

Revised stratigraphy of the upper Quaternary in Yufutsu Plain and Shikotsu Pyroclastic flow upland, central Hokkaido

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Upper Quaternary stratigraphy in Yufutsu Plain and Shikotsu Pyroclastic Flow Upland, southern Hokkaido is revised based on review of previous studies and three boring core analysis, which includes sedimentary facies, pollen, diatom, shell assemblages and paleomagnetic analysis.

Active folds have been assumed beneath Yufutsu Plain and Shikotsu Pyroclastic Flow Upland because they are located southwest of the active faults along the eastern margin of the Ishikari Lowland, but neither displacement nor continuity of the folds has been specified. The detailed stratigraphy of the Shikotsu Pyroclastic Flow Upland is unknown due to lack of boring surveys for stratigraphic research. To establish subsurface stratigraphy in Yufutsu Plain and Shikotsu Pyroclastic Flow Upland to specify the fold activity, we take three boring cores (BT1, YF1 and CT1). BT1 and YF1 are 4.25 km apart along the coastline, the former is on the Yufutsu anticline axis and the latter is on the west side of the axis. CT1 is in the center of the upland.

In BT1 core we found two characteristic units: First unit is estimated as MIS11 for its abundant *Fagus* pollen, and second unit is estimated as MIS7 for its marine strata which yields cool temperature pollen assemblages. CT1 core is composed MIS7 marine deposits, MIS6 conglomerate, and MIS5 marine deposits. Two unidentified tephra layers found in MIS7 marine deposits in CT1 core may be traceable up to the north of the Shikotsu Pyroclastic Flow Upland.

Keywords: Ishikari lowland, Yufutsu plain, boring survey, Quaternary stratigraphy, Pleistocene

Geological overview of the Mobara District: Quadrangle Series, 1:50000, GSJ/AIST

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Between 2010 and 2014, geological and geomorphological research for the Quadrangle Series, 1:50000 of the Mobara district was performed by Geological Survey of Japan, AIST. In this poster presentation, we presents the proto version of geological map due to have opinions from everyone.

The Mobara district is located in the northeastern part of Boso Peninsula of the Kanto region. The district partly includes the Pacific Ocean in the eastern district. The land area is geomorphological divided into hills, diluvia uplands, river terraces, alluvial lowlands and Kujyukuri strand plane. The hills and uplands occupy the southwestern to western and northwestern part of the district, respectively. The hills constitute parts of the Kazusa Hills and the uplands are parts of the Shimosa Uplands. River terraces and alluvial lowlands are distributed along Ichinomiya River, Isumi River and Murata River. The Murata River runs through the northwestern district flows into the Tokyo Bay. On the other hand, the Ichinomiya River runs through the central district eastward into the Pacific Ocean. Also the Isumi River runs through the southern district eastward into the Pacific Ocean.

In the Mobara district, there are mainly two stratigraphic units, the lower to middle Pleistocene Kazusa Group and the middle to upper Pleistocene Shimosa Group, trending northeast to southwest and gently dipping northwest. Furthermore Upper Pleistocene terrace deposits with Kanto Loam, Holocene terrace deposits and alluvial deposits arc mostly distributed along the Ichinomi, Isumi and Murata Rivers.

The Kazusa Group is divided into seven formations, Otadai, Umegase, Kokumoto, Kakinokidai, Chonan, Kasamori and Kongochi Formations. These were conformably deposited upward the continuous change of the sedimentary environments from the lower bathyal through upper bathyal to inner shelf.

Keywords: Chiba Prefecture, Mobara District, Quadrangle Series, 1:50000, GSJ/AIST, Geology, Geomorphology, overview

Subsurface geology of the Shimizu Lowland and the Miho Peninsula along the northern Suruga Bay, central Japan

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We conducted the drilling survey, core analysis, and boring data analysis to clarify the subsurface geologic structure of the Shimizu Lowland and the Miho Peninsula, the Shizuoka Prefecture, central Japan. GS-MMB-1 was drilled in the northern Miho Peninsula. GS-MMB-1 is composed of the gravelly layer, sandy and muddy layer with burrows and shell fragments, and gravelly layer in ascending order.

In the Shimizu Lowland, a buried incised valley is along the right bank of the Tomoe River. The basal altitude of the incised valley appears to be decrease upstream, suggesting that coastal area of the Shimizu Lowland has been relatively uplifting.

Keywords: Shimizu Lowland, Miho Peninsula, Subsurface geology, Boring survey

Reconstruction of tectonic movements using ravinement surfaces: A case study for the subsurface geology of the Osaka

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Ravinement surfaces are produced when the sea floor is eroded into a flat surface by the action of waves or tides during a marine transgression. They are preserved in the transgressive deposits as a sharp erosion surface. In a geological cross section across the ancient shoreline, primary ravinement surfaces appear as a subhorizontal line slightly dipping toward the sea. In a cross section, comparing successive ravinement surfaces deformed by tectonic movement allows for the reconstruction of relative tectonic movement. For example, when successive ravinement surfaces are parallel, the entire region has subsided or uplifted uniformly. However, when the lower ravinement surface dips more steeply than the upper ravinement surface, this indicates differential subsidence. With sufficient data, ravinement surfaces can be used to reconstruct the deformation history of an area in three dimensions. Furthermore, because many ravinement surfaces in Quaternary sediments are associated with transgressions related to glacio-eustatic sea level changes, the age of the surfaces can be determined and used to estimate the rate of tectonism. We used the reconstruction of tectonic movement derived from ravinement surfaces to reconstruct the shallow subsurface geologic structures of the Osaka Plain, an intra-arc basin in the Japan island arc. For this study, we constructed cross sections from drill hole data extracted from a civil engineering drilling database. Our study revealed that, in different areas of the Osaka Plain, the land had been uplifted and differentially subsided toward the sea; a relatively large uplift occurred near a flexure zone, and the rate of the tilting of an anticline was constant.

Keywords: ravinement surface, tectonic movement, intra-arc basin, Quaternary, drilling database