

THE FISHERIES OF THE UNION OF SOUTH AFRICA*

THE Eighteenth Annual Report of the Fisheries of the Union of South Africa shows clearly how the activities of the Department of Fisheries have been influenced by the war. R.S. "Africana" was continuously employed in connection with Seaward Defence, and the normal survey operations were carried out only by the P.B. "Impala". Although investigations were conducted over a large area of the West Coast from Cape Point to Groen River, certain areas such as the Second Salt River Mouth-Blaauwberg and Dassan Island, had to be excluded. Detailed statements of crawfish hauls showing size, sex, maturity, nature of shell, etc., for the various areas surveyed, show a satisfactory maintenance of crawfish supplies. It is thus clear that the existing sanctuaries are sufficient for replenishing the surrounding areas which are being depleted through regular fishing. Owing to certain trawlers being still engaged in Defence Work, deep sea fishing activities were materially reduced, but the richness of the catches enabled large-scale canning to be undertaken, especially for military purposes. Adequate statistics of inshore fisheries are lacking, but it is reported that Snoek, the chief line-fish, yielded better catches than in the previous year. The census of fishing craft shows a total of 1,864 boats; 1,385 of the rowing and sail type, 458 motor and 21 steam, costing in all £472,719. fitted with gear costing £23,673.

Reduction in shipping facilities and defective canning of frozen tails materially affected the crawfish industry, but it is hoped that the new Export Control Act will make it possible to standardize the commodity and improve the sales organization. It may be noted that three special harbours at Hermanus, Gansbaai and

Port Alfred are being constructed for the landing of fish, while steady revenue has been forthcoming from the existing harbours at Lamberts Bay, Gordons Bay and Hout Bay.

A landmark in the history of the Union Fisheries was the transfer of the establishment to the new headquarters at Sea Point. The illustrated description of the Aquarium reveals its up-to-date construction and unique design. In less than one month nearly 12,000 visitors were registered. With its high recreatory and educative value the Aquarium will become one of the most popular attractions of the area.

The Union Government have been quite alive to the needs of proper fisheries legislation. Besides passing the Crawfish Export Control Act No. 9, the Sea Fisheries Act No. 10 was enacted whereby all fishing and whaling in the territorial and extra-territorial waters have been centralised under the Union control. The enforcement of these acts is sure to lead to a smoother working and development of the fisheries.

Research activities have been greatly handicapped by the employment of the fisheries staff for War Service. However, experiments in the artificial rearing of crawfish and sharks, analyses of survey results to ascertain fluctuations in the crawfish fishery, and experiments in rapid freezing of crawfish tails are some of the works in progress.

The authorities are to be congratulated on the maintenance of a high level of efficiency despite the fact that more than two-thirds of the staff are at present on active military service. The achievements of the depleted Department illustrates how even in these abnormal days, fisheries can usefully be utilized for the supply of an item of food which is as valuable for the successful prosecution of war as it is for feeding the population of the Union during peace time.

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INDIAN ACADEMY OF SCIENCES

THE seventh annual meeting of the Indian Academy of Sciences was held at Nagpur from the 24th to 26th December 1941. The session was inaugurated by Lt.-Col. T. J. Kedar, Vice-Chancellor of the Nagpur University. A message of appreciation of the Academy's work received from His Excellency the Governor of C.P. and Berar, was also read. Sir C. V. Raman then delivered his Presidential Address. In the course of his address he emphasised the role of Academies in national life and their relation to the Universities and appealed for generous help from the governments and university bodies to sustain and enrich the activities of these scientific institutions. He then gave a popular account of the 'New Concepts of the Solid State', developed by him and his students at Bangalore and published in the *Proceedings of the Academy* in the course of the year under review.

There were four popular lectures during the

session. Sir C. V. Raman delivered a lecture on the 'Game of Chance', Dr. K. R. Ramanathan on 'Some Problems of Upper Atmosphere', Dr. H. J. Bhabha on 'Recent Advances in Cosmic Ray Physics', and Mr. K. P. Sagreiya on 'Beautiful Trees and their Culture'. Fifty original papers were presented to the sectional meetings. Of these ten were read and discussed.

A useful and interesting symposium on the 'Industrial Development of C.P. and Berar' was held on 26th December. The opening speech was made by Mr. K. D. Guha, the Director of Industries. Ten papers were contributed to the symposium. They dealt with such varied problems as 'Economic Planning for Industrial Development', 'Fodder and Grazing Resources', 'Mineral Resources', 'Production and Distribution of Hydro-electric Power', 'Linseed Fibre Industry', 'Ceramics and Glass', 'Orange Industry', etc., with special reference to local

conditions. The reading of papers was followed by lively discussions. Sir C. V. Raman in winding up the symposium urged for rightful balance being maintained between basic and applied sciences, on which largely depends the success of any scheme of industrialisation of the State.

The following were elected as Fellows:

- (1) Dr. Norman Loftus Bor, Dehra Dun; (2) Dr. D. V. Gogate, Baroda; (3) Dr. M. B. Lal, Lucknow; (4) Dr. K. L. Moudgil, Trivandrum; (5) Dr. Samuel, Wanleswadi, (6) Dr. N. G. Shabde, Nagpur; (7) Mr. N. A. Shastri, Nagpur, and (8) Dr. H. Subramani Aiyar, Trivandrum.

NATIONAL INSTITUTE OF SCIENCES OF INDIA

THE seventh annual general meeting of the Institute was held at Baroda on January 1, 1942, with Dr. Bainsi Prasad in the chair.

In his presidential address Dr. Prasad dealt with the zoogeography of India. Wallace, Huxley, Selater, Sharp, Heilprin and other early workers have attempted to divide the surface of the earth into zoogeographical regions mainly based on the distribution of the present-day groups of animals with only casual references to their geological history. It is clear from their classification that no one scheme can serve equally for all groups of animals.

As Blanford has pointed out, India surpasses in interest all other regions from the standpoint of zoological distribution. The variety in elevation and of climate of this country is remarkable. Peninsular India is a land of great geological antiquity since there has been no evidence to show that it has ever been submerged under the sea. It has been found really difficult to include the whole of India into one natural zoogeographical region since the greater part of Punjab and Western Himalayas undoubtedly belong to the Palæarctic Region rather than the Indo-Malayan Region.

India is a heterogeneous country with diverse types of fauna and this aspect makes the division of India into subregions a difficult task. The affinities of the faunas of different areas are very complicated. Attempts have been made to divide India into subregions by several workers such as Jerdon, Gunther, Blanford, Wallace, Newton, Gadsw, Alcock, Annandale, Prashad, Malcolm Smith and Mahendra, generally based on the distribution of the animals studied by them. These attempts for the division of India have not materially helped much in the proper understanding of the origin, distribution and relationships of the various groups of animals.

Dr. Bainsi Prashad then gave a brief outline of his scheme of the division of India into the following sub-regions: (1) Western Frontier Territory including Baluchistan, the North-Western Frontier Province and the greater part of the Punjab; (2) the Himalayas consisting of the Upper Indus Valley with Ladak, Gilgit, etc., the Western Himalayas from Hazara to the western limit of Nepal, and the Eastern Himalayas from the limit of the Western Himalayas to the Mishmi Hills above the Assam Valley; (3) Assam and Burma comprising the greater

part of the Lower Brahmaputra Drainage System and the Burmese territory including Tenasserim; (4) the Gangetic Plain to the east of Delhi, and including the whole of the United Provinces, Bengal, and parts of Assam up to the base of the Assam Hills, together with the plain of the Brahmaputra as far as Goalpara and Cachar, Sylhet and the plains of Tipperah; and (5) Peninsular India, with the Malabar zone as a very distinct subdivision, and Ceylon. A short account of some of the palæogeographic facts about the origin of the Indian fauna has also been given.

The following papers were read at the meeting:

C. V. KRISHNA IYENGAR: Development of embryo-sac and endosperm-haustoria in *Tetranema mexicana* Benth. and *Verbascum thapsus* Linn. P. K. SEN-CHOWDHURY: Radio-activity of rubidium. P. K. SEN-CHOWDHURY: On the existence of an isotope of cobalt, Co^{60} . J. DHAR AND B. B. NIYOGI: X-ray studies in Indian coals. Part I. V. PURI: Studies in floral anatomy II. Floral anatomy of the *moringaceae* with special reference to gynæceum constitution. B. N. SINGH AND A. G. CHOWDRI: The relation of gas pressure to radiation pressure in a Bose-Einstein gas. B. MOHAN: Properties of a confluent hyper-geometric function. D. S. KOTHARI AND F. C. AULUCK: Degenerate gas and the motion of a particle in a uniform field. D. S. KOTHARI AND F. C. AULUCK: Fermi-Dirac and Bose-Einstein gas in a uniform field of force. F. C. AULUCK: White dwarf and harmonic oscillator. H. R. SARNA, P. L. KAPUR AND CHARANJIT: Studies on helium-filled Geiger-Müller counters.

The following were elected Office-bearers and other Council Members for the year 1942:

President: Dr. B. Prashad; Vice-Presidents: Prof. J. N. Mukherjee and Dr. C. W. B. Normand; Treasurer: Dr. B. S. Guha; Foreign Secretary: Dr. J. C. Ghosh; Secretaries: Prof. S. P. Agharkar and Dr. C. S. Fox; Members of Council: Rai Bahadur Dr. K. N. Bagchi, Sir S. S. Bhatnagar, Dr. F. H. Gravely, Dr. S. L. Hora, Dr. M. Ishaq, Dr. D. S. Kothari, Dr. M. S. Krishnan, Prof. G. Matthai, Prof. V. V. Narlikar, Principal G. R. Paranjpe, Principal P. Parija, Dr. F. G. Percival, Prof. M. Qureshi, Dr. K. R. Ramanathan, Rao Bahadur G. N. Rangaswami Ayyangar, Prof. M. R. Siddiqi, Dr. N. K. Sur and Mr. F. Ware.