INQUA – International Union for Quaternary Research

<http://inqua.nlh.no>

The years 2004 or 2005 will be nominated the UNESCO International Year of the Planet Earth. Which of the two will be decided rather soon. The activities of INQUA highlight the climate-driven physical and biological processes on the Earth's surface. Is the Earth's climate changing? Is the climate becoming warmer, or are we about to enter another ice age? Or, - is the warming observed during the last century just another short-time (century-scale) oscillation of the kind the Earth has experienced during the whole of the Quaternary period? How does the Earth's biota react to a significant and possibly abrupt change in climate? The answer is not obvious.

For scientists associated with the International Union for Quaternary Research (INQUA) these are the basic scientific questions. The Quaternary Period, spanning about the last couple of million years, is the latest period of Earth history. It has been marked by dramatic cyclic shifts in climate and surface environments, from glacial to interglacial and back to glacial conditions.

Of all our scientific endeavors, none is more interdisciplinary than Quaternary science. Quaternary research engages a diverse array of scientists, who often have the prefix "paleo-", attached to their disciplinary identification. INQUA is therefore not just another geologic union, but spans over disciplines as geology, climatology, oceanography, glaciology, hydrology and biology, to name but a few.

INQUA was founded in 1928 with the objective of fostering interdisciplinary research on the Quaternary Period. During the nearly 75 years since INQUA was founded, major advances have been made on many fronts, including the development and application of paleomagnetic and radiometric dating methods, stable-isotope geochemistry, and climate modeling. We now realize that during the Quaternary Period as many as 30 glacial-interglacial cycles have profoundly influenced the Earth's surface and its biology.

INQUA has national and regional members. Today, all continents are represented among INQUA's 44 members. The national and regional membership fee is INQUA's main income. The member delegations meet in the International Council at the quadrennial INQUA International Congresses, where they elect the INQUA Executive Committee, the leaders of the scientific Commissions and decide about the activities of the next inter-congress period. During the last day of the Congress the General Assembly ratifies the decisions taken by the International Council. The elected Executive Committee will act according to these decisions during the following four years.

In the inter-congress period 1999–2002 the Executive Committee has the following 6 members:

President: Sir Nicholas Shackleton (UK);

Secretary General: Sylvi Haldorsen (Norway);

Treasurer: Allan R. Chivas (Australia);

Vice Presidents: An Zhisheng (China); John J. Clague (Canada); Leszek Marks (Poland); Timothy C. Partridge (South Africa).

Past President: Stephen C. Porter (USA).

INQUA is involved in an array of research efforts, carried out primarily through its 12 scientific top-units:

- *Commission on Carbon* (President Hugues Faure, France)
- *Commission on Glaciation* (President Jan A. Piotrowski, Denmark)
- *Commission on Global Continental Palaeohydrology* (President Ken J. Gregory, UK)
- *Commission on the Holocene* (President John Dodson, Australia)
- *Commission on Human Evolution and Palaeoecology* (President Lawrence G. Straus, USA)
- *Commission on Loess* (President Iain Smalley, UK)
- *Commission on Neotectonics* (President Ian S. Stewart, UK)
- *Commission on Palaeoclimate* (President Marie-France Loutre, Belgium)
- *Commission on Palaeopedology* (President Arnt Bronger, Germany)
- *Commission on Sea-level Changes and Coastal Evolution* (President Nils-Axel Mörner, Sweden)
- *Commission on Stratigraphy* (President Christian Shlückter, Switzerland)
- *Commission on Tephrochronology and Volcanism* (President Etienne Juvigné, Belgium)

Under each Commission there are Sub-Commissions and Working Groups that serve for at least one full inter-congress period. The Commissions annually propose research projects, which are evaluated by the INQUA Executive Committee and receive funding from INQUA. In the present inter-congress period the Commissions run about 50 targeted INQUA-funded research projects. Workshops, typically including field excursions and conferences dealing with international research results are held annually by most of the Commissions.

The Executive Committee has encouraged inter-Commission and interdisciplinary activities, related to climate change, rather than specialised projects restricted to the task of one Commission only. Three of the Commission Projects were last year nominated inter-congress interdisciplinary Core Projects:

- The Marine Isotope Stage 11 — an equivalent to the Holocene?
- Environmental Catastrophes and Recoveries in the Holocene
- INTIMATE: INTegration of Ice core, MARine and Terrestrial records of the Last Termination

A major restructuring of INQUA is now discussed. The International Council has recommended the number of Commissions to be reduced. At the Congress in Reno in 2003 the Executive Committee will present a proposal for a limited number of more permanent top-units, which should cover the main themes relevant for the Quaternary science.

INQUA's quadrennial congresses provide a major forum for Quaternary scientists from around the world to exchange information and keep abreast of recent advances. New data and interpretations are presented and discussed in symposia and workshops, and field excursions are designed to encompass a wide range of disciplinary interests. The last INQUA Congress was held in Durban, South Africa in 1999. The forthcoming XIV Congress will convene in Reno, USA in late July 2003.

The official international INQUA journal is *Quaternary International*, published by Elsevier, with 12 volumes per year.

INQUA is an associate of its sister Earth Union IUGS. This association was initiated in the 1960s, long after INQUA's own foundation. The main idea behind the association was to bridge the stratigraphic work of INQUA to the IUGS International Committee on Stratigraphy. From that time the INQUA Commission on Stratigraphy also served as the IUGS - ICS Subcommittee on the Quaternary. The reorganisation of ICS, which has taken place during the past couple of years, will terminate this direct link. But we hope for a good future cooperation between INQUA and ICS on stratigraphic questions related to the Quaternary.

However, for INQUA the formal stratigraphic record is only one topic of importance. The most central theme is the climate

change and its impact on the environment. This is where INQUA should play its most important role. Despite major advances in our understanding of Quaternary surface processes and environmental history, many major problems have yet to be resolved. Significant portions of Quaternary time cannot yet be dated with adequate precision and resolution. Although the relationship of glacial-interglacial cycles to the Earth's changing orbital pattern is now well documented, much less is known about the cause and timing of higher-frequency (100–1000 years) climate changes that bear importantly on possible climates of the next several centuries. INQUA, therefore, faces many interesting and significant scientific challenges, and looks forward to addressing them as new tools and ideas become available in the 21st century.

The time has come to discuss other and new links between INQUA and IUGS. INQUA is involved in several IGCP-projects, and it should be an aim for IUGS and INQUA to apply for larger funding to joint research projects. There are many relevant tasks related to Global Change, which form a main platform for a closer co-operation between the two unions.

Sylvi Haldorsen,
INQUA Secretary General

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