

MIS011-09

Room: 304

Time: May 24 11:15-11:30

## Education and new definition of Quaternary

Kunihiko Endo<sup>1\*</sup>

<sup>1</sup>Nihon University

The proposal of ICS on the new definition of the Quaternary, was formally ratified by executive Committee of IUGS in 2009.

The new base of the Quaternary is placed at 2.588 Ma and the same horizon of the base of Gelasian (upper Pliocene in the old definition). This new definition has a significant meaning that the new boundary is situated near beginning of global major cooling and ice sheet development in high latitudes of the northern hemisphere. Closure of Panama Isthmus led to moisture transport to northern Atlantic and supported much precipitation to make wide ice sheets.

Such climate system based on the bipolar ice sheets is what characterized by a number of cyclic change of glacial/interglacial, driven by orbital changes during the whole Quaternary.

This definition is based on the recent studies and knowledge, many of them in the last 10 or 20 years, such as deep sea core studies using foraminifera, nanno fossils and IRD(ice rafted debris), global climate change curves by isotope studies, ice sheets and ice core studies, circulation in ocean and atmosphere, Milankovich cycle and so on.

Quaternary is a special period in the earth history, connecting to the present and the future.

Topics on the Quaternary must be a good subject matter for schooling, because those will be attractive and easy to understand for young people, and cultivate their multidisciplinary understanding.

Those are also necessary knowledge especially for young generation for the future global environmental change and sustainable development of the earth society.

Keywords: definition of Quaternary, education