

Report of the Geological Survey of Hokkaido, No. 73, 205-208, 2002

The 3.5kHz Sub Bottom Profiling had been carried out in Saroma-ko lagoon. From the acoustic profile record and the contrast with sediment cores, all the amount of pelitic sediments in Saroma-ko lagoon was calculated from sedimentation thickness above the ash layer (Ta-a), past about 260 years. The calculated value of sediments was about 30,000,000m³ and weight was 17Tg.

Investigation of shoreline transition on Hamayuchi coast by map, aerial photographs and shoreline measurement [JE]

by Sei'ichi Hamada and Kazuya Suga

Report of the Geological Survey of Hokkaido, No. 73, 107-132, 2002

Hamayuchi sandy coast faced to Japan Sea is located in the north part of Hokkaido prefecture. Shoreline has a bowed shape as a whole. Coastal erosion on the backshore and sand-dune of the coast has become remarkable after 1990. In this paper, we report the shoreline changes in Hamayuchi coast by using old maps of 1898 and 1923, aerial photographs in 1947 to 1994 and topographic survey in 1999 to 2001.

Trends of shoreline change in the coast are as follows

- (1) From the viewpoint of total trend, Hamayuchi sandy coast has been eroded since 1923, and average eroding rate of the total coastline is estimated at 0.64m/year.
- (2) As a result of our shoreline surveys in 1999 to 2001, average erosion rate of the total coastline is 0.61 m/year.
- (3) Especially, center part of the bowed shape coast around Kouhone swamp has been eroded strictly. In the eroded area, old sand dune was eroded and the sea cliffs are formed by storm wave. The sea cliffs have shifted 5-50m to landward during May 1999 to October 2001. On the other hand, around Bakkai port and Yukuru, sand has deposited.
- (4) Survey area of water depth sounding is off 10-1000m from the shoreline, and interval of the survey lines is 500m. By the sounding, bottom in the center part of the coast has been eroded and its slope is steep. Eroding sand volume in the coastal sea floor from Bakkai to Yukuru is estimated at 907,000m³/year.

Neotectonics

Active faults along the Western margin of the Muikamachi Basin, Central Japan [JE]

by Kim, Haeng Yoong

The Quaternary Research, Vol. 40, No. 2, 161-168, 2001

The Muikamachi basin, in the central Japan (length: ca. 40 km, width: ca. 5 km, strike: NNE-SSW), is a depression along the northward-flowing Uono River. The western margin of the basin is bounded by a straight scarp with the Uonuma Hills up to ca. 1,000 m high, underlain by the

Plio-Pleistocene Uonuma Group. This straight scarp is most probably of tectonic origin. However, no detailed study has been carried out on this scarp, except for the mapping of the Ishiuchi fault at the southern part of the Muikamachi Basin. The author intends to establish the tectonic origin of this western boundary and evaluate its deformation pattern and slip rate, based on the interpretation of large scale aerial photographs, observation, and surveying of the deformed morphology.

A series of small-scale uplifted fans, which are formed by eastward-flowing branches of the Uono River, are developed along the western margin of the Muikamachi Basin. They are classified into 4 levels: terraces I to III of late Pleistocene age and Alluvial surfaces of Holocene age. Their longitudinal profiles are characterized by backward tilting and convex profile of flexural scarps, indicating that the terraces were deformed by reverse faults. Based on field observation of deformed morphology, the author identified faults along the western margin of the basin and called them the Ishiuchi faults collectively. Vertical slip rate ranges from 0.8 to 2.0 m/ky after the late Pleistocene. Therefore, the author concludes that the Ishiuchi faults have repeatedly moved at a high slip rate throughout the late Quaternary, and can be defined as seismogenic faults.

Activity study of the Suminoe flexure, a branch of the Uemachi fault system and estimated sea level change during the past 10,000 yrs, in the western Osaka Plain, central Japan [JE]

by Futoshi Nanayama, Yasuhiro Doi, Naoko Kitada, Keiji Takemura and Yuichi Sugiyama

Journal of Geological society of Japan, Vol. 107, No. 3, 215-221, 2001

Borehole and seismic-reflection data provide no evidence for recent activity of the Suminoe flexure, a branch of the Uemachi fault system near Osaka since 14,000 ^{14}C yBP. Using cores from six boreholes, we studied the sedimentology, paleontology, micropaleontology, tephrochronology, and radiocarbon age of late Quaternary deposits on the flexure. We also made an S-wave seismic reflection survey to check the architecture of these deposits. The architecture of these units shows that the average vertical slip rate on the flexure has not exceeded 0.2 m/ky, and that the most recent faulting predates 14,000 ^{14}C yBP. The Holocene deposits further shows that relative sea level was about -19m at 8,500 ^{14}C yBP, and that it rose rapidly between 8,500 and 6,000 ^{14}C yBP.

Faulting history of the Median Tectonic Line active fault system at Tokushima plain in the easternmost part of Shikoku, southwest Japan [JE]

by Michio Morino, Atsumasa Okada, Takashi Nakata, Koji Matsunami, Masayoshi Kusaka, Akihiro Murata, Kiyohide Mizuno, Tadatoshi Noumi, Emi Taninomiya, Saori Ikeda and Ikuro Hara

Journal of Geological Society of Japan, Vol. 107, No. 11, 681-700, 2001

The Median Tectonic Line (MTL) active fault system is one of the most active intraplate faults in Japan. The fault system, more than 300 km long, is a right-lateral strike-slip fault with average slip