II. BATHYMETRIC SURVEY

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The surveyed area covered the northeastern and northwestern continental shelves and slopes of Hokkaido, the southwestern Kuril Abyssal Plain, the southern Tartary (Tatar) Trough, the northern Okujiri ridge and the southern margin of the Japan Abyssal Plain (Fig. II-1).

Continental shelves of the NE and NW areas of Hokkaido

A relatively wide shelf develops in the area northwest of Hokkaido, between Hokkaido and Sakhalin Island (Fig. II-2). The depth ranges from 80 to 190 meters and is approximately 120 m in the middle part of the shelf, gradually deepening toward the shelf edge. The depths at the shelf edge range from approximately 140 m in the north, to 190 m in the south.

The Kitami–Yamato Bank ranges parallel to the shelf edge in the southern area, separated by a depression between the shelf edge and the Bank (Fig. II-3). The Bank has a flat top with a depth of approximately 130 m which is a little higher than that at the shelf edge (NAGANO *et al.*, 1974). These facts suggest that the Bank is structural in origin, having a north-south orientation parallel to the shelf edge.

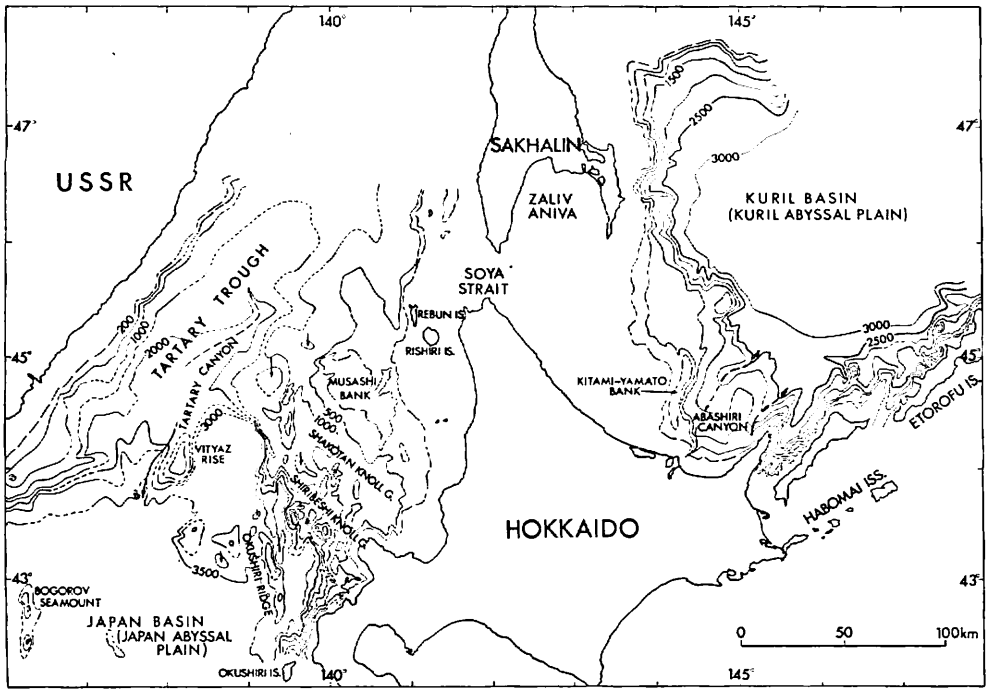

Fig. II-1 Topography in the surveyed area.

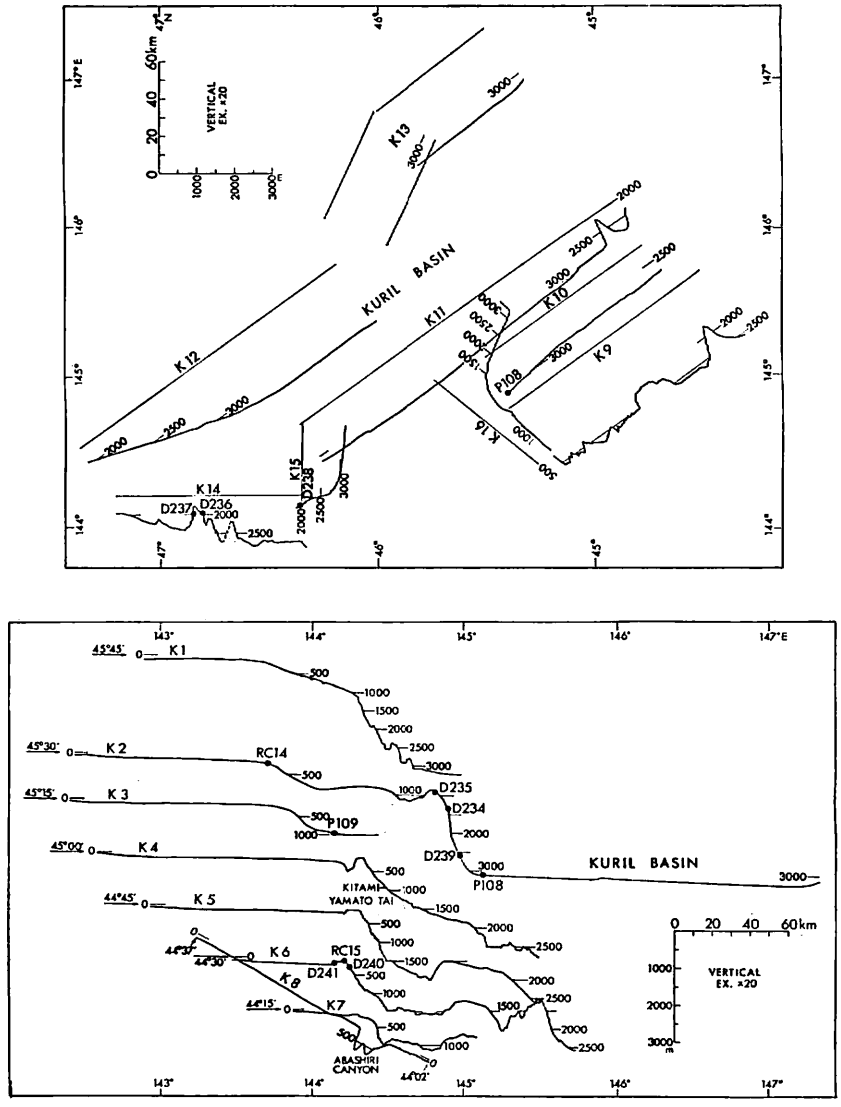

Fig. II-2 Bathymetrical profiles.

The depth of the shallowest part is approximately 50 m in the Soya Straight, and gradually deepens both eastward and westward. A steep scarp develops along the western shelf edge of the strait (Fig. II-4). However, the scarp gradually becomes indistinct toward the south and also, the shelf edge is not clearly distinguished in the southern area off Rumoi, which may suggest gradual subsidence of the outer shelf and the upper slope in the southern area.

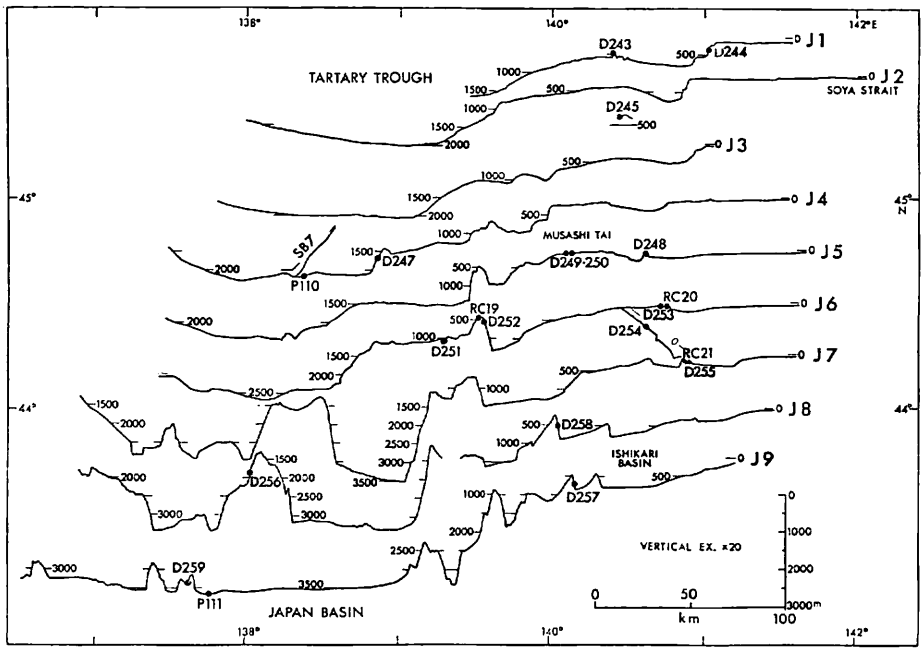

Fig. II–3 Bathymetrical profiles.

Continental slopes, ridges and troughs

A trough at the midslope of the Kuril Basin has a smooth surface approximately 900 m deep in the central part which is not level but has a high and a depression at the outer margin of the trough.

The slope from the trough to the Kuril Basin is rather steep. No wide trough is observed in the southern slope which has many highs and depressions.

Many ridges and troughs are present in the northwestern slope off Hokkaido. They are the Okushiri Ridge, the Musashi Bank, the Shakotan Sea knoll and the Shiribeshi Sea knoll Groups. The later two Groups are involved in the Okushiri Ridge (MOGI, 1972). The ridges and troughs have northwest to southeast and northeast to southwest orientations. The ridges show bathymetrical profiles which may suggest a structural origin of the ridges.

Kuril Abyssal Plain and Tartary Trough

The Kuril Abyssal Plain has a flat and smooth surface with an approximate depth of 3200 m. The depth of the Abyssal Plain is approximately 3100 m in the southwestern margin, is 3250 m at the foot of Etorofu Island and is 3300 m at the foot of the northwestern slope, which suggest gradual deepening toward the northeast and also suggest sediment supply from the southwestern slope.

The Tartary Trough has an approximate depth of 1500 m to 2500 m, gradually deepening toward the southwest. A channel runs along the center of the Trough, but is discontinuous, partly showing slight depressions where no erosional features are suggested.

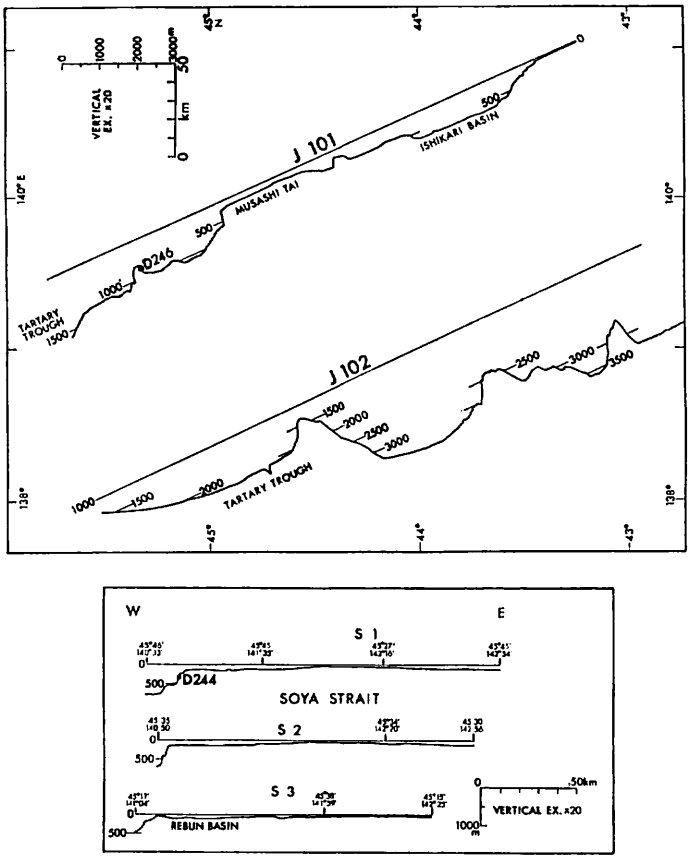

Fig. II–4 Bathymetrical profiles.

References Cited

MOGI, A. (1972) *Bathymetry of the Kuroshio region, in "Kuroshio-Its physical Aspects.* Tokyo Univ. Press, p. 53–80.

NAGANO, M., SAKURAI, M., UCHIDA, M., IKEDA, K., TAGUCHI, H. and OMORI, T. (1974) Submarine geology off northeast coast of Hokkaido District. *Report of Hydrographic Researches*, no. 9.