Notes on the Herring, Long-line, and Pilchard Fisheries of Plymouth during the Winter 1889-90.

By

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I. The Herring Fishery.

[The herring fishery is carried on at Plymouth during the winter months, when the adult herring seek the inshore waters for spawning. Besides these, however, the so-called "harbour herring" are taken in the summer and autumn; these appear to be the produce of the last spawning season, *i. e.* six months to a year old. Mr. Cunningham has shown me specimens taken in the Cattewater in May, 1889, which vary from 3½ to 5 inches in length. Those which are at present being brought to the Laboratory (September, 1890) are 9 or 10 inches in length, but their reproductive organs are still at an extremely early stage of development. Further observations on these harbour herring are much needed, and are being gradually made.

The nets used up at Saltash for these harbour herring are, Mr. Roach informs me, used three to a boat, 7 score 7 meshes in depth and 44 fathoms to the rope, that is, 132 fathoms long, with buoy-lines 1 fathom deep. Those used in the Sound vary with the size of the boat. The smaller boats have two or three nets, 12—13 score meshes in depth, and each 40—42 fathoms long; buoy-lines 4—5 fathoms apart, and 2 fathoms long; the latter are shortened up a fathom at low water. The boats used outside the Breakwater have three to four nets each, 13—14 score meshes deep. The next boats (9-ton dandy hookers, 36 feet long, 10 feet beam, worked by 4 men) use ten to twelve nets, 15—16 score meshes deep. The largest boats are decked, use sixteen to eighteen nets, 16—18 score meshes in depth, with 3-fathom buoy-lines; they are worked by 6 men. The proper herring mesh for full-roed fish is

33 meshes to the yard. The Cawsand fishermen who fish in Cawsand and Whitsand Bays use moored nets.—G. H. Fowler.]

Note.—The symbol > implies that the number given was the greatest catch by any single boat; a number without this implies the total amount of fish landed.

Date.	Number per boat.	Locality.	Price per 100.	Remarks.
1889.				
Oct.				
23	40 >	Rum Bay	—	—
24	500 >	Batten Bay	5/6	Quality good.
26	400 >	,,	4/6	Very scarce up to 10 p.m., when the fish rose in the slack water.
30	1000 >	Cattewater	4/6	—
31	1500 >	Inside Batten Breakwater	4/6–5/0	These are probably not the coast fish, but harbour fish which have been driven down by foul water following the heavy rains.
Nov.				
1	500 >	Inside Mallard Buoy	4/0–5/0	—
2	400 >	Rum Bay	6/0	Quality good.
	2000	Cawsand Bay	—	Taken in moored nets.
4	400 >	Rum Bay	5/0	No fish from Cawsand Bay.
5	300 >	Sound, East Channel	4/6	Wind W.; threatening.
	700	Cawsand Bay	—	
6	Very few	—	—	Fine, calm. Herring fishing discontinued for a time, as the coast fish had not made their appearance.
11	200–300	Saltash and St. Germans	3/6	—
	500 >	Cattewater	3/3–3/6	These fish used to be taken in large quantities some years ago at Laira with long seine nets. Now the fish do not appear to go so far up, and the seining industry in the estuaries has diminished.
12	3000 >	Saltash Bridge	3/6	These fish were probably caught in tuck seines, as they were so small that they would have passed through the meshes of the large seines.
13	None	—	—	Wind S.E.; very fine.
14	—	—	—	No herrings in Plymouth Sound or the Cattewater, but a few thousands taken by 27 small boats near Carr Green, 3 miles above Saltash. The fishermen there use 3 nets, threescore and seven meshes in depth, and 44 fathoms to the rope, making a total length of 132 fathoms. The buoy-lines are one fathom deep. They only fish in slack water, because, when the tide is running strong, they drift against the ships. Herrings are always taken there at this time of year when the weather is fine, and they only come to the Sound when there is a great freshet after rain.
18	None	—	—	Many of the boats took out their nets, and dried and put them away, anticipating a bad season.

Date.	Number per boat.	Locality.	Price per 100.	Remarks.
Nov. 27	600 >	Rum Bay	3/0	No quantity of fish arrived yet, probably owing to the east winds, which are noticed to keep not only herring but whiting off the coast.
28	100 >	Batten Bay	2/0	The low price is due to large consignments from W. Cornwall, which are two days old on arrival, and are sold at 1/0 per 100, depreciating the home catch.
29	3000 >	Cawsand Bay	1/6	Caught in moored nets. These are not the same fish as those caught by the Saltash fishermen; the scales of the latter come off much more readily than those of the coast herrings, caught for the first time to-day. Since the beginning of the month from 60,000 down have been taken by large and small boats in St. Ives Bay. They have since decreased there, and increased at Penzance, where they had from 20,000 down. Finally, they have fallen off at Penzance, and have appeared at Plymouth, their last spawning place, but they are still very hard.
30	6000 >	Cawsand Bay	—	Caught in moored nets. They have not yet appeared in the Sound.
Dec. 2	3000 >	2 miles S.W. of Penlee Point	1/3	Caught by six large boats.
	10,000 >	Cawsand Bay	1/2	Moored nets.
3	4000 >	2 miles S.W. of Penlee Point	1/3	—
	8000 >	Cawsand Bay	1/2	Moored nets. Owing to the strong S.E. winds it has been difficult to underrun the moored nets in Cawsand Bay; otherwise the catches would have been better.
4	10,000	Whitsand Bay	3/0–1/6	Wind E.N.E. No herrings in the Sound or in Cawsand Bay. The Cawsand fishermen made the whole catch, having moved their moored nets to Whitsand Bay. The herring is a "lee fish," moving backwards with the wind. They will remain in Whitsand Bay till the wind shifts and drives them out. A west wind is the best for Plymouth Sound.
6	800 >	N. of Eddystone	2/0	
	1200	Whitsand Bay	1/6	
7	4000	Off Rame Head	1/11	Wind E.N.E. The fish in Whitsand Bay are caught in moored nets, the others by the large drift-boats.
	10,000 to 12,000	Whitsand Bay	1/6	
9	—	—	—	Moored nets taken from Whitsand Bay. Wind W., very light. 10,000 herrings brought in by pilchard-boats, made 2/0 per hundred.
10	Several thousand	Cawsand Bay	1/8	Moored nets. Wind W., fresh. The drift herrings always make more money than those taken in moored nets, the latter being so many hours dead in the water.
	Several hundred	Plymouth Sound	1/11	—

Date.	Number per boat.	Locality.	Price per 100.	Remarks.
Dec.				
11	400	Plymouth Sound	1/11	No great quantity as yet in the Sound.
	8000	Cawsand Bay	—	Moored nets.
12	400 >	Plymouth Sound	2/1	—
	6000	Cawsand Bay	1/10	—
13	Small catches	Plymouth Sound	—	—
	2000–3000	Cawsand Bay	—	—
14	3000 >	Plymouth Sound	1/6	New grounds to Melampus Buoy.
15	3000 >	N.W.–N.E. of Breakwater	1/6	—
16	3000 >	West Channel	1/7–1/8	New grounds to Melampus Buoy; largest catches on the slack water (flood), 10 p.m. Wind W.
17	4000 >	N. & S. of the Breakwater	1/6–2/0	—
	6000	Cawsand Bay	1/6	—
18	3000 >	½ mile S. of the Breakwater Fort to E. end of Breakwater	2/0	—
19	1800–2000	Outside Breakwater	2/9-3/3	Owing to stormy weather from the west the large boats had to return without shooting their nets.
	500 >	West Channel	2/9-3/3	
	8000	Cawsand Bay	2/6	
20	1000 >	Outside Breakwater	2/6–3/9	Rise in price due to diminished catches in the west.
	400 >	Inside Sound	2/6–3/9	
	9000	Cawsand Bay	2/6	—
21	Few hundreds	Mid Sound	4/9	Stormy.
	8000	Cawsand Bay	2/6	
23	2000 >	Near Melampus Buoy	4/4	Fish very fine; will spawn in about a fortnight.
24	2000 >	Inside Breakwater	3/4–3/6	150 sail in the Sound. Fish full.
	10,000	Cawsand Bay	2/6	—
	10,000 >	6 miles S. of Mothecombe	2/6	All full-roed.
25	1500 >	E. of Melampus	3/4–3/9	—
26	20,000 >	Off Mothecombe	2/6	Taken by large-decked boats from Penzance.
	Few hundreds	Cawsand Bay	1/7	—
27	30,000 >	Mothecombe; Breakwater Light, clear of Mewstone to S.	1/4–1/9	Taken by large boats on the evening slack water. Twilight, midnight, and daybreak, the best three times for herring. Some of these fish are already shotten; they then go away, probably into the Channel, as the mackerel men fishing 15–20 miles S.S.W. of the Eddystone get them in their nets in April, after which they begin to fill again. Very few herrings now being taken in the Sound; they have probably gone up the harbour to spawn, the weather being fine and the water clear. The Saltash fishermen are taking several thousand. If the weather keeps fine they will come down, nearly all shotten.

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Date.	Number per boat.	Locality.	Price per 100.	Remarks.
Dec.				
27	6000	Cawsand Bay	1/7	—
28	400 >	Sound	—	—
	7000	Cawsand Bay	1/3	—
	20,000 >	Mothecombe	1/3	Taken again by the large-decked boats.
30	20,000 to 5000	„	1/3	The Sound fishery has completely stopped, owing to a strong, cold east wind for 2 or 3 days. If the present S. wind continues the fish will probably return.
	Few hundreds	Cawsand	—	—
31	40,000 >	S. of Mothecombe	3/0	—
1890. Jan.				
1	7000 >	S.S.W. of Mothecombe	4/0–4/9	—
2	4000 >	„	5/2 best, 2/6 seeds.	—
	1500	½ mile S.E. of Breakwater	4/10	—
3	5000	Mothecombe	2/8–2/10	The Sound fish are in good condition, and therefore make more money than the outside fish, which are mostly shotten.
	450	E. Channel	4/10	
	Few hundreds	Cawsand Bay	3/0	—
4	20,000 >	S. of Mothecombe	2/0–2/6	Very stormy; few boats out.
	200–300	Sound	3/0–3/3	Too bright a moon for a good catch at night.
	2000	Cawsand	2/0	—
6	400–500	Sound	3/0–4/0	No large boats out; strong wind and rain from the south.
	7000	Cawsand Bay	4/0–2/0	—
7	300–400	Sound	3/0–4/0	Stormy; never many taken in bad weather. Three parts of these herrings are shotten now.
	9000	Cawsand Bay	3/0–4/0	Nearly all shotten.
8	2000 >	Sound	3/3–3/6	New Grounds to Melampus Buoy. Nearly all shotten, and yet fetching a good price, as there is no other fish in the market.
	10,000	Cawsand Bay	2/0–2/4	—
9	3000 >	W. Channel	2/0–3/6	Strong wind and rain.
10	800 >	„	2/0–3/4	The heavy seas have driven the herring out of Cawsand Bay. None being taken at St. Germans and Saltash.
11	3000 >	E. Channel	—	The herrings have left the Sound; none with the large boats in Bigbury Bay. Only one or two per cent. full.
	Few hundreds	Cawsand Bay	—	—
14	Few hundreds	Sound	—	Shotten.
	5000 >	Outside Breakwater	5/0–5/4	A fresh shoal of fish, three parts full, taken just after midnight. Fine; night wind S.W.
16	3000 >	„	Full 3/6-4/0 Shotten 2/0	—
18	500 >	Sound	1/5–1/11	—
	2000 >	Outside Breakwater	4/6–5/6	Full-roed, and now spawning. Very stormy; wind S.
	4000 >	Cawsand Bay	1/6	Shotten.

Date.	Number per boat.	Locality.	Price per 100.	Remarks.
Jan. 21	1000 >	Sound	2/8–3/4	Small boats trying all round and outside the Sound; the large shoal which was outside last week has been broken up by the bad weather, and has come inside the Sound; only about 25 per cent. full. Stormy; wind S.
23	1000	W. Channel	3/0–3/8	Stormy. 10 per cent. still full.
24	400 >	Sound	3/2–3/4	Wind W.S.W., very squally. Nearly all fish shotten.
25	300 >	W. Channel	3/0	—
27	1800 >	Outside Breakwater, Panther to Shagstone	4/7–4/8	20 per cent. of these full; those inside the Breakwater all shotten.
30	8000 >	Panther to Shagstone	1/9–2/0	Sound fishery abandoned. The fish outside so ripe that the ova run out when touched; the buyers do not care for them when so ripe.
31	6000 >	½ mile S. of Panther to Mewstone	2/4–3/4	Fresh shoal of full-roed fish; now 6 or 7 years since full-roed fish appeared so late; last year none a fortnight after Christmas.
Feb. 1	1000 >	Shagstone to Mewstone	2/0–2/6	Half were shotten. The former shoal between Panther and Shagstone have spawned and gone into deeper water. The fishing has not been so good this year, the old localities (*e. g.* Bovisand, Cawsand, and Batten Bay) have been failures; probably because of the heavy ground seas prevalent this year, which seem to have driven the fish on to rockier ground, such as between the Panther and the Shagstone. Wind W., calm.
2	700 >	,,	2/0	Wind N.W., slight.
4	300–100	W. of Shagstone	2/0–2/2	Calm.
6	400 >	E. Channel	1/0	Shotten. Wind E., strong.
7	1000–300	,,	2/6 full 1/4 shotten	Wind E., strong.
8	500–100	,,	1/4–1/8	—
11	800–500	New Grounds to Melampus	2/0	20 per cent. still full.
12	800 >	,,	—	—
13	800–100	New Grounds	1/4	2 per cent. full.
14	200 >	—	0/10	Only 4 or 5 boats working; the fishery is practically over.

II. The Long-line Fishery.

Long-lining no longer pays in this port, as there is so much time wasted in waiting for bait. The boats are worked by four men, and the profits are divided in five and a half shares, apportioned thus :— To the four men one share each; to the owner, for the boat, one share; for the long-line or bolter a half-share. The owner, there-

fore, apparently takes one and a half shares, but of this he pays a quarter of a share to the skipper, while at least half a share must be devoted to the expense of maintaining the bolter in proper condition; he receives, therefore, only three quarters of a share clear for the boat and bolter. Years ago it used to pay; the boats were then much smaller, and only used from 600 to 800 hooks; now they have 1500 to 2000 hooks per boat.

On February 4th, for instance, I find from my notes that all the long-liners were in harbour for want of bait. The same thing happened on March 1st. Bait was scarce almost all the winter, while at the close of March matters were so bad that pilchards had to be sent by train from Falmouth, costing 12*s*. per 1000 and 5*s*. per 1000 for carriage, each boat requiring 800 (the large pilchards make two baits, the smaller only one). One boat on this occasion used a bait of half squid and half pilchard, and took 4½ cwt. of conger, two dozen rays and skates, and six ling, making £6. The other boats had pilchard bait only, and took 2 cwt., ¾ cwt., and three conger respectively, making £2 to £3. One who took only one conger made £7 by rays and skates. The mixed bait of pilchard and squid is found to be the best; the latter, however, depends upon the trawlers, in their turn dependent on the weather; while the scarcity and expense of the former will be seen from the tables given below.

III. The Pilchard Fishery.

Date.	Number per boat.	Locality.	Price per 1000.	Remarks.
1889. Oct.				
23	20,000	—	17/0	Taken by one boat; 3 other boats took 700–800 per boat.
25	10,000 >	Penlee to Eddystone	15/0	Hake, 3 dozen and less, 8/0–10/0 per doz.
26	200 >	Eddystone	25/0	Stormy, cold; wind E.
30	200 >	—	—	—
Nov. 1	300 >	W. of Eddystone	25/0	—
5	8000 >	„	20/0	Spur dog-fish (*Acanthias vulgaris*) innumerable, eating both fish and gear.
6	—	—	—	Very scarce, not enough for bait; 3 doz hake in 15 fath.
7	5000 >	5 miles outside Eddystone	11/0–15/0	5–6 doz. hake, at 9/0 per doz.
8	7000 >	Outside Sound	12/0	7–8 doz. hake, 9/0–9/6.
9	6000 >	4 miles outside Breakwater	10/0	Few doz. hake, at 8/0.
11	20,000 >	10 miles S. of Plymouth	9/0–10/6	—

Date.	Number per boat.	Locality.	Price per 1000.	Remarks.
Nov.				
12	5000 >	2 miles N. of Eddystone	10/0	—
13	9000 >	2 miles N.W. of Eddystone	15/0–16/0	Taken by Mevagissey boats. As the seine fishery in the W. has so far proved a failure, it is so much the better for the drift-nets, as all the buyers are at Plymouth.
14	8000 >	,,	15/0–16/0	Good demand, as there are ships here waiting to be loaded for W. Cornwall.
15	3000 >	E. of Eddystone	15/0–16/0	—
16	Few hundreds	N. of Eddystone	17/6	Mostly purchased by the hook-and-line whiting-boats, of which there are 60–70 sail here.
18	1000 >	6 miles E. of Eddystone	15/0	—
19	1000 >	—	—	Very bad season; 200 sail of boats here, the large boats taking out the pilchard-nets, and substituting mackerel-nets. Hake also fallen off; a W.S.W. wind wanted, as the E. wind always keeps the fish off this coast.
20	1000 >	E.S.E. of Eddystone	16/0	—
21	2000 >	—	—	Most boats had no fish at all.
22	Very scarce	—	—	Three boats out of a hundred landed 300 fish each.
29	5000 >	N.W. of Eddystone	—	—
30	2500 >	,,	17/6	—
Dec.				
2	8000 >	5 miles S.W. of Penlee	17/6	—
3	15,000 >	2 miles outside Eddystone	16/6	Only 8 boats with good catches.
6	800 >	N.W. of Eddystone	17/4	8 boats.
7	Few hundreds	—	—	—
10	10,000	4 miles S. of Rame Head	17/0	—
11	20,000 >	6 miles S.W. of Penlee	17/0	—
12	5000	,,	17/6	—
13	Few hundreds	—	—	—
14	30,000 >	Between Penlee and Eddystone	11/0–16/6	—
16	15,000 >	8–10 miles S. of Mewstone	15/0	—
17	25,000 >	6 miles S. of Stoke Pt.	14/0	—
18	15,000 >	—	13/0–15/0	—
21	20,000–10,000	—	17/0	Only 4 boats out, the weather being so bad from S.W. They saw what almost always indicates a good catch, viz. the gannets diving from a great height.
24	17,000	2 miles N.W. of Eddystone	14/0–15/0	Very stormy.
26	20,000 >	Rame Head to Eddystone	14/0–15/0	20 boats.

Date.	Number per boat.	Locality.	Price per 1000.	Remarks.
Dec.				
27	20,000 >	½ mile S. of Penlee	12/0–13/0	30 boats. One boat took 40,000, which carried the nets to the bottom; got them back without much damage.
28	20,000 >	Rame Head to Eddystone	11/0	Half the boats are now in the East Channel for herring. Hake very scarce, 33/0 per doz.
30	30,000 >	S. of Penlee	11/6	—
31	40,000 >	,,	10/6–11/0	Smallest boats almost sinking under their catches. Weather very fine. Taken at midnight after the moon went down.
1890. Jan.				
1	10,000 >	S. of Mewstone	9/0–11/0	—
2	10,000 >	3 miles outside Breakwater	4/0–11/0	—
3	7000 >	Various localities	8/0	Most of these fish taken by briming (cf. p. 250). Market glutted.
4	Few thousand	—	8/0	—
11	50,000 >	3–5 miles S.W. of Rame Head	8/0–10/0	The fish seem to be travelling S.W. Wind S.W., light.
15	20,000 >	S. of Rame Head	5/0–8/0	—
16	None	—	—	Stormy; wind S.

[*These extremely valuable notes will be continued in the next number of the Journal.*—G. H. F.]