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TECTONIC AND/OR STRUCTURAL LANDFORMS IN EASTERN QUEEN MAUD LAND (ABSTRACT)

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It is important for elucidation of the glacial history to know the effect of crustal movement on glacial landforms in Antarctica, because, for example, the reconstruction of the expanded former ice sheet depends considerably on the altitudes of glaciated mountains which might have been affected more or less by crustal movement. It is highly difficult, however, to estimate the effect and time of crustal movement in Antarctica because of the difficulty in obtaining adequate data. The situation in Eastern Queen Maud Land differs little. However, the author attempts to collect information on tectonic/structural landforms in order to contribute to future investigations.

1) In the inland Yamato Mountains region, recent radio-echo sounding data seem to support the view that the mountains are the block mountains bounded by faultlines on their east and west sides. The mountains may be composed of two tilted blocks separated by a large outlet glacier, both inclined to the north, viewed mainly from distribution of the summit levels of flat or gentle surfaces. The relationship between the surface altitudes of the reconstructed former ice sheet and the glaciated summit altitudes of the mountains suggests that the mountains have been uplifted by about 500 m since the ice sheet flooded the mountains.

2) In the Lützow-Holm Bay region, large- and meso-scale topography comprising the embayment, the Riiser-Larsen Peninsula to Gunnerus Ridge rise, and submarine valleys would have been influenced greatly by a large fault system. Recent seismic observations showed the existence of current seismic activities in the Lützow-Holm Bay-Prince Olav Coast regions. This seems to suggest that part of fault structures may be still active.

3) Trends of large-scale rises and depressions appear to change systematically from the E-W direction in the Sør Rondane Mountains in the west via N-S in the Yamato Mountains to WNW-ESE in Enderby Land in the east.

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