SHORT NOTE

A RECENT DECLINE IN AVAILABLE MOISTURE IN NORTHERN VICTORIA LAND, ANTARCTICA

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ABSTRACT. Evidence from two areas in northern Victoria Land, Antarctica demonstrate that available moisture has been declining since at least 1265 B.P. The cause is not known.

RESUME. Une baisse recente des ressources en eau disponibles dans le Nord du Victoria Land, Antartique. Des indices sont rassemblés, recueillis depuis deux sites dans le Nord du Victoria Land en Antartique, pour démontrer que des baisses dans l'alimentation en eau sont survenues depuis au moins 1265 ans avant nos jours. La cause n'est pas connue.


Renwick Glacier (center point lat. 71°15' S., long. 162°30' E.) and its tributaries are currently receding. The grounding line is migrating inland (Mayewski and others, in press), and the area of local lakes and snow patches has decreased.

Skinner and Ricker (1968) observed that many small lakes in the Reeves Glacier area (center point lat. 74°43' S., long. 162°00' W.) were formerly as much as 0.3 m deeper. In the Renwick Glacier area lacustrine strandlines and algal peats show that the lakes were formerly more extensive. 14C dates from two samples of algal peats from 4 m and 2 m above current lake level are of 1265±130 B.P. (6x-4069) and 1085±105 B.P. (6x-4068), respectively.

Skinner and Ricker (1968) mention apparent decreases in the area of snowdrifts over the past century in the Reeves Glacier area. In the Renwick Glacier area, undated pro-talus ramparts stranded meters to tens of meters in front of snow-patches and snow ramps suggest similar decreases. Air photographs taken in 1962 and 1974 (Fig. 1) also show the decrease in snow cover on the walls of an easterly-facing bedrock embayment, west of Renwick Glacier. Similar examples exist elsewhere in the Renwick Glacier region.

The cause of this decrease in available moisture is unknown. However, monitoring of lakes and snow-patches may yield data on short-term climatic changes which will be of particular value when used in conjunction with other climatic data, such as the Holocene glacial record and ocean-bottom data.

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REFERENCES


(Figure 1 overleaf)
Fig. 1. Example of changes in snow-patch distribution 1962–74 on the east-central side of the Morozumi Range, west side of Rennick Glacier. Photographic insert appears above photograph diagrammatically displayed. Photograph XAM 501904, November 1974, courtesy of U.S. Naval Support Force, Antarctica.