
STUDENT

FILING COVER

To Bind Completed Matter



Course given by

New England
W. W. Welsh

SUBJECT:

For the
NATIONAL SEPARATE-LEAF NOTEBOOK

Patented by E. W. Hill, July 5, 1898.

E 8.35 - 8.45

Soft to barren sand
few sea clam shells
SSW $1\frac{1}{10}$ miles

F Sand to Soft Blue clay
9.05 to 9.10

Sea clam shells few quahog
shells. 1 small quahog live
SW $\frac{1}{2}$ S 3 miles

G 9.30 - 9.35

Soft to hard Blue-green
clay. dead quahog shells +
sea-clam shells
WSW 2 miles

10377 H. Sta

NE fresh cloudy overcast

11.25 AM - 1 PM,

15 m. ~~HT~~

0

71.5

W.S.

15 m. 148 15.9 @ 20 WS

SE by E $\frac{1}{4}$ E 7.2 miles

* Clam dredge 11.30 - 11.40

1 king crab, 1 sea robin few dead
quohog + sea-clam shells.

Sled net	35 min	very little but stenophore & fish eggs
$\frac{1}{2}$ m net	30 "	
20 net	30 "	few micro
Otter trawl	20 min	

1 *Lophositta*

Sea robin, Ryo ♂ IIII Hard ♂ I

♀ II

P. dentatus 1 (45 cm) ~~HT~~ 10708 to

Sea clam shells 10715

10377 I. 16 min. SE $\frac{1}{4}$ E $\frac{1}{4}$ E
2.08 PM - 15 min 7.2 ~~8~~ miles
Hrd + soft. blue clay + sh
6 Conchs (live) + dead sea clams
1 skate TT 10717

J. Scallop dredge. SE $\frac{1}{4}$ E $\frac{3}{4}$ E
2.32 PM. 15 min. 8 miles
 $\frac{1}{2}$ bush conchs + dead shells
Sea clam

K. 3 PM. 5 min hooked SE $\frac{1}{4}$ E $\frac{3}{4}$ E 5 $\frac{1}{2}$ miles
up. Dead sea-clam shells $\frac{1}{4}$ bush
Sand. smug

L. 3.14 PM 10 min ESE $\frac{3}{4}$ E
4.5 miles
1 bushed sea clam shells
1 quohog shell Several live
hard blue clay. conchs.

Towers N by W
down NW by W $\frac{1}{2}$ W

N $\frac{1}{2}$ E
W N W.

M. Soft. to hrd.
3.43 Pm 357 15 min

1/2 bush dead sea lams
+ live conchs. Black mud
ESE 3.8 miles

N. 4.15 Pm Sft.
15 min,

7 conchs + 2 large quohogs.
E by S 2.3 miles

Set a trap -
Went into case

Wm
N 1/2 W
NE by E 1/2 E
W by N 1/2 N

Sta 10378 S $\frac{1}{2}$ E 5 $\frac{3}{10}$ miles
Aug 11

NE light clear. Smooth
Meeraps Shoal

9.45 AM - 10.30 AM

O 70 WS,

R. 148 21.1 @ 22 WS,

14. m.

10 AM.

Otter trawl $\frac{1}{2}$ hr.

20 net O 20 min faun micro

$\frac{1}{2}$ m net O " Scanty.

Red + gray worm tubes

Sea robins 23

Puffer 1

Summer flounder 5

Window-pane 1 TT 10718

Spate 1 (Same as Sta 10737)

WT + length of *P. dentatus*

37 cm 460 g
38 525 g
50 1155 g
41 660 g
34 405 g.

Scales + data taken

~~A.~~ 8 fath Soft $s \frac{1}{4} E$ 7.2 miles
15 minutes.

Clam dredge 11.15 AM
dead sea-clam shells
& 1 quohog.

B, 12.30 PM. $\frac{1}{2} m$
Otter trawl. $s by E$ 8.8 miles

75 sea robins [204 TT 10720
10721

7 204.
flounders

1 Window pane TT 10719

C. 155 P.m.

Sand bottom + gravel

Clam dredge

1 sea clam, 15 min^s SSE 8 miles

1/2 bush^l large sea-clam shells.

The dredge does not dig deep enough to get these sea-clams.

D 310 P.m. SE 3/4 S. 1 1/2 miles
Hnd r

clam dredge

Gravel + pebbles, barren

$$\begin{array}{r} 18. \\ 14 \\ \hline 32 \end{array}$$

Sta 10379 Aug 11

4.40 P.M. - 6 P.M.

Calm clear ground swell

27 m.

1 mile SW from 5 fath lightship

0 74.5 WS

25 #148 11.05 @ 18

Swarm stenophores

Bottom net 1 Clam - stenophore
20 min

1/2 m net 0 Scanty "

20 net 0 "

Scallop dredge 25 min slow

1 Bush sand dollars, stars

& dead sea clam shells

~~W by S 2 miles from lightship
bubbles of oil coming to surface~~

10380 Aug 12 11 AM

2:30 AM

choppy,

WSW fresh ~~smooth~~ cloudy

23 fath = 42 meters

0 74.5 WS

20 148 6.98 @ 19 WS

40 153 6.94 @ 18 WS

1/2 bottom

Bottom net 35-0 Rich col + 4 f

1/2 m net 0 Swam tenophos

20 net 0 Scanty

$$\begin{array}{r} 54.8 \\ 146 \\ \hline 6940 \end{array}$$

10381 Aug 12 6.35 AM
8.45 AM

Cloudy S.W. ^{light} choppy
green sand mud

38 fath = 69 m.
much quelled. Rid of stenophores
at last

0	74.5	WS.
20	149	17.17 @ 24 WS
40	148	4.5 @ 22 WS
65	153	4.4 @ 21 WS
30	148	4.4 @ 17

Scallop dredge 15 min.

6 scallops + 1 bush Stars few quoddy
shells.

8.15

Bot net: Bot = 0 Cal + Euth swam
Mitt net 25 = 0 Scanty small pods
+ sals
20 net 0 Scanty
1/2 m " 0 many small black pods.

$$\begin{array}{r} 1097 \\ 109 \\ \hline 1206 \end{array}$$

10382 Aug 12 11.30 AM
4.00 PM
NW fresh smooth Clear

66 fath = 120 m.

0 76° W S.
40 R 149 7.35 @ 24 W S.
80 " 148 5.10 @ 23 W S.
120 " 153 7.05 @ 22

Ran out 1 mile to 70 fms =
128 m. T set trawl at 12.45 PM

1 PM.

Bottom net 120-0 fair haul
Cal + Euth
Miter net 50-0 fair haul cal
20 net 0 very scanty
1/2 m net 0 few large eggs

Otter trawl, Bottom 10 min.

Other haul

1 lobster 31 cm long

3 4 spot flounders

4 red 2 Urophycis

Crabs stars sponges

1 large oalf, + some

small crustaceans

TT 10722 to 10731 inc

good tile fish bottom.

1 squirrel hake

1 silver hake

(most bait taken)

10383 Aug 12

4.45 P.m. 5.30 P.m.

n. W. Calm clear Clear

96 fath = 175 m

0 76.5 WS.

25 148 13.68 @ 23

50 153 5.2 @ 21

100 149 5.7 @ 17.5 WS

150 148 11.45 @ 16 WS

175 153 9.94 @ 19. WS

Humpback whale
no nets

10384

Aug 12.

WNW 6.15 PM - 9 PM
 light fresh clouding up
 chop clear

0 76.5 WS

50 149 9.82 @ 25

100 148 10.64 @ 25

150 153 11.3 @ 25

250 149 9.5 @ 20 WS

350 148 6.48 @ 18 WS

500 153 5.03 @ 20 WS

Bottom net 500-0 myct eel
 + huff stuff.

Water net 250-0 Salps + jelly toads

20 net 0 Scanty micro

1/2 m net 0 Small salps

School of Porps. + Blackfish

Tow was very slow

$$\begin{array}{r} 128 \\ 12 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 140 \\ 3 \\ \hline 520 \end{array}$$

Sunday. 5.30 AM
9.15 AM

10385 Aug 13

5.30 - 8 AM Set for Tils in

77 fath = 140 m. cloudy,
smooth sea NW light

~~falling barometer~~
Result nothing - many baits
gone

1ft net on surface

Surface temp 76°

School Grampin

Put over otter trawl

15 min

(2 jelly-fish & some sally)

Physalia + Gulfweed

10386) Aug 13.
(proposed)

N^o Squally fresh smooth, cloudy

95 fath = 173 m.

Set for titfish - 1:30 P.M.

Squall from North. at 2 P.M.
just got dory & had to
cut away tub of trawl.

0	
25	Hauled mainsail here
50	to under jib & jumbo.
100	
150	4:00 P.M. wind
175	moderating, got up mainsail with one reef.

Done

10386 Aug 13 4.30 PM

NE Stiff rough chop. Cloudy.

⊙ temp. 76.5

34 fath = 62 m.

meter net. 45-0 m $\frac{1}{2}$ hr

$\frac{1}{2}$ m net 0. 25 min

Too rough to risk thermometers.

meter net - swarm of Clams,
Euth + Pods,

$\frac{1}{2}$ m net small dk green pods
+ 4f.

10387 Aug 21.

12:30 Pm.

Clear. smooth W light?

Cape Henry St Buey -
Last of albs
13 meters'

0 74 W.S.

(bot.) 12m 148 23.3 @ 24 WS.

20 net 0 Rich green mussels

1/2 m net 0 Scanty

Sled net Bot - 0 Rich juv fishes
+ crustacea.

Otter trawl, 15 min (slow)

7 blue crabs 2 y sea-robbies, 1 windowpane

Very few tenophores

1 small shark seen

Halfway between ~~87~~ & ~~88~~
 saw fisherman with dories
 out for blackfish - no luck
 put over otter trawl 10 min
 hard bottom

3.10 - 3.20 PM

Aug 21st

Sta 10368

Croakers, mostly ♀ with well developed hard roe			
29 cm	285 g	27	280
32	410	27	265
30	340	25	195
29	350	27	255
29	320		995
28	290	1 quart / kept	
28	300	TT 10732	
28	330	Several sea	
31	445	robins	
27	<u>290</u>		

Sta 10389 Aug 21

4.15 P.M. - 5.45 P.M.

15 miles E of Bunn

Clear smooth, light S breeze
Blue, clear water.

19 m.

0		75	WS.
10	148	23.45 @ 26	
18	153	22.40 @ 25.75	

	4.35	few stenopharys
Sled net	bot-o	45 min + 4 ft
20 net	0	" fair micro
1/2 m net	0	" few medusa
		4 ft + crustaceans

Otter trawl 10 min.

5 croakers, same as before.

3 sea robins'

net slightly torn

$$\begin{array}{r} 18.3 \\ 7.3 \\ \hline 261 \end{array}$$

10390 Aug 21

8.15 PM - 9.45 PM -

South, fish, smooth, clear
40 miles E by S from C. Henry.

26 m.

0		75	WS.
12	148	23.5 @ 24	WS
25	153	16.73 @ 24	WS

8.40 PM.

Sled net 26-0 $\frac{1}{2}$ hr. Some stenopores
20 net 0 " ~~the~~ gillnet, worms
 $\frac{1}{2}$ m. net 0 " fair haul micro
" crab larvae
" + a few ctenophores

Otter trawl. 10 min.

2 snails, 1 Lophopriete
Smooth, barren bottom

$$\begin{array}{r} 365 \\ 36 \\ \hline 401 \end{array}$$

10391

Aug. 22 12.05 AM

1.45 AM

Clear fresh S breeze, smooth

sea.

22 fath = 40 m.

Rich young fishes

0

73

WS

20 148 22.10 @ 23 WS

40 153 11.09 @ 23 WS

Sled net	12.35	<u>per entire</u>	Swarm of
	40-0	1/2 hr.	<u>at atmosphere</u>
20 net	0	"	Scanty.
1/2 m net	0	"	4f + young crustacea

Other trawl 15 min.

3 large / small scallop

1 small *Urophycis regia*, TT 10733

few stars + sea-lam shells

$$\begin{array}{r} 73 \\ 82 \overline{) 9} \\ \underline{82} \\ 9 \end{array}$$

Sta 10392

3.30 Am to 6 Am

W. Cloudy fresh smooth

45 fath = 82 m.

0	72	WS
20	148	21.95 @ 23 WS
40	149	6.92 @ 23 WS
60	148	6.2 @ 22 WS
80	103	5.44 @ 23

nets 440 Am

1/2 hr, all.

Sled net 75-0 m.

Salps, red copepod + drone

20 net 0

very scanty

1/2 m net 0

Scanty blue copepods etc.

Otter trawl

Salps + a few shells

Plenty daffodils + weed
no physalis.

10393 Aug 22

7.30 Am.

W fresh clear smooth -
water very blue.

0		72	WS
50	149	12.09 @ 23	WS
100	148	9.05 @ 23	WS
200	153	11.48 @ 23	WS
300	149	6.59 @ 23	WS
400	148	7.10 @ 21	WS
500	153	5.45 @ 18	WS

nets @ 9.05

Bottom net 500-0 1 hr. Scanty
preserved entire

Water net 250-0 45 min. 1 large -
Salps etc

1/2 hr net 0 1/2 hr Scanty

20 net 0 " "

$$\begin{array}{r} 36.5 \\ 5.4 \\ \hline 41.9 \end{array}$$

23

10394 Aug 26 8 A.M.

9.30 A.M.

Clear SE, Light Smooth

42 m.

0		69.5	WS
20	153	12.52 @ 25	WS
40	148	7.72 @ 24	WS

nets 8.20 A.M.

Bottom net 42-0 Scanty salt 4 ft
Cuth + Cop.

1/2 m net 0 Scanty, blue cop. etc

20 net 0 Scanty.

Other haul. 20 min.

1 Serranus		Scallops large	23
2 mackerels small		" Small	16
1 silver hake "			

1 Bushel sand dollars Hermits etc

44 liparids

$$\begin{array}{r} 36.5 \\ 11.8 \\ \hline 38.3 \end{array}$$

10395 Aug 26 2 PM

3.4N-PM

Clear. S. ~~fish~~ ^{light} smooth

38 m.

0, 70 W.S.

17, 148 17.9@24

35, 103 9.14@15

note 2:30 pm.

Bottom net 38-0 ^{1/2 hr} Swarm (1 gal) of flemingia etc. ^{col. Eute. oag. etc}

1/2 m net 0 Scanty

20 net 0 "

OTter trawl 20 min ^{TT} (10734 inc
10737)

1 small butterflyfish

2 " limanda

1 P. oblongus

2 scallops

a few sand dollars

$$\begin{array}{r} 18.2 \\ 10.9 \\ \hline 29.1 \end{array}$$

10396

Aug 26

10.30 PM

11.45 PM

Clear light S. Smooth sea.

Brilliant aurora
Water firing brilliantly

29 m.

0.

66.5

WS

28/

153. 12.3 @ 20

WS

10.55 PM

Bottom net	20 min	Swarm Sag.
1/2 m	"	Y f + Euth.
20 net	"	fair haul pods + Y f
	"	" " more

10397 Aug 28

Nantucket Id.

11 AM ^{11:30} SE light

Smooth cloudy.

Surface temp 69 WS-

~~1 meter net~~
~~20 net~~ } 1/2 hr.

1 meter net 3-0 m. 1/2 hr.

20 net 0

.. fair
down miss