

## ZOOLOGICAL RESEARCH.

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(Read at Symposium, September 27-28, 1943.)

Summarising the admirable review prepared by Dr. H. S. Rao in 1938 on the 'Progress of Zoology in India during the past twenty-five years', Dr. Prashad directed <sup>1</sup> attention to the following outstanding achievements of the period:—

### Present Position of Zoological Research.

(1) The establishment of properly equipped Zoology Departments in most of the Indian Universities, (2) the official recognition accorded to Zoology by the Government of India by the foundation of the Zoological Survey of India in 1916, for extending the knowledge of the geographical distribution of animals in the country by survey work, maintaining and looking after the National Zoological Collections in the Indian Museum, Calcutta, and acting as the Bureau of Systematic Zoology for the Indian Empire, (3) the organisation of special Mammal and Bird surveys in the hitherto unexplored or little-known regions of the country by the Bombay Natural History Society, (4) the realisation of the importance of zoological research and its application to the elucidation of problems connected with medical and veterinary sciences on the one hand and agriculture, forestry, and fisheries on the other, and (5) the oceanographical studies leading to an increase in our knowledge of the physical conditions governing the life of marine animals in the surface waters of the Bay of Bengal and the Andaman Sea.'

*Universities.*—The establishment of properly equipped Zoology Departments in most of the Indian Universities has no doubt resulted in a fairly wide dissemination of zoological knowledge and a considerable amount

**Future Needs.** of research on morphology, taxonomy and cytology of animals. There is, however, still urgent need for introducing a graded system of biological education in our schools and providing better opportunities to the teaching staff in the Universities for research work.

For achieving better results in teaching the principles of zoological science, the Universities at present rightly encourage excursions of students to sea-side places, hills, lakes, etc. to study the ecology and bionomics of animals in their natural habitats. For such studies to be fruitful, it is necessary to have fully equipped stations for biological research at suitable places. For a country of the size of India and with such varied environmental conditions, it will be obvious that a network of biological stations is needed. In 1933, the Indian Science Congress at Patna discussed the necessity of establishing a marine biological station in India and though views differed regarding a suitable site for the location of the station, there was a general agreement amongst biologists that the establishment of an All-India Marine Biological Station was an urgent need of the country. More recently, Dr. H. S. Rao in his Presidential Address to the Section of Zoology at Baroda (1942) urged the need of biological stations in India for the advancement of fundamental knowledge in Biology which will prove to be a great constructive factor in the progress of human civilisation. Dr. Rao's address is full of information regarding the part such institutions are playing in other parts of the world and he has very ably brought out the urgent need of establishing biological stations in India. I hope the National Institute of Sciences of India will bear the need of the biologists in mind when approaching the Government of India with plans for the post-war re-organisation of scientific research.

*Zoological Survey of India.*—Dr. Bains Prashad, Director, Zoological Survey of India, would have been the most competent person to deal with the present activities and future planning of this Department of the Central Government, but in his unavoidable absence I may be permitted to express my personal views which are, however, based on 23 years'

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<sup>1</sup> *The Progress of Science in India during the past twenty-five years*, p. xli, Calcutta, 1938.

service in that department. The objects of starting the Zoological Survey of India in 1916 are enumerated above in the quotation from Dr. Prashad's summary, but in actual practice the Department never had sufficient staff or funds to carry out the duties allotted to it by the Government. Since 1931, when the Retrenchment Committee restricted its activities to museum work only and discouraged surveys of the fauna, it has been, more or less, in cold storage. So far as my knowledge goes, no scientific department of the Government has received such step-motherly treatment as the Zoological Survey of India, especially when it had demonstrated its utility through its remarkable achievements in the study of field zoology. Whereas other countries were taking up the lead given by the Zoological Survey of India in permitting their Museum staff to do extensive field work, and the services of the retired officers of the Zoological Survey of India were eagerly sought by the British zoologists in connection with extensive faunistic surveys, the Government of India took a very retrograde step in restricting the activities of the department. It is of the utmost importance, therefore, that in any post-war reconstruction of scientific research in India, the Zoological Survey of India should not only be restored to its normal working but should be enlarged considerably to meet the needs of the expanding zoological research in the country. It will be a matter of considerable surprise to several that while the Zoological Survey of India existed 'for extending the knowledge of the geographical distribution of animals in the country by survey work', the Government of India financed the organisation of special Mammal and Bird surveys in the hitherto unexplored or little-known regions of the country by the Bombay Natural History Society.

*National Collections.*—Besides faunistic surveys, another important function of the Zoological Survey of India is to maintain and look after the National Zoological Collections for reference by the workers interested in the study of the Indian fauna. With the progress of taxonomic studies in the Universities and in scientific institutions, both Imperial and Provincial, much valuable zoological material is being collected from different parts of the country, but as there is no organisation to co-ordinate the activities of all the institutions engaged in scientific research, in most cases the rare and unique specimens are not sent to the Zoological Survey of India for safe custody. One fully understands the need of reference collections at various centres of taxonomic research but, in my opinion, it is against national interests not to house rare and unique specimens in an institution especially established by the Government for that purpose. The Government have attached so great a value to these national collections that, for the duration of the war, the Survey has been transferred to Benares from Calcutta. I would strongly urge, therefore, that in any post-war re-organisation of zoological research it should be made incumbent on the discoverers of new forms of animal life to deposit the type-specimens in the National Collection. These, like Treasure-trove, should be treated as the property of the Government. Further, if the Zoological Survey of India has to function effectively as a Bureau of Systematic Zoology for the Indian Empire, it is the duty of all zoologists in the country to make its collections as representative of the fauna of the country as possible.

*Other Institutions sponsoring Zoological Research.*—With the realisation of the importance of zoological research and its application to the elucidation of the problems connected with agriculture, forestry, fisheries, medicine, animal husbandry, etc. more and more zoological work is being done at several Imperial and Provincial institutions, such as the Imperial Agricultural Research Institute (New Delhi), the Imperial Veterinary Research Institute (Muktesar), the Imperial Forest Research Institute (Dehra Dun), the School of Tropical Medicine (Calcutta), the All-India Institute of Hygiene and Public Health (Calcutta), the Indian Lac Research Institute (Ranchi), the Indian Institute of Plant Industry (Indore), the Locust Research Institute (Karachi), the Imperial Sugar-cane Breeding Station (Coimbatore), etc., but it is unfortunate that in the absence of a co-ordinating authority there is sometimes duplication of work and waste of limited talent available in the country. The new forms of animals discovered through researches at these institutions, instead of being sent to the Zoological Survey of India, are generally kept in their own laboratories and museums and thus a great harm is being done to national interests.

I hope I have made it sufficiently clear that in any scheme of post-war reorganisation of Zoological Research, the Zoological Survey of India must play a leading part and for that reason there will be an urgent need to expand its activities, to increase its staff manyfold and to devise an organisation by which its resources and experience can be put to the best use in the interest of the nation.

Though at present it is not the function of the Zoological Survey of India to undertake economic problems, it is hoped that when its staff is sufficiently strengthened it will be able to lend a hand in the economic reconstruction of India. Thus I can visualise that a 'Utilisation Branch' of this department will be developed in the distant future more or less on the same lines as that of the Geological Survey of India started only a short time ago.