

or examining a place from which the fish have gone to find out the reason of their departure.

There is no reason that I can see why, if the fish banks of the Gulf were as well marked out and the habits of the fishes as well understood as they are on the Newfoundland banks, the fishing interests of the Gulf should not develop enormously. By the refrigerator-car plan—both afloat and ashore—every city and town of the United States would become a ready market for a moderate supply of fresh fish. Such a plan would require the attention of capitalists to be drawn to its advantages, and these advantages would only show themselves when the sources of the supply have been accurately determined, and the conditions affecting the supply well enough investigated. This would require the location and the limits of each “snapper” bank to be practically determined, so that steamers fitted for refrigerating could make the rounds of a certain number of banks, and lose no time hunting a very indefinite spot, such as most of the snapper banks of the Gulf are at present.

U. S. S. GEDNEY,

Navy Yard, New York, May 17, 1882.

SUGGESTIONS FOR TRANSPLANTING CLAMS FROM THE PACIFIC OCEAN TO THE ATLANTIC.

By R. E. C. STEARNS.

(Letter to Prof. S. F. Baird.)

In relation to the transplanting of the West American clams, *Glycimeris generosa*, *Saxidomus aratus*, and *Schizotharus nuttalli*, to the Atlantic seaboard of the United States, I have to submit the following:

Immediately after the receipt of your letter of the 6th February, referring to the first species, and Mr. Hemphill's recommendation thereof as a valuable edible, I took the necessary steps to inform myself as to the best locality from which to obtain a supply, and subsequently made arrangements, which are now pending, for a supply to be sent me promptly by express as soon as the tides are low enough to permit the same to be obtained, and gave particular and explicit instructions as to the manner of packing, so that no lack of care need occur to prevent the successful transmission as far as San Francisco. Transmission is much more direct, and less time is lost, by forwarding from Olympia on Budd's Inlet (which appears, everything considered, to be the best place to obtain them), via Portland, Oreg.; Portland and Olympia being connected by rail, and the steamer communication between Portland and San Francisco being more frequent than by the Puget Sound steamers to San Francisco. The Portland market is supplied with *Glycimeris* from Budd's Inlet.

It is not unlikely that the *Saxidomi*, recommended by Mr. Dall, and my favorite *Schizothærus*, can also be obtained at the same place and at the same time, which will save great trouble and expense and kill *three* "birds with one stone." I am of the opinion, however, that in order to be successful, I shall have to go up myself. As to the method of conveyance, after a careful consideration of the question, and of Mr. Hemphill's views, as expressed in his letter to you, of October 17, 1881 (page 200 of Bull. U. S. F. C.), I think the plan suggested by him, in the main, is the one to be pursued, for I do not believe that any fair percentage of either species can be carried through alive to the Atlantic coast packed in seaweed. All of these species are *Gapers*, otherwise I should think the chances better. The lowest tides occur in the last of May and the first half of June, when the weather is quite warm on this side of the continent, and often so on the Atlantic side. Ice, a good supply of salt water procured outside of the bay of San Francisco, where it is pure, and careful attention while on the cars will also be needed; and finally, the locality on your side wherein to plant them must be determined on beforehand. As to the character of the station in Budd's Inlet, as to climate and sea-bottom, reference to the Coast Survey chart of said inlet, and to the Coast Pilot of Washington Territory, will furnish most of the information necessary in this direction. Dr. Dall knows the climatal peculiarities. I have discussed this point with various intelligent persons on this side, and all parties, I find, agree with me, that the Chesapeake Bay region is more likely to meet the requirements than any other place on the Atlantic side. You are better able to judge of this matter correctly than we are here.

I have a letter from Hemphill at hand. He informs me that his intention is to be here by the middle of this month and to go east to Minnesota by June 1, if possible. It occurs to me that an arrangement might be made with him to superintend the transmission overland and take care of the tanks *en route*, for then we should be morally certain that no pains would be spared to make the experiment a success, so far as the transshipment part is related to the whole matter.

If you are disposed to authorize the expense, as indicated in the foregoing, and the employment of Mr. Hemphill to take charge, as suggested, from San Francisco, to your hands, or your orders, please telegraph me at once, as I want every moment to push matters, so that the plan above outlined may be carried out.

Tanks must be made and cans for sea-water, &c., got together, and arrangements made with the railroad folks, so that there will be no hitch to endanger our movements by delays.

BERKELEY, CAL., May 8, 1882.