

Alluvium Stratigraphy and Formational process in the Echigo Plain, central Japan

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Main three stratigraphical and geohistorical problems are known in the Echigo Plain of Japan Sea side. Whether or not an unconformity exists in the alluvial strata. How was historical process of the plain. And why is the strata very thick (one hundred fifty meters or more). The outline of research with the above three problems are announced.

1. Stratigraphical classification and "unconformity problem"

Minato et al.(1967) named the alluvial strata in the Echigo Plain with the Shirone Formation. After, Aoki and Nakagawa(1980) classified it into the Shirone and the Kurotori Formations in ascending order, based on the existence of unconformity (the Kurotori unconformity). Their classification is known most generally in the Echigo Plain.

But Kamoi et al.(2002) reported that the unconformity was not able to find out. Namely the Shirone Formation distributed in the seaside was correlated with the Kurotori Formation in the inner side, judging from many ¹⁴C data. Therefore the Shirone Formation named by Minato et al.(1967), is adequate to the name of alluvial strata in the Echigo Plain. The Holocene strata is conformably overlain by the Late Pleistocene strata at least in central part of the Echigo Plain.

2. Formational process of the Echigo Plain

The Echigo Plain has been formed during four stages as follows.

Stage 1 : Early transgressive stage = Late glacial stage. Formation of a drowned valley(15-10Ka).

Stage 2 : Transgressive stage. A water area was expanded(10-8Ka).

Stage 3 : Highstand transgressive stage. Formation of a barrier-lagoon system(8-5Ka).

Stage 4 : Formation of a strand plain system and disappearance of the lagoon(after 5Ka).

3. The factor of a thick alluvial strata

Over one hundred fifty meters of thick alluvial strata in the Echigo Plain is not able to explain only in the rise of a sea stand (one hundred meters). It may be that the continual basin subsidence after Pleistocene and the sedimentation by the rise of a sea stand are conceivable.