

## OPENING ADDRESS

In his quest to understand nature man has always felt the need to classify, to create a system to communicate his observations. Since the whole earth can be considered as a stratified body, all rocks fall within the scope of a naturally stratigraphic classification. Stratigraphy became the language of the geologists. Rock layers or strata having many different properties can be classified according to any of these, such as lithology, structure, organic content, geophysical parameters, chemical composition.

The stratigraphic unit or boundary for any one property does not necessarily coincide with that for any other. The language of the geologist thus gradually developed into many dialects. Dialects are intelligible only for a small number of people, in a restricted area. However for the outside world an understandable simple language is needed. Engineers require information about the subsoil in plain words.

It is not possible to contain within a single stratigraphic unit all different properties. Many different kinds of units are needed to express the changes in the properties of the rock strata. Geologists by speaking and developing a stratigraphical dialect have often been unable to communicate their observations however important they were. This has found its expression in a variety of time tables, map legends and correlation charts, bringing students, researchers and outsiders almost to despair. However these properties only concern different aspects of the same rocks and should all be considered in a single stratigraphical language, only serving to learn from the earth strata the key to past processes, events and life on earth and providing at the same time a usable system for practical purposes. The need for an internationally accepted system of stratigraphic classification has been increasingly felt. In the last two decades the guidelines for such a system have been worked out by the International Subcommission on Stratigraphic Classification chaired by Hollis D. Hedberg.

The work of the Committees on Stratigraphy, acting according to these guidelines, is of essential value to create that universal language. Sequence stratigraphy may provide a means for achieving such a global approach for sedimentary rocks. Sequence stratigraphy was developed from a stratigraphy based on seismic records. This methodology, although still under debate, has the merit of combining a theoretical approach with practical findings and thus being predictive.

Sequence stratigraphy is based upon boundaries created by the relative falls and rises of the sea level. It defines genetically related sediment series comprising

all sedimentary environments. Peter Vail pioneered this idea into a workable system. Recently our university awarded him a doctorate honoris causa for this outstanding achievement and for the stimulating contacts with our Renard Centre of Marine Geology.

In shallow marine environments, present during the Tertiary period in all basins surrounding the North Sea, even small sea level changes might have induced dramatic changes in the sedimentary system. A fall of some ten meters exposes a wide area of nearshore sediments to erosion, and creates a completely different geochemical situation. Lithologically different sediments may be perfectly contemporaneous, while lithological similarities do not necessarily have the same age. Shallow marine environments have a tendency to develop areas of specific physical, hydrological and chemical conditions, with an adapted organic content. This may lead to problematic correlations in biostratigraphy.

Sequence stratigraphy may provide a new basis for a more encompassing stratigraphy. Although the global character of sea level oscillations is still a matter of debate, the basic idea of this stratigraphy has found its way from the industry to the academic world. This fact illustrates once more the need for a close co-operation between applied and fundamental research.

This Geological Institute, hosting the Third Biannual Meeting has a long standing tradition in stratigraphy, which has been a major topic of investigation since more than 50 years, when Prof. Tavernier presented his thesis on the Neogene of Belgium. He was the convenor of the International Meeting on the Neogene and the Quaternary in 1946, considered by many as the First International Sedimentological Congress. Many licentiate and doctoral theses have dealt with all aspects of the Tertiary and Quaternary sedimentary system in the Southern Bight of the North Sea.

We feel a joy to know that in some way the Institute has contributed to the acceptance of the terms Ypresian and Rupelian by the international community. The Renard Centre of Marine Geology is continuing the tradition of stratigraphical research in a renewed and vigorous way. This meeting is the result of the enthusiastic efforts of a young team. I am confident that the communications, the debates and the excursions will be stimulating and successful and will contribute to that one stratigraphic language we all need.

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