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The State and Wild Life

IN so far as science is organized knowledge, it is a reasonable assumption that it could best be attained by the organization of scientific workers for particular purposes. Such a view has received tardy recognition in Great Britain, where faith has rested upon individual effort unhampered by official allegiances (it has been nobly rewarded for its trust), and where State-controlled scientific research is still looked upon by many with a modicum of distrust. Indeed as regards the biological sciences, the influence of the State has made itself increasingly felt in directing scientific investigation only in recent years, through the creation of such bodies as the Medical Research Council, the Development Commission and the Agricultural Research Council, and there the touch-stone has been the benefit of the people through researches directly or indirectly of economic importance.

Other nations have found that State organization of biological research has been fruitful to science as well as to the people, and have developed far-reaching schemes which have become integral parts of the nation's activities. The extraordinary expansion of the United States Department of Agriculture is a case in point. Founded in 1862, the functions and work of the Department had so increased in variety and extent that, even before the Board (now Ministry) of Agriculture and Fisheries was established in England as an independent unit in 1889, it had already developed special "Divisions" each with a staff which concentrated its attention upon one particular set of problems, of chemistry, entomology, botany, forestry, pomology, animal industry, statistics. Under this policy of devolution there grew up in the U.S. Department of Agriculture an organization which has been of supreme importance

for the wild life of the United States, and of which no counterpart exists in Great Britain.

On July 1, 1886, the Division of Ornithology and Mammalogy was established by law "for the promotion of economic ornithology and mammalogy, an investigation of the food habits, distributaries [? distributions] and migrations of North American birds and mammals in relation to agriculture, horticulture and forestry"¹. It might be thought that such an investigation was limited in scope and was remote from the interests of the populace and from major problems of farming, but that has not been the experience of the United States. The work and contacts of the old Division so widened that in 1904 its place was taken by the Bureau of Biological Survey, with its own Divisions of Administration, Public Relations, Wildlife Research, Land Acquisition, Migratory Wildfowl, and Game Management, and with at the present moment a technical staff of some two hundred and fifty persons, most of whom are stationed at field headquarters in the various States.

It is pertinent to our inquiry into the relationship of the State to wild life to glance at the activities of the Biological Survey, for its functions reveal an unexpected scope and correlation of interests, along lines some of which might well be developed in Great Britain. "The Bureau of Biological Survey, the wild life service of the Federal Government, engages in research relating to the habits, economic status, and diseases of birds and other wild animals, including studies in the propagation of fur and game species; it acquires and maintains refuges for migratory birds and other forms of native fauna; conducts work in game management, under regional directors, including control of injurious species

and the administration of laws for the conservation of vertebrate wild-life (except fishes). Its work is undertaken in the interest of agriculture, horticulture, stock-raising, forestry, and recreation, and to meet the natural requirements of the wild-life itself. . . . It maintains more than 100 refuges in the United States, Alaska, Hawaii and Puerto Rico for the protection of birds and of game and other mammals, conducts educational and investigational work in enforcement of laws for wildlife conservation, and develops more effective methods for the control of stock-killing wild animals, destructive rodents, and injurious birds, cooperating with State and other organizations."²

Although problems of economic biology in the United States differ from those in Great Britain in vastness if not in essence, the question compels attention whether some organization such as has proved so successful in America would not further investigations necessary for the understanding of the wild life of this country in its human relations.

It must not be thought that the absence of organization implies that such investigations have been neglected. The Vole Commission of 1892, the work of W. E. Collinge and others on the food of birds, the botanical surveys of W. G. Smith, A. G. Tansley, W. Davies and others, the inquiries set afoot by the British Trust for Ornithology and the Bureau of Animal Population of Oxford, and the researches upon insects and parasites of importance to farmer and forester conducted independently or with the support of the Agriculture Research Council, these and many others have added their mite to the sum of knowledge. But the fact that the majority of such researches depend upon the initiative and isolated work of individuals, or are conducted by bodies the tenure of which rests upon the insecurity of private donations, tends to make the investigations casual, incomplete, and planned for the short rather than the long view.

This unsatisfactory position could be remedied and that at no great expense to the State. In his brief address to the meeting convened by the University of London Animal Welfare Society on March 22 to discuss "Man's Relation to Nature", Prof. F. A. E. Crew properly pointed out that almost everything we need for the creation of a biological service already exists, that it should consist of men and not of masonry, and that it should make the most of biological departments in the universities, of museums, and of institutions like the Bureau of Animal Population and the

British Trust for Ornithology, all of which are actually or potentially workers in the field of ecology.

It would be a mistake to develop an independent biological survey, for the essence of its investigations is that they must not be independent, but must be linked up with the efforts already being made by the State for the benefit of the people, through agriculture, forestry, the preservation of food-stuffs and materials from animal pests, and so on. The botanists have been calling for a permanent Botanical Survey³; the interest and variety of the problems tackled by the severely limited staff of the Bureau of Animal Population at Oxford are referred to in another place (p. 822); the demand for the establishment of national parks and of Nature reserves in face of the steady encroachment of industry and human habitations upon the open spaces of the country; the possible effect upon fauna and flora; the acquisition by the State of vast areas for afforestation; these suggest some of the many problems that await the consideration of a Biological Survey. That some form of organization in these diverse and yet interrelated matters is desirable must be obvious to anyone familiar with the casual development of British economic biology.

In 1793 Pitt, with great foresight, established a Board of Agriculture with Sir John Sinclair as president, a chief object of which was to collect information respecting the agricultural conditions of each county. That Board came to an end in 1822 during a long period of agricultural depression, but the need for studying agricultural conditions, particularly in regard to wild life, still remains, although a new interpretation has been given to "agricultural conditions" by modern methods of botanical surveys and of precise analysis of animal populations in relation to climate, vegetation and other influences still unknown.

For the elucidation of all such problems of economic biology in Great Britain, we envisage a body organized, as in the United States, under the State departments dealing with agriculture, which will adopt, encourage, direct and initiate activities, botanical and zoological, bearing upon the relationship of plants and animals—the living environment—to the human population, and will keep in mind at the same time the interests of the wild life itself.

¹ From *Misc. Pub., U.S. Dept. Agric.*, No. 223.

² From "A History of Agricultural Experimentation and Research in U.S.A.—1607-1925". True, A. C., *Misc. Pub., U.S. Dept. Agric.*, No. 257 (1937).

³ See Fenton, E. Wyllie, "The Need for a Permanent Organization for Undertaking Periodic Botanical Surveys of Great Britain", *Scot. Forestry J.*, 49, 121-126 (1935).