

Fig. 1. Coast line corrected.

GRAVITY MEASUREMENTS BY THE JAPANESE ANTARCTIC RESEARCH EXPEDITION*

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南極地域における重力測定について*

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Precise gravity values at Singapore and Cape Town were determined referring to the Geographical Survey Institute, Chiba, Japan, by

means of a GSI pendulum apparatus in the second expedition, 1957-58. This gravity tie between Chiba-Singapore-Cape Town make a part of the international gravimetric nets planned by the International Gravimetric Commission.

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 ** Geographical Survey Institute. Member of the Japanese Antarctic Research Expedition, 1957-58.
 *** Geographical Survey Institute. Member of the Japanese Antarctic Research Expeditions, 1957-58 and 1959-60.

Unfortunately, we could not make pendulum observations at Syowa Base in Antarctica. The gravity value at Syowa Base, however, was determined with a Worden gravimeter on the

third expedition, 1958-59. The gravimeter used for this measurement had a small and stable drift, which was confirmed by examining the observed closure at Cape Town and also from observed drift at Syowa Base and Cape Town. The result is:

$g_{\text{Syowa base}} = 982.540$
 Latitude $69^{\circ}00.4'S$
 Longitude $39^{\circ}35.4'E$
 Height 29.2 m

relative to $g_{\text{Cape Town}} = 979.6470$. The accuracy of this value was estimated to be a few milligals. A similar observation was made on the fourth expedition, 1959-60, and it was ensured that this value has an expected accuracy.

Gravity measurements in the Ongul Islands were also carried out with the same gravimeter at several points of which positions were determined by the triangulation survey. Experimental observations on pack-ice in Lützow-Holm Bay were also made with the gravimeter and a rather high positive gravity anomaly was found

in this region.

References

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ON THE FORMATION OF THE PUDDLES OF LÜTZOW-HOLM BAY*

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リュッツォウ・ホルム湾のパドルの生成機構について*

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In January of 1957, when the First Japanese Antarctic Research Expedition was engaged in transportation for the establishment of Syowa Base on Ongul Island, Olav Coast in Lützow-Holm Bay, the traffic by weasel was greatly

troubled by the existence of innumerable puddles on the fast ice fixed to the coast. But the

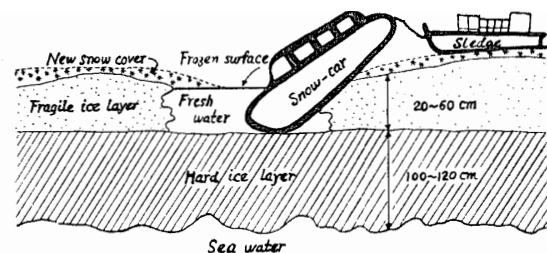


Fig. 1. Profile of the puddle on the fixed ice, by Kotaro Morita.

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