

Stratigraphic problems and review on the lower part of the Nanba formation in the Osaka Plain, southwest Japan

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The alluvial formation widely distributed in the Osaka Plain is called as the Nanba formation defined as deposit after the last glacial maximum. Thus, Nanba formation consists of Holocene and the upper most Pleistocene since 20 ka. The sand and gravel layer below the Nanba formation is called as Tenma formation. Because of coarse grained composition, 14C dates and including fossils in this formation is very poor. It is better for Tenma formation to be defined as the deposits during the last glacial stage such as lower terrace deposits and the Tonda formation. But, for the above reason, Tenma formation is conveniently recognized the coarse grained layer between the Nanba formation and Ma12 bed. Therefore, those strata include deposits at regression stage after the last interglacial, at the last glacial and at post glacial stages.

Tenma formation is generally recognized as gravelly layer below Nanba formation. The lithology of the Tenma formation is different among the several areas. In the eastern part of the Osaka Plain and southwestern part of Osaka City and the coastal area of Kobe, the lithology of Tenma formation is alternation of sand and gravel intercalating clay, silt and peat. While, the gravel layer above Ma12 bed at the OD-1 drilling site, has been defined as Tenma formation. This gravel layer fills the valley of the upper surface of Ma12 bed. Because the 14C date of the wood fossil in the gravel layer is 10,900 yr BP, this gravel layer can be correlated with the lower most part of the Nanba formation. The sand bar in the northern side of the Uemachi Upland has been correlated with late Pleistocene. But, based on the result of 14C dating, this sand bar is formed by the Holocene transgression and grade laterally into marine clay bed of the Nanba formation. This presentation will review the stratigraphy of the Nanba formation based on above mentioned findings.