

TO PRESERVE THE LIFE THAT FILLS THE SEAS

International Fisheries Congress Considers Conservation of the Food of One Fourth of the Human Family—Strange and Interesting Facts.

By **FREDERIC J. HASKIN.**
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Washington, Sept. 25.—The fourth international fisheries congress is now meeting in Washington, on the invitation of the American Fisheries society, and it has brought together most of the leading fish culturists of the world. It has been estimated that there is enough food in the waters of the world to support the entire human race, but were it not for the timely interposition of the fish culturists many of the great food fishes would ere this have almost disappeared, because without artificial propagation the demand must have overreached the supply.

Fish culture aims to create enough interest so that we will not have to touch the principal. It seeks to have the annual crop of fish large enough so that the year's catch will leave enough seed to bring forth an equivalent crop the succeeding year. It is to consider ways and means for attaining this end, and the congress will have to be more completely than has heretofore been possible that the fisheries congress has convened.

The United States government has recognized the congress by the appropriation of money to defray the expenses of the meeting, and the new ideas of fish culture which will be brought from the ends of the earth will give an impetus to the science here, although the whole world concedes that the United States is far ahead of any other country in the work. There will be discussions of the various phases of the fishing industry. Millions of dollars are lost every year because of the waste of fish, and the congress will try to solve these problems. Wealthy and fabulous amounts could be added to Uncle Sam's already large holdings if knowledge of fish culture could be widely disseminated, so the question of the establishment of fishery schools will be considered. All of the papers and lectures of the congress will be published, thus bringing together into one volume all the best and newest ideas of the world on fish culture.

The Mysteries of Fishdom.
Perhaps one of the most interesting things that will engage the attention of the congress will be a competition for prizes for the best methods of observing the habits and recording the life history of fish. Much as the fish culturist knows about the habits of fish, he does not know. He knows that the salmon come into the water to spawn, and then die. But the young salmon go out to sea and are lost for a long time. Where they go no man knows, for they have never been sighted at sea except when they are headed for the shore. The shad—a member of the herring family—goes to sea after spawning, and is seldom seen close to shore. The codfish come back the year after they first put in their appearance, and then they are seen no more. Where do they go? What do they eat? Do they call fresh water their home and sport only about in the boundless ocean? There are a hundred mysteries about fish life into which the fish scientist would like to have a peep. How easy to get at it? That is the question the congress is to answer.

The Fish Tag Experiment.
The bureau of fisheries did make an experiment with cod in an attempt to solve the mystery. They tagged 4,000 cod a few years ago and advertised the fact widely, with the request that whoever came across one of these tagged fish should advise the bureau, giving the date of catch, the location, the weight and condition of the fish, and other information. The newspapers made a feature of the story, and soon the whole fishing world was on the lookout for tagged cod. Some were caught and the catch promptly reported. Some who caught them turned them over again. In one instance the tag passed through a dozen hands from the catcher to the consumer without discovery. It was returned to the bureau by the latter. Not more than 4 per cent of the tags were ever heard from and no tagged fish ever showed up later than the first year after it was liberated. They drifted widely. Some which were liberated on the same day and at the same place were caught hundreds of miles apart. One fish was found 33 miles on a bee line from the point at which it was released, only two days after it was set free. While some wandered widely apart, others kept closely together.

Fish Leather; Sand Bathers.
In the utilization of the waste products of fisheries it is probable that the

making of leather from fish skins will be a more sensitive question in the future than it has been in the past. Porpoise hide is said to be the finest of all leathers for shoes, one pair made from it outlasting three of calfskin or kid. The leather is worth from \$5 to \$14 a pound, but one pound is enough to make different kinds of fish. The law of selection is nowhere so strongly in evidence as in marine life. The sole, accustomed to lying on its side, has developed both eyes on one side of the head. The great class of sea squirts have eyes in their younger days, but when they reach the adult stage and thereafter remain immovable, these eyes disappear. The tail also disappears as soon as they quit crawling.

Some marine creatures have a rather precarious existence. The lug worm gets its sustenance by eating sand, and inasmuch as there is not much nutriment in this kind of food it has to eat lots of it. As many as \$2,000 cases of sand from lug worms have been found on a single acre of ground—equivalent to 2,000 tons.

The law of natural selection shows up forcibly in the fertility of fishes. The ones which are exposed to the most dangers are the most prolific, and the ones which are the least exposed are the least prolific. For instance, it is estimated that but one shad out of 100 ever survives to lend itself to the perpetuation of the species, hence a female shad may lay 1,000,000 eggs during her life. On the other hand, cannibal fishes and turtles, which counter but few dangers, lay but a small number of eggs.

The Pest of the Dogfish.
One of the worst enemies of the food fish of the Atlantic coast is the dogfish. These marine pirates travel in vast schools and eat wholesome fish by the millions. All sorts of methods have been recommended for checking their ravages. Some one wrote to the Canadian government advising that a successful way would be to fasten little bells and bright-colored bunting to their bodies by means of wire run through their tails. A dogfish so decorated would be a terror to his associates, and in trying to indulge his social instinct would drive his fellows to the ends of the sea. The Canadian government replied that the effect might be the same on the food fish, so the suggestion found a pigeon hole.

Transplanting Fish.
One of the most interesting features of the work of the United States bureau of fisheries is the introducing of fish into other than their native waters, and the bringing of foreign fish into American waters. A most noteworthy instance of its success in this direction was the acclimatization of the striped bass on the Pacific coast. The cost of the transfer was only \$5,000, and the annual catch now amounts to 30,000,000 pounds, valued at \$1,000,000. The bureau is meeting with gratifying success in transferring the Atlantic lobster to the Pacific, also the Pacific salmon to the waters of New England and the middle Atlantic states. It was at one time proposed to introduce marine life into the Great Salt Lake of Utah. It was claimed by the proponents of the scheme that it would be easy to acclimatize marine fishes in the lake, but when fish culturists came to investigate the question they found the waters too salty to support marine fishes.

The experiments of the bureau in fattening for market have not been successful, and the luscious Lynnhaven is going to be more juicy than ever. It is making such a name for itself in the direction of artificially hatching eggs of the diamond back terrapin and the green turtle, and rearing the young to the point where they are able to steer clear of the perils of the deep, that anybody who has a diamond back taste and a common herring income is praying for the success of the experiments. The infection of oysters by contaminating water is being investigated, and efforts are being made to develop the growing sponges from cuttings.

Fish Three and One-third Miles Down.
It has been estimated that one-fourth of the world's diet is fish. Of course such a proportion is too large for the people of such countries as the United States, but the great amount of fish eaten by the inhabitants of seafaring countries and those living on the islands of the sea would probably make the estimate close to the truth. The annual catch of fish for the world is estimated to be in the neighborhood of 10,000,000,000 pounds, making an allowance for fish wastes, valued at about \$300,000,000. The United States ranks first in the value of its fish, the annual catch amounting to one-fifth of that of the whole world.

An interesting work of the bureau of fisheries is the study of marine life. It has two steamers on the high seas investigating the mysteries of the deep. One of these, the Albatross, was built purposely for the work. It has brought up 117 fishes from a depth of three and a half miles. It was with apparatus loaned to the U. S. S. Nero by the Albatross that the deepest hole in the ocean was found. It is 11 1/2 miles deep and is six miles deep deep enough to bury Mount Everest, the highest peak of the world, with room for a covering of a half mile of water.

Southern Families United.
Southern families were united at the altar here today, when Miss Mary Bowie, daughter of Mrs. Edward Conner Johnson, became the bride of John Pearce Campbell of Baltimore. The bride's grandparents, Mrs. J. P. Bowie and Beverly Johnson, United States senator from Maryland, and the bridegroom is a son of Mrs. J. P. Bowie, former United States senator from West Virginia.

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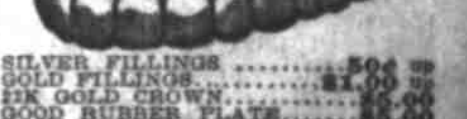
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