

the migratory Salmonidae. I have only just commenced the construction of a botanical pond to enable me to study water plants as herbage for molluscs, shelter for *grannuiri*, and the natural production of myriads, of *outomstried*. On the sea-shore of the Western Highlands if the kelp be not regularly cut, or in other words rudely cultivated, for cutting is most assuredly a process in cultivation, the whelks and bukkies decrease on account of the want of the young tender shoots of seaweed, and the fishing in the neighbourhood is sensibly diminished. From this it is easy to understand what a great future may be opened out by the systematic culture of water plants in our inland waters. Food limits the culture of non-migratory Salmonidae, therefore our study must be where to grow it, how to grow it, when to grow it, and what to grow. In lakes some shoal swimming fish is essential to the growth of the large species of non-migrating Salmonidae. Since the Char have disappeared from Lochleven in the first quarter of the present century, the ten pound Trout in that loch have passed into the realms of romance. Acclimatization here steps in: either the freshwater Smelt of America or our own *Osmerus eperlanus*, which I have successfully hatched and am now rearing in fresh water, if introduced into a Highland loch, for instance, Loch Tay, would enable it to carry a very heavy crop of some of the larger inland species, for instance, the landlocked Salmon of Loch Werner in Sweden, or the *S. schuys* of America; but we must not conclude that the acclimatization of every species is in all cases desirable, for if the Black Bass were introduced into the Tay, and the Pike Perch allowed to sport wherever he listed, even were the sport with the new comers at all commensurate with the highly-coloured descriptions which we have read, it will hardly compensate for a troutless river, and a salmonless estuary. There may be parts of the country where the Pike Perch would form a desirable addition to the local fauna, but I cannot conceive the Black Bass, who is only at his best in waters essentially fitted for Salmonidae, to be other than a most dangerous intruder. The Colorado beetle boasts, I believe, of a special Act of Parliament, and I do think the introduction of strange and dangerous species of fish should only be attempted under State control. The *S. schuys*, should he retain in this country his non-migratory instincts, would probably be a splendid fish for the

Thames, and if used in the upper parts of the Severn would introduce a new and important element in the question of the respective rights of upper and lower proprietors. It is not for the public good that this should be done, for this fish would probably be able to hold the spawning grounds from all comers, and a rapid decrease of the migratory species would be the result, and if it be urged that a lake species would not localize itself to the upper portions of our larger rivers, still it crossed with a British variety, such as *S. leuciscus*, it in all probability would do so. The acclimatization of the Coregoni, of which there are many species, all of which can be easily transported as alevins in my opinion, only to be considered as a factor in the production of food for more valuable Salmonidae. If we had the great American lakes, no doubt the large white fish of Canada would, if introduced, form a valuable article of popular food, but our space in this island is too confined to enable us to deal with other than the best we can have, and I doubt, except in a few solitary cases, if any of the Coregoni fall under this head."

MR. WILMOT (Commissioner for Canada) said he rose with great pleasure to move a vote of thanks to Sir James Maitland for the very lucid and instructive paper he had read, for he felt satisfied that much benefit would be derived from it. He was a deep lover of the science of fish culture, believing it to be one of the means by which the population of the earth hereafter would derive much benefit in the way of food and wealth. It was well known that the waters of almost every country which had been largely inhabited had become very scarce of fish, but this result was brought by the greed and avarice of mankind almost entirely, not in consequence of the predatory habits of other fish which frequented the same waters. In any new country an abundance of fish was to be found in the rivers and waters, showing that the balance of nature was evidently correct; that though fish fed on fish, they did not exterminate one another; but the moment man stepped in with his engines of destruction, the fish were reduced to such an extent that this great International Exhibition had been established for the purpose of devising means whereby this description of food could be increased. He regretted to find that, to some extent, there was a difference of opinion with regard to the means to be adopted to this end, but, for his part, he