

c

1916

Grampus

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- June 20 Left Washington on 10.03 Am. P.R.R. train for New York, arriving 3.18 P.M. Spent some time in the N.Y. Aquarium. Left N.Y. on 6 P.M. Metropolitan Line boat for Boston.
- " 21 7.30 Am. Arrived at Boston. Went out to Cambridge to see Dr. Bigelow in the morning. Lunched in Boston and took 2.20 P.M. train for Gloucester, where I joined the Grampus. The vessel was being hauled out when I arrived. The express shipment arrived in the P.M.
- " 22 Vessel on railway, + painting. Unpacked + stowed the stuff already here. Came off railway 4 P.M.
- " 23 Getting things over from the island, + arranging + painting in the laboratory, Inventory etc. Had talk with Capt Carlos Young, + Capt Hansen.
- " 24 Ship turned inside out hunting bed-bugs. Worked over stuff in Am., went swimming at noon, and worked on scale tabulations in the P.M.
- " 25 Sunday. No work.
- " 26 Went to the island, sorted over stuff there, brought a lot to the vessel + stowed in laboratory. Overhauling gear etc. etc. Two boxes of mackerel eggs brought in today from Magnolia trap, and one box from same place already hatched.
- " 27 Went to island, got sample of mackerel eggs, + arranged to go to trap tomorrow. Spent morning studying and sketching mackerel eggs. Also afternoon same.

June 28 Went to Magnolia trap at 5 AM with spawn taken from station. Very few mackerel, only 2 large spawners, but these gave more than 1/4 inch of very fine eggs. A small catch - several bushels of silver hake and bluebacks, a few kyacks and small shad, 1 ♀ butterflyfish, ripe, a few small pollock, 1 bushel mackerel, mostly small, a few cunners & sea-robins, 2 or 3 small cod, 1 monkfish, & a few skates & squid, & 1 ripe ♀ window-pane.

Returned to vessel 9 AM. & measured up & sketched the mackerel & Lophopsetta eggs, & worked on scale tables.

June 29 Went to Magnolia trap at 5 AM. The catch was

50 large pollock about 20 small mackerel

20 squirrel hake (chuss)

A few white hake

6 bushels silver hake

1 butterflyfish

3 ♀ Lophopsetta (ripe)

a few sea-robins

1 monkfish

Several small shad

2 bushels bluebacks

a few kyacks

A school of small bit & sand-lance

The herring bit measured as follows (left)

8 cm. 3

7 cm. 7

6 " 5

15

A large ♀ Urophycis chuss was spawned, fertilized & the eggs put in a box at hatchery.

9 AM. returned to vessel & studied & sketched eggs of Urophycis and mackerel.

11.30 AM. Dr Moore & Dr. Bigelow arrived, & the rest of this day was spent in consultation with them.

June 30 Went to Magnolia trap at 5 AM. The owners reported a catch yesterday P.M. of 10,000 lbs pollock, which had come in after the bit.

A large haul was made - as follows

About 25 bbls silver hake

1 bushel hickory shad (*undicaris*)

a few small shad

" " bluebacks

" " kyacks

" " squirrel hake

2 ♀ + 1 ♂ Lophopsetta (ripe)

a few sea-robins

1 butterflyfish

1 pollock

8 small mackerel

1 monkfish

1 small haddock

Secured & fertilized Lophopsetta eggs.

" Sample A (scales) *Pomolobus undicaris* as follows

33 cm 1

34 " 2

35 " 4

36 " 5

37 " 4

38 " 1

39 " 0

40 " 2

19

These fish were all quite fat, but stomachs were empty. Sexual organs all in stage 2.

3 shad (scales) 28, 34 - 35 cm. stage 1, quite fat.

Returned to vessel at 9 AM + studied + drew *Lophosetta* + *Krobycis*, + took scale samples of *Pomolobus medicus* + *Alara*. Got more drawings in P.M. Taylor showed up in the evening.

July 1 Did not go to trap. Went to hatchery 7.15 AM and got sample of squirrel hake eggs, returned to vessel and sketched them. This lot is coming along splendidly. Taylor showed up, + went over to Rocky Neck in dory to see some fish unloaded. As it was Saturday, took P.M. off.

July 2 Sunday. Last night + this morning the harbor was solid with 1915 herring. 3.30 AM. they came so close to vessel that in a few minutes I dipped 591 fish. These were measured + weighed as follows.

Length	Number	Weight (av.)	
5 cm.	1.		Measured + weighed fresh, within an hour or two of being taken
6 "	60	1.46 grams	
7 "	323	2.26 "	
8 "	194	3.12 "	
9 "	13	4.61 "	

Went to hatchery 7.15 AM. for squirrel hake eggs, returned to vessel + sketched them. 9 AM. knucked off.

July 3. Went to hatchery 7.15 AM. Squirrel hake eggs hatching out. Got sample, returned to vessel, and sketched them. Took Taylor around the harbor to see fish men. This day at Noon, Ex. Capt. Hanson of the *Grampus* sailed for Iceland + Norway in command of the *Schr. Matchless*. He is to load herring at Iceland + take them across.

The immense schools of young brit continue to fill the harbor.

This is a very poor shad year here - seem to have skipped Ipswich Bay.

Freight arrived

July 4th Holiday ——— no work.

July 5th Went to Boston in the morning to order steel blocks + other sundries. Best I could do was at Bliss Bros, who ordered from the Seaboard + Boston Block Co. 2 galv. steel snatch blocks, 8 inch sheave, for 1/2 inch wire, @ \$12 each. Bliss promised them "within two days".

Returned to Gloucester on 2.20 train + met Dr. Mavor, of the Canadian service, who is working on cod + shaddock scales. He had to catch a train for Canada, + had only about 1/2 hour here.

July 6 Unpacking + stowing freight. Went to Hatchery in A.M. but all young hake had died in the box, Cunningham reporting that the day before there were only a very few left. Overhauling water-bottles + instruments etc.

July 7 Fitting up accumulator, nets, net frames + rings etc etc. With only 2 seamen available this work is very slow.

July 8 Saturday. Fitting up nets etc.

July 9 Sunday. No work.

July 10 The 2 steel snatch blocks from Bliss Bros. arrived this morning, vouchered as follows.

Bliss Bros. 170 Commercial St. Boston
1916
July 8 2 Galv. W.R. Snatch Blocks, 8" Shrs.
\$12.⁰⁰ \$24.⁰⁰

Bliss Bros.
E.C.W. Bliss
Sole owner.

The voucher was signed in the wrong place, and was immediately returned to Bliss Bros. for correction. Putting bridles on nets, overhauling equipment etc.

July 11 Went out to Magnolia trap 5:00 AM. No luck on eggs.

The trap held about 60 bbls, about half & half bluebacks and silver hake, with about a barrel each of shad and mackerel. No squirrel or white hake seen. About a dozen butterfish, from 25 to 27 cm in length, the ♂s ripe, the ♀s hard. 2 monkfish & a few cunners, sea-robin, black-backs, & a very few hysaks. The shad ran small to medium. About 1/2 the catch was dumped before baling.

Yesterday there were seven tuna in this trap, the largest about 300 lbs. All got away, going right through the webbing.

On Friday, July 6th, a very heavy body was found in this trap, and 8 men failed to lift it; the webbing being loosed, it suddenly rolled out. Portuguese Joe, an old whaler and shark hunter, employed at Gloucester station was one of the men at the trap, and he is convinced the thing was a bone shark. One was

taken in this trap last year, he states, and several years ago one was taken in Ipswich Bay. He has taken them at the Azores several times, and claims to be familiar with them. Says it could not be a whale of any kind, or it would have soon risen with gas. The thing, whatever it is, is believed to be still on the bottom under the webbing of the bowl, and I saw that the twine in one place was excessively slimy.

July 12 Went to Magnolia trap at 5 AM. Yesterday P.M. a horse mackerel got in, but went through the twine.

The catch today was about 100 bbls, and of the same character as yesterday, about half & half bluebacks & silver hake. Half the catch was released. Besides these two species, there were about 4 bbl of mackerel, nearly all ♂ with running milt. 1 Bbl shad, (several large). 1 Bbl hysaks & a few large butterfish. One ripe ♀ butterfish was taken, but the rest were all hard or ♂. A few mackerel & butterfish eggs were obtained.

Returned to vessel, and measured up the butterfish eggs in the 2 cell stage. Too warm to keep them going for future work.

P.M. repairing & fitting up Bigelow water-bottles, which have developed some weak spots.

July 13 Went to Magnolia trap at 5 AM. Similar catch to yesterday, only more mackerel, butterfish & blue-backs. One very large horse mackerel in trap, but as usual, got away. Only saw his back, which was deep black in color.

Got a sample of 20 butterfish, which ran very large. Scales & data as follows. They averaged nearly $\frac{3}{4}$ lb.

Length	Count	av. wt	grams
26 cm.	5		269
27 "	3	"	289
28 "	8	"	336
29 "	3	"	373
30 "	1	"	378
	20		

July 14 Stiff easterly at 5 A.M. so did not go out to trap. Worked on herring data and butterfish scales. Wired Washington last night for information as to when funds would be available. Got Bulletin this morning saying that our bill was signed July 1, so cannot understand the delay.

July 15 Got orders from Washington. 2nd mate went to Boston for men. Worked in lab. in AM, took P.M. off.

July 16 Sunday. No work.

July 17 Taking stores & making final preparations to sail at daylight tomorrow. Still one man short.

July 18. Thick fog clearing up a little in the harbor at noon. As we have a green crew, decided to anchor in stream this P.M. & train them in use of gear. A full day's daylight is needed for our 3rd stations on the 1st leg to Provincetown.

1.30 P.M. left dock and anchored off 10 lb. Island. Started at last!

July 19

Came in foggy, but rapidly lifted. Hove up anchor 4.30 A.M. & proceeded.

5.30 - 6.30 A.M. making station 10340, 3 miles S by E from Eastern Point. Rich Calanus, many fish eggs & young fish.

9.15 A.M. - 10.50 A.M. making station 10341, Lat $42^{\circ}45'30''$ Long. $70^{\circ}27'30''$, West of Stellwagen Bank. Swarm of Calanus in upper layers and of Sagitta in lower. Many young fishes.

1.30 P.M. - 2.25 P.M. making station 10342, Race Pt St S by E $\frac{1}{4}$ E dist $4\frac{1}{2}$ miles. Rich Calanus & young fishes.

As the crew was very green at handling sail etc, Capt decided to go into Provincetown for the night, thus avoiding night work for another day. Came to an anchor in Provincetown Harbor 4.30 P.M.

N.E. Storm warnings ashore, and thick fog in the night.

July 20

Day came in with thick fog & calm. Picked fish from $\frac{1}{4}$ of meter net haul, Sta 10341, an awful job. Almost pure Calanus, & fish very minute, could only sort a tablespoon full at a time. Recognized (naked eye), silver hake, cusk, rockling, witch-flounder, sand dab, sculpin. Only got about $\frac{1}{2}$ of the fishes in this lot.

Storm warnings still flying. Fog lifted in harbor, but thick outside. At 2 P.M. took the launch and made Sta 10343 in Provincetown Harbor. Bottom net yielded a rich haul of young fishes, chiefly gadoids & flounders - cusk, hake, rockling, cod, sand-dab, witch, window-pane, etc. etc. This region is the richest I know for New England young fishes.

10.30 P.M. the long-promised gale started in from S.E with heavy rain.

July 21 Day came in with South Easter, cloudy + showers. Many seiners in harbor for refuge, including 6 old Menhaden steamers now seining machuel
7.30 Am Wind S.S.E + increasing.
High wind + rain all day - many vessels coming in for refuge - counted at 4 P.M. 30 schooners + about 35 steam + motor vessels, besides dozens of smaller craft. Too little light + ventilation to work in lab. Spent day mostly reading + sleeping.
4.30 P.M. Wind round to S.W. + moderating somewhat.

July 22 Came in cloudy, with fresh S.W breeze. Hoove up anchor at 6 Am. + proceeded. Off Race Pt. ran into fog, which continued until off Highland Light.
9.15 to 10.45 Am made Sta 10344, 6 miles NE by E from Highland Light, in 48 fath. Encountered swarm of Calanus + young fish (chiefly silver hake), between 40-60 meters. Many fish eggs on surface.

12.30 P.M. ran into fog again.

2 P.M. fog very black + dense. Surface temp 50°

3.15 - 4.30 P.M. made Sta 10345 in a thick fog, SSW breeze + smooth sea. We have gotten out of the Calanus swarm, but there is still a fair amount. Rich red micro on surface. Surface temp 50°.

6 P.M. Surface temp risen to 52° + fog lifting somewhat. Saw 2 large fin-back whales

7.30 P.M. Surface temp 53 53

8 P.M. " 52

9 " " 53

10 " " 57

11 " " 45

12 midnight 45

8 P.M. Fog shut in again. 10.15 to 11.30 P.M. made Sta 10346, in thick fog + showers, SW breeze + smooth sea. Lumpy bottom, + quantitative net struck, + brought up sand + shells, without damage. Made Sta in 34 fath, (62 m).

July 23 Sunday. Came in with thick fog + lumpy sea.

Surf. temp. 1 Am 46

" " 2 Am 47

" " 3 Am 53

4 " " 51

5 " " 53

6 " " 46

7, 8, + 9 " 52

7.15 Am to 8.20 Am. made Sta 10347 41°06' 68°51' in 43 fath, fresh SW breeze, smooth sea + thick fog.

Took 16 young haddock in meter net, 50-0 m, as follows

5 cm. 4.7 cm. (measurement approximate.)

3.4 4.1

4.5 5.

4.5 3.6

5.5 2.6

4.4 4.

4.7 3.8

4.2 3.5

also a lot of jelly fish in same net. Few copepods - all nets clogged with green diatoms.

1 P.M. to 3 P.M. made Sta 10348, 40°49' and 68°21' Similar to last station, taking 22 young haddock and one butterflyfish. (see log.)

(TT) 1 Simanda 10700

(TT) 3 skates 10701-10703

4 P.M. passed large shark, est. length 7 ft.
 Light head winds made it slow going to the
 next station. Passed several sword-fishermen in
 the night.

July 24

Day came in fine + clear, with showers on
 the northern horizon

Surface temp	1 AM	56
	2 AM	58
	3 AM	58
	4 AM	59.

5 AM Calm, started engine to reach station. Decided
 that as it was an exceptionally fine day to set for tilefish,
 to make the 100 fath sta. the last on this leg, + run
 back at once to set trawl.

5.30 AM to 7.30 AM making sta 10349, at $40^{\circ}15' - 68^{\circ}05'$
 in 190 meters. See log. Lost meter net - see log.

At this station killed swordfish ♀ roe immature,
 with the following measurements

Total length	325 cm	Base to fork caudal	25
Tip sword to eye	106	Length caudal keel	28
" " base dorsal	140	Breadth across " "	34
" " tip mandible	93	Base caudal to finlet	17
" " end maxillary	122	" finlet	6
Base dorsal	30	Length "	8
Height "	53	Finlet to anal	26
D to finlet	96	Anal base	16
Base finlet	6	" length	30
Length same	10	" to base pectoral	40
Finlet to base caudal	12	Pectoral base	10
Spread of caudal	90	" length	43
Upper lobe "	56	tip sword to opercle	143 (head)
Lower " "	55		

Diam orbit perp. 9 horizontal 8

" eye $6\frac{1}{2}$

" pupil $3\frac{1}{4}$

Interorbital 19.5

Back + fins slaty black

Belly silvery

Iris sea-green

Pupil blue black

Stomach contained 1 bucketful of silver hake +
 squid.

Eyes + sword saved.

At end of this station saw another swordfish
 6 swordfishermen in company.

9 AM to 11 AM. Made Sta 10350, in $40^{\circ}23' - 68^{\circ}15'$
 in 65 fath sand + mud. This station was a
 trial for tile fish with 1 blind tub of trawl with
 300 hooks baited with salt bluebacks. Total catch
 as follows.

2 squirrel hake

1 silver hake

1 dogfish.

Barren bottom, no fish here, proceeded westward.
 2.45 PM passed large shark on surface.

4.30 P.M. - 6 P.M. made Sta 10351 in 100 fath = 182 m.
 $40^{\circ}06' - 68^{\circ}57'$. See log.

8 PM - 11.30 P.M. made Sta 10352 in approx 900 fath,
 going down to 500 meters. $40^{\circ}00' - 68^{\circ}44'$. See log.

July 25 Day came in with fog, light S. breeze + smooth sea. Ready to ~~set~~ for tile-fish at 4 AM, but found ourselves up in 55 fath, due to a miscalculation in the last watch, overrunning 10 miles (L.)

5.45 AM to 8 AM making Sta 10353 (set for tilefish) Total catch 2 white hake + 2 squinell hake.
A large school of blackfish seen at this station

10.45 AM to 12 m. making Sta 10354. See log.
Small sword + large shark seen.

3.30 P.M. passed Nantucket South Shoals Lightship,
& saw 1 sword.

4 P.M. saw large shark.

All day thick to light fog with intermittent showers.

6 P.M. - 7.30 P.M. Making Sta 10355 See log.

3 young haddock taken at this station with one bucket of jelly-fish. In the two previous stations where young haddock were taken (on George's Bank) they were taken with a swarm of jelly fish. At this station the ~~net~~ meter net got no jellies - no haddock. This appears to be more than a coincidence.

July 26 Still foggy. 12⁰⁰ AM to 1.10 AM making Sta 10356
Many small fish eggs. Water firing brightly.

7 AM. fog lifting somewhat.

7.25 AM - 8 AM. Making Sta. 10357, off No Man's Land. Swarms of small fish eggs + some small fry taken.

1 P.M. arrived at Woods Hole. Commissioner came on board. Got quohog dredge.

July 27 Fog. In spite of this, took the Commissioner and a party out into Vineyard Sound, and made Sta. 10358, just off Cottage City. Returned to Woods Hole 1 P.M. Too thick to start out. Decided to go up Long Id. Sound to New York, in the hope of getting a good seaman.

July 28. U.E. breeze. Left Woods Hole at 6 AM.
11.15 AM made Sta 10359, south of Newport about 15 miles.

6.45 P.M. made Sta 10360 in Long Id. Sound off Gardiners Bay.

July 29 5.30 AM made Sta 10361 in Long Id. Sd., west 3 miles from Stratford Shoal.

1 P.M. arrived and anchored at Stapleton S.I.

July 30 Sunday. No work.

July 31 Went up to N. Y., doing errands etc. Called on Dr Townsend at the Aquarium. Met Bureau of Standards man there. Officers trying to get a seaman.

Aug 1 Left Stapleton early for a line off shore.
9 AM to 10.50 A.M. made Sta 10362 near Cholera Bank.

3 P.M. - 4 P.M. made Sta 10363, and during the rest of the day passed 2 large schools of bonito, 20 or 30 sharks, and one large hammer head shark

A barn-swallow and a nuthatch came aboard.

7.15 PM - 8.30 PM. made Sta 10364

Got a few scallops. Passed 20 or 30 large sharks + 1 large hammerhead. nearly calm all night, vessel drifting

Aug 2. Smooth, clear + calm. Much floating seaweed
6.45 AM - 7.45 AM made Sta 10365

2.45 PM made Sta 10366 Set for tilefish, but got only 1 squirrel hake + 1 small eel. Good bottom, but bottom water only 6°C.

8.30 PM - 9.15 PM made Sta 10367, hydrographic only

10.45 P.M. - 1 AM. made Sta 10368, on board.

Aug 3. 5.15 AM. Made Sta 10369, + set for tile-fish.

Got 11 tile fish as follows, all females

Hard ♀	16	Kilo	108	cm.
Ripe ♀	7	"	81	"
"	8.5	"	88	"
"	7.5	"	84	"
"	7.5	"	8.5	"
"	8	"	8.6	"
"	7	"	80	"
"	8	"	77	"
"	8	"	83	"
"	7.5	"	86	"
"	7	"	82	"

There seemed to be plenty of fish here, on good bottom, but they did not like the salted blueback bait, as nearly all were hooked in lip or hooked foul.

1.45 PM - 4.25 PM made Sta 10370.

Shortly after leaving this Sta took a swim, and 2 minutes after coming aboard sighted a large shark in the wake. He was hungry, + was taken in a few minutes on tilefish. Proved to be a large ♂ hammerhead, with the following measurements

Total length	302 cm.	Width between nostrils	57
Width of head	63	" " eyes	68
" " eye stalks	12.5	Snout to upper lip	14
Snout to D	83	" " angle of jaw	25.5
Base D	29	Width mouth	19
Height D	43		
D to 2 nd D	70		
Base 2 nd D	10		
Height 2 nd D	11		
2 nd D to Caudal base	21		
Caudal base to tip upper lobe	89		
" " " lower "	34.5		
" " fork caudal	21		
" " " anal	19		
Base anal	15		
Height "	13		
A to ventrals	29		
Base "	17		
Caudal tip to notch	17		
Length claspers	29		
Height ventrals	15		
V to P.	60		
Pect base	18		
Length pect	37		
Pect to rear angle head	32		
" " snout	57		
diam eye	3.5		
Depth body	50		

Upper parts of head body + fins, head gray.
Lower parts of same grayish white

Tip of pectoral black, + other fins dark

Jaws + skin sample saved.

6.30 P.M. - 7 P.M. made Sta 10371
9.45 P.M. - 10.45 P.M. " " 10372

Aug 4 1 Am - 2.15 Am made Sta 10373.
5 Am made Sta 10374
8 Am - 8.45 Am made Sta 10375

Should have made 5 fathom lightstiff by noon (according to the log) but it overran badly. Turning course to N.W. made landfall at Ocean City N.J. Came to an anchor in Cape May Harbor 6 P.M.

Aug 5. Saturday, crew engaged cleaning ship.

" 6 Sunday no work

" 7 Crew painting etc. 2.30 P.M. made Sta 10376 in harbor with launch.

" 8 Crew painting etc. In A.M. made several hauls with 100 ft seim at inlet. Interesting collection of small fishes + swarms of Meridia. Should have taken stores in P.M., but engineer failed to return from liberty, and could not get alongside wharf without him.

Aug 9 Taking stores etc all morning at wharf. As we have much work to do close to shore, decided to postpone start until daylight tomorrow. Also a chance to get bait for titefish

Aug 10 No Bait Hove up anchor 5.30 A.M., + went out to look for clams. Hazy with light NE breeze. Made the following stations, all under Sta 10377. All bearings from light on Cold Spring petty.

A. 7.30 - 7.35 Am. S by W 4 1/2 miles Clam dredge
Starfish, dead conch, oyster + sea clam shells Hard bot.

B. 7.45 - 7.50 Am. S by W 1/8 W 4 miles Clam dredge
2 dead conch shells Soft bot.

C. 8 Am - 8.05 Am. S 3/4 W. 3.3 miles Clam dredge
A few dead sea clam shells + 1 quohog shell hard bot.

D 8.15 - 8.20 Am. S by W 2 1/2 miles Clam dredge
Many quohog + sea clam shells. hrd + sft blk sand

E 8.35 - 8.45 Am. SSW 1 1/10 miles Clam dredge
A few sea-clam shells sft to hrd sand

F 9.05 - 9.15 Am SW 1/2 S. 3 miles Clam dredge
Sea-clam shells, few quohog shells, 1 live quohog Sand + sft blue clay.

G 9.30 - 9.35 Am. WSW 2 miles Clam dredge
Dead quohog shells + sea clam shells sft to hrd blue clay

H. 11.25 - Am - 1 P.M. Made Sta 10377. [11.30 - 11.40 Am Clam dredge
1 King crab, 1 sea robin, a few dead quohog + sea clam shells. sft bot.

Sled net 35 min. little but stenophores (bottom)
1/2 m net 30 min. " " fish eggs surfers
20 net " fair haul micro. "
Otter trawl 20 min, 2 flat-fish, 6 sea-robins (ripe),
sea-clam shells.

I 2.08 - 2.23 P.M. SE by E 1/4 E. 7.2 miles Clam dredge
6 live conchs, 1 skate + dead sea clams hrd + sft blue clay + sand

- J 2.32 - 2.47 P.m. SE by E $\frac{3}{4}$ E 8 miles
 1/2 bush conchs + dead sea clams Scallop dredge
- K. 3.00 P.m. hooked up in 5 minutes. SE by E $\frac{3}{4}$ E ^{5.7} miles
 1/4 bushel dead sea clam shells Clam dredge
 Sand + mud
- L. 3.14 P.m. - 3.24 P.m. ESE $\frac{3}{4}$ E 4.5 miles
 1 bush sea clam shells, 1 quohog shell, several,
 live conchs. Clam dredge
 Ind blue clay
- M. 3.43 - 3.57 P.m. ESE 3.8 miles
 1/2 bush dead sea clams + live conchs. Clam dredge
 sft blk mud
- N 4.15 - 4.30 P.m.
 7 conchs + 2 large quohogs Clam dredge
 sft.

Located end of trap 3 miles off Holly Beach.
 As we were close in, and there was a chance of
 getting bait, went into Cape May for the night.
 Got 1 bushel menhaden for bait.

- Aug 11. Left Cape May 8 A.M. 9.45 - 10.30 A.M. made
 Sta 10378 on Meercay's Shoal, Cape May jetty bearing
 N $\frac{1}{2}$ W $5\frac{3}{10}$ miles
 Took in otter trawl 5 *Paralichthys dentatus*, as
 follows; Scales + data taken.
- | | |
|---------------|------------|
| Length 37 cm. | Wt. 460 g. |
| 38 " | 525 |
| 50 " | 1155 |
| 41 " | 660 |
| 34 " | 405 |

Made the following trials with clam dredge etc.
 all bearings from Cape May jetty.

- A. 11.15 A.M. - 11.30 A.M. S. $\frac{1}{4}$ E 7.2 miles
 1 quohog + some sea clam shells. Clam dredge
- B. 12.30 P.M. - 1 P.M. S. by E 8.8 miles
 75 sea robins Otter trawl
 1 flounder 1 *Lophopsetta*.
- C. 1.55 P.M. - 2.10 P.M. SSE 8 miles
 1/2 bush large sea clam shells. Clam dredge
- D 3.10 - 3.25 P.M. SE $\frac{3}{4}$ S. 11.1 miles
 barren. Gravel + pebbles. Clam dredge
- 4.40 P.M. - 6 P.M. made Sta 10379 1 mile SW from
 5 fathom bank lightship.

Aug 12 1 A.M. - 2.30 A.M. made Sta 10380

6.35 A.M. - 8.45 A.M. made Sta 10381

11.30 A.M. - 4.00 P.M. made Sta 10382. Set for tele -
 fish here, but got only 1 small *Urophycis* + 1 silver hake.
 Good tele bottom with plenty of food.

4.45 P.M. - 5.30 P.M. made Sta 10383, hydrographic only.

6.15 P.M. - 9 P.M. made Sta 10384.

Aug 13 Sunday. 5.30 Am - 9.15 Am. made Sta 10385. Abundant Physalia + gulf weed.

1.30 P.M. an attempt was made to set for tile-fish. The trawl had just been put out, when a heavy squall came up very suddenly. Just had time to get the dory used as a marker, and cut away the trawl. The squall developed into a stiff NE blow and it would have been foolish to risk the instruments on further stations. Therefore headed for Norfolk.

4.30 P.M. ~~the~~ made Sta 10386 in 62 meters, only using meter net at 45-0 m + 1/2 m net on surface. The meter net brought up a swarm of Clione, Euthemisto + copepods.

Aug 14. At 4 Am came to anchor in Hampton Roads. Proceeded up to Norfolk + tied up at Buoy Dock at Portsmouth at 11 Am. Took the Steamer to Washington D.C. in P.M.

Aug 15 In Washington D.C.

Aug 16 " " " left for Norfolk in P.M.

Aug 17 Arrived Norfolk A.M. Went to vessel, there was a N.E. blow outside, so Capt decided it useless to go out.

Aug 18 Still N.E. outside, lying at Portsmouth

Aug 19 " " " " " " " " " " " "

Aug. 20 Sunday. N.E. wind moderating. Capt decided to start Monday morning

Aug 21 left Norfolk 8 Am.

12.30 P.M. - 2 P.M. making Sta 10387 off Cape Henry light buoy.

3.15 P.M. - 3.20 P.M. making Sta 10388. This was only a set with otter trawl on grounds on which several dories from a fishing schooner were fishing for sea-bass without success. In 10 min. the otter trawl took 14 croakers 1 small pin fish + several sea-robins. The croakers as follows.

Length.	Weight
29 cm.	285 g
32	410
30	340
29	350
" 29	320
28	290
28	300
28	330
31	445
27	290
27	280
27	265
25	195
27	255

4.15 - 5.45 P.M. made Sta 10389 Otter trawl torn at this sta.

8.15 P.M. - 9.45 P.M. Made Sta 10390

Aug. 22 12.05 Am - 1.45 Am Made Sta 10391

3.35 Am - 6 Am. Made Sta 10392

7.30 Am - 9.45 Am Made Sta 10393

At the end of this station headed for Cape May N.J. to visit pound nets on 5 fath bank. Picked up 1 bushel Gulf-Wood to analyze for potash + iodine etc. etc.

Aug. 23 10 Am. Came to an anchor in Cold Spring Harbor, Cape May. 1 Monitor + 1/2 submarines in port.

Aug. 24 At 7 Am. went to 5 fathern bank in seabright shuff owned by a local fisherman named Oster. Got back to Grandus at noon. Short of ice, and none can be had until tomorrow.

Aug 25 Ice + stores not aboard until noon. 1.30 P.M. started for Gloucester, Mass.

Aug 26 8 Am. - 9.30 Am Making Sta 10394

2 P.M. - 3.45 P.M. " " 10395

10.30 P.M. - 11.45 P.M. " " 10396

A wonderful aurora tonight, reaching from east to west and up beyond the zenith. Light white or pale green. Lighter than bright moonlight most of the night

Aug. 27 Sunday. Arrived Woods Hole 1.30 P.M. for water + stores + rest.

" 28 Left Woods Hole 8.30 Am. for Gloucester. Light variable breezes

11 Am. made Sta 10397 in Nantucket Sound

4 P.M. Head winds ^{side} + thunder squalls with rain + patches of fog. Came to an anchor off Chatham Roads in Nantucket Sound.

6.30 P.M. Wind N. + rising with rain.

The American Magazine

381 FOURTH AVENUE
NEW YORK

EDITORIAL ROOMS

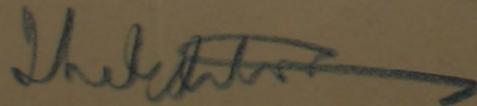
August 31, 1916.

Mr. William W. Welsh,
U. S. Fisheries Schr.
'Crampus"
Gloucester, Mass.

My dear Mr. Welsh:-

Many thanks for your letter of the 29th inst. regarding the kind of fish caught by Captain Thompson. Before receiving this letter we had already written to the author and Captain Thompson for verification or correction of the facts as published by us. We fear that there are several mistakes in this article and, of course, we wish to put the matter straight. We thank you for the personal interest you have taken in this matter.

Very sincerely yours,



H

876

TRAVEL ORDER
DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES
WASHINGTON

No. 215

Mr. W. W. Welsh,

June 10, 1916.

Bureau of Fisheries,

Washington, D. C.

You are hereby directed to proceed by the shortest and most direct route from

Washington, D. C.,

to

Gloucester, Mass., and other points along the Atlantic Coast,

~~and such points in the immediate vicinity thereof as may be necessary~~ for the purpose of

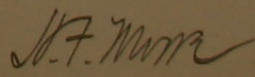
making a study of the life history and habits of herring and gadoids,

and on completion of this duty to return to Washington, D. C.

On the presentation of proper vouchers you will be reimbursed from the appropriation "Miscellaneous Expenses, Bureau of Fisheries, ," "Scientific Inquiry ," for your actual and necessary expenses while engaged as above.

You are also authorized to make such small purchases of articles of equipment and supplies, and to employ such temporary help as emergency conditions may require for the efficient conduct of the above work.

Refer to the number of this order in your monthly account taking up expenses incurred and upon the face and coupon of Government requests for transportation issued for travel in connection therewith. Estimated time 30 days.


Acting Commissioner.



57

State of New Jersey.
Fish and Game Commissioners.

ERNEST NAPIER, PRESIDENT, EAST ORANGE.
WILLIAM A. LOGUE, TREASURER, BRIDGETON.
BERNARD M. SHANLEY, JR., NEWARK.
W. A. FAUNCE, ATLANTIC CITY.

WALTER H. FELL, SECRETARY.
J. M. STRATTON, CHIEF WARDEN.
HOWARD MATHIS, ASST. CHIEF WARDEN.

Trenton, June 28, 1916.

William W. Welsh, Esq.,

U. S. Fisheries Schooner Grampus,
Gloucester, Mass.

Dear Sir:

Enclosed please find permit to take fish with a seine in the salt waters of New Jersey during the coming summer's cruise of the United States Fisheries Schooner Grampus.

We have this day notified the Wardens along the coast of the granting of this permit.

Very truly yours,

W. H. Fell
Secretary.

/M

Enc. 1.



State of New Jersey.
Fish and Game Commissioners.

Trenton, June 28, 1916.

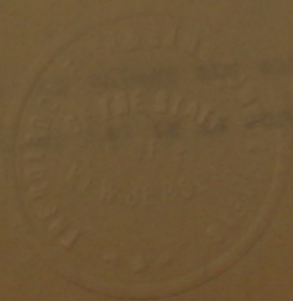
ERNEST NAPIER, PRESIDENT, EAST ORANGE.
WILLIAM A. LOGUE, TREASURER, BRIDGETON.
BERNARD M. SHANLEY, JR., NEWARK.
W. A. FAUNCE, ATLANTIC CITY.
WALTER H. FELL, SECRETARY.
J. M. STRATTON, CHIEF WARDEN.
HOWARD MATHIS, ASST. CHIEF WARDEN.

TO WHOM IT MAY CONCERN:

Pursuant to Section 25, of the Act of April 14, 1903, as amended April 9, 1914, permission is hereby given to William W. Welsh, Bureau of Fisheries, Department of Commerce, Washington D. C., to take fish with a seine in the salt waters of New Jersey during the coming summer's cruise of the United States Fisheries Schooner Grampus.

Ernest Napier,
President.

/s/



DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES

"GRAMPUS" *at sea*

August, 4, 1916.

SURFACE DENSITIES BY BOBBIN NO. 3.

Station No.	Date Aug.	Equilibrium Temperature	Corrected Mean Temp.	Density at 15/4
10364	1	23.70 23.70	23.65	1.02270#
10365	2	25.10 25.00 25.10	25.00	1.02309
10366	2	28.55 28.70 28.70	28.60	1.02419
10367	2	27.90 27.80	27.80	1.02394
10368	2	28.25 28.20	28.15	1.02405
10370	3	24.35 24.40	24.30	1.02289
10371	3	24.20 24.10	24.10	1.02283
10375	4	23.25 23.40 23.35	23.30	1.02259#

#these low values are interpolated from the calibration curve and may not be as accurate as the others.

W. L. Thues

DEPARTMENT OF COMMERCE

Aug 10. H. B. Drummond, Cape May N. J.

1 Sack Salt	1.25-
2 bushels menhaden	75-
	<u>2.00</u>

2.00

Aug. 14th Norfolk + Washington S.B. Co.

Transportation Norfolk to Washington
+ return. No 14226⁰ 5.00

" " Same, stateroom Norfolk to Washington
no. 165451 \$ 3.00 (non cheaper)

" " Dinner on board 1.10

" 15 Breakfast on board 85

" 16 Norfolk + Wash St. Co.,
Stateroom Wash to Norfolk
no 165452 2.00

" " Dinner on board 1.20

" 17 Breakfast " " 90

" " Herman Baray, Portsmouth Va.
2 doz. 1/2 gal fresh jais @ 1.00 per doz. 2.00

" " Norfolk Steam Laundry, laundry as
per list attached 2.78

" 31 Board on Sch. Grafius, Aug. 1, 15 21.25

31st (except \$ 32.08)

DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES
WASHINGTON

AME

July 19, 1916.

Mr. William W. Welsh,
U. S. Bureau of Fisheries, Div. Scientific Inquiry,
Washington, D. C.

Sir:

You have been appointed Assistant, Office of the Commissioner,

in the service of this Bureau, at a salary of \$1600
dollars per annum, effective July 16, 1916.

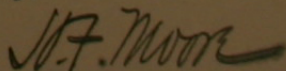
Note inclosed papers.

Execute the oath of office before a notary public
or other proper official on the day you enter on duty, or
as soon thereafter as practicable.Fill out carefully, answering all questions, in accord-
ance with instructions thereon, both the Declaration of
Appointee and Part 1 only of the Personal Question Sheet;
also Question No. 14 of Part 2 of the Personal Question
Sheet, if necessary.Return all papers, including stub of Circular No. 253,
through your superior officer, having him note on the oath
of office over his signature the date of your entrance on
duty, approve Part 1 of the Personal Question Sheet, and
sign the final statement on the Personal Question Sheet.

Report to

Expenses involved in travel to place of duty are not
allowed.

Respectfully,



Acting Commissioner.

Incs.--Declaration of Appointee.
Personal Question Sheet.
✓ Oath of Office.
Department Circular No. 253.

15
GENERAL APPOINTMENT-FIXED DATE

DEPARTMENT OF COMMERCE
APPOINTMENT DIVISION
WASHINGTON

July 15, 1916.

Mr. William W. Welsh,

Through the Commissioner of Fisheries.

Sir:

You have been appointed, subject to taking the oath of office,
and to actual entrance upon duty (unless on authorized leave) on
the date indicated, Assistant
in the Office of the Commissioner, Bureau of Fisheries
at a salary of One Thousand Six Hundred dollars per annum,
effective July 16, 1916.

(By promotion from \$1200. per annum.)

By direction of the Secretary:

Respectfully,

Clifford Hastings
Chief of Appointment Division.

L
G

Appropriation: Salaries, Bureau of Fisheries.

Vice: Lewis Radcliffe.

Legal Residence: Pennsylvania.