profiles of horizontal currents. It is possible to compare these measurements with others taken earlier.

At station I the currents were nearly uniform in magnitude from surface to bottom, averaging about 6 centimeters per second. Current direction rotated counterclockwise with depth. At station II all profiles showed fairly constant speed in the upper 100 meters (1 to 2 centimeters per second), but speed increased below that depth in several profiles; direction generally was toward the south with slight counterclockwise rotation with depth. All profiles at station III indicated currents flowing generally to the northeast at all depths with some indication of greater speed at mid-depth.

Where there was significant rotation of the current vector with depth it was counterclockwise. The maximum current speed we observed was 22 centimeters per second, while the average speed was 5 to 8 centimeters per second (about 60 percent of the magnitude reported by Gilmour, 1962). Our current measurements showed flow under the ice on the rising tide. However, we did not get sufficient coverage to confirm or refute Heath's (1971) statement, "closest to Ross Island the currents may be directed under the ice only near high or low tide and not between tides."

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Mesozoic nonmarine ecosystem and faunal data: Antarctica, Tasmania and India

Paul Tasch
Department of Geology
Wichita State University
Wichita, Kansas 67208

Food chain relationships (Tasch, 1974) were found to be more complex on lower (crustacean) and higher (fish) trophic levels based on new data on fossil spoor from Storm Peak (84°35'S. 163° 55'E.) and Blizzard Heights (84°37'S. 163°53'E.) (Tasch, 1976). Included among the spoor are: braided structures at both localities and conchostracan valve borings, a coprolite of three whorls incorporating a fish scale, and broken spines at Blizzard Heights. At Storm Peak apparent galleries of an infesting organism occur on the interior of some conchostracan valves.

A preliminary palynological assay in collaboration with J. M. Lammons (Trinidad Texaco) of slides from my Transantarctic Mountains fossil collection indicated those from Storm Peak (Upper Flow) had a small residue after acid digestion with a few spores and pollen and sparse floral fragments; those from Blizzard Heights (Tasch Station O) also had a small residue, but more spores and floral fragments than those from Storm Peak; Carapace Nunatak (Tasch Station 2) (Tasch, 1974) by contrast contained dense plant and wood fragments and numerous better preserved spores and pollens. Further palynological studies are planned. These data also point to more complexity in the food chain: in this instance, in terms of additional food resources. They also suggest denser wooded areas in southern Victoria Land some 850 kilometers from the Queen Alexandra Range.

The arthropods of the Tasmanian Triassic (Knocklofty Formation chiefly and Ross sandstone) (Tasch, 1975) include fossil conchostracan genera as follows: *Paleolimnadia* (two subgenera and six species); *Cyzicus (Lioestheria)* (three species) and *Paleolimnadopsis tasmanii* n.sp., as well as a fragmental malacostracan carapace. The *Paleolimnadia/Cyzicus* faunal assemblage indicates probable correlation with the Blina shale (Western Australia) and the Mangli beds (India). Eastern Australia could have been the source area for the Tasmanian paleolimnadids.

Field work in collaboration with the Geological Survey of India (Tasch *et al.,* 1975) systematically sampled the conchostracan-bearing beds of the Indian Jurassic Kota Formation among others. An important biostratigraphically related collection (seven or more successive insect-bearing beds) was found in the Tasch collection during processing. F. M. Carpenter (Harvard Biological Laboratories) is doing the taxonomy in a joint study that will cover the biostratigraphy and paleocology of these beds as well. Dr. Carpenter's first-sight survey of the collection showed that at least six insect orders and possibly more were present: Coleoptera, Blattaria, Homoptera, Neuroptera, and Heteroptera.

The Kota Formation's nonmarine biota have several affinities with Jurassic equivalents in the Transantarctic Mountains.

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Geologic studies in the southern Prince Charles Mountains

EDWARD S. GREW
Department of Geology
University of California, Los Angeles
Los Angeles, California 90024

Geologic studies in the southern Prince Charles Mountains, including detailed work at five localities (figures 1 and 2), were made while I was U.S. exchange scientist with the 18th and 19th Soviet Antarctic Expeditions (SAE) in 1973 and 1974 (Grew, 1975).

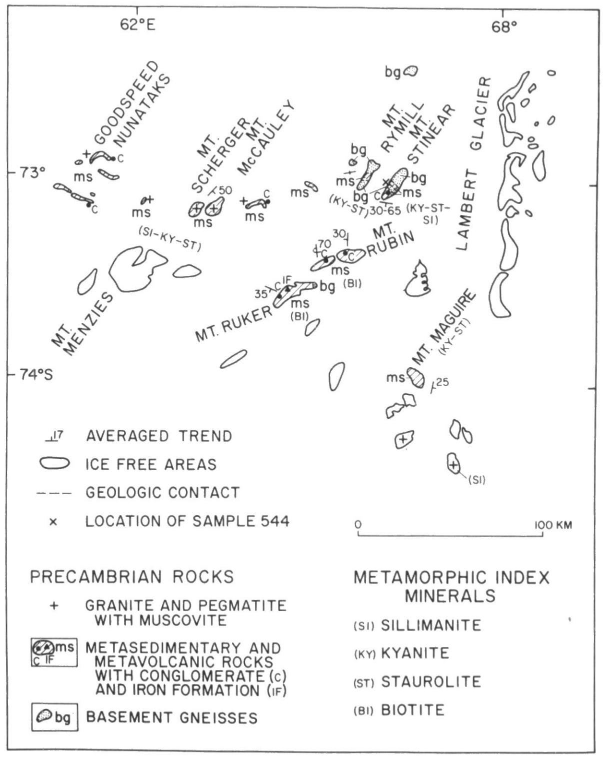

Figure 1. Geologic sketch map of the southern Prince Charles Mountains. This map is based on field work by Dr. Grew in 1973 and 1974, supplemented by information in Ravich and Kamenev (1972), Soloviev (1972), Tingey and England (1973), Grikurov and Soloviev (1974), Tingey (1975), and Tingey (personal communication, 1975).