

REVIEWS

'STUDIES ON LOESS' (INQUA Commission on Loess and IGCP Project 128: Magnetostratigraphy) (Ed.) M. Pácsi, Acta Geologica Academiae Scientiarum Hungaricae Tomus 22 (1-4), pp. 1-555 (1979) Akademiae KIADO, Budapest.

Quaternary methodology is barely 50 years old. Majority of the Quaternary is non-marine. Due to diverse nature of the terrestrial environment, Quaternary methodology has become quite diversified on different continents.

The present publication through the combined efforts of two international scientific groups (INQUA Commission on Loess and IGCP Project-128), including scientific papers read at an international conference on Loess held at Budapest in 1979, represents theoretical and applied studies on loess—a major Quaternary environments covering at least 10 per cent area of the continents. Out of the 45 papers presented, 32 are from the host country, Hungary. There are 3 contributions from France, 2 each from Canada, Israel, U.S.A., USSR and West Germany and one each from Austria, Bulgaria, Czechoslovakia, India, New Zealand, Romania and Yugoslavia. The well-documented volume is thus a handy source of information regarding the Quaternary loess methodology and studies being carried out particularly in Europe, which is not readily available to the English-speaking world.

As is well-known, methods of study of terrestrial Quaternary formations are ill-defined and lack standardisation. Various exploratory studies have been undertaken in different parts of the world to understand Quaternary processes and Quaternary formations. Such studies include: a) geomorphology and geomorphic mapping; b) airborne sedimentation studies; c) stratigraphy (litho/bio/chrono); d) palaeopedology; e) palaeomagnetism; f) geochronology; g) SEM and h) TL.

Particularly noteworthy is the multifaceted study in the Pannonian Basin of Hungary (Kretzoi and Pécsi, pp. 3-33), where the geomorphic-cum-morphotectonic development is fully correlated with terrestrial stratigraphy, palaeontology (mammals), sedimentology, magnetostratigraphy, K-Ar dates, and also archeology. It has been possible to undertake a detailed sub-division of the Upper Pliocene and Quaternary into stratotaxons, which may well serve as the formal basis for the reconstruction of the late-Cenozoic history of Europe.

Loess and fossil soils (Veklich, pp. 35-62) covering very large areas in Ukraine (southern USSR) have been investigated from palaeopedologic and pedostratigraphic angle and have enabled a detailed correlation and subdivision of the Anthropogene or Quaternary. Another comprehensive study of the Quaternary loesses and other formations has been carried out in the Tajik depression of central Asia (Dodonov, pp. 63-74) which apparently is a classic area for loess exposures. Some light has been thrown by Arias *et al.* (pp. 81-88) on the difficult problem of correlation between the continental and marine stratotypes, respectively in central Europe and Italy. While a variety of tools have been employed,—palaeontologic, palaeomagnetic and radiometric (K/Ar and fission track),—a comprehensive correlation is yet to be achieved.

In the only presentation on the extensive loess deposits of USA, Olson and Ruhe (pp. 205-227), give a dispersion model based on sedimentological parameters. Litho-stratigraphic classification of the five loess horizons encountered has been completed. It is interesting to note that radiocarbon dates of younger two loesses get successively younger away from the source. Loessial deposits from a relatively warm semi-arid desert fringe are reported from Negev (Bruins and Yaalon, pp. 161-169) and from Beersheva Basin (Ginzburg, pp. 319-26) both in Israel.

A substantial portion of the volume is devoted to 'inter-disciplinary characterization' of important loess profiles of Hungary. This section contains 19 papers and begins with a brief summary of the lithostratigraphical subdivisions of the loess sequences in Hungary (Pécsi pp. 367-69), where four different 'loess complexes' formed in markedly different geomorphic setups have been located. The entire

section vividly reveals how different disciplines of geology and various and analytical techniques have interacted in getting a full understanding of the complicated processes of loess formation.

Four papers relating to engineering, geological and geotechnical investigations of loess emphasize the importance of loessic studies in such environmental problems as landslides, soil erosion and utilization of loessic soils, etc.

Publishers of this volume, Hungarian Academy of Sciences, have, in the preface, dedicated the volume to 'experts of engineering geology, earth science and environmental science'. There is no doubt that this publication is an important step towards man's understanding of Quaternary processes relating to loess formation.

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'EXPERIMENTS IN ENGINEERING GEOLOGY' By K. V. G. K. Gokhale and D. M. Rao, Tata McGraw-Hill Publishing Company Limited, New Delhi, 142 pages, Price Rs. 22.50.

It has been well realised that Engineering Geology is one of the branches of Geology, essential both for Geologists as well as Civil Engineers. The present book under review fulfills an urgent need and forms a valuable addition to the limited number of books on Engineering Geology.

The text has been planned through a set of practical courses useful for students pursuing the subject for graduate studies.

Experimental techniques have been conveniently grouped and dealt with under six sections: identification methods of rocks and minerals, engineering properties of rocks, aggregate properties, site evaluation techniques viz., geophysical methods as applicable to Civil Engineering problems and groundwater aspects.

Hence, this book on 'Experiments in Engineering Geology' is useful and welcome text and forms an important addition to Engineering Geology Course programme where practicals and experimental methods are very essential. The subject matter of the text has been well thought of and arranged. It will be a very useful text book for graduate and post-graduate students concerned with the studies relating to field and laboratory technique in Engineering Geology.

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ANNOUNCEMENT

SYMPOSIUM ON 'QUATERNARY EPISODES IN INDIA: NEOTECTONISM, EUSTASY AND PALEOCLIMATES'

6-8 February 1983

The main objective of the symposium is to provide a common platform to geologists, geomorphologists, archeologists, micropalaeontologists, and palynologists to present their recent studies on various aspects of the Quaternary.

Scientists who are interested are requested to contact:

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