

Beginning on December 10, 1967, and ending on February 5, 1968, visits were made about every five days to Coast Lake* at Cape Royds to obtain environmental and biological data, the former including maximum and minimum air and water temperatures, temperatures at the times of visits, cloud cover, and wind conditions. The types of lake-water data obtained are listed below.

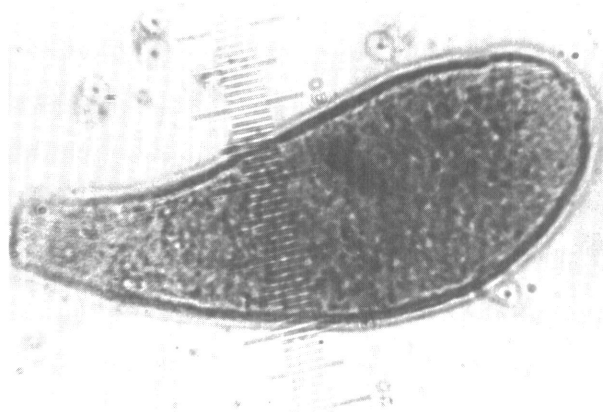
pH	Fe ⁺⁺ /Fe ⁺⁺⁺	Cl ⁻
Dissolved oxygen	Mg ⁺⁺ , Mn ⁺⁺	NO ₂ -N
Turbidity and color	K ⁺	NH ₃ -N
Conductivity	Na ⁺ , Li ⁺	Ca ⁺⁺
Total hardness	SO ₄ ⁻⁻	NO ₃ -N
Alkalinity	PO ₄ ⁻⁻ , ortho and meta	

The quantitative biological data consisted of surface and bottom samples from nine stations arranged in transects across the lake. The samples were collected on millipore filters, then fixed and mounted on slides. Total species counts are being made of the Protozoa, primarily of ciliates. In addition, rotifers, tardigrades, nematodes, and algae are being counted because of their importance in understanding the nutritional and competitive roles of Protozoa.

Generally, the lake water is characterized by low temperatures (0°C.-5°C.), dissolved oxygen saturation, very high pH (9.2-9.9), and variable ionic content. Tentative results of the biological investigations reveal the presence of about 29 species of ciliate Protozoa, several flagellates and amoebae, 3 species of rotifers, and some tardigrades, nematodes, and filamentous algae. The tentative count of a bloom of the red rotifer (*Philodina* sp.), which peaked on about January 3, 1968, was about 5,000/cm² of bottom surface, while the count of the total ciliates in the same sample was nearly 9,000/cm² of bottom surface. Surface waters, although containing very few organisms, included an unidentified green flagellate that numbered about 50,000 to 100,000 cells/ml. The predominant ciliates belong to the following genera: *Nassula*, *Pleuronema*, *Vorticella*, *Oxytricha*, *Trachelophylum*, *Euplotes*, and *Paramecium*. Fixed samples, stained preparations, cultures, and photographs are being studied at the laboratories of the University of South Dakota for further identification of the Protozoa. Total and species counts of Protozoa from Cape Royds are also being continued, with the hope that they will provide information on the succession, nutrition, and other features of these organisms.

The remainder of the work at McMurdo consisted of the collection of freshwater and soil samples from about 25 areas.

The senior author made about 100 collections of flora from soils and meltwater ponds in the vicinity



Spathidium spathula, from a meltwater pond near Palmer Station.

of Palmer Station, the British stations on Adelaide Island and the Argentine Islands, and near Argentina's Almirante Brown base and the Chilean refuge near Adelaide Island. Near Palmer Station, collections were made on Norsel and Bonaparte Points and on Cormorant, Humble, and Litchfield Islands.

Smears were made of blood collected from 17 fish, and special slides were made of free-living and cultured Protozoa. Data on communities of Protozoa and freshwater crustaceans were obtained from freshwater ponds. Amoebas similar to those gathered from soil at McMurdo (Dillon *et al.*, 1968) were found near Palmer Station. The culturing and identification of these organisms (particularly the protozoans) and the development of a checklist and pictorial set of drawings of antarctic Protozoa continue at the laboratories of the University of South Dakota.

References

- Bamforth, Stuart S. 1958. Ecological studies on the planktonic Protozoa of a small artificial pond. *Limnology and Oceanography*, 3: 398-412.
- Dillon, R. D. 1967. The ecology of free-living and parasitic Protozoa of Antarctica. *Antarctic Journal of the U.S.*, II(4): 104.
- Dillon, R. D., G. Walsh, and D. Bierle. 1968. *Antarctic Amoebae*. Unpublished data.

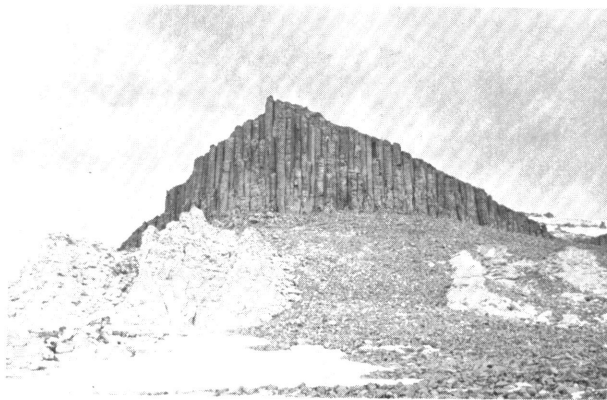
Arthropods of the Convoy Range

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During the 1967-1968 austral summer, a search for arthropods was made in the previously unexplored Convoy Range, a series of small mountains and inter-

*Unofficial name.



(Photos by authors)

Views of the Convoy Range; left, an outcrop of massive sandstone; right, the authors' camp.

vening dry valleys located about 160 km north of Taylor Valley and about 48 km inland from the Ross Sea.

The dominant geologic formation of the Convoy Range is a dense igneous rock that is red on exposed surfaces and gray within. Massive sandstone outcrops occur along the valley walls. The valleys are short (3–8 km), steep-sided, and boulder strewn, and they contain scattered snowbanks. The glaciers are retreating but have not yet reached the stage of producing floodplains. Plant life is very sparse. A few orange-yellow and grey-black lichens were found on the slopes at an altitude of about 250–400 m. Green algae were noticeable on the margins of stones in areas moistened by melting ice and snow. Apparently there are no mosses. Mites were found only in areas where meltwater was present.

Camp was established on December 27, 1967, at about 76°40'S. 160°40'E. in the valley draining into the Towle Glacier.

We collected intensively for six days over an area of approximately 130 km² extending from the foot of the glacier (at an altitude of about 250 m) to the top of Elkhorn Ridge (at about 600 m). We found mites almost everywhere that the rocks were moist. Although the mites were widely distributed compared with those of such areas as Cape Roberts, Spike Cape, and Miers Valley, they were scarce. Generally, algae were obvious wherever mites were found, but sometimes mites were found where no trace of algae was visible. Collembola were present, but not in as many places as the mites.

We found two species of Collembola and two of mites in about equal abundance. The mites were *Stereotydeus mollis* and *Nanorchestes antarcticus*. Intensive collecting in certain areas of Victoria, Wright, and Taylor Valleys to the south also revealed the presence of only these two species of mites, whereas along the coasts—at Cape Roberts, Spike Cape,

and Hobbs Glacier on the mainland and at Capes Royds and Crozier on Ross Island—an additional species (*Tydeus setsukoae*) occurs. North of Towle Glacier, at about 76°10'S., a predatory mite (*Coccorythidia kiethi*) has been found.

I think we are now in a position to make the following general statement regarding the distribution of mites in the areas mentioned: Two species of mites (*Stereotydeus mollis* and *Nanorchestes antarcticus*) are ubiquitous in all of the areas; a third species (*Tydeus setsukoae*) is restricted to the coast; and the southern limit of the predatory mite is approximately 76°10'S. It is true that along the Kirkwood Range between Towle Glacier and Mount Murray there are a few isolated exposures, but they appear to be most inhospitable.

The authors are grateful to Lt. Donald Chider for his keen interest in their project and welfare.

Physiological Studies of Antarctic Mosses, 1967-1968

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Preliminary studies of the physiology of antarctic mosses were completed during the past austral summer at McMurdo Station. They included culturing, pigment assaying, and measurements of photosynthesis and respiration of two species. Collections of *Bryum argenteum* and *B. antarcticum** served as

*The collection of this species often included some other *Bryum* spp.