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1955/34



PRELIMINARY GEOLOGICAL ACCOUNT OF LORTEN ISLAND,
ANTARCTICA

by

P. W. Crohn.

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Lorton Island, at latitude $69^{\circ}20'$ south, longitude $75^{\circ}32'$ east approximately, is situated off the coast of Ingrid Christensen Land, between the Lareseman Hills and the head of Sandefjord Bay, at an estimated distance of 10 to 12 miles from the nearest point on the mainland.

This island was visited by an Australian National Antarctic Research Expedition party under Mr. P. G. Law on February 4th and 5, 1955, and the following preliminary account is based on observations made on this occasion.

Magnetic variation in this area is approximately 70° west of north, and all bearings quoted in this report refer to true north.

The island measures approximately 350 yards by 120 yards, elongated in an east-north-east direction, and reaches a maximum elevation of about 60 feet.

At the time of the visit, the island was completely surrounded by fast sea ice with a pronounced tide crack, and its relatively low-lying central portion was largely covered by snow drifts.

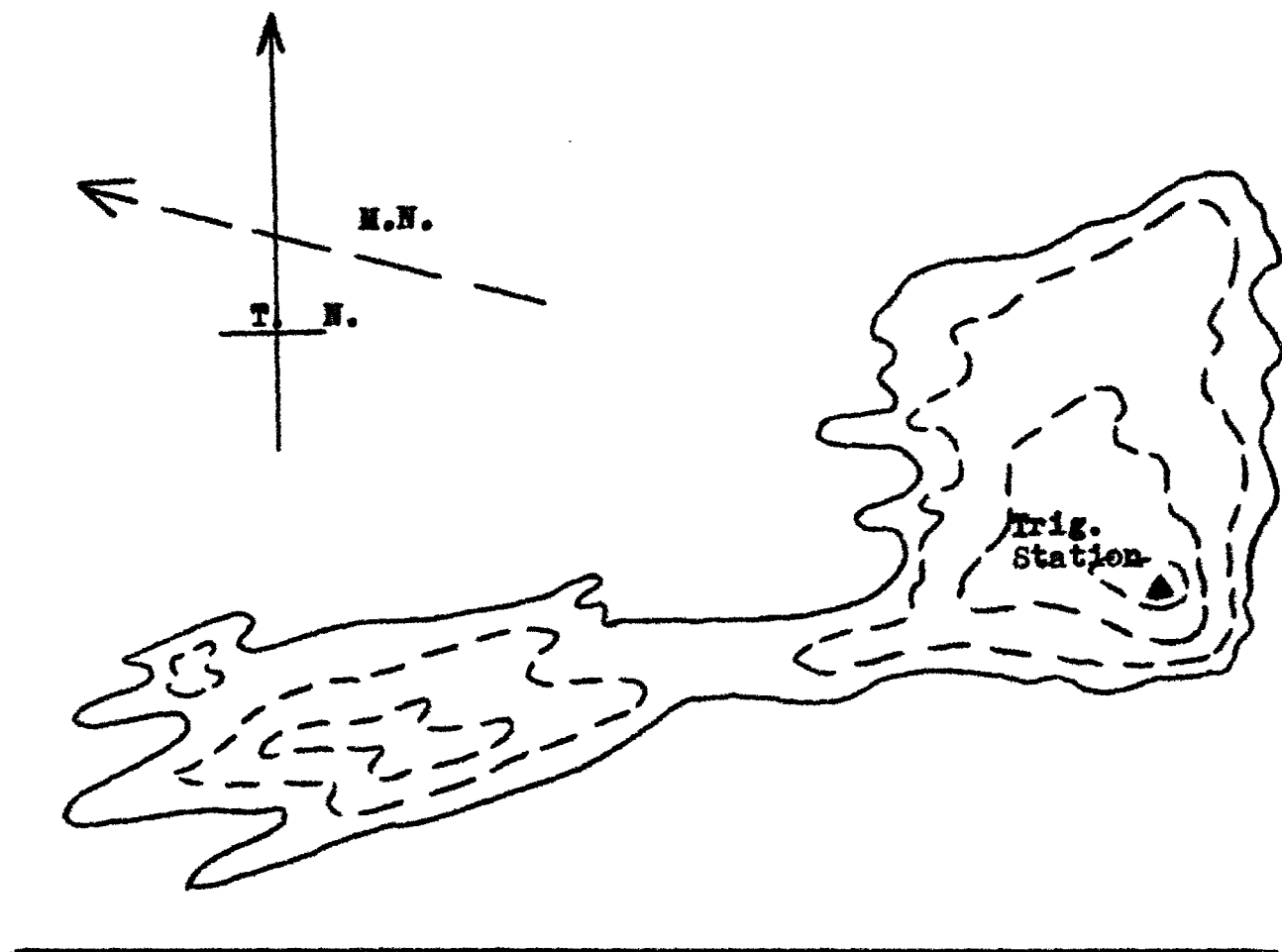
In contrast to the Westfold Hills area, this island is free from erratics and glacial drift. The country rock consists largely of medium-grained and biotite para-gneisses, which locally grade into biotite hornfelses, and are intruded by quartz-felspar ortho-gneisses with occasional clots of garnet. Garnet is also present in the para-gneisses near the ortho-gneiss contacts, but, in contrast to the Westfold Hills area, there are only very minor amounts of pyroxene.

There is marked foliation in the para-gneisses, parallel to the original bedding, and this is immensely contorted into irregular folds of very variable amplitude. The fold axes, on the other hand, show remarkable parallelism with strikes of 225° to 255° and south-easterly pitches of 20° to 35° . There

is also a marked lineation parallel to these fold axes, due to the presence of macro-folds and of elongated clots of various mineral constituents. Both foliation and lineation are also present in the ortho-gneisses, although less pronounced, and are closely parallel to those in the para-gneisses. The intrusions are generally elongated parallel to the direction of this lineation, and their boundaries are also generally concordant to the foliation.

Occasional veins of glassy quartz with a thickness of 2 to 3 inches and a length of up to 20-feet were noted, but there is a complete absence of basic dykes.

No indications of economic mineralisation and no significant radioactive anomalies were encountered.



0 50 100 150

Scale of yards.

Form-line interval: 20 feet.

LORTEN ISLAND.

ANTARCTICA.

(Sketch only (not based on survey))

Latitude $69^{\circ}20'$ south

Longitude $75^{\circ}32'$ east