

Quaternary Terrace Deposits and their Stratigraphy along, the East Coast of the Peninsula

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With regard to the Quaternary deposits in the Korean peninsula, only very few studies have been done specially from a stratigraphic viewpoint. The alluvial sediments filling in the valleys have often been considered as the only formation of Quaternary age (more precisely of the Holocene) and so the Pleistocene was regarded as an erosional or non-depositional episode. This is apparently true from a quick look at general geological maps of the peninsula, which show lithological sequences of Mesozoic or Paleozoic substrate, immediately overlain by Holocene alluvium. Recently several different types of Quaternary formations, besides the so-called Holocene alluvium in the valleys, have been found along the coastal areas. They consist of coastal deposits, marine or fluvial deposits, valley fill deposits and/or slope deposits. Thus, the Quaternary deposits in the peninsula are far more developed than previously known to geologists.

At the southeastern coast of the peninsula, a series of marine terrace is developed at 5 different altitudes. The 1st Terrace outcrops at the level of 13 to 15m and well rounded fresh gravels are mantled on the surface. The 2nd Terrace shows the most outstanding flat surface bounded by front and back escarpments. The 3rd Terrace shows a gently inclined flat surface, paved with round gravels. The 4th and the 5th Terraces are seldom present because of the post weathering process. The Naengcheon valley runs northwards in the southern part of the Pohang basin. A set of fluvial terraces is markedly present at the different level of the Naengcheon valley. Each terrace shows an extended flat surface and the altitude of this surface gently rises upvalley in accordance with the present stream gradient. The 1st Terrace at the level of 13 to 15m from the river bottom is considered to be of Holocene age, while the 4th Terrace at the level of 40 to 50m belongs to the Middle Pleistocene based on the "Base level-Time" relationship. At the southern valley of the Pohang basin, a gravel member is successively overlain from the level of 127 to 153m. Each gravel member consists of gravels at bottom and silty clay on top. The contact is clearly marked by yellowish brown secondary ironified crusts. The age of this deposit is considered to belong to the Olduvai Event based on magneto stratigraphy.

As shown the Quaternary outcrops during this field excursion, the Quaternary deposits are often present along the coastal area and the stratigraphy of these deposits can be a benchmark for Quaternary studies in the Korean peninsula.