

MONTHLY REPORT

January - February, 1948

The first two or three days in January were spent working on the pilchard report. The weather was bad and no otter-trawl fish were coming in.

A letter was written to be sent to the otter trawlers requesting their aid in recovering fish tags. A poster was made to advertise the tagging program.

A day or so was spent looking at albacore scales. The scales had been removed from the fish between the dorsal fin and the lateral line. They were covered with a thick mucous layer and were difficult if not impossible to clean. Next year more care will have to be taken to see that the scales are in better condition when stored, or perhaps scales from a different part of the body should be taken. The bluefin tuna scales taken from about the same position were in good condition. The scales in better condition showed clear circuli and with time perhaps annuli could be discovered. Ronga Iyengar, a fisheries student from India studying at the University of Washington, worked on albacore scales collected by Dr. W. F. Thompson at San Pedro. He reports that he could make out annuli on the scales.

Toward the middle of January the weather cleared and the otter trawlers put to sea. On January 15 the first sample of English sole was obtained. There were 222 English sole measured, of which only three were males. The total length was taken on a measuring board and the condition of the gonads recorded from all the fish. About 140 otoliths were taken. On January 19 a sample of about 200 English sole and 150 petrale was taken. In both species the females far outnumbered the males. On January 23, a sample of about 150 petrale sole was taken. On January 29, about 200 petrale were measured and about 50 English sole. Otoliths were taken from all of these samples. The weather then turned poor and no more samples were taken.

Figure one shows the length-frequencies of the petrale sole measured during this period. It is noted at once that the females are larger and far more numerous than the males. There are 6.3 females for every male. There appears to be a distinct age class at 36 centimeters in the females. Just which age group this is has not yet been determined as the otoliths haven't been examined. However, judging from the condition of the gonads, this age class is largely immature.

The following table shows the per cent of females that are mature at various lengths:

Per cent of Mature Female Petrale at Various Lengths			
<u>Length in centimeters</u>	<u>Per cent mature</u>	<u>Length</u>	<u>Per cent mature</u>
35	15	39	55
36	8	40	63
37	17	41	67
38	0	42	94

The per cent of mature females increases sharply at 39 centimeters and continues to increase until 94 per cent of the 42 centimeter fish are mature. There may be errors due to inexperience in determining the condition of the gonads which will change these percentages some.

There are too few males to determine anything except approximate lengths at maturity. At 32 centimeters 9 of the 10 fish examined were immature. At 33 centimeters, 3 out of the 5 fish were mature. At 34 centimeters, only 2 out of 8 were mature while at 35 centimeters, 2 out of 4 were mature. At 36 centimeters 3 out of 5 were mature, and at 37 centimeters 3 out of 4 were mature. Probably the majority of the males became sexually mature at from 33 to 35 centimeters.

Figure two shows the length-frequencies of the English sole measured between January 15 and January 29. Again the females are larger and more numerous. There are 6.1 females for every male, almost exactly the same ratio as in the petrale sole.

Five of the ^{six} English sole females shorter than 30 centimeters were immature.

At 30 centimeters 5 out of 8 were mature and at 31 centimeters 4 out of 7 were mature. Almost 100 per cent of the females 32 centimeters and over were mature. These figures indicate that the majority of the females become mature at about 30 or 31 centimeters.

There were only three immature males observed, one at 26, one at 27, and one at 31 centimeters. At 28 centimeters both fish examined were mature, at 29 centimeters four fish were examined all mature, and at 30 centimeters 11 out of 11 males were mature. These meager data indicate that the majority of the males probably reach sexual maturity in the middle twenty centimeters.

The following are random notes concerning the otter-trawl fishery. On January 15th, 83 per cent of the mature female English sole marketed from area 1313 off Klipsan Beach, Washington had already spawned. Only 1.4 per cent of the fish landed were males. However, on January 19th, 83 per cent of the mature English sole taken in area 1262 off Tillamook Head had not spawned. About 29 per cent of the fish landed were males. On January 29th, 82 per cent of the mature females marketed from area 1308 off the mouth of the Columbia River had already spawned. Ten per cent of the fish landed were males. The reason for the difference in the condition of the female gonads between those fish caught off Tillamook Head and the fish caught a few miles to the north is not known.

Because of poor weather conditions keeping the fishing fleet in port, the beginning of the spawning season for English and petrale sole was not determined. Many of the females had already spawned when the first samples were taken. On January 19th, forty-four per cent of the mature female petrale had spawned, on January 23rd, sixty-eight per cent had spawned and on January 28th, eighty per cent had spawned.

The demand for English sole, petrale, and even flounders has been good. There has been no quota placed on red rockfish (*S. pinniger*) principally because 6 army is taking large amounts of this species. However, the army is not accepting any black rockfish, and consequently these fish have been placed on a quota by the

buyers, Roughly, about 65 per cent of the rockfish brought in during January were black and 35 per cent were red.

During January about 85 per cent of the black rockfish brought in were *S. flavidus*, commonly called green rockfish in Astoria. The remainder were mostly *S. melanops* with a scattering of *S. paucispinis*. The red rockfish were practically all *S. pinniger*, although some *S. ruberrimus* (red snapper) were seen and one or two *S. rubrivinctus*.

S. flavidus were examined on January 19, 20, and 22, and no females containing young were observed. The first female with young was detected on January 27th.

When the first *S. pinniger* were observed on January 15th, about twenty per cent were already carrying young; *S. melanops* appeared to be in about the same stage of sexual development.

On January 15th, none of the starry flounders observed had spawned.

On January 20th, one *S. rubrivinctus* was seen with eggs which appeared to be almost mature.

On January 27th, one sand dab (*Citharichthys sordidus*) was seen with ripening eggs.

On January 29th, eight rex sole were seen with ripening eggs.

During the first part of February a trip was made to Seattle. John Gharrett had suggested inquiring about tuna logs that the halibut commission might have. Mr. Bell said that the commission had copied only a few logs. He suggested that the halibut boats be contacted prior to the opening of the halibut season. Mr. Bell will give us names of halibut boats which have kept tuna logs.

Most of the remainder of the month was spent working on Tri-state business. Preparations were made for the meeting; the meeting was attended in San Francisco, and after the meeting, the necessary reports were written.

George Harry,
Aquatic Biologist.

FIGURE ONE
LENGTH-FREQUENCY
PETRALE SOLE

Jan. 19 thro. Jan. 29

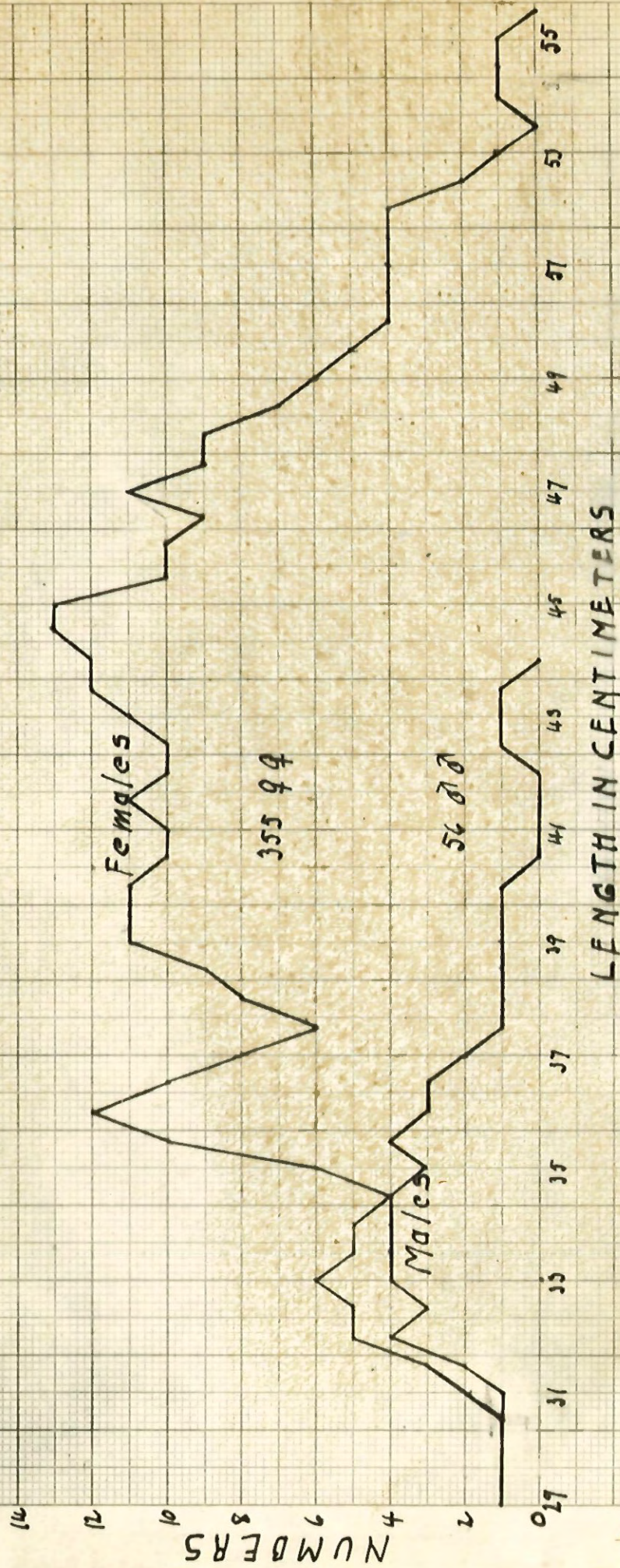


FIGURE TWO
 LENGTH-FREQUENCY
 ENGLISH - SOLE
 Jan. 15 thro Jan 29

404 Females
 66 Males

NUMBERS
 1/2
 8
 16
 20

