

Drilling survey by percussion core sampler across the Sekidosan fault, Ishikawa Prefecture

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The Sekidosan fault is a reverse fault which extends northeast along the southeast margin of Ouchigata Plain, Ishikawa Prefecture, central Japan. It has some flexures and scarps on terraces and alluvial plains along its trace, indicating it is active during the late Quaternary (Ota et al., 1976, Tsutsumi et al., 2000). Tsutsumi et al. (2000) also suggested that a vertical slip rate was approximately 0.8-1.0 mm/yr on the evidence of the vertical offset of the top of a lagoonal peat layer for 5.2-6.1 m which had probably deposited nearly horizontally at approximately 6000 y.B.P., by drilling survey at six points across a flexure on the alluvial plain at Udono, Hakui City. At the same time, they pointed out that the vertical offset of each individual faulting could be estimated about 2-3 m by leveling along three lines across flexures and scarps, and that more than two faulting events could have occurred after approximately 6000 y.B.P. from these results.

We carried out reinterpretation of aerial photographs and field study, and at the same time did drilling survey by percussion core sampler, getting four cores at Udono to improve the geomorphic and geologic section suggested in Tsutsumi et al. (2000), and five cores at Nakagawa, 300m south of Udono, to recognize the lagoonal peat layer observed at Udono. Around Udono and Nakagawa, a flexure with approximately 4m vertical offset is recognized about 1 km long on the alluvial plain.

As a result, we were able to get some information of the activity of the Sekidosan fault. The surface trace of the Sekidosan fault would be recognized for 27km between Nanao City and Sio Town, Hakui District. Especially, it seems to be recognized continuously for 11km from Mihaku, Kashima Town, to Nakagawa, Hakui City.

From drilling survey at Udono, at all the four cores the lagoonal peat layer was recognized comparable to those in Tsutsumi et al. (2000). Now, we discuss all the ten cores got at Udono. In the upside, a gravel layer about 3m thick was recognized on the peat layer, and in the downside, a f.sand-silt layer about 3m to 4m thick was recognized on the peat layer. In the deformation zone, both gravel layer and f.sand-silt layer were recognized (The former onlaps the latter.). Moreover, humic soil layers in the upper part of the f.sand-silt layer in the downside and deformation zone were compared each other, and the dates of their bottoms were measured 890 \pm 80 y.B.P., 870 \pm 90 y.B.P., and 1090 \pm 80 y.B.P., interpreted to be approximately 1000 y.B.P. From the improved geomorphic and geologic section, an image of late Holocene geomorphic and geologic development at Udono is suggested and more than one probable faulting event during approximately 6000-1000 y.B.P. is inferred, too.

From drilling survey at Nakagawa, at all the five cores the lagoonal peat layer was recognized which had facies and level concordant with those at Udono. Actually, the peat layer in CC6 were dated at 6160 \pm 120 y.B.P., concordant with Tsutsumi et al. (2000). The vertical offset of the top of the peat layer is estimated 5.3-6.9 m, which is nearly the same as that at Udono, 5.4-6.8m.