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## Zoological Survey of India

IN our Editorial of December 1935 attention was directed to some of the important activities of the Zoological Survey of India during the years 1932-35, and the hope was expressed "that the authorities while Indianising the services, will also provide them with the necessary means of maintaining their high standard of efficiency and traditional reputation". It is with sincere regret, therefore, that we find, in the triennial report of the Department for the years 1935-38, recently issued by the Director, that the curtailed activities of the Department, following retrenchment in civil expenditure in the year 1931-32, had not been materially restored even during the period covered by the last report. So long as there is no Committee of Scientific Advice, as envisaged by us in 1935, to educate our Legislators and Civilians, in whose hands lie the destinies of even the expert scientific services, it is perhaps useless to expect a fair

deal for all scientific and similar activities. We do not blame the Governments for not providing funds for scientific investigations, but at the same time we are definitely of the opinion that, for want of a central organisation to co-ordinate scientific activities of the various services on a national basis, considerable portions of the funds already provided are not properly spent, with the result that there is duplication of work in some fields and starvation of legitimate activities in other spheres. In view of the uncertainties in the international situation and the rôle which science must play in the event of any war, is it not proper for the Governments of the country to devise ways for utilising to the best advantage the scientific resources of the country, both in men and material? In our opinion this can only be done by having a Board of Scientific Advice on the same lines as in Great Britain or some other countries.

The curtailment in the activities of the Zoological Survey was effected in 1931-32 on the advice of the General Purposes Subcommittee of the Retrenchment Advisory Committee, which unfortunately did not include even a single scientist. The recommendation naturally, therefore, could not be based on a proper consideration of the importance of the activities of the Survey and other scientific departments.

To revert to the Zoological Survey of India, the activities of the Department as revealed in its two reports, seen by us and covered by a period of six very lean years of its working, leave no doubt that there is a considerable difference in the functions of the zoological departments of the universities and the Zoological Survey of India. For instance, during the period under report, the Zoological Survey of India, in addition to attending to the needs of the Indian Museum and to innumerable minor enquiries of various types, carried out detailed investigations in connection with (i) shell fisheries in the Andamans and their economic exploitation; (ii) biological investigations at Pulta near Calcutta in connection with the water supply of Calcutta, and at Senchal lakes in connection with the water supply of Darjeeling; (iii) special enquiries regarding the rôle of indigenous species of fishes as larvivorous forms in connection with anti-malaria measures; (iv) identification of animals of economic importance from the medical or sanitary point of view for various scientific institutions; and (v) identification of human and animal remains excavated by the Archaeological Survey and other bodies at various prehistoric sites in different parts of India.

The work on the Shell Fisheries in the Andamans was of direct economic import-

ance. The Department was able to establish that the two common types of shell of *Trochus* represented only plastic phases of the widely distributed Indo-Pacific species *Trochus niloticus* Linn. The rate of growth, age at which maturity is attained and the longevity of the species have been worked out. From the survey of the fishing beds it has been ascertained that shell fishing has been carried on to such an extent as to have endangered all commercial possibilities of regular fisheries, and in accordance with the knowledge gained regarding the bionomics of the species an entire stoppage of fishing for a period of three years was suggested to the Andaman and Nicobar authorities.

The biological investigations at the Pulta Water Works also had a very important economic aspect in so far as certain organisms were found to interfere with the proper working of the slow-sand filters. Besides determining the seasonal variation in the fauna of the Settling Tanks, Filter-Beds, etc., the Department found that these variations in the animal populations could be correlated with the presence or absence of aquatic vegetation, the quantity of silt held in suspension and the salinity of water. Several remedial measures were suggested by the Zoological Survey of India, which the Corporation of Calcutta adopted with considerable advantage to the working of the filter-beds. The Department's activities in this connection are stated to have now reached a stage when the data collected and the opinions formed should be tested experimentally in order to devise permanent measures of relief.

It is indeed a great pity that owing to lack of funds the survey activities of the Department had to be greatly restricted. Our knowledge of the geographical zoology of



India is very meagre indeed and when the Zoological Survey of India was established in 1916 one of the functions assigned to it was to collect data about the zoogeography of India. Special mention may, however, be made in this connection to the preliminary survey, during the period under review, of the Santal Parganas, where certain species of fish hitherto unknown from the Eastern Himalayas were found; these have thrown considerable light on the palæogeographical features of the country.

In spite of severe handicaps under which the Department is labouring, the Departmental publications have been kept up-to-date and at an acknowledged high standard. The staff has also published numerous original articles, some of which are of unusual interest and of great merit. The laboratories of the Department, as in previous years, continued to attract a large number of workers from different parts of India and abroad. It is perhaps not generally realised that for zoological research the laboratories of the Zoological Survey of India provide unique opportunities in the East, not only on account of its extensive library, the magnitude and variety of its research collections, and, last but not the least, the expert knowledge of its staff which is available for all research workers.

The improvement effected by the Department in the Public Zoological Galleries of the Indian Museum is evident from the illustrations of some of the exhibits reproduced on three halftone plates that accompany the report. A start has been made by the Department to make the exhibits popular and attractive for the general public. Special mention may be made of the fact that purely scientific labels have been replaced by popular labels in the recently

arranged galleries, and in the case of the Fish Gallery labels in Bengali also have been installed.

The details of the activity of the Department can be judged from a perusal of the Appendices A to J, which accompany the report. They contain information regarding the specimens sent to specialists for study or identification; the list of new types and co-types added to the collections; the list of donors; the list of new exhibits in the public galleries; the specimens received for study or identification; the list of Zoologists, Anthropologists, etc., who made use of the Library and Laboratories; the list of publications, official and unofficial; and the additions to the Library.

It is with considerable pride and pleasure that we have commented on the useful work done by the only thoroughly Indianised scientific department of the country. Not very long ago it was openly said that Indians were not scientifically minded, but we are definitely of the opinion that this was based on erroneous assumptions, as very few, if any, opportunities had then been available to Indians for showing their scientific worth. Even now where chance or accident has placed them in suitable positions to carry on scientific work the authorities are not really helpful, as the grants sanctioned in the way of emoluments for their staffs and for the works of the departments are hardly sufficient even to keep them on a maintenance basis, much less to carry on detailed surveys or research work. May we wish and hope with the Director that the work of the Department will be restored to its normal pre-retrenchment level before very long, and that adequate use will be made of its staff in the much-needed economic development of the country.

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