	-	-	2,488	-	rr
<i>Lecidea epiphysa</i> Stirton	-	-	-	-	2,449	-	2,495	-	rr
	-	-	-	-	-	-	-	-	sr
	-	-	-	-	-	-	2,484	-	rr
<i>Lecidea macquariensis</i> Dodge	2,350a	err	-	-	-	-	2,480	-	rr
	2,376	err	-	-	-	-	-	-	-
<i>Lecidea melastroma</i> Nyl.	-	-	-	-	-	-	2,479	-	rr
	-	-	-	-	-	-	2,480	-	rr
	-	-	-	-	-	-	2,481	-	rr
<i>Lecidea pallidoatra</i> Nyl.	-	-	2,515	sr	-	-	-	2,463	sr
	-	-	2,519	sr	-	-	-	-	-
<i>Lecidea schistacea</i> Knight	-	-	-	-	2,430	-	-	-	srbr
	-	-	-	-	-	2,509	-	-	sr
	-	-	-	-	-	-	2,482	-	rr
	-	-	-	-	-	-	2,498	-	rr
	-	-	-	-	-	-	2,499	-	rr
<i>Lecidea (Biatora) subcoarctata</i> Knight	-	-	-	-	2,452	-	-	-	sr
<i>Lecidea sublapicida</i> Knight	-	-	2,523	rr	-	-	-	-	-
<i>Lecidea subtenebrosa</i> Nyl.	-	-	-	-	2,445	-	-	-	err
<i>Lecidea sylvicolella</i> Nyl.	2,348-2,352	srbr	-	-	-	-	-	-	-
	2,354-2,375	srbr	-	-	-	-	-	-	-
	2,355	err	-	-	-	-	-	-	-
	2,359-2,363	srbr	-	-	-	-	-	-	-
	2,370	err	-	-	-	-	-	-	-
	2,375	srbr	-	-	-	-	-	-	-
	2,382	err	-	-	-	-	-	-	-
<i>Lecidea triangularis</i> Magn.	2,366	err	2,520	sr	-	-	-	-	-
	2,367	err	2,524	sr	-	-	-	-	-
	2,369	srbr	-	-	-	-	2,483	-	rr
	2,377-2,379	err	-	-	-	-	2,493	-	rr
	2,381	err	-	-	-	-	2,500	-	rr
	2,392	err	-	-	-	-	2,501	-	rr
	2,403-2,409	srbr	-	-	-	-	-	2,471	sr
<i>Mykoblastus hypomelinus</i> (Stirton) Müll. Arg.	-	-	2,414	esr	-	-	-	-	-
<i>Omphalodiscus subaprinus</i> (Frey) Llano	-	-	-	-	-	2,506	-	-	sr
	-	-	-	-	-	2,508a	-	-	si
	-	-	-	-	-	-	2,475	-	rr
	-	-	-	-	-	-	2,477	-	rr
	-	-	-	-	-	-	2,479	-	rr
	-	-	-	-	-	-	2,486	-	rr
	-	-	-	-	-	-	2,494	-	rr
<i>Parmelia (Melanoparmelia) epbeoides</i> Zahlbr.	-	-	2,412	esr	2,427a	-	-	-	sr
	-	-	2,413	esr	2,440	-	-	-	sr
	-	-	2,425	lsr	-	2,508	-	-	sr

TABLE 1 (continued)

SPECIES	MT. ALACK RIDGE SITE OF PIONEER HUT		MT. HAIDINGER		MT. HAAST				
	CATALOG NUMBER	HABITAT	CATALOG NUMBER	HABITAT	HIGH	MIDDLE	COL BETWEEN	WEST	
					PEAK	PEAK	MIDDLE AND WEST PEAKS	PEAK	
					CATALOG NUMBERS			HABITAT	
<i>Parmelia (Melanoparmelia) epheboides</i> Zahlbr.	-	-	2,426a, b, c	ssr	-	-	2,473	-	rr
	-	-	-	-	-	-	-	2,472	sr
<i>Parmelia (Melanoparmelia) otagensis</i> Zahlbr.	-	-	-	-	-	2,507	-	-	sr
<i>Perforaria peponula</i> Müll. Arg.	-	-	-	-	2,428	-	-	-	srbr
<i>Pertusaria graphica</i> Knight	-	-	-	-	-	-	2,481	-	rr
	-	-	-	-	-	-	-	2,466	sr
<i>Psora medusula</i> Dodge	2,402	srbr	2,525	sr	2,429	-	-	-	srbr
	-	-	-	-	-	2,509	-	-	sr
	-	-	-	-	-	-	2,484	-	rr
	-	-	-	-	-	-	2,474	-	rr
	-	-	-	-	-	-	2,485	-	rr
<i>Rhizocarpon neozelandicum</i> (Räs.) Räs.	2,364	err	2,410	esr	2,438	-	-	-	err
	2,365	err	2,415	esr	2,445	-	-	-	err
	2,373	err	2,416	esr	-	2,505	-	-	sr
	2,397-2,400	err	2,418-2,420	esr	-	2,510	-	-	sr
	-	-	2,422-2,424	esr	-	-	2,474	-	rr
	-	-	-	-	-	-	2,475	-	rr
	-	-	-	-	-	-	2,497	-	rr
	-	-	-	-	-	-	2,498	-	rr
	-	-	-	-	-	-	2,500	-	rr
	-	-	-	-	-	-	2,501	-	rr
	-	-	-	-	-	-	-	2,458	sr
	-	-	-	-	-	-	-	2,459	sr
	-	-	-	-	-	-	-	2,467	sr
	-	-	-	-	-	-	-	2,470	sr
<i>Rhizocarpon thomsoni</i> Zahlbr.	2,353	err	-	-	2,433	-	-	-	err
	2,356-2,358	rr	-	-	2,436	-	-	-	err
	2,391	err	-	-	-	2,503	-	-	sr
	2,395-2,397	err	-	-	-	-	-	2,460	sr
<i>Rinodina microspora</i> Dodge	2,372	err	-	-	-	-	-	2,469	sr
	-	-	-	-	-	-	-	2,471	sr
	-	-	-	-	-	-	2,479	-	rr
	-	-	-	-	-	-	2,480	-	rr
<i>Rinodina peloleuca</i> (Nyl.) Müll. Arg.	-	-	-	-	-	-	-	2,467	sr
<i>Squamarina baysomi</i> Dodge	-	-	2,514 (?)	sr	-	-	-	-	-
<i>Stereocaulon caespitosum</i> Redgr.	-	-	-	-	2,428	-	-	-	srbr

TABLE 1 (continued)

SPECIES	MT. DOUGLAS		MT. TORRES		BRASS PEAK	
	CATALOG NUMBER	HABITAT	CATALOG NUMBER	HABITAT	CATALOG NUMBER	HABITAT
<i>Parmelia (Melanoparmelia) adpicta</i> Zahlbr.	2,511	sr	—	—	—	—
<i>Parmelia (Melanoparmelia) otagensis</i> Zahlbr.	—	—	—	—	2,529	sr
<i>Rhizocarpon neozelandicum</i> (Räs.) Räs.	—	—	2,502	rr	—	—
<i>Usnea (Neuropogon) acromelana</i> Stirton	—	—	—	—	2,528	sr

NOTE: err, exposed rock on ridge; esr, exposed summit rock; lsr, ledge on summit rock; rcr, rock crevice on ridge; rr, rock on ridge; sr, summit rock; srr, sheltered summit rock; srbr, sheltered rock below ridge; urr, underside of overhanging rock on ridge.

peaks—the high, middle, and west peaks—which together form a rocky massif running northward from the Main Divide. Pioneer Hut is located on a rock outcrop in the neve of the Fox Glacier toward the foot of the ridge from Mt. Alack. Brass Peak lies on the next range of mountains east of the Main Divide between the Tasman and Jollie valleys (NZMS 1 S89 TASMANT). The peak forms part of the Liebig Range and is situated between Mt. Little and Mt. Fagan.

In all localities the lichens were collected on rock of the greywacke type or on dirt in crevices and ledges.

RECORDS

Catalog numbers are those of B. A. Fineran. Where other persons assisted with the collecting the same number series has been used. The collection is housed in the herbarium of the University of Canterbury. Duplicate specimens of some of the material are also held by C. W. Dodge in his herbarium. Specimens assigned questionably to a species are indicated by a question mark in parentheses after the catalog number.

SUMMARY

Lichens collected between 2,340 and 3,137 m from peaks at the head of the Fox Glacier and in the Jollie Valley are recorded. The collection contains 50 species and is represented by voucher specimens in the herbarium of the University of Canterbury.

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