

by Navale dealt with the Biopetrology of Kargali seam of the East Bokaro Coal Field in Bihar, the rest of the papers were concerned with the sedimentological studies of rocks of some regions in the Central and Northern parts of India. Paper by Basumallick and Sharma was concerned with the discovery of Glauconites from Eocene carbonates of Assam region. The paper by Arabindha Ghosh on the overgrowth in Albite and K-Feldspar, as found in the fresh-water Lameta beds, was of interest because of his reasoning that the marine conditions need not necessarily be ideal for Na⁺ and K⁺ metasomatism. A paper by A. R. Bhattacharya was concerned with Zircon and Tourmaline, from the Precambrian arenaceous rock units of distinct Lithostratigraphic units. He has shown that the shape and size of these two minerals can be used as distinct criteria for recognizing the differences in apparently similar-looking rock units.

Of the two symposia, one was concerned with the soil plant relationship and the other with the climatic vicissitudes in India during the Gondwana

times. In the former symposium there were as many as twentyfive papers, all dealing with the mineralogical influence on the growth of plants and their distribution pattern. The latter symposium had eight papers dealing with the climatic vicissitudes of the Gondwana Era in India. The discovery of lowest Gondwana beds, equivalents of Talchirs, consisting of unsorted boulders and khakhi shales in the Chingelpet District of Tamil Nadu, discovered by the workers of G.S.I. was not, unfortunately, a part of the review presented at the session by one of the workers of the G.S.I.

The Conference was inaugurated by Vice-Chancellor Kaul who dealt with the palaeogeographic distribution of plants of the South Asian and Australasian regions. The Presidential address by Prof. R. C. Mishra dealt with the application of geobiological techniques in the exploration for economically important mineral deposits. The author of this report hopes that the first geophytological conference would be a happy augury for many more in the years to come.

INTERNATIONAL SYMPOSIUM ON 'USE OF NON-HUMAN PRIMATES IN BIOMEDICAL RESEARCH'

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RECOGNIZING the importance of non-human primates in biomedical research to the overall welfare of mankind, the Indian National Science Academy sponsored an international symposium on the 'Use of non-human primates in biomedical research'. The objectives of the symposium were: (1) to evolve an international convention of non-human primates to avoid depletion of wild populations by the growing needs of research, (2) to direct efforts towards formulation of scientifically sound programmes of management and conservation of non-human primates as a valuable natural resource.

The symposium was held in New Delhi from November 3-8, 1975 and was attended by 120 leading biomedical scientists from 13 countries, representatives from the World Health Organization and from all research institutions and agencies in India. Forty-two papers were presented, dealing

with the use of non-human primates in areas of biomedical research directly relevant to human health and welfare, namely, reproductive biology, contraceptive technology, nutrition, neurobiology, surgery, infectious diseases, immunology, psychopharmacology, toxicology, pharmacology and the study of non-human primates in the wild and their conservations.

The discussions focussed attention on issues of vital importance, namely:

- (a) relevance of using non-human primate models in biomedical research and other biomedical endeavours.
- (b) Consideration of steps to be taken to conserve non-human primate populations which represent a valuable natural resource.
- (c) specific recommendations for judicious and restrained use of non-human primates in biomedical research.

The international community of scientists gathered at the symposium reached the following conclusions :

The most dramatic illustration of the importance of non-human primates in medical research is poliomyelitis vaccine which was produced using polio viruses grown in tissue cultures of monkey kidney cells and is tested in monkeys. Many other examples were cited in the fields of infectious and parasitic diseases, reproductive biology and contraceptive technology, etc. Biomedical scientists are aware of the increasing pressures on numerous primate animal species caused by the growth of human populations and agriculture. Non-human primate species should be protected by appropriate conservation measures. Review committees and granting agencies should review research projects so as to avoid wasteful use of primate animals. Animal husbandry methods should be adopted for efficient breeding of non-human primates to supplement those caught in the wild and to provide specific-pathogen-free animals of known parentage. Judicious cropping of the more abundant species and management practices may be expected to improve the total supply.

Biomedical research can, in fact, help to conserve monkeys by developing specific programmes of conservation and breeding. Multiple utilization of individual animals is accepted and advocated by this group. Laboratory scientists are not in conflict with conservation and policies and endorse the need to preserve animals in the wild. Management of non-human primates in the wild and judicious cropping is preferable to prohibition of their use in biomedical research. The scientists noted with satisfaction that the regulations for capture, transport, caging and husbandry of primates formulated and enforced by the Indian Standards Institution, had improved considerably not only the quality of animals now available for research, but had also decreased the wastage of animals during transport.

Endangered or rare species of primates (as listed in the I.U.C.N. Red Data Book) should not be harvested from the wild for biomedical research. The study of the natural history of these species should be intensified to ensure their survival.

The group made the following specific recommendations for improving primate research facilities in India :

Standard guidelines regarding husbandry, quarantine, caging, feeding, breeding, etc., should be made available to the scientists using non-human primates in biomedical research. Priority should be given to primate field studies on population and on diseases occurring in the wild. Proper conservation and management of India's valuable primate resources require extensive study of the ecology, distribution, abundance, population dynamics, habitat utilization and social behaviour of the species occurring in the wild. Such studies will lead to formulation of policies for management of wild populations of primate animals to ensure conservation of the species and to provide adequate supplies for biomedical research. The group recommended that the Government of India give active consideration to the implementation of the following programmes in a phased manner :

Establishment of ranches (farms) under natural conditions from which monkeys could be periodically cropped, quarantined and supplied to investigators. The programme could be expanded to meet worldwide needs.

The establishment of one or more primate research institutes should be considered by the Government to provide facilities for visiting scientists from other institutions and for conduct of research in primate biology. These facilities may form the nucleus of an International Primate Research Centre on the lines of similar international research institutes.

INDIAN SOCIETY OF DEVELOPMENTAL BIOLOGISTS

THE above society came into existence on 4th January 1976, at a meeting held during the 63rd Session of Indian Science Congress Association at Waltair. The general body meeting elected Professor Har Swarup, Head of the Zoology Department, Vikram University, Udaipur, as President and

Dr. Suresh C. Goel, Reader in Developmental Biology, University of Poona, Poona, as Secretary-Treasurer of the Ad-Hoc Governing Board of the Society. Persons interested in promoting the cause of developmental biology in India are requested to contact Dr. Goel, for further details.
