

NATURE

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NATURE PRESERVATION AND NATIONAL LIFE

THIS War, like the War of 1914-18, with its demand for sacrifice from all the people, has given a jolt to the easy-going tolerance which, in times of peace, permitted the development and the continuance of social conditions universally regarded as intolerable. In Great Britain, at any rate after the War, a reawakening of the nation to its needs, with insistent urge for their satisfaction, are foregone conclusions, and promise of some readjustment of conditions is implicit in the post-war reconstruction policy of His Majesty's Government.

But if post-war reconstruction is not to miss a great opportunity it must not limit its efforts to re-arrangements of industry and populations as between town and country, restoration of security to the basic food-raising industries of husbandry and fishing, banishment of slums and reduction of disease, and similar essays to improve the material welfare of the nation or of its constituents. For the welfare of man's spirit, as well as his material good, demands forethought and planning, and the "nation of shopkeepers" is certain, and properly so, to put the latter first, and perhaps forget the other altogether in the difficulty of attaining throughout the nation even the lowest decent standard of economic independence and health, to say nothing of happiness.

Indeed we can say that one aspect of this more subtle welfare has been forgotten, or almost forgotten, by the Governments which have represented our people—the opportunity for sharing in that pleasure, mental uplift and healthy recreation which is associated with great open spaces and the beauty of Nature. It is a matter in which the Governments of most civilized countries have far out-distanced the leaders of our own nation. Rightly our legislators may plead that the people has never with one voice demanded such amenities, and this cannot be gainsaid, but the position is no different in other lands, for even of the United States, with its enormous area of Nature reserves, it has just been written, "a great part of the public is indifferent to the success of wildlife conservation"*.

There the Government, itself guided by a few enlightened pioneers, gave the lead, and now it expends much thought and money in endeavouring to educate the people to make the best use of their own Nature possessions, although of course there is a nucleus of the American nation which takes full advantage of its opportunities.

We plead, therefore, for the inclusion in His Majesty's Government's review of post-war planning, of consideration of the value and the possibility of setting aside as national heritages areas

* Ira N. Gabrielson, "Wild-Life Conservation". 1941, p. 241.

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for the people. The difficulties do not appear to be greater than those which have been surmounted in less wealthy nations. Density of population and the area under cultivation offer no greater obstacles here than in many European countries. Indeed, of land which may be regarded as almost unproductive the U.S.S.R. and Spain have about 20 per cent, France 14 per cent, Italy 13 per cent and Germany 9 per cent, while the proportion in Great Britain is roughly 18 per cent. Surely there is room here for the areas we have in mind.

These areas should be of three kinds, conveniently specified in a memorandum just issued as the result of a conference of representatives of British organizations interested in the provision of national parks and the preservation of the native plants and animals of Great Britain*.

(1) *National parks and national reserves*, of considerable size, open to and providing facilities for the recreation and enjoyment of the public with no more restriction than is necessary to preserve the amenities of the area. Their objects are various, but in general their purpose is to ensure to the people access to areas of wide appeal and to preserve these unspoiled for future generations. Such are typical mountain regions, moorlands and downs, stretches of sea-coast, fen-land, which have some peculiar interest because of their scenic beauty, their geological structure, their association with human history, their plant and animal life, and above all, their suitability for recreation and rest.

(2) *Intermediate areas*, which we may call *national wards*, "notable alike for their natural beauty and for their scientific interest and often including agricultural areas of great charm, in which all that is requisite for the preservation of their amenities is that they should not undergo any fundamental change". Such areas, and presumably only exceptional areas would be selected, would have to be delimited and preserved from unsightly or injurious industrial development, the operations of the speculative builder and the advertiser. Land in such areas need not be purchased from its owners; the essential is simply that present usage should be continued or should not be replaced by usages less in keeping with the peculiar charm of the place.

(3) *Nature reserves and sanctuaries*. These are areas to be set aside for a very special purpose, the preservation of representative samples of our native wild plants and animals, and of geological features of particular significance. They would include typical marsh and fen such as the Broads, beaches such as Blakeney, woodland such as the

ancient pine forest of the Spey Valley, mountain and sea-cliff. Naturally, their special purpose would restrict their appeal to a limited section of the people, and the safety of the plants and animals would demand the least possible disturbance even by naturalists and the Nature-loving public; but the experience of the past, with its tale of the extermination and disappearance of native species, calls for the determined protection of wild life.

Of these three types of area the grandest in dimensions and in purpose is the national park, with its offer to the people of temporary release from the rush and strain of the daily round and of recreation of mind and body by contact with the peace and beauty of unspoiled Nature; and if national parks are to fulfil this object they must be made reasonably accessible to centres of population, and must have within easy reach, if not within their bounds, rest-houses where accommodation is comfortable and food inexpensive. The success of this part of the scheme will rest largely upon careful selection and subsequent planning. But even more will the success of the Nature reserves depend upon the proper selection of areas, for just as their purpose is specific, their locality must be defined by fine adjustment of environment to the needs of the wild inhabitants, plants or animals.

While the selection of the national parks and national wards, therefore, should be in the hands of a composite body including representatives of the Government Departments concerned, of bodies whose interests are in art and amenity, in touring and camping, and in wild life in its broader aspects, the choice of Nature reserves could be most fittingly made by scientific workers, especially biologists, familiar with detailed distribution and the conditions which influence particular species or assemblages of species.

The recent conference, the place and date of the meeting of which, curiously enough, are not mentioned in the Memorandum, made certain recommendations regarding the management of the areas. It suggested that the national parks and national reserves should be administered and managed locally "so far as may be desirable", a qualification which seems to leave the recommendation very much in the air. On the other hand, as regards the specialized Nature reserves and sanctuaries, the management "should be placed only in the hands of persons fully conversant with the highly technical problems included in the maintenance of the balance of life, and the general control should be vested in a central authority representative of the different interests concerned". Since no one has yet fathomed the intricacies of the reactions which make up the balance of life

* Nature Preservation in Post-War Reconstruction. Conference Memorandum No. 1. Issued on behalf of the Conference of the Society for the Promotion of Nature Reserves, November 1941.

in any area, it may be difficult to constitute the "fully conversant" management committee. Indeed the great value to scientific knowledge of these ecological oases will be the opportunity they afford of continuous study under known conditions of the interplay of weather, soil, vegetation and fauna. How much that is required is indicated by the confession of the director of wild-life conservation in the United States: "the research undertaken in this country [U.S.A.] has never yet been great enough to meet the needs of conservation in any of its phases" (*op. cit.*, p. 243).

So far as wild life is concerned, there are three broad principles which must guide the national park authorities to be created to determine general policy, if the report of the National Park Committee (1931) is followed. They are clearly set out by the Director of Fish and Wild-life Service in the United States Department of the Interior (*op. cit.*, p. vi). The first is that wild-life conservation is not an isolated problem but is inseparably linked with problems of soil, water and forest, and that all must be regarded together in a comprehensive policy. The second is that wild life must have an environment, animate as well as inanimate, suited to its needs if it is to survive. The third is that any use that may be made of any wild creature must be limited to the destruction of not more than the annual increase if the breeding stock is to be kept up, with the correlative that those animals and plants which are inordinately successful in the competition of life and tend to oust less robust neighbours must be kept ruthlessly within bounds. The successful sanctuary is not necessarily a place where *all* animals and plants are protected, for indiscriminate protection may well lead to the survival of the only species of plants or animals which need no protection, and to the consequent disappearance of the very forms for which a sanctuary was necessary.

It is unlikely that even the national parks, the areas of which are bound to be limited, will satisfy the craving for variety of scene and for the stimulus of unexpected prospects which is the inheritance of most men and particularly of such as the artist and the Nature wanderer. So that, with the formal reservations which have been mentioned, it behoves an enlightened Government to take further steps to preserve, and encourage appreciation of, the grander aspects of our varied scenery. A danger lies in the clash between business and Nature—the spread of industry to an unspoiled valley with perhaps the consequent pollution of miles of river and other deteriorations, the construction of ponded valleys in the Highlands as a source of electric power, entailing changes in the water supply of a watershed, the felling of great

stretches of forest without compensatory planting. While no negative policy should be allowed to stand in the way of efforts which are to benefit vast multitudes of people, nevertheless a wise control would see to it that the benefits mentioned here were gained without serious disturbance to scenery.

It is sometimes forgotten that the great steps in the progress of civilization transformed the aboriginal landscape: the development of agriculture drained the marshes, destroyed the lowland forests, and replaced variety of vegetation by uniformity, just as the domestication of animals contributed further to the disappearance of woodland for the sake of pasture, and intensified the changes in plant life. What we now look upon as natural landscape is not the landscape of our forefathers, and it may be that the increasing comforts of civilization can only be gained by some sacrifice of aboriginal Nature. There is the more reason that further encroachments should be guided and localized, and that certain selected areas should now be set aside and should be preserved for all time as representative of the scenery and of the haunts of the wild life of the British Isles.

THE SCIENCE OF MERCERIZING

Mercerising

By J. T. Marsh. Pp. xv+458+56 plates. (London: Chapman and Hall, Ltd., 1941.) 32s. net.

WHEN cotton hairs are treated with a concentrated solution of sodium hydroxide in the cold, they combine with alkali and undergo a remarkable series of changes. The cellulose swells in such a way that the flattened cross-section becomes elliptical, with fairly complete disappearance of the lumen, and lateral swelling is accompanied by a decrease in length. Such phenomena, and the increased affinity for dyes of the alkali-treated hairs, as well as their increased strength, were first observed by a Lancashire chemist, John Mercer, in 1844–1850. After an interval of some thirty years, Mercer's observations were turned to practical advantage in the manufacture of crêpes, but the mercerizing process proper did not come into being until 1890, when a twenty-year-old chemist, Horace Lowe, discovered that cotton acquires a greatly increased lustre when the hairs are tensioned so as to prevent shrinkage during the caustic soda treatment.

As one of the most important processes in the cotton textile industry, mercerizing has occupied the attention of numerous research workers, especially during the past twenty years, and pub-