

waters many millions of young fry. But for this artificial supply, the enormous drafts on this fish, by the fishermen of both countries, would long since have caused a decline which must ultimately lead to the extinction of an industry now employing thousands of men and a large fixed capital, and furnishing immense supplies of wholesome and agreeable food to an increasing population.

While the culture of fresh water fishes has thus been increasing in importance, a very striking advance in the art has been made in recent years, by extending its operations so as to embrace marine food fishes. It is needless to say that this enormously widens its field of operations and increases its prospects of usefulness to an unlimited extent. If the food fishes of the sea and edible crustaceans can be multiplied artificially, then we can imagine a time when the coastal waters will become great sea-farms, yielding enormous supplies of food for man, and even in the end approaching those of the land in value, and when salt and fresh waters everywhere will be cultivated with as much assiduity and skill as are now the continents and islands of the globe.

This is no mere flight of fancy. Keen-eyed science has taken the matter in hand, and is subjecting to her scrutiny the entire life-history of those finny tribes which can be made subservient to human necessities. Nothing escapes her observation. The minute eggs, transparent as crystal, and hardly discernible by the naked eye, which are cast into the waters in countless myriads, are patiently studied from the moment when the first movements of the mysterious principle of life begin, on through their phases of development till they reach the stage when they are able to "repeat the story of their birth." Science will not rest satisfied till the full biography of these nurslings of the sea is completed. Her investigations include not only their embryology, but their whole surroundings—their food, habits, migrations, their rate of growth, their friends and enemies, their birth and death-rates, as well as the physical condition of the waters in which they have their being. All the knowledge thus acquired is then to be applied practically, so as to guard them from injurious influences and destructive modes of capture; and above all, to the multiplication of their numbers and the restocking of exhausted waters, in cases where fisheries have ceased to be remunerative. Even the planting of maiden waters with new life-germs, and the improvement of breeds by crossing are within the scope of this new art.

Fish-culture has thus a wide range, and it is not unworthy the attention of the keenest scientific intellects. Its aim is noble—an extension of man's dominion over nature with a view to the increase of human resources and the food supplies of nations. As yet it is but in its infancy; but it gives promise of a vigorous growth. What it has achieved is a pledge of what it is destined to accomplish. Of course it has its limitations, just as farming and stock-raising; and there are many difficulties and obstacles yet to be overcome. Now, however, that it has given proof that it can deal successfully with the great sea fisheries—such as those of the cod, herring, mackerel, haddock, as well as with the anadromous fishes and the more valuable crustaceans, it is difficult to set bounds to its possible achievements. Certainly no other art gives promise of such beneficial results, of a practical character, as fish-culture.

The honour of carrying fish-culture into this new domain must be awarded to the late Professor Baird, though experiments with the same object in view were commenced about the same time at Flodevig, Norway, as in the United States. Professor