GUEST EDITORIAL

Looking Ahead for IUGS

Surely one of the best contributions that the international geological community can make to society is to provide adequately for our present needs without robbing future generations. Through organizations such as IUGS, we can develop a longer and broader perspective. We can seek, for example, an improved understanding of how different mineral deposits or petroliferous basins originated. The results of this search will be essential for such vital activities as exploration (seeking more), resource assessment (knowing what we have) and conservation management (using wisely what we have).

Some critical groundwork has already been done in IUGS. An initial meeting for a new program on basin analysis, with the first phase to be undertaken in South East Asia, was convened in Madrid in April this year. The proposed program could go a long way toward unravelling individual basin histories - a prerequisite for understanding the origin and evolution of contained petroleum and minerals. A parallel IUGS programme on deposit modelling is also being launched, in collaboration with Unesco. These major new initiatives could provide a significant boost to research on the origin and evolution of petroleum and mineral deposits.

We live in times of rapid change. "Global change" is becoming the catchall phrase for a whole series of new scientific ideas, ranging from "CO₂ and the greenhouse effect" to "the growth of desert areas." Geologists, long used to thinking of change as being imperceptibly slow, are now examining phenomena with effects that are measurable in decades or less. Some, like volcanic activity, or sunspot frequency and drought, may be cyclical; others may herald long-term trends with catastrophic consequences to large segments of the world population. For example, some geologists believe that we have experienced a period of increased volcanic activity during the last 10 years. If this is the case, then to what extent is the increased CO₂ in the atmosphere attributable to this effect? It is vital that we know the annual flux of gases, so that we can more confidently assess the extent to which man-made sources are overtaking nature's own.

Global change presents for IUGS a natural avenue along which the Union can exercise its tremendous capacity to bring together geoscientific experts from around the world and focus on problems affecting us all. I hope that IUGS will play a major role in the next few years in fostering and coordinating international efforts to examine global change.

In the area of data gathering, storage and management, I see not only challenges, but also some danger signs ahead. We are in danger of being drowned by the quantities of data that are being generated, and we risk becoming mistrustful of them as a result of inadvertent "data pollution." The ICSU Committee on Data for Science and Technology (CODATA), which I have headed in the past few years, has emphasized the need for data quality and assiduous care in establishing standards. Methodologies developed in this domain are being widely applied by IUGS' own COGEO DATA.

Another excellent example of a standard-setting is the work of the IUGS Commission of Stratigraphy, whose continuing efforts to identify natural global events forms the basis for establishing a refined geological time scale. This work may

not be a "new" frontier of science, but it does play a critical role in unravelling the nature of the many boundaries, including the mystifying Cretaceous-Tertiary boundary and whether or not it is unique in the geological record.

IUGS has been successful, particularly in recent years, at highlighting significant regional issues that have an impact on more universal problems. I have in mind issues such as:

- fresh water - the mineral resource in greatest demand; its continued availability will require special attention in the near future,
- continuing subsidence - a most acute urban geology problem,
- safe disposal of radioactive waste - an issue of serious concern in some areas,
- improvement of the quality of soil (degraded by artificial fertilizers) - a priority consideration, and
- provision of timely warnings of impending natural earth movements (earthquakes or volcanic eruptions) - another priority for the near future.

The challenge that lies ahead for IUGS is to provide scientific leadership in a host of new, multi-disciplinary, collaborative studies, and to balance this with the need to maintain a vital core of geoscience activities. We will fail ourselves if we do not take advantage of the full range of scientific, intellectual, technical and support resources available through thoughtful, well-planned, international collaboration and cooperation. Bearing in mind the limited financial resources currently at our disposal, we are in for some discerning strategic planning ahead!

W.W. Hutchison, President of IUGS
(Excerpts from Presidential Address at the Closing
Ceremonies of the 27th International Geological
Congress, August 14, 1984)

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