

any scientific man contest this view?] in respect to the closure of areas." This is stated by Prof. McIntosh to be the first item in the scheme of investigations, whereas no such general scientific investigation is recommended. Whether or not the fisheries of the North Sea will be permanently altered by the closure consequent on the war no one knows, but certainly trawlers have been experiencing the immediate benefit of the closure since the armistice. The extent to which the North Sea is covered by the operations of trawlers is evidently not understood. The work of Masterman, Heincke, and others results in the estimate that 1500 million plaice of more than 12 cm. live in the North Sea, of which one-third are caught annually, 200 million being put on the market and 300 million being destroyed in the process of catching.

Again, Prof. McIntosh refers to one part only of the proposal for the protection of plaice, viz. that by a size limit, whereas the permanent closure of certain areas "to provide a reserve from which the young plaice might spread so as to restock the open grounds" is definitely mentioned in my article. Prof. McIntosh apparently does not realise that the representatives of at least three of the four countries that are particularly interested in the plaice stock of the North Sea are convinced that the evidence shows that the plaice stock is, under normal conditions, being so seriously depleted by man that international legislative action is essential. In view of such action, the proposed year's intensive plaice investigation is fully justified. We wonder whether Prof. McIntosh has examined the statistics that have been published in respect to the plaice and other flat-fishes year by year?

Prof. McIntosh scoffs at the basal researches on the physico-chemical conditions of sea-water in respect to the life in the sea as likely to be of any importance. He selects in particular "vitamines." His remarks should be read in connection with my paragraph to which he refers. It is self-evident that even the largest quantity of food can be of no use to a living animal unless that animal has the requisite power to build up that food into its own living matter. The understanding of this at every age of the animals in question—and of animal life in general—is the object of these researches. There seems to be no such thing as "pure sea-water" without "vitamines."

It may not be generally known that an almost judicial committee appointed by the Development Commission is at present sitting on the question of fishery research. There is no member of that committee employed in fishery research, and, equally, there is no member of the committee who is incapable, by training or otherwise, of understanding any parts of the problems to be investigated. The report of that committee should shortly be issued. It will doubtless be an authoritative pronouncement upon the whole question as to the utility or non-utility of fishery investigations as proposed by the International Council and as undertaken by the Fishery Departments of England, Scotland, and Ireland.

X. Y. Z.

The Plumage Bill and Bird Protection.

NATURE is doing a service to science, as well as to art, in having opened its pages to the discussion of the Plumage (Prohibition) Bill. For in the end the Bill should be drafted in harmony with the scientific facts concerning the bird-life it is designed to protect, and also with due regard for the æsthetic and decorative needs of mankind. There is one aspect of the subject which has hitherto been only lightly touched upon, but which, if unfettered, is sure to become of

great importance in the future, namely, the domestication of plumage birds. Impressed with the success of its ostrich industry, South Africa has for some time turned its attention to the possibility of the domestication of other plumage birds. Experiments have already demonstrated that the marabou stork can be controlled in captivity and, in all probability, induced to breed. Attention has also been directed to the gregarious weaver-birds and other brightly coloured species; but the advent of war turned men's thoughts away from the arts of peace.

In all the considerations no biological difficulty presented itself which a thorough study of the nature and habits of the bird could not be expected to overcome; the chief problems were economic, namely, how profitably to produce the plumage in sufficient quantity to comply with trade requirements, so admirably met in the case of the ostrich. On the authority of Prof. Lefroy we learn that there are many egret farms in India, and the plumes are procured without cruelty; domestication of the same bird has also been considered in parts of Africa. With the encouragement which ornithologists could give, there is every likelihood that in the future great developments will take place in the production of domesticated plumage, procured in harmony with the highest humane sentiments and to the exclusion of plumage from the wild bird—a realisation which would be peculiarly acceptable to the trade as well as to zoologists.

Now if the Plumage Bill were passed in its present form it would close the door on all efforts of this kind, at any rate so far as importation into England is concerned. Sir Harry Johnston indicates that, as a compensation, plumage might be procured from a dozen or more kinds of our domestic birds; but surely, in these days of Empire considerations, he would not wish us to isolate ourselves in prejudice from the Dominions overseas, as well as from the products of other countries?—a result which would follow from the carrying out of his suggestion.

Nor is this necessary. A study of the situation reveals that all the reasonable requirements of the supporters of the Bill can be met, and at the same time the avenue be left open for the development within the Empire of a trade in domesticated plumage. Instead of asking for a prohibition of import of every kind of plumage (except ostrich and eider-down), let the prohibitionists and others interested in the preservation of bird-life agree upon a list of birds the protection of which is desirable from any point of view, and then have the list appended to the Bill as a schedule of prohibitions. The carrying out of the intent of the Bill on these lines would be a simple matter, and additions to, and removals from, the schedule could be made as circumstances demanded. Passed in this form, the Bill would become a real stimulus to the activities of the Royal Society for the Protection of Birds and an effective measure for the inculcation of humane principles and regard for bird-life generally.

As Prof. Lefroy has shown, the trade has no concern in avian rarities, but is prepared to work with bird-lovers in the direction of their preservation and in the discouragement of every kind of cruelty. Before the war a list of prohibited plumage had been agreed upon by the trade representatives in the leading European capitals. When the matter of bird-protection is discussed in a calm manner, with full knowledge of the facts involved, it is seen that the interests of the bird-lover and of the plumage trade are alike, and the simple modification of the Bill suggested above would meet the needs of all.

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