

are the result of the disturbing effects of reagents, let it be remarked here that precisely similar changes have been observed in the living nuclei of both plants and animals.

No connecting granular fibers could, as a rule, be clearly made out between the aggregations at the opposite poles of the nucleus. The connecting lines, when present, appeared to be more or less broken as represented in our sketches, and only a faint outline of the nuclear field between the aggregations could be clearly made out. Neither was it possible to find any granular lines radiating outwards from and beyond the ends of the aggregations into the surrounding protoplasm of the cell in which the nuclei were embedded.

This condition is in very marked contrast with that constantly observed in the connective tissue-cells of the oyster, one of which is represented in Fig. 22 enlarged 800 times. Here a complex network of granular threads passes outwards in all directions from the irregular nucleus through the enveloping protoplasm; besides the threads there are usually one or two globular granular accessory bodies present, as shown in the figure. A still more complex arrangement of granular threads around the nucleus is shown in Fig. 23 of a cell, enlarged 1,000 times, from the reproductive tissues of the smooth limpet, *Crepidula glauca*. This last figure is from a sketch made two years ago from fresh material studied in neutral fluid.

THE DESTRUCTION OF YOUNG FISH BY UNSUITABLE FISHING IMPLEMENTS.

By B. P. CHADWICK.

BRADFORD, MASS., *December 23, 1881.*

Prof. SPENCER F. BAIRD:

DEAR SIR: I take this method of calling your attention to a subject that has occupied my mind for a long time, and that is, the destruction of the young fish along our coast from Cape Henry to Nova Scotia, by the use of ill-constructed nets, pounds, weirs, and traps of every description. For instance, in the seining of mackerel it often happens that 200 barrels are taken at a time; of this amount only 25 barrels are found to be large enough to be of any value in the market, the other 175 barrels are thrown back into the sea, all dead. This is a daily occurrence in a hundred places, and countless millions of young fish are destroyed during the mackerel season annually. The catch of mackerel is of vast importance to this country, and the useless destruction of the young fish is four times the amount of that sold as food. This wanton waste of the young fish can all be avoided by act of Congress, compelling fishermen to use seines, the mesh of which is large enough for the young of a useless size to pass through; thus there would be no fish taken except such as are marketable. This subject is probably nothing new to

you, but upon investigation you will find it of much importance; should you deem it of sufficient importance to bring the subject before Congress, with a view of regulating our fisheries so far as the government has jurisdiction from the shore along our coast, I would be pleased to furnish you with further information and such suggestions as have come to my observation in years past.

Very respectfully,

B. P. CHADWICK,
Deputy Fish Commissioner, Massachusetts.

THE PROPOSED INTRODUCTION OF CATFISH INTO GHENT.

By THOMAS WILSON.

UNITED STATES CONSULATE,
Ghent, December 2, 1881.

Hon. SPENCER F. BAIRD,
Commissioner, &c.:

MY DEAR SIR: Your letter of the 12th ult. was duly received, together with the pamphlets on carp and salmon, for all of which accept my thanks. My expectation and idea in regard to importation of catfish is as follows: There are many rivers and canals in this city and province which are capable of raising fish in great numbers, but owing to the muddy, sluggish character of the streams, the number of mills of every sort, the locks, &c., &c., together with the increased number of eels, the fish have been driven nearly out; fish like the salmon, pike, &c., &c., will not remain and thrive; therefore, while there are great quantities of water there are few fish. Fish are brought from the sea and are for sale in the markets, but I have thought to utilize these rivers by the importation of fish, such as would live and thrive and would be essentially a poor man's fish, such as could be caught on the banks in the country through which the streams flow. I have talked with the governor of the province and it meets his approbation. He said late laws had been passed for the protection of fish and that this general matter had received the attention of the government. I do not understand that there is any fish society or association in this kingdom, but I think such a step as I propose would excite sufficient attention to result in the formation of one.

Therefore, as a sort of pioneer and *pro bono publico*, I have thought to take this initiatory step solely for the good of the public, and knowing your devotion, &c., &c., to this fish business as one of your specialties, I have thought you and I could make the world a little better from our having lived in it by making the endeavors I have suggested. This is the whole matter. It will be necessary to give me full instructions what to do and how to do it on receipt of the fish. I know virtually