

### XIII.—MISCELLANEOUS NOTES AND CORRESPONDENCE RELATIVE TO SALMON AND TROUT.

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#### A—ON THE SALMON IN MAINE.

DENNYSVILLE, ME., August 3, 1872.

DEAR SIR: When you were here, I did not have time to give any intelligent information concerning the salmon, its habits, &c. I am sorry I do not have the positive knowledge which would be of most service to you, but, in place of that, will give you some indirect, some *circumstantial* evidence which may serve some purpose.

I have been surprised at seeing how late the deposition of the spawn is now considered to take place, and I am not ready to believe that under normal conditions, at least on this river, it is anywhere near so late. I myself have never seen their operations.

My notion has been that the large early salmon deposited their spawn as soon as they reached the proper places. Certainly, many of them seem to be as forward as the alewives, who hardly get above the dam before commencing, the most forward of them, to leave their eggs; for small alewives are ready to return at so early a period that they must have begun growing in May. These get to be about as long as one's finger when they come down the river, and schools of them, probably from later and later deposits, keep coming down till after the river freezes, and two years ago masses of them got entrapped in the "anchor-ice" in Meddybemps Lake, and were then washed ashore and perished in windrows on the beach.

Now, some few things as to the salmon. Years ago they could be caught by the boat-load. They were too numerous to escape the same observation which the alewives attracted. I never heard of anybody who knew, or supposed, or suspected anything to the contrary of their coming down the river and going right off to sea as quick as they became large enough to swarm, there to remain and get their living, where alone a living was to be had, till they became large enough to return (some two or three years) and leave their own fry, which would correspond, perhaps, to the later alewife-fry. If young salmon (other than the little fry hurrying off to sea) were caught, or were in the river—that is, if they hung around and went up stream the next season, and the next, I cannot but think we should have found it out, some of us. My eyes were certainly sharp enough to know a trout when I saw it—and I caught any amount of them—and to be safe from confounding it with a young salmon; and if blind, I should have found out the difference by the taste.

As I think I told you, from earliest spring till late in the summer, there were always (more formerly than now) weirs up and down the river from just below my house to the falls, in which salmon, alewives, herring, frostfish, smelts, sturgeons, &c., were caught, as well as a few nice but unmistakable trout; but in all this period I never knew of but two young salmon, children, to be caught. These were caught in one tide in one weir down the bay, some fifteen or twenty years ago, and we had them cooked, and ate them.

Of course, if two have been caught, others may, and probably have been; but in that time hundreds of shad, and bass, and mackerel have strayed away from their fellows, and been caught also; so that it is hard to regard the coming of these young salmon as otherwise than exceptional in this little river. In large rivers, where there is more to eat, it may be different.

In late years, now that there are legions of little boys fishing in the fall of the year in the pond at the mills, it is reported that they have occasionally drawn out, with the chubs and trout, a very small specimen of a salmon, about as long as a smelt or a very small trout; and I presume that always, when the gates of the water-wheels were shut down, and little alewives were stranded in the puddles underneath, that salmon-fry were with them. The men sawing would have expected nothing less; and it would probably have been only the uniform absence of salmon-fry that would have excited any attention or remark. This is the way it seems to me. Of late years, the number of fish has been too small to give much of a chance of stranding a little one, even if the old rocky puddles had been left in condition.

More than this, it does not seem probable that a year-old fish would ever trust himself up the river, unless he were a candidate for starvation. There are flies enough to support a few chubs and trout, and that seems to be all. The salmon and alewives seem to deteriorate rapidly in condition with every step they take from the sea to the highest point they reach. Those taken much above the mills we think of little account. Coming in from the sea, at the mouths of the bays, salmon are occasionally caught with a codfish-hook and a piece of pork, perhaps, and when they are leaving the river, black, and eel-shaped, and ravenous, they have been caught in that way also; but between these two periods, they seem to subsist upon and consume their own substance laid up at sea, together with what few insects they pick up. The young of the alewives are grown in the large shoal lakes, where there seems to be some little chance of subsistence for a small fish, while the salmon is confined to the little stream itself, with its scanty supply of food.

I hope I have not tired you with these details, which possibly you understand very much better than I.

Yours, truly,

THOMAS LINCOLN.

Professor S. F. BAIRD.

## B—ON STOMACHS OF SALMON AND THEIR CONTENTS.

### 1.—ON THE CÆCAL APPENDAGES OF THE STOMACH.

NEW HAVEN, *February 22, 1873.*

DEAR SIR: I looked over some salmon-stomachs last November. I told Mr. Smith the result, and supposed that he put this item in with his report to you. I learned the other day from him that this was not the case.

The fact was, that there was no regularity in the number or arrangement of the cæcal appendages. They ran all the way from 44 to 70, gradually, continuously, and without grouping.

Very respectfully,

JAMES K. THACHER.

Professor S. F. BAIRD.

### 2.—ON THE CONTENTS OF THE STOMACH.

NEW HAVEN, *November 11, 1872.*

DEAR SIR: I have carefully examined the salmon-stomachs, sent on a few days ago, but find nothing in them which could have served as food. The stomachs themselves were entirely empty, except one, which contained a single specimen of the external, Caligus-like, parasite, sent by Mr. Atkins as from the salmon. This may have been accidental. The intestines usually contained, especially in the pyloric region, considerable mucus, which revealed nothing under the microscope. In several specimens, the intestines contained a few fish-scales, which, I presume, are those of the salmon, as they were also frequently found upon the outside of intestines, and loose in the packages.

In one specimen, there were two small bits of wood in the intestine. These specimens, with a few intestinal worms, which were found, I have preserved to return with the stomachs as soon as you wish.

Very truly, yours,

SIDNEY I. SMITH.

Professor S. F. BAIRD,

*Washington. D. C.*

[According to Dr. A. C. Hamlin, the examination of many hundred salmon in the Bangor market revealed no kind of food, excepting in a single instance, where two small fishes were discovered.—S. F. B.]

## C—ON THE SILVER-TROUT OF MONADNOCK LAKE, NEW HAMPSHIRE.

KEENE, N. H., October 30, 1872.

DEAR SIR: I send you by express to-day a few specimens of the "silver-trout," or "Dublin trout," as they are called here. They were caught in Center Pond, in Dublin, yesterday, and are fair specimens of the variety found there.

The pond lies at the foot of Monadnock Mountain, and is sometimes called Monadnock Lake. The shores and bottom are covered with a fine white sand. The water is always much colder than that in the neighboring ponds, as it is fed only by deep springs, there being no stream running into the pond. The water is also very clear. In the pond are a few dace, perch, and eels, which are not in any way peculiar. I believe the flesh of these trout is a fine salmon-color, and they have a great local reputation for the angler and for the table since the settlement of the country. They are caught only in May or June and in October, when they seek their spawning-beds in the shallows of the pond. Great numbers were formerly taken from the spawning-beds, but they are now protected by law at that season. They are thought by our anglers to be a different species from the brook-trout of our New Hampshire streams, and by some are claimed to be "land-locked salmon." I hope these specimens may enable you to decide these questions. As the colors will be damaged by the alcohol in which I send them, I give you the notes of the coloring of a female, measuring nine inches in length and weighing four ounces: iris, dark-brown; upper part of head, black; gill-covers, silvery white, with prismatic reflections; lower jaw, white, with a dark line near the mouth; back, light olive-green; sides, light-green to lateral line, and then much lighter, shading rapidly to white of belly, the whole gleaming like silver in the sun-light, even under water; belly, white, tinged with bright vermilion. Sides covered with golden spots, rather faint in color, from one-eighth to three-sixteenths of an inch in diameter; lateral line very distinct; the pectoral, ventral, anal, and caudal fins bright vermilion, with the larger rays in each white; the dorsal and adipose fins olive-green, mottled with brown; the scales are small, but very distinct. The male is darker colored, with much more red upon the belly, and has small red spots in many of the yellow spots, resembling much more some of our brook-trout. I may add that no other pond, as far as I have learned, has trout marked like these.

Hoping these specimens may arrive safely and in a satisfactory condition, I remain, yours, truly,

THOS. E. HATCH,

*Com. on Fisheries for New Hampshire.*

Professor S. F. BAIRD.

[These fish proved to belong to the group of lake-trout, probably closely related to what Dr. Prescott called *Salmo symmetrica*.—S. F. B.]

## D—ON THE EDIBLE QUALITIES OF THE SACRAMENTO SALMON.

SAN FRANCISCO, *August 1, 1872.*

DEAR SIR: Your esteemed and very interesting favor of the 12th ultimo reached me not until yesterday, owing probably to some irregularity of the mail. It is quite encouraging to us out here to learn that the commissioners of the Eastern States are taking an interest in the fishes of this coast. Born and raised on the Atlantic seaboard and accustomed from my boyhood to fishing in its waters, I have found much to interest one in the marked difference of the fishes of the Pacific coast from those of the Atlantic.

As a rule (with the exception of the salmon) the fish of this coast are not so good in quality not so reliable in quantity, neither are there large runs of migratory fish, as is the case on your coast. The herring comes into the harbors in schools, but not in quantities. The mackerel is rarely seen, and the few that frequent our bays are small, and, as a general rule, applying to all our fish, saving the salmon, there is a want of both fatness and flavor. The halibut we also have somewhat plentiful on the northern coast, and sometimes in small numbers as low down as the harbor of San Francisco.

Our great and reliable fish is the salmon, visiting our coast, in swarms annually, from the Bay of Monterey to the extent of the Territory of Alaska. The salmon of the harbor of San Francisco are a large, fine, fat fish, and are a valuable article of food, and are sold in the season as low as five cents per pound. They are equally plenty in all the bays and inlets north of this, improving in flavor as you go farther north, until, in the bays and rivers of Alaska, they exhibit a flavor and richness utterly unknown to the epicure of the world at large. The desire of the people of California to have introduced in these waters the shad stimulated the commission to attempt the bringing across the continent the young fish from the Hudson River, and we are indebted to Mr. Seth Green for successfully placing in the Sacramento River some fifteen thousand, alive, in good health and condition, and we await with faith and patience their return from the ocean. In the mean time, I, this year provided transportation for and desired Mr. Green to send us fifty thousand more, for the purpose of pursuing the experiment yearly, until the first return might assure us of success; but the engagements of Mr. Green are such as to prevent his coming with them himself, and the difficulties of transporting them he deemed too great for him to intrust the care of them to any one else. Mr. Green has written me upon the subject of obtaining salmon-ova on this coast, and I have answered him that they can be obtained here in the vicinity of San Francisco in unlimited quantity.

Referring to the mission of Mr. Livingstone Stone, I would add that here he can have every facility for obtaining salmon-ova, and the impregnation of them. The fisheries which supply this city with salmon

are but a few miles distant, and are landed twice a day daily by steamers. The fish in full spawning condition can be obtained directly from the nets, and the transportation of impregnated spawn is available daily by express. It will give us great pleasure to meet your friend, Mr. Stone, and you will do me a favor by advising me of the time of probable arrival here, that I may be on the lookout for him. I know that he can teach us many things upon this, to me, very interesting subject, and it will give us great pleasure, not only to meet, but to be as useful to him as we can be.

With much respect, I remain, very truly, yours,

S. R. THROCKMORTON,

*Chairman California Commission of Fish and Fisheries.*

Hon. SPENCER F. BAIRD,

*United States Commissioner of Fish and Fisheries.*

## E—ON THE SALMON-FISHERIES OF THE SACRAMENTO RIVER.

BY LIVINGSTON STONE.

CHARLESTOWN, N. H., *November, 1873.*

DEAR SIR: In reply to your inquiries as to the extent and nature of the salmon-fisheries in the Sacramento River, I have to say that in February, 1873, I went to the Sacramento River and at Rio Vista and other points gathered the following rather fragmentary notes, which I present here as supplementary to my report on the Sacramento River for 1872.

The fishing on the Sacramento is done in three ways: 1st, by drift-nets; 2d, by fyke-nets; 3d, by sweep-seines.

### 1.—DRIFT-NET FISHING.

The drift-nets are used exclusively for catching salmon. They have an 8½-inch mesh, are usually 40 meshes deep, and from 150 to 200 fathoms long. As nearly as I could learn, there were not far from a hundred salmon-nets in operation on the Sacramento River in 1872. At the meeting of the salmon fishermen of the Sacramento that year, there were 95 boats represented.

These nets are worked by simply drifting them with the tide. The salmon, which of course are heading against the tide, are gilled in the meshes. The turn of the tide is the most favorable time for this sort of fishing.

The nets are frequently drifted a mile before being hauled in. The salmon-fishing is conducted entirely by white men, no Chinamen being allowed to participate in it. There is no law regulating the matter, but public opinion is so strong in relation to it, and there is such a prejudice against the Chinamen, that any attempt on their part to engage in salmon-fishing would meet with a summary and probably fatal retaliation.

The number of fresh salmon shipped from Rio Vista to San Francisco in the year 1872 is as follows:

January.....	792
February.....	1,581
March.....	1,945
April.....	3,354
May.....	4,408
June.....	1,201
July.....	1,145
August.....	1,496
September.....	2,335
October.....	583
November.....	441
December.....	390
Total.....	19,671

On one day in February, when I came down the river, there were put on board the steamer, at Courtland, 7 fresh salmon; at Rio Vista, 32 fresh salmon; at Sherman Island, 32 fresh salmon; at Collinsville, 123 fresh salmon.

The daily number of fresh fish (salmon and sturgeon) brought down the Sacramento River to San Francisco in 1872 by the steamers of the Central Pacific Railroad Company, is as follows:

JANUARY.		FEBRUARY.		MARCH.	
Date.	Fish.	Date.	Fish.	Date.	Fish.
January 1.....	87	February 1.....	326	March 1.....	247
2.....	97	2.....	174	2.....	199
3.....	105	3.....	237	3.....	402
4.....	182	4.....	157	4.....	402
5.....	111	5.....	324	5.....	404
6.....	115	6.....	250	6.....	401
7.....	133	7.....	337	7.....	1,030
8.....	125	8.....	393	8.....	344
9.....	113	9.....	334	9.....	139
10.....	199	10.....	282	10.....	334
11.....	211	11.....	415	11.....	272
12.....	224	12.....	296	12.....	356
13.....	243	13.....	250	13.....	316
14.....	112	14.....	228	14.....	135
15.....	166	15.....	253	15.....	447
16.....	234	16.....	432	16.....	283
17.....	308	17.....	247	17.....	419
18.....	214	18.....	259	18.....	285
19.....	172	19.....	348	19.....	501
20.....	302	20.....	408	20.....	425
21.....	73	21.....	285	21.....	452
22.....	294	22.....	389	22.....	106
23.....	210	23.....	249	23.....	516
24.....	221	24.....	223	24.....	396
25.....	210	25.....	334	25.....	192
26.....	267	26.....	276	26.....	253
27.....	112	27.....	292	27.....	244
28.....	46	28.....	395	28.....	242
29.....	76	29.....	272	29.....	384
30.....	301	30.....		30.....	344
31.....	141	31.....		31.....	378
Total.....	5,514	Total.....	5,779	Total.....	11,394

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APRIL.		MAY.		JUNE.	
Date.	Fish.	Date.	Fish.	Date.	Fish.
April 1.....	243	May 1.....	1,485	June 1.....	536
2.....	57	2.....	1,758	2.....	403
3.....	193	3.....	1,342	3.....	207
4.....	439	4.....	560	4.....	229
5.....	4,711	5.....	998	5.....	174
6.....	114	6.....	1,487	6.....	157
7.....	423	7.....	1,298	7.....	75
8.....	372	8.....	1,361	8.....	175
9.....	418	9.....	1,046	9.....	220
10.....	599	10.....	482	10.....	300
11.....	578	11.....	431	11.....	357
12.....	310	12.....	578	12.....	348
13.....	589	13.....	669	13.....	210
14.....	960	14.....	1,216	14.....	564
15.....	863	15.....	1,668	15.....	307
16.....	879	16.....	712	16.....	306
17.....	643	17.....	694	17.....	158
18.....	581	18.....	929	18.....	41
19.....	693	19.....	899	19.....	38
20.....	905	20.....	859	20.....	89
21.....	827	21.....	950	21.....	157
22.....	1,123	22.....	637	22.....	139
23.....	835	23.....	980	23.....	162
24.....	435	24.....	1,193	24.....	100
25.....	1,014	25.....	1,297	25.....	109
26.....	990	26.....	1,242	26.....	
27.....		27.....	603	27.....	
28.....		28.....		28.....	
29.....		29.....		29.....	
30.....		30.....		30.....	
Total.....	15,613	Total.....	27,395	Total.....	5,561

JULY.		AUGUST.		SEPTEMBER.	
Date.	Fish.	Date.	Fish.	Date.	Fish.
July 1.....	266	August 1.....	454	September 1.....	836
2.....	43	2.....	177	2.....	831
3.....	134	3.....	72	3.....	1,269
4.....	81	4.....	560	4.....	1,170
5.....	73	5.....	747	5.....	512
6.....	38	6.....	632	6.....	215
7.....	249	7.....	558	7.....	703
8.....	202	8.....	573	8.....	636
9.....	214	9.....	159	9.....	412
10.....	266	10.....	105	10.....	512
11.....	177	11.....	661	11.....	331
12.....	75	12.....	297	12.....	253
13.....	163	13.....	1,014	13.....	890
14.....	140	14.....	798	14.....	756
15.....	281	15.....	186	15.....	1,112
16.....	276	16.....	1,041	16.....	1,042
17.....	181	17.....	1,205	17.....	461
18.....	175	18.....	1,567	18.....	261
19.....	363	19.....	1,499	19.....	567
20.....	330	20.....	1,061	20.....	563
21.....	337	21.....	165	21.....	385
22.....	323	22.....	427	22.....	303
23.....	353	23.....	243	23.....	225
24.....	270	24.....	341	24.....	154
25.....	520	25.....	591	25.....	263
26.....	223	26.....	304	26.....	
27.....	345	27.....	240	27.....	
28.....		28.....		28.....	
29.....		29.....		29.....	
30.....		30.....		30.....	
31.....		31.....		31.....	
Total.....	5,043	Total.....	15,677	Total.....	14,706



OCTOBER.		NOVEMBER.		DECEMBER.	
Date.	Fish.	Date.	Fish.	Date.	Fish.
October 1.....	189	November 1.....	40	December 1.....	136
2.....	251	2.....	33	2.....	66
3.....	462	3.....	82	3.....	246
4.....	136	4.....	69	4.....	213
5.....	67	5.....	111	5.....	128
6.....	143	6.....	122	6.....	113
7.....	160	7.....	167	7.....	204
8.....	148	8.....	43	8.....	248
9.....	218	9.....	91	9.....	234
10.....	85	10.....	67	10.....	283
11.....	74	11.....	123	11.....	123
12.....	95	12.....	147	12.....	151
13.....	81	13.....	81	13.....	116
14.....	112	14.....	98	14.....	164
15.....	118	15.....	87	15.....	226
16.....	22	16.....	112	16.....	204
17.....	70	17.....	167	17.....	74
18.....	75	18.....	157	18.....	64
19.....	87	19.....	70	19.....	88
20.....	122	20.....	50	20.....	62
21.....	114	21.....	53	21.....	93
22.....	52	22.....	58	22.....	127
23.....	50	23.....	118	23.....	100
24.....	62	24.....	78	24.....	75
25.....	18	25.....	51	25.....	160
26.....	2	26.....	92	26.....	70
27.....	69	27.....		27.....	
28.....		28.....		28.....	
29.....		29.....		29.....	
30.....		30.....		30.....	
31.....		31.....		31.....	
Total.....	3,082	Total.....	2,367	Total.....	3,716

The proportion of sturgeon and salmon in the shipments of the various months is estimated by the San Francisco market-men as follows:

January, 10 per cent. salmon, 90 per cent. sturgeon.	July, all salmon.
February, 10 per cent. salmon, 90 per cent. sturgeon.	August, all salmon.
March, 50 per cent. salmon, 50 per cent. sturgeon.	September, all salmon.
April, mostly salmon.	October, 50 per cent. salmon, 50 per cent. sturgeon.
May, all salmon.	November, 50 per cent. salmon, 50 per cent. sturgeon.
June, all salmon.	December, 10 per cent. salmon, 90 per cent. sturgeon.

Besides the salmon above mentioned, a large number are taken by sailing-vessels, and by the opposition line of steamers and other conveyances, to San Francisco and the larger towns.

The points from which salmon are shipped on the river-steamers are, Sacramento City, Courtland, Emmatown, Rio Vista, Collinsville, Antioch, Benicia, Martinez.

In the spring of 1872 about 25,000 salted salmon came from the Sacramento River to San Francisco, and in the fall of the same year about 9,000. The Rio Vista salmon fishermen recommend the prohibition of fishing from June 1 to October 1, or from June 15 to October 15.

## 2.—FYKE-NET FISHING.

The fyke-nets have a mesh of  $2\frac{1}{2}$  inches. There were in the winter of 1872-'73 eighty-five fyke-nets on the Sacramento at Rio Vista. They are stationary, of course, and are examined every twenty-four hours. All the kinds of fish that are found in the river are caught in these nets. Mr. John D. Ingersoll, a prominent fyke fisherman of Rio Vista, informed me that the daily catch for twenty nets is now about seventy-five pounds of fish.

They include chubs, herring, perch, riparous, sturgeons, hardheads, splittails, Sacramento pike, suckers, crabs. Of these the perch, pike, and sturgeon are the best food-fishes, though all of the species named are sold in the market.

There has been a vast decrease in the returns of the fyke-nets during the last twenty years. In 1852 and 1853, they used to catch 700 or 800 pounds a day in one fyke-net. An average of 250 pounds a day for one net at Sacramento City was usually expected in those times. The present catch of 75 pounds a day in twenty nets, certainly presents an alarming contrast. The fyke-net fishing is conducted wholly by white men, I believe, the Chinese fishermen being ruled out by force of public sentiment. The fyke-nets are usually visited early in the morning of each day, and the catch is sent down to San Francisco by the noon boat. The fyke-net fishing begins in November and is continued till May. The best fishing is when a rise in the water drives the fish in shore where the fyke-nets are placed. During the summer months the water is warmer, the fish are poor, and the fishing is discontinued.

On the 27th of February, 1873, I went the rounds of Mr. Ingersoll's set of fyke-nets with him. We visited twenty nets, but as some of them had not been examined for over twenty-four hours, the yield was supposed to be equivalent to one day's fishing for thirty nets. The nets had four hoops each and 14-foot wings. We took out about 120 pounds of fish in all. Hardheads were the most numerous, and the Sacramento pike next. Mr. Ingersoll said that perch used to rank second in abundance in fyke-net fishing, the average for thirty nets being 200 or 300 pounds a day, but the perch were quite insignificant in numbers on this day. We found in the nets seven small viviparous perch and two small sturgeon. I learned also that mink, beaver, and otters are sometimes caught in the nets. In 1872 Mr. Ingersoll caught 8 minks, 2 beavers, and one otter in his fyke-nets.

## 3.—SWEEP-SEINE FISHING.

The sweep-seine fishing is given over to the Chinese, who are not allowed by public sentiment to engage in either of the other two kinds of fishing just described, but what they are not permitted to do by the prohibited methods, they make ample amends for by their own methods. They are, I should say, the most industrious and persistent fishermen on the river. They fish all the year round. They use fine mesh-nets,

with which they sweep every part of the river, especially the partially-stagnant fresh-water lagoons, or sloughs, as they are called in California, where the fish collect in myriads to spawn. With these nets they catch vast quantities of fish of all sizes, and so destructive has their fishing been on the Sacramento, that all the fish of that river except salmon are disappearing with unexampled rapidity.

It is owing to this kind of fishing that the returns of the fyke-nets have diminished so alarmingly the last few years. The Chinese have been at it for seven or eight years, and if they keep on three or four years more at this rate, the small fish of the Sacramento will be practically exterminated. I had no means of ascertaining with any exactness how many Chinese fisherman there were on the river, but there are a large number, and Mr. Ingersoll said that they were increasing every year. The most of their fresh fish they send to the San Francisco Chinese markets as soon as caught, but they also dry a great quantity of them on bars and floors prepared for the purpose. These are both eaten by themselves and sent packed in barrels to the Chinese quarter in San Francisco. While at Rio Nita in February, 1873, I visited a Chinese fishing-station on the Sacramento River. It was located about 80 rods above the Rio Nita steamboat-landing, and consisted of a nest of Chinese fishing-boats numbering seven small boats and three large ones. There was also on the shore, just across the road, two old tumble-down buildings with drying-bars and floors near by in the open air, where some of the fishermen lived and attended to the drying of the fish. The small boats were small, flat-bottomed dories, square at the stern, sharp at the bow, about 15 feet long, and strongly built.

The large boats were also strongly built, but narrow and pointed at both ends, and constructed in the Chinese fashion. Two of the three large boats had one mast, and the other one had two masts, considerably raking, with Chinese sails, which were not like anything used in this country for sails. Nearly amidships, but a little nearer one end than the other, was a tent in which the Chinamen lived. There was also considerable space in the hold of this really Chinese junk, which added a good deal to their house-room.

The whole air and look of these crafts was decidedly foreign, and I might say oriental.

If I understand their method rightly, the small boats are to visit the sloughs and various fishing points when they go out to draw the seine, and the larger boats are really only movable dwellings and store-houses, where they live and receive the fish that are brought in by the small boats, and which, of course, they move from place to place on the river as the exigencies of the changing fishing seasons may require.

Yours, respectfully,

LIVINGSTON STONE.

Prof. S. F. BAIRD.