

GEOLOGICAL AND GLACIOLOGICAL STUDIES IN QUEEN MAUD LAND, ANTARCTICA DURING WINTER 1986-87

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Main objectives was to have additional geological traverses with snow mobiles in Wohlthat Mountains and Schirmacher Oasis in the months of October, November and December, before the arrival of next summer team. During March to October wintering geologists were to carry out petrological studies and to collect snow accumulation data on shelf, fast ice and polar ice.

GEOLOGICAL STUDIES

Petrographic studies of selected rock samples from Schirmacher Oasis, Gruber and Petermann Range was carried out by preparing thin sections. Rock types studied are anorthosites, charnockite, amphibolites and gneisses.

Topographic maps of Petermann I and II ranges were enlarged to 1:50,000 scale from 1:2,50,000 scale, to undertake geological mapping.

The geologists left Dakshin Gangotri Station on 31st October 1986 in a 'Pisten Bully' vehicle with a sledge along with four other colleagues. Schirmacher Oasis was reached the next day. Attempt to negotiate polar ice beyond Schirmacher was unsuccessful because of the inability of these vehicles to

negotiate the slopes south of Schirmacher. Trip to Petermann Range had thus to be abandoned. The party thereafter stayed at Schirmacher till 12th November, 1986. A total of 39 samples were collected along the eastern margin of granulite body showing malachite stains. The nunatak Veteheia (S70°48', E11°40'), 6 km southwest of Indian camp was approached on foot and geological mapping was carried out. A nodular basalt dyke in the western part of the range was also examined in detail.

GLACIOLOGICAL STUDIES

Repeated-observations of the stake network, fixed 1.25 km away from Dakshin Gangotri, were taken to assess the snow accumulation of shelf. The net accumulation of snow over ice shelf between 27th March, 1986 and 15th December, 1986 has been of the order of 56.07 cm.

Snow accumulation around the station was of the order of 113.70 cm. between 11th April and 27th December, 1986. Thermal drilling was also attempted on shelf ice.

Glaciological studies on fast ice off the Lazarev coast were carried out every month between May and December, 1986. Stratigraphy of, snow/ice column, density and Ramrod Hardness were studied. Maximum thickness of fast ice of 3.17 metres were recorded on 16th November, 1986.

Ice flow movement studies were carried out on polar ice with the help of few stakes fixed during the Fifth Expedition. Coordination of these stakes was done with the help of 'Distomaf. Movement of approximately 2 meters per day, of polar ice, has **been** computed **for** the summer period.

Monitoring of the snout of Dakshin Gangotri Glacier, in the western part of the range, has also been carried out. In February, 1987 it shows an overall recession with respect to its position in February, 1986.