

II. BATHYMETRIC SURVEY

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The surveyed area contains the junction of the Ryukyu Arc and Southwest (Seinan) Japan Arc Systems, and covers the Danjo Basin, the northeastern margin of the Tunghai Shelf, the Tsushima Shelf, the Tsushima Basin and the Korean Continental Borderland. Activities in both arcs are thought to be caused by the subduction of the Philippine Sea Plate. However, apparent activities which can be seen in both arcs show quite different development. The Danjo Basin off the southwestern Kyushu and Tsushima Basin off the San-in are separated by Tsushima Strait. Both of the Basins are suggested to be back-side marginal sea of the each arc.

Danjo Basin and northwestern margin of Tunghai Shelf

Danjo Basin has an approximate depth of 900 m and smooth surfaces which are partly disturbed by scarps, convexed highs and depressions. These topographic features may be caused by structural movement (Fig. II-1). The smooth surface of the Tunghai Shelf slopes slightly downward toward the east. The depth of the shelf is approximately 120 m in the western margin of the surveyed area and is approximately 150 m at the shelf edge.

A channel surrounded western area of Goto Islands which terminates in the Danjo Basin is extended toward northeast in the Tsushima Shelf, and is deviated in a few branches toward upstream at the northwest of the Goto Islands. The main channel extends to the southeast of the Tsushima Islands and the branches extend to the west of the Tsushima Islands.

Tsushima Shelf

A channel (Tsushima Channel) runs parallel to the Tsushima Islands in a northeast-southwest direction on its west side, and deepens toward the northeast. A wide depression runs the same direction as the western one, having an approximate maximum depth of 120 m, and extends to the channel northwest of Goto Island (Fig. II-1).

Steep scarps merge the Tsushima Channel and depressed features are suggested in the full profiles of the Channel, which may imply structural origin of the Channel.

Tsushima Basin

The bottom of the Basin slopes rather smoothly downward toward the northwest and has a depth of more than 2000 m. Gentle slopes from the continental shelf of the San-in region extend to the Basin, and the slope which continues to the Korean Continental Borderland makes a steep scarp. Waved topography is observed at the foot of the southern slope in the transition area between the slope and the basin (Fig. II-1).

These facts may suggest that sediments are predominantly supplied from the continental shelves of San-in and Tsushima Strait, and that sliding occurs at the foot of the slope.

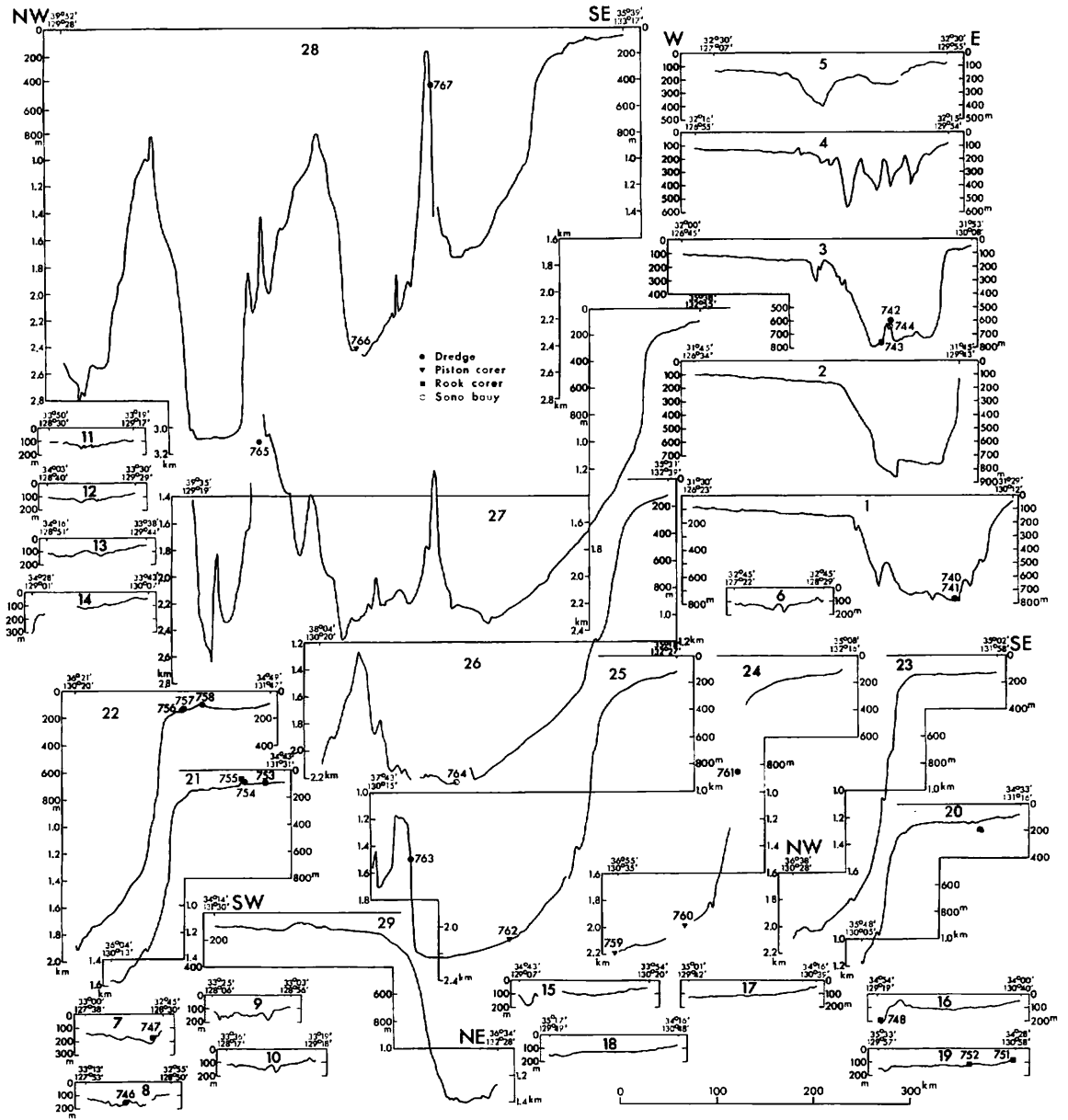


Fig. II-1 Bathymetrical profiles. Line numbers are shown in Fig. I-1.

Korean Continental Borderland

The Korean Continental Borderland consists of a northern and a southern block separated by a depression. The bottom topography of the blocks is rather ragged, having peaks and depressions. However, the blocks can be expressed as broad highs standing approximately 1500 m higher than the basin on the eastern side.

The term "continental borderland" is proposed by MOGI (1972) and is used by HILDE and WAGEMAN (1973) and HONZA (1976). The term "plateau" is proposed by LUDWING and others (1975).

The bathymetry of the western margin of the Borderland is not clear, for no data are available in this survey. However, the Borderland is suggested to neighbour with the Korean continental slope (HILDE and WAGEMAN, 1973). The blocks are extended slightly northeast-southwest, but not as distinctly as the Yamato Ridges (or Yamato Rise).

Therefore, the term, "continental borderland" is appropriate for the blocks or alternative to "rise".

References Cited

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