Whale notes & measurements
Japan 1910

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Kōzo - tree from which paper is made
made in Tosa province
2 P.M. Shiva Wana.

No 740.

Skin whale & Aug 23/10 Alaska.

Vertical line from anus to flukes gray like sides of pelvis -- narke & genital fissure

Patellar to fin intersection the gray on sides is very light -- tinged with pinkish -- only a suggestion of grayish tan had across abdomen -- slight bluish tinge general color. Right lip & gray & tip rams a little lighter. Below right

fin tibia grayish all tinged with pink

now or else. Fool by instantaneous recovery of dark gray --- folks of breast while tinged with pink and all fumus dark gray except 11 in mid-ventral line. Top of head has two ridges parallel with medium ridges but more in deep "broad" navel at end of furrow.

Total length: boundary = 46' 5" = 15\(\frac{6}{7}\)

Flukes to brane = 12' 11" = 39\(\frac{4}{17}\)

" anus = 11' 10" = 36\(\frac{1}{2}\)

" tip to fin = 11' 8" = 35\(\frac{3}{8}\)

Finn & brane = 7' 9" = 25\(\frac{1}{2}\)

" eye = 9' 27\(\frac{3}{8}\)

Fin to head = 5' 11" = 180

" " and aint = 3' 2" = 15\(\frac{7}{8}\)

" " fin = 4' 2" = 127

" " breakth = 1' 3" = 38

" height head = 12" (measured) = 31
No. 1 Blue Whale - \( \text{female} \) Apr. 4/10 Oshina, Shikoku.

Contained a male foetus about 18 in. long.

Color

A very light whale caused by a predominance of the light gray markings.

Body

Top of head uniform slate gray. From head backward to almost to dorsal, on the very medium line of the back, is a narrow band of slate gray like head color. Rest of back to sides from edge of almost wholly light gray. The light markings are interrupted occasionally by small patches of the dark color - large areas, however, are solid light gray with no suggestion of darker - light markings then downward to near along sides of furrows, meeting on medium line below between navel and anus. On folds at their ends there are many gray white dashes - these markings become pure white on the folds on the sides of the belly and extend forward nearly 8 ins. in section of fin - they do not meet on the median line as the folds of the belly. Mention right pecoral is a white patch (breaking) about 2 ft. wide by 2½ ft. deep. The white markings then upward to meet this patch, and are both on the pecoral and in the furrows - Between

1:30 P.M. Japan (skeleton taken)
there are only a few light markings -
in front of fins, on breast & throat,
no light markings, uniformly slate
gray like head. The light gray dashes
extend forward in a narrow band
and to a little in front of above eye.
On the peduncle the light gray color
predominates and is broken by darker
fin in only a few places.

Right & left are alike in color. Superiorly
the distal 1/4 of fin is white — this extends
backward along the posterior edge to the
middle of fin — along the anterior
edge for about 1/3 of the length of the
fin - rest of upper surface dark gray.
The dark gray on the above runs down
to exact median line of the anterior
edge & there meets the white of the
under surface. While under sur-
face of fins white. The pectorals of this
whale are colored like those in one of
the figures given by True of the new-
foundland Blue whales. It is rather
impossible to see the white of the under
surface overaching on the tip of the
fin about. I saw it in only one of
the Vancouver Bluff specimens. Etc.
Fleshy: Above dark gray. Inferiorly, flukes are marked with rather coarse white lines which run from anterior edge and curve inward almost reaching posterior margin as in the Van. specimens. The central 1/3 of flukes is very lightly (caused by the white lining) except the tip which is dark. Both lobes are the same in color.

Dorsal Gills (light) caused by many very light gray lines which run from anterior edge (median) diagonally downward & backward over sides of a near region (Photographed).


External Characters: Many of the "ears" like spots on the peduncle and on back, sides & proximal half of top of head. These "ears" may strike those which I observed on the Vancouver Finbacks 7 on one or two of the Blue Whales - also one or two of the Alaska Finbacks. I can see no other origin for them, except that they may be due to the action of parasitic cirrhopes. Fins were seen upon the posterior 

...
Eye. Below eye there are two deep creases. Two creases run out from the anterior corner—above eye are 4 short, hollow creases and one long deep one.

The iris is brown.

The median ridge on top of the head rises gradually from the occiput, the highest point being directly in front of the anterior ends of the blowholes; here it was about six inches high. A cross section of the nostrum, taken directly in front of the spiracles as like this: there are low, hardly perceptible ridges which less themselves long before reaching occiput.

The head of Van specimen were all the same.

As far as could be seen from color and external appearance this specimen differed not all all from the Van. Blue Whales.

Measurements, see opposite page.
Many of these measurements were taken when the animal was in the water and while I believe most of them to be correct, yet I can not be certain of all.

Measurements of No. 1 cent.

1. Total length minus notch over back =

3. Distance to eye =

6. " " post. vert. of pectoral =

7. " " " dorsal =

10. Length of opening of eye = 9.5

16. Notch of pectoral to post. vert. of dorsal =

17. " " " pectoral =

18. Pectoral (tip to head of humerus) =

19. " (" post. insertion) Right =

20. " " " ant. =

21. Greatest breadth of pectoral =

22. Height of dorsal (vertical) =

23. Pectoral, tip to tip =

24. " greatest breadth (ant. post.) =

27. " length left lobe (axially) =

Pectoral - tip to head of humerus =

" " " post. insertion =

" " " ant. =

Osteology

Dental formula - C 15 15 15 15 4 3 4 3 = 63. Last caudal about the size of a small bobby pin.

Ribs - 15 pairs.

Chevrons 16. Last very small.

When the vertebral column had been assembled, after the bones were cleaned, it measured 5'3 feet 2 inches from atlas to last caudal in a straight line.
No. 2: Six Whale (Frippery and) Apr. 6/10 Obseing this useful.

This whale was drawn on and upon the cut-
ing ship as my measurements are all
accurate & were taken with the greatest
care.

The picture top of the head on the right side
drawn to about 2 inches above the eye is
dark slate or on account of the remaining
of the edge of the nostrum is gray. On the
left side the dark slate covers the whole of the
eye about two inches above the
eye it is lighter gray for a short distance
then the dark color begins a pain and
fades away as back to the mouth.

The edge of the Izent for about 10 feet or even one are light gray.
& in the peduncle the dark color extends
the upper 1/4 & comes down to the inser-
tion of the flippers. The left ramus of
the mandible is gray or a light gray
runs along the side of the throat & breast but
the ramus is lighter than the latter parts.

Muscles of the folds below the left fin are
blue gray slate. Throat & breast pinkish
white (deep flesh color) in furrows but
folds are white.

On the sides the dark of the back shades
off rather abruptly into light bluish
gray - As in the Emboucha this
light gray comes fainter & fainter
down on the sides until 100 cent. behind
arms it covers all but a narrow
ventral line. This ventral line is the belly in light pink
mucous membrane on ventral side pink
flukes below grayish white—above dark
Pectoral above dark
Dorsal fin is dark slate on ventral side
back—very high (photographed)

Pupil widely elliptical-

dus brown—thus comes a very narrow ring
of dark blue, then a wider ring of blush-white,
then ring of brown which gradually shades off
into white of eye ball

Balene

The greater portion of baleen plates is
very dark of dark slate
plead color—limit a narrow streak of the
inner edge is white—like this / dark slate
The bristles are all white except
except at the tip which are grayish—such as
anterior / 2 of baleen the bristles are all white
The bristles of posterior / 2 because grayish at
the tips, the gray being of greater extent

When I first looked at baleen it looked
that the bristles of all the plates were
pure white for about 10 inches up from the base, & closer to it then became tinged with grayish. On closer inspection I discerned that this grayish tint was due to the head color of the baleen plates shining through the fringes of bristles, and that the bristles themselves were not grayish except on the tops of the posterior one half. The pure white strip along the inner base of the baleen plates give the appearance of a white to hand along the whole.

The baleen of both sides was alike.

The folds read 100 feet. Accord to the measures.

N.B. (Uncertain not located correctly)

**Osteology**

<table>
<thead>
<tr>
<th>Right scapula</th>
<th>Left scapula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatest height (vertical)</td>
<td>4.0</td>
</tr>
<tr>
<td>&quot; breadth</td>
<td>6.65</td>
</tr>
<tr>
<td>Tip of coracoid</td>
<td>5.0</td>
</tr>
<tr>
<td>&quot; acromion</td>
<td>5.0</td>
</tr>
</tbody>
</table>

 Both scapulæ photographed & sand.

<table>
<thead>
<tr>
<th>Left ramus of mandible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temple straight</td>
</tr>
<tr>
<td>&quot; curved</td>
</tr>
</tbody>
</table>

Tips to coronoid straight = 1.89 |

Height of " vertical = 4.5 |

(Cornered a little)
The left pectoral fin was rared and I
decidcd to cut with great care, cutting away
the cartilage from the timinute phalanges
at the tips of the digits. I am absolutely
certain that the formula below is
correct.

\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c}
\hline
& & & & & & & & & & & & & & & & \\
I & II & III & IV & V & VI & VII & VIII & IX & X & XI & XII & XIII & XIV & XV & XVI \\
\hline
4 & 6 & 8 & 10 & 12 & 14 & 16 & 18 & 20 & 22 & 24 & 26 & 28 & 30 & 32 & 34 \\
\hline
\end{array}
\]

There were five carpal ossifications in this
fin—3 in the proximal row were about
on which one half inch diameter & were
placed in a parallel line with the ends
of the radius & ulna. The two carpalae in
the distal row were small. The right fin
presented the same number & position
of the ossifications.

**Left Fin:**

Temp. of Radius (median, straight) = 46.5
Breath " " (distally) = 10.5
Temp. " ulna (median) = 45
Breath " " (distally) = 9.3
Depth olaracoma " = 6
Length of humerus (median) = 27

There were either 12 or 14 ribs. I could not be sure
which, but I think 13 ribs. M.B. Dr. No. 16" said no 14. See
whale I find 13 pairs & this is probably the
normal number.

(Measurements see page 14)
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length, snout to notch</td>
<td>100.7</td>
</tr>
<tr>
<td>Fluke to eye</td>
<td>190.0</td>
</tr>
<tr>
<td>Ear</td>
<td>2.3-3</td>
</tr>
<tr>
<td>Blowhole (center)</td>
<td>19.81</td>
</tr>
<tr>
<td>Post. vent. pectoral, dorsal</td>
<td>38.0</td>
</tr>
<tr>
<td>Eye to ear (center)</td>
<td>6.0</td>
</tr>
<tr>
<td>Nose</td>
<td>4.0</td>
</tr>
<tr>
<td>Length opening of eye</td>
<td>7.0</td>
</tr>
<tr>
<td>Notch of flukes to post. insertion, dorsal</td>
<td>29.0</td>
</tr>
<tr>
<td>Pectoral, (tip to head of baleen)</td>
<td>14.2</td>
</tr>
<tr>
<td>Port. anterior</td>
<td>9.01</td>
</tr>
<tr>
<td>Anterior</td>
<td>12.1</td>
</tr>
<tr>
<td>Greatest breadth of pectoral</td>
<td>27.0</td>
</tr>
<tr>
<td>Height of dorsal (vertical)</td>
<td>8.2</td>
</tr>
<tr>
<td>Flukes, tip to tip</td>
<td>24.3</td>
</tr>
<tr>
<td>Depth notch of flukes</td>
<td>1.5</td>
</tr>
<tr>
<td>Length left lobe axially</td>
<td>18.2</td>
</tr>
<tr>
<td>Blowhole straight</td>
<td>2.7</td>
</tr>
<tr>
<td>Post. anterior</td>
<td>2.51</td>
</tr>
<tr>
<td>Posterior</td>
<td>1.6</td>
</tr>
<tr>
<td>Anterior</td>
<td>1.80</td>
</tr>
<tr>
<td>Dorsal</td>
<td>9.0</td>
</tr>
<tr>
<td>Tongue plate of baleen (anterior)</td>
<td>58.1</td>
</tr>
<tr>
<td>Number</td>
<td>79.3</td>
</tr>
<tr>
<td>Head of baleen (horizontal)</td>
<td>41.0</td>
</tr>
<tr>
<td>Post. post. length dorsal</td>
<td>45.9</td>
</tr>
</tbody>
</table>
I was given time to photograph & measure carefully this specimen and also to compare it with the figure given by Prince in his "Delphinidae," a copy of which I had with me. His figure is excellent and could hardly be improved upon - only a few insignificant details did not which the specimen differed from the figure.

General color black - by pulling off one layer of the epidermis the color below was seen to be very dark neutral tint which is probably the color in life. An elliptical white spot running foreward on side of head.

The anterior point of this spot about two form cent. inward beyond eye and about five cent. above it; the length of (longitudinal) of this spot was 60 cent. - the greatest breadth was 17 cent. On the side of the back, opposite the posteriormost point of the dorsal fin was a roughly crescent-shaped patch of jumbled This was indistinct, and its edge was not well defined. It was of same shape, size & position as the white patch shown in Prince's figure. Thus, a throat & breast to pectorals white. White extends from corner of mouth, backward and downward to about 7 or 8 cent. beyond anteriormost edge of fin. The white extends considerably above a line drawn from corner of mouth to.
and inward of fin. Just at corner of mouth
the black project into the white in a small
semi-circle. The white runs down between
pectoral below & extends backward along
the median ventral line. The white does
not come very close under the fins.

A little narrow. The white area is
broad between the fins, narrowing as it
goes backward until at its narrowest
point it is 20 cent wide. At then curve
abruptly expands & backward along the
side of the peduncle. At the point where
it curves backward on the side, the white
broad is 5.6 cent wide. The central
tone of the trikery runs backward to
a little behind the wind above be genitalia.

The white is 4.4 cent wide; the black above
has genitalia in 2.5 cent wide. On the
sides of the peduncle, the white ends 1.5 cent
from insertion of pectoral anterior. In
the central white, three distinct
in front of
the ventral is a black patch.

The inward curve of the white area on
the sides, begins 2.38 cent from anterior
insertion of fin, and ends 1.2 cent from
insertion of pectoral anterior.

Above black. Below white except for
a black band 2 inches wide which runs
along the posterior margin across the
tips on the anterior edges for about ten inches from the tips where it runs off to its east. The white of the lower surface extends forward in a triangular patch on the inferior edge of its peduncle about one quindecem of anterior to the insertion of the flukes.

The anterior edge of the flukes was almost straight except near the tips where it curved to meet the posterior edge. The posterior edge was slightly concave near the tips, then curved very gradually outward to the terminal end until it turned rather abruptly inward to form the notch. The median ventral ridge of the peduncle is low on the inferior surface and loses itself about four inches from the bottom of the notch.

On the superior surface of the flukes, the dorsal median ridge of the peduncle is more prominent than below and extends nearly to the notch.

[Handwritten notes]
Black - anterior edge slightly convex toward tip - posterior edge concave forming a shallow crescent. The fin as written described as being erect and not scarcely elevate.

Head: view from the pectoral fins to the edge that it narrows gradually, but in front of the edge the two sides slope more abruptly to the snout which is "roundly truncated".

A photograph taken after the head had been removed from the body, shows that it is not quite bilaterally symmetrical.

Eyes: view a few inches from the tip of the mandible there is a pronounced dip in the outline of the throat. The snout projects 2 cent. beyond the lower jaw. It rises abruptly then slopes gradually upward backward to the floorhole.

From the corner of the mouth, there is a white edging to the upper lip. This white band is about one inch wide at the corner of the mouth, gradually narrowing as it moves forward until it runs off, it is lost before it quite reaches the middle of the lip.

Hairs: I examined the snout, lower jaw, head with the greatest care to see if any hairs were present - none whatever.
The dip in the chin is more abrupt or pronounced than is shown in the figure. The upper edge of the white for the upper eye is more curved than shown in figure—that is, the spot is more nearly regularly elliptical. The white of the eyelid runs down closer to face of premaxilla and extends in a curve instead of an angle as shown in figure. The superior edge of the white mark on the peduncle is more convex (not flat) than in figure. There is too much dip in the superior anterior of the peduncle, in the figure—it is nearly straight. No white edging as shown on the proximal half of the upper lip as figured.

These are all probably only individual differences and have very little importance.

The blowhole is irregularly semicircular, not the convex horseshoe pointed forward. The blowhole is situated in a slight depression in the tip of the head. Length curved = 16 cent. Length given, tip to tip of points (straight) = 12 cent.
The eye is situated 11 cent. above the corner of the mouth, and 10 cent. behind it. The opening is 4 cent. in length, and is elliptical. There are no creases either above or below eye.

The membrane was yellowish white, 4.50 cent. long by 2.1 cent. greatest breadth.

The stomach contained the dorsal fin, part of the skin immediately in front of it, and a piece of the gills. The fin is shaped like this:

(photographed)

It is vertical height in inches, and just length across is 1/12 yard.

Blubber on back of killer whales first gets above pectoral in median line—here it is 5.5 cent. thick—as it goes backward the thickness increases until on peduncle just above genital join in mid dorsal line at 17 cent. thick. (This is not the thickest place)
<table>
<thead>
<tr>
<th>No.</th>
<th>Measurement Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total length (snout to flukes on back)</td>
<td>6.70</td>
</tr>
<tr>
<td>2</td>
<td>Semi cir of body just behind fins from mid dorsal line to mid ventral line</td>
<td>2.20*</td>
</tr>
<tr>
<td>3</td>
<td>Snout to eye</td>
<td>7.4</td>
</tr>
<tr>
<td>4</td>
<td>&quot; &quot; &quot; ear</td>
<td>1.03</td>
</tr>
<tr>
<td>5</td>
<td>&quot; &quot; &quot; blowhole (center)</td>
<td>0.88</td>
</tr>
<tr>
<td>6</td>
<td>&quot; &quot; &quot; post. insertion of pectoral</td>
<td>1.08</td>
</tr>
<tr>
<td>7</td>
<td>&quot; &quot; &quot; &quot; dorsal</td>
<td>3.31</td>
</tr>
<tr>
<td>8</td>
<td>Dist from eye to ear (center)</td>
<td>3.5</td>
</tr>
<tr>
<td>9</td>
<td>Ear below eye</td>
<td>7.3</td>
</tr>
<tr>
<td>10</td>
<td>Length opening by eye</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>&quot; &quot; &quot; ear</td>
<td>0.2</td>
</tr>
<tr>
<td>12</td>
<td>Notch of flukes to anus</td>
<td>2.03</td>
</tr>
<tr>
<td>13</td>
<td>&quot; &quot; &quot; elitoris</td>
<td>2.30</td>
</tr>
<tr>
<td>14</td>
<td>&quot; &quot; &quot; mammary pit</td>
<td>2.24</td>
</tr>
<tr>
<td>15</td>
<td>&quot; &quot; &quot; umbilicus</td>
<td>3.93</td>
</tr>
<tr>
<td>16</td>
<td>&quot; &quot; &quot; post. insertion of dorsal</td>
<td>3.40</td>
</tr>
<tr>
<td>17</td>
<td>&quot; &quot; &quot; &quot; pectoral</td>
<td>0.20</td>
</tr>
<tr>
<td>18</td>
<td>Length pectoral tip to head of humerus</td>
<td>7.8</td>
</tr>
<tr>
<td>19</td>
<td>&quot; &quot; &quot; &quot; &quot; post. insertion</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>&quot; &quot; &quot; &quot; &quot; ant.</td>
<td>0.3</td>
</tr>
<tr>
<td>21</td>
<td>Greatest breadth of pectoral</td>
<td>5.9</td>
</tr>
<tr>
<td>22</td>
<td>Height dorsal (vertical)</td>
<td>7.0</td>
</tr>
<tr>
<td>23</td>
<td>Flukes tip to tip</td>
<td>1.93</td>
</tr>
<tr>
<td>24</td>
<td>Greatest breadth flukes (anterior-posterior)</td>
<td>0.9</td>
</tr>
<tr>
<td>25</td>
<td>Depth notch of flukes</td>
<td>1.1</td>
</tr>
<tr>
<td>26</td>
<td>Length right lobe (axially)</td>
<td>1.0</td>
</tr>
<tr>
<td>27</td>
<td>&quot; &quot; &quot; left</td>
<td>1.04</td>
</tr>
</tbody>
</table>

* The whale had been lying about 17 hours and was considerably swollen by gas. The air had been pumped into the whale.
28 Greatest thickness of pleurals at insertion =
29 Depth of peduncle at and just dist of pleurals = 0.2
30 Midway between insertion of pleurals & anus = 8.6-

Length of pleurol (straight) = 12
Length (curved) = 16

Length of penis = 6
Length of genital slit = 4.8

Length of mammary slit = 1.2
Dist. between mammary = 2.7

Mouth just extends beyond lower
Height of dorsal (axially) = 8.3-
Ant. joint breech, dorsal at base = 6.0

Corner of mouth to tip of gen. = 6.6
Dist. between ant. & rear of pectorals below = 8.0
Ant. & post. joint breech of pectoral in angulation = 9.0
Ant. & post. breech of dorsal fin at insertion = 3.7

**Osteology**

**Plica 11 fers.**
**Five ribs joining sternum**
Skeletum taken 8 P.M.

No. 4

Sea whale 9 Apr. 13 10 at

This whale was pulled out upon the slip of the ship. My measurements were carefully taken so they can be relied upon fully.

Eye ground off side top of head is dark slate cast for an inch (along edge of slit) in front of eye, about three feet long and one foot wide; this band is a little lighter in color though not. Right side top of head is dark slate cast off side except for a broad area of lighter slate which runs from eye nearly up to blown heel of the then diagonally forward to down center of back of animal; therefore the greater part of this side is of the lighter slate color.

Back of the superior are thirds of sides are dark slate as top of head—down two thirds of sides a light gray—at navel the gray of the sides comes down.

Roof of mouth is white; 17 folds on breast are white. — The finnish color dots not extend upon the flukes underneath; none of the right fin 11 folds are dark gray; above the same number; under the left fin although it did not
count the exact number - directly under the corner of the mouth on left side 20 fields are dark gray - from the end of the creases or furrows to the flukes the gray comes down nearly to the ventral line, which is pinkish. On the flanks the pinkish ventral area narrows gradually from the genital backward until it becomes a very narrow line. On left ramus of mandible has lower one half light gray - upper is slate or dark gray. The edges of the mandible for 12 inches an ulcer side are light gray.

Under surface of flukes a light gray about same color as sides & pinkness caused by very fine lines - the posterior edges are dark slate as anteriors and the anterior edge for a few inches from tips. Above flukes are slate.

Posterior

Right (Photographed) The superior surface has the anterior edge light gray caused by the light color of below running up over the edge on to the superior surface for about 2 inches for its whole length. The remainder of the fin is blue-slate becoming dark slate near posterior edge. Below the anterior half of the fin for its whole extent again light gray.
- the posterior one half is slate, except near the proximal end where the plate changes to dark gray.

Baleen

There are 315 plates of baleen on the left side counting all plates two inches or more in height.

The first 207 plates of baleen have more or less white along their inner edges; this white is in longitudinal streaks that decrease gradually toward the posterior part of the baleen rows - the remaining 108 plates are all very dark brownish black.

Darker than the Fairbanks baleen, along the inner base of the baleen row for about half the length is a line of plates from two to three inches high and one half inch wide. These are white and with their white bristles make a band about five inches high along inner base of baleen row. The brenches of the anterior fourth of the baleen row are all white, the second fourth have the lips tinged with grayish for about four inches, the third fourth have about eight inches of lips grayish, and the brenches of the last fourth are almost all grayish except for the white baleen line. When one first looks at the baleen of the sea whale he believes gets quite a different impression than
That obtained by a careful examination.
This description was written at my desk while examining carefully the balænæ of this whale. The
external character of balænum of whale no. 1 one should refer to this. The balænum of that
whale was as nearly like that appearing
as possible.

The distance between the tips of balænum
the two rows of balænum on the widest
joint was 86 cent., as they were setting
in position. The superior edge of the
peduncle does not descend to the flukes quâl,
so abruptly as it does in the Bœlandæale
at the ant. extremity of the flukes the
peduncle is 42 cent. wide & 78 cent. deep.
The folds are about 3 cent. wide on
lines it is narrower an about 2 centes when they end.

Three measurements of the fin were taken
(ant. & post mortem) before the pecænal rays
are cut off & whilst it was extended at right
angles from the body.

Ribs 14 fins, the last pair being rudimentary.
First rib on each side, has bifurcated heads.
Skeleæon taken so few of description can be
written later.
<table>
<thead>
<tr>
<th>Measurement Description</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Total length</td>
<td>135.0</td>
</tr>
<tr>
<td>Tip of snout to eye</td>
<td>250</td>
</tr>
<tr>
<td>...</td>
<td>220</td>
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<tr>
<td>Post insertion of pectoral</td>
<td>463</td>
</tr>
<tr>
<td>Length opening of eye</td>
<td>8</td>
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<tr>
<td>Notch of flukes &amp; maxillary slit</td>
<td>38.5</td>
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<tr>
<td>Post insertion of pectoral</td>
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<td>Length pectoral (tip to head of humerus)</td>
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<tr>
<td>(post. insertion)</td>
<td>15.2</td>
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<tr>
<td>L. and R.</td>
<td>165.0</td>
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<tr>
<td>Greatest breadth of pectoral</td>
<td>40</td>
</tr>
<tr>
<td>Flukes and post.</td>
<td>90</td>
</tr>
<tr>
<td>Length right lobe axially</td>
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<tr>
<td>Greatest thickness of flukes at insertion</td>
<td>17</td>
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<tr>
<td>Depth Peduncle at and. base. of fluke</td>
<td>78</td>
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<tr>
<td>Anus to navel</td>
<td>400.0</td>
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<tr>
<td>Dist. between mammaries</td>
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<tr>
<td>Length row of baleen (straight)</td>
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<tr>
<td>Longest plates of baleen (inches)</td>
<td>70</td>
</tr>
<tr>
<td>Number of plates of baleen</td>
<td>315</td>
</tr>
<tr>
<td>Number of broad femurs between fins</td>
<td>32</td>
</tr>
</tbody>
</table>
No. 5

Saw whale Apr. 13/10. Oshina

Top of head left side, dark slate—the upper edges of the mouth for a short distance from the end on either side are grayish underneath this changes to pinkish which extends for 1/3 of the length, from tip of snout to first ramus of mandible, then affer 2/3 light slate. Lower 1/3 discolored grayly.

Ramus is light gray for the whole distance—dorsal fin to head. Back and upper sides are dark slate—behind dorsal the upper 1/3 of the peduncle is dark slate, the sides of peduncle, and many dark light small areas, the light areas seem to be composed of fine many lines as granules. Also a great many small white areas.

On breast between fins are 22 white folds—fornices are pinkish—then are 9 dark folds under right fin.

The pink area becomes narrower as it goes backward, until when it reaches peduncle it is very narrow—same as in the other whale I have described.

Peduncle. Above slate except anterior edge which
is light for almost whole distance but the light is very narrow toward proximately end. Under surface of both fins is very light gray superior surface finely lined with grayish almost white.

Baleen: Bristles of 1st one fifth of baleen row all white - 2nd one fifth has tips grayish - 3rd fifth tips grayish for about 8 or 10 inches - in 4 th fifth grayish for half their length from tips downward - last fifth all grayish. For 30 cent from tip of baleen row on either side plates all white.

Length of pupil = 15 mil
Dia. " " " = 11 "
Length of iris = 35 "
Dia. " " " = 23 "

Cir. of eyeball (trimmed) = 310 mil.

Pupil elliptical - then comes mix of dark brown (much darker than in Finback) which is 12 mil wide - then just a suggestion of a bluish-white ring or edging to the next wide ring which is almost black 3 runs off into the gray of the eyeball then blackish ring is 19 mil wide - eyeball is elliptical.
These measurements were taken from the eye of a Finback taken the next day. The eyeball is much more elliptical than that of the Finback, very high (photographed). By peeling off portions of the epidermis, found the color to be gray slate with little if any blue in it. This is probably its true life color of the back and head also. The Finback dorsal was neutral tint, washed a good deal of blue, mixed with black and white, would go red. It was decided purple, which is probably life color and is what I have described the Blasket Finbacks to be.

Measurements of Fin Whale (taken in water)

1. Total length (Snout to notch) = 14' 6"
2. Snout to eye straight = 281
3. Eye opening = 7
4. Notch of flukes & mammillary ridges = 4' 28"
5. Post. base dorsal = 4' 45"
6. Trunk pectoral lip to head of humerus = 1' 93"
7. Post. n. p. = 1' 38"
8. P. p. = 1' 70"
9. Breath. pectoral = 3' 7"
10. Height dorsal (vertical) = 4' 4"
Height of dorsal (axially) = 65
Length (and part. at base) = 50
23. Flukes left = 40
27. Siphon, left lobe axially = 19
29. Depth peduncle at and near of flukes = 85
30. **between flukes** = 135
36. Length of mammillary slit = 18
39. Base between mammillae = 18
40. Length baleen rosin = 285
41. **longest baleen plate (inside)** = 73
44. **maximum throat furrows** = 40
Finback 3  Apr. 14-16  O. Shina

This whale was brought in about 2 p.m. so I was able to get a few photographs.
'The total length' is the total of three sections.

Upper side & back neutral tint (seemingly pulling off the upper epidermal layer) — the ridge of back & peduncle neutral, the rest of the upper sides & sides Isabella gray (the neutral tint of the back extends down from the median line only about 12 inches on either side) Tipt remains dark slate — Right remains has the anterior half all whiteish, shading into light gray of the posterior half. As in the Clarke Finbacks the gray of the sides comes farther & farther down toward the mid ventral line as it goes backward until about 3 ft in front of the flukes only the very ventral ridge of the peduncle is colored — a little way behind the generator. The ventral white strip is 15 inches wide. The throat, breast & belly are white (powdery) with dark furrow as in Clarke Finbacks. Under right fin 3 folds are gray.

The tips of both flukes have been injured.
I photographed both inferior & superior surface.

Under side (right) has about 2/3 white.
Gray shading running over part 1/3 from
edge. Above and edge whitish for whole length - rest of upper surface gray.
Boat fins are bluegray. One undistilled side left faint two fresh scars, cup shaped, existentially where parasites had been lodged.

Balenus

I counted all balanus plates on left side from very back plate 2 inches high to front plate 2 inches high - there were 3 2 in all on this side.

On the right side (antennae) 9 plates were white - the edge of the smallest underneath is whitish for the length of the white portion of balanus.

Antennae numerous strands of balanus plates have bristles light grayish at tips - (very front ones are not white, but are white) posterior 1/3 have bristles all grayish, darker at tips.

Pupil nearly round - iris very widely elliptical - iris of brown - iris is 12 mil. wide - then a white ring 4 mil. wide - then brown ring 10 mil. wide which runs off into gray of eyeball. Eyeball is very widely elliptical - almost round.

Length of pupil -- 2 mil. 

\[ \text{Dia} = 17 \] 

Length = 45 

\[ \text{Dia} = 30 \] 

Circ. of eyeball (trimmed) = 375
These measurements were taken when the skull had been cleaned and are correct.

Length (straight) (from tip of premax. to condyles, taken below) = 447.7 cm.

Breadth (nasionale) = 180

Length of jaw (straight) = 450

" " (curved) = 485

Measurements of Finback No. 6

1. Total length (total of three skeletons) = 166.5
2. Length to eye = 40.1
3. " " " " temple hole (center) = 34.7
4. " " " " temple eye opening = 9
5. " " " " notch of flukes to center = 54.0
6. " " " " post. vert. of dorsal = 47.3
7. " " " " length of pectoral (tip to head humerus) = 230
8. " " " " post. vert. = 145
9. " " " " ant. vert. = 195
10. " " " " greater breadth pectoral = 60
11. " " " " height dorsal (vertical) = 43
12. " " " " (apexal) = 75
13. " " " " ant. post. length dorsal at base = 85
14. " " " " length right baleen straight = 44
15. " " " " left = 41
16. " " " " dist. apart (antero) = 5
17. " " " " posteriorly = 25
18. " " " " length row of baleen = 400
19. " " " " length plate of baleen = 80
20. " " " " number plates (left side) = 332
21. " " " " in whole = 96
No. 7

Blue Whale 1 April 14 10 @ Shion. The length of this whale was the total by three sections.

The top of the head is almost an light gray as are the markings — it is solid color — or bluish color in darker — the light to markings extend on both sides forward to the eye ending them in very small patches — On the left side of the body as far as the end of the fin the light color is almost solid, broken in only a few places by the darker ground color. On the sides of the fin, nearer to the flippers the light to dark colors are about equal in quantity — the light color is in small patches — just forward of flippers there is more dark than light — Along the ridge of the back from fins to flippers the light dark color predominates but there are also many rather small light markings — On the sides the light markings follow down on the edge of the fin, mark closely but do not come near one to the other just above the left fin the light color is almost solid — The light gray markings which follow the ends of the folds
These measurements were taken when the skull had been cleaned and are correct.

Length (straight) (from tip of premax. to condyles taken below) = 47.7 cm.
Breath (goniometer) = 180°
Length of jaw (straight) = 45.0 cm

Measurements of Finkbein No. 6

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length (total of three sections)</td>
<td>18.63 cm</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>4.0 cm</td>
</tr>
<tr>
<td>Blade of blade (center)</td>
<td>3.47 cm</td>
</tr>
<tr>
<td>Tooth eye opening</td>
<td>9 mm</td>
</tr>
<tr>
<td>Width of flukes at anus</td>
<td>5.7 cm</td>
</tr>
<tr>
<td>Post. View of dorsal</td>
<td>47.3 cm</td>
</tr>
<tr>
<td>Length of pectoral (tip to head humerus)</td>
<td>2.80 cm</td>
</tr>
<tr>
<td>Post. View of pectoral</td>
<td>1.45 cm</td>
</tr>
<tr>
<td>Ant. View of pectoral</td>
<td>1.95 cm</td>
</tr>
<tr>
<td>Greatest breadth pectoral</td>
<td>6.0 cm</td>
</tr>
<tr>
<td>Height dorsal (vertical)</td>
<td>4.3 cm</td>
</tr>
<tr>
<td>Ant. View (apex)</td>
<td>7.5 cm</td>
</tr>
<tr>
<td>Ant. View length dorsal at base</td>
<td>8.5 cm</td>
</tr>
<tr>
<td>Length height blade of straight</td>
<td>4.4 cm</td>
</tr>
<tr>
<td>Left</td>
<td>4.1 cm</td>
</tr>
<tr>
<td>Dist. apart of (anteriorly)</td>
<td>5.0 cm</td>
</tr>
<tr>
<td>Posteriorly</td>
<td>2.5 cm</td>
</tr>
<tr>
<td>Length row of baloon</td>
<td>4.0 cm</td>
</tr>
<tr>
<td>Longest plate of baloon</td>
<td>5.0 cm</td>
</tr>
<tr>
<td>Number plates on left (left side)</td>
<td>33.2</td>
</tr>
<tr>
<td>Width of plate</td>
<td>9.5 cm</td>
</tr>
</tbody>
</table>
No. 7  Blue Whale 3  April 14/10  @ shima

The length of this whale was the total
by three sections.

The top of the head is almost an
light gray as are the markings—it is solid color—at a whole one—is darker—the lines of markings extend on left side forward to the
eye ending them in very small
patches—On the left side of the body
as far as the end of the fin the
light color is almost solid, broken
in only a few places by the darker
ground color. On the sides of the
posterior from the fin backward
to the flukes, the light & dark colors
are about equal in quantity—the light color is in small patches—
just forward of flukes there is more
dark than light—Along the ridge
of the back from fins to flukes
the dark color predominates
but there are also many rather small
light markings—On the sides
the light markings follow backward
along the ends of the finnasau closely
but do not come quite near the flukes—
just above the base for the light color
in almost solid—The light gray mark-
ings which follow the ends of the folkl
meet at the genital furrow near navel. Genital furrow is mid-ventral line. They do not meet. This is plain - from the genital furrow backward to chin. On the ventral line the light and dark markings are about equal. There is a patch of dark about one foot long and one foot wide (irregular) from the posterior insertion of dorsal forward and on the left side.

Right corner of mandible is gray lighter than the top of the head (which is the same color as the dark of the body). On thorax (median) are a few small ash-colored markings. On the face, white markings come down from root of each pin down to the dorsal forward and downward directed toward navel but only a few scattered ones reach navel. There are only a very few small scattered white markings on very mid-ventral line forward of navel. There are a few ashly markings on breast between fin and no white ones. No white patch below fin.

Dorsal is lined as usual - the antedge is very light - almost white.
Above considerably darker gray than sides of body. Below an gray (darker than No. 1) gray for whole surface except an narrow posterior edging on the tips which are dark.

Pectuncle. Above dark gray except tips and The ant. 2/3 of side and edge - these parts are white - below white. Both fins same.

External notes. A fresh parasite scar at ant. end of thorax, shaped like this. This elliptical cup is about one inch deep and contains a linving which may be pulled out, leaving the flesh clean exposed. Capt. Nelson tells me that it is a "shelless barnacle" which fastens itself. Evidently the parasite lets go and frees itself when the whale is killed. It could not be a barnacle like those on the Humpback (Ecorinella) for their fellows could not let go. Also the scars are nothing like those left by Ecorinella.
between fins one fold is 6.5 cm. wide. These same scars were found on both the Sea whale Fairback.

**Osteology**

- Length of skull (straight) from tip of premax. to condyles below = .590
- Breast sphenosquamosal = .250
- Fingirl jaw straight = .500
- " " curved = .600

---

**Measurements**

1. Total length (taken in sections) = 22.70
2. Suvant to eye = 5.06
3. Notch of flukes & amens = 6.23 (?)
4. Post. max. dental = 5.15
5. Pectoral = 14.40
6. 365
7. Post. max. = 253
8. " " " curv. = 3.25
9. Greatest breadth pectoral = 90
10. Flukes tip & tip = —
11. Greatest breadth flukes (curv. & post) = 130
12. Depth mouth = 20
13. Length, right lobe anteriorly = 27.5
14. Depth peduncle between flukes ganics = 21.5
Blue Whale 3 Apr 1910 Oshina
Total length of this whale was taken straight.
The top of the head on the left side is mostly dark gray.
The inner part as light as body markings. From opposite the genitalia, the sides of the peduncle back to the flukes is mostly a small light gray marking. Also here there are many scattered white dashes on markings. On ventral surface just above the genitalia for about one foot on either side the darker gray predominates and backward to midway between the flukes on a more darker gray predominates.
From there on to flukes, the ventral line is light gray like the sides of peduncle. Between its many angles on ventral line, the darker gray is found.
From the dorsal fin to flukes, the light gray markings run in a curved dorsal line. The light gray markings of the upper side run close down to base of fin above and down on six of the folds between corner of mouth and anterior insertion of fin. The light gray markings below the ends of the furrows which do not come too close to ends as in W. 7 Blue Whale.
On belly foots from a short distance behind fins there are many small ash colored markings - also a few scattered white ones. Six folds under left fin are whitish - an irregular line 3 ft long of white dashes comes obliquely downward & backward from posterior insertions of fin. There is then a break of 1' inches in the white line of dashes and then it begins again reaching nearly to midline line, halfway between first navel. These white dashes are about 2" in. long & 3" in. wide. Five folds directly under right first are whitish (but not shiny) at least between fins are a few ash colored markings.

On upper sides & back directly above navel is a large patch of almost solid light gray markings - the navel is white. The right ramus of the mandible is of a lighter gray than are folds of the throat.

Dorsal edge very light gray shading into the gray color of the body markings - very light gray lines start from an z edge to run downward over sides as in

Lateral
all the eithers Blue Whales - tip & posterior edge is dark gray - post. edge has been injured.

Below all white -

Other dark gray except anterior edge tip as shown in drawing.

The peduncle is covered with small scars & "blisters" which give it a crinkled appearance.

Male mammary situated on either side of ventral line 30 cm behind penis base.

Measurements of No 8

1. Total length (taken through alongside) = 22.03
2. Snout to eye = 512
3. Notch of pectorals to anus = 587
4. " " " " penis (center) = 717
5. " " " " navel = 927(?)
6. " " " " post. rect. dorsal = 5.07
7. " " " " post. rect. ventral = 14.00
8. Length pectoral (tip to head underneath) = 317
9. " " " " post. mid. = 226
10. Breach pectoral = 87
11. Height of dorsal (vertical) = 31
12. Length anal & finning = 16
13. " " " " mammillary sheeted = 28
14. Deep between " " = 20
15. Length nose of balance = 480
16. Length nose of balance, longest = 120
2 a.m.

No. 9 - Finback - 3 - May 20 - Aikawa

This whale was allowed an hour on the slip to that measurements are all correct.

I did not have an opportunity to observe carefully the tip of the head.

On the side a dark gray band comes down backward from root of fin below; it is about 2 ft long and 1 ft wide. The second band which is dark gray (much darker than first) is the same size and runs down and back at same angle and begins opposite end of fin and back.

On throat the central area has bottom of numerous pinkish sides of throat has the m. dark. The same condition extends for whole length backward except on belly about opposite tip of fin and back where all furrows are dark except very median central ones.

Right side remains very light gray (almost white) especially toward the tip. Between the corner of mouth and right fin the grayish of the lower back runs downward about 2 1/2 ft - at corner of mouth a very dark band runs backward and quite reaching for insertion - on the throat between the corners of the mouth 16 furrows one pinched the rest are dark.
The underside of the right margin is dark slate.

Bunche

Left inferior at tip—below white except grayish at base, along post. edge and at tip. White runs over on to superior surface along anterior edge—rest of above is slate.

Flaker

Below have posterior edge anterior edges + tips dark gray—not all white—posterior edging is darker than anterior, above dark slate. Notch overlaps T-25.

Dorsal

Dark slate—dorsal is high recurved. It has a deep notch in post. edge at base.

Baleen

Bristles of baleen all tinged with grayish—the only pure white ones being the very anterior plates—going backward the bristles become more strongly gray and especially so at tips.

(For measurements see opposite page.)
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>184.5</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>4.00</td>
</tr>
<tr>
<td>Post. n. to pectoral</td>
<td>6.30</td>
</tr>
<tr>
<td>Eye to ear (center)</td>
<td>8.4</td>
</tr>
<tr>
<td>Notch of flukes to anus</td>
<td>57.3</td>
</tr>
<tr>
<td>Post. n. to dorsal</td>
<td>42.5</td>
</tr>
<tr>
<td>Post. n. to pectoral</td>
<td>124.0</td>
</tr>
<tr>
<td>Pecoral tip to head of burnes</td>
<td>22.4</td>
</tr>
<tr>
<td>Post. n. to pectoral</td>
<td>14.5</td>
</tr>
<tr>
<td>Greatest breadth, pectoral</td>
<td>6.3</td>
</tr>
<tr>
<td>Height, dorsal (vertical)</td>
<td>3.9</td>
</tr>
<tr>
<td>Flukes tip to tip</td>
<td>4.15</td>
</tr>
<tr>
<td>Greatest breadth, flukes ant. &amp; post.</td>
<td>10.0</td>
</tr>
<tr>
<td>Depth, notch</td>
<td>2.5</td>
</tr>
<tr>
<td>Depth, right lobe axially</td>
<td>21.9</td>
</tr>
<tr>
<td>Depth, peduncle at ant. &amp; post.</td>
<td>85</td>
</tr>
<tr>
<td>Midway between... and anus</td>
<td>18.8</td>
</tr>
<tr>
<td>Anus to base of penis</td>
<td>13.8</td>
</tr>
<tr>
<td>Ant. n. to umbilicus</td>
<td>3.61</td>
</tr>
<tr>
<td>Number of branch fiuores</td>
<td>7.4</td>
</tr>
</tbody>
</table>
10 A.M.

No.10 Tuna back of May 20 10 Atalanta

This whale contained a single fetus about 18 inches long; it is preserved in alcohol.

Color
- Left ramus dark gray – right ramus light gray – outside left ramus light gray – inside right ramus dark gray.

Picture
- Below ramus distal 1/3 all gray except ant edge – middle 1/3 has anterior half white & post half gray – the proximal third is the same.

Dorsal
- All slate. This fin is unlike any I have seen before. It is long and narrow, not having the broad base of others – it is roughly finger shaped spreading out comparatively little at the base.

Pins of anterior 1/3 are white, middle 1/3 have gray tips – last 1/3 all gray.

Fin creases run out of corner of mouth – center of eye is centered above corner of mouth.

Measurements over page.
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>1980</td>
</tr>
<tr>
<td>Eye to snout</td>
<td>440</td>
</tr>
<tr>
<td>Blown hole (center)</td>
<td>377</td>
</tr>
<tr>
<td>Can (can not certainly located)</td>
<td>687(?)</td>
</tr>
<tr>
<td>Above</td>
<td>13</td>
</tr>
<tr>
<td>Opening</td>
<td>10</td>
</tr>
<tr>
<td>Proximal tip &amp; head of finures</td>
<td>243</td>
</tr>
<tr>
<td>Port circumference</td>
<td>160</td>
</tr>
<tr>
<td>Greatest breadth</td>
<td>60</td>
</tr>
<tr>
<td>Length of baleen row (straight)</td>
<td>435</td>
</tr>
<tr>
<td>Longest plate of baleen</td>
<td>86</td>
</tr>
</tbody>
</table>
Fumback 7 May 22/10 Aikawa

Left side of head darker than right side in dark ventral tint — right side gray at edge the light color extending to tip of snout — inside left inner lower half of eye is half way to tip of snout — inside right inner lower half gray for lower half — upper half slate right.

Remarks

Below — a grayish band eight inches wide runs along posterior edge of fin all except a narrow anterior edging is grayish — rest of mantle part of fin is white — above all slate white not running over and covers surface along the anterior edge as is normal. Tissue of both fins have been injured.

On the left side 150 cent, from tip, and 35 cent, from edge of snout, is a large scar evidently made by a harpoon. The scar is in the form of an irregular opening 28 cent, long which runs almost straight downward through the rostrum. The inside of the scar is covered with black skin. On the lower side it opens in the middle of the baler, here the baler has grown together.
into three heavy tunnels which are white & set loosely in the skin. On
the inside of the right assassins are
many small scattered scars
such as would be produced by
the bursting of a half-pound bomb.
I had an opportunity to examine
carefully the head of this whale &
as it was typical I will describe
its shape in detail.
A cross section of the head direc-
tly in front of the blowholes
would be this

\[ \text{[Diagram]} \]

The median ridge, which is highest
immediately in front of the blowholes
runs forward, becoming lower
less pronounced until it is
lost entirely 105 cent. from the
tip of the snout. Opposite to the
anterior ends of the blowholes
30 cent. from the median ridge
is a broad, hump-like ridge begins
which runs forward along the edges
of the rostrum to the tip. As its summit
is rounded. As the central ridge
is lost 105 cent. from the end of
the rostrum and as the two side
ridges persist to the extreme tip,
The fur on the distal portion of the rostrum is coarse. At the base, for the entire length of the median ridge, the faces between the side ridges present shallow concentric ar

These were a few scattered hairs about the rostrum, and along both edges of the rostrum, there were none on the very median line. On the incisival day symphysis, the arrangement of the hairs is the same as in the Old-Peake Finbacker vis. There are two irregular lines on either side of the low median ridge, or two other shorter more irregular lines, and so forth there. Their hairs are scattered about in no definite arrangement.

I measured the rostrum by sections before the blubber had been stripped from the edges.

8.6 cent. from tip rostrum is 90 cent. wide.
120°
175°
225°
330°

Across the eyes.
Three folds run out of corner of mouth and four furrows
Eyes
One funnel is 45 cent. long, next is 60 cent. next 75 cent. next 90 cent. The posterior corner of the eye is directly above the muscle corner of the mouth. The funquil of eye is 3 cent. in front of corner of mouth 110 cent. above.

Balene
All bristles are gray save the anterior ones which for a distance of 60 cent. are white toward back bristles are very dark gray, almost brown.

Measurements

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>18.00</td>
</tr>
<tr>
<td>Snout to edge</td>
<td>3.66</td>
</tr>
<tr>
<td>Blowhole (center)</td>
<td>3.10</td>
</tr>
<tr>
<td>Post. inst. of pectoral</td>
<td>6.20</td>
</tr>
<tr>
<td>Eye to ear (center)</td>
<td>9.0</td>
</tr>
<tr>
<td>Ear opening</td>
<td>9.0</td>
</tr>
<tr>
<td>Pectoral tip to post. inst.</td>
<td>15.0</td>
</tr>
<tr>
<td>&quot; &quot; &quot; hand</td>
<td>19.51</td>
</tr>
<tr>
<td>&quot; &quot; greatest breadth</td>
<td>5.2</td>
</tr>
<tr>
<td>Greatest breadth flukes ant.-post.</td>
<td>10.3</td>
</tr>
<tr>
<td>Finshp right lobe (axially)</td>
<td>20.6</td>
</tr>
<tr>
<td>Blowhole straight</td>
<td>4.3</td>
</tr>
<tr>
<td>Left</td>
<td>4.4</td>
</tr>
<tr>
<td>Distance aflat to anteriory</td>
<td>3.0</td>
</tr>
<tr>
<td>&quot; &quot; posteriorally</td>
<td>2.0</td>
</tr>
<tr>
<td>Length balene row (straight)</td>
<td>34.8</td>
</tr>
</tbody>
</table>
4:30 P.M.

10:12

May 22, 1910, Akauwa

Color

Feet: The top of the head is dark slate or neutral. Right side has lighter semi-transparent areas running forward and downward from tip as far as bifurcation for branches. Outer half of rostrum not reaching tip. On the top of the head are irregular lighter patches looking as though the epidermis had been rubbed off. Back and extreme outer sides are slate color, left side a light bluish green to eye. The under edge of the small inflorescence pink for some distance as white portion of baleen.

Left ramus very dark slate (almost black) to about 14 inches below the corner of mouth. This color extends. This dark color is narrow near digit as end of ramus and widens as it goes backward.

Right ramus very light gray (almost white) shading into the white of the central throat. A very dark patch on branch runs backward out of corner of mouth.

The gray of the sides comes down very far on the peduncle leaving only a narrow midventral strip white. The peduncle to lower sides are a beautiful diamond gray. Instead of two narrow bands of gray running down
out the folds from the root of the fin.

The gray is in two very wide bands, and almost solid. They are broken by a narrow bank of whiteish gray tip of fin laid back to a broad white streak from the root of the fin.

In other words, the gray bands are

one thin white so broad that they

cover all but the two narrow streaks

of white mentioned above.

13 folds under the left fin are dark.

21 dark furrows under right fin.

14 folds under eye left side are dark

shading off into white.

10 furrows between fins are flesh
colored, rest are dark.

Pectorals

Right below white except for gray posterior

border at tip — gray covers heel of tip

except very anterior edge. On the

upper surface the white from below

runs across upper anterior edge,

notch flushes not lapped
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total length</td>
<td>18.40</td>
</tr>
<tr>
<td>3 Length to eye</td>
<td>292</td>
</tr>
<tr>
<td>10 Eye opening</td>
<td>10</td>
</tr>
<tr>
<td>12 Width of flukes &amp; amn</td>
<td>55.0</td>
</tr>
<tr>
<td>16 &quot; &quot; &quot; post. mit. dorsal</td>
<td>44.5</td>
</tr>
<tr>
<td>18 Pectoral (tip to head of humerus)</td>
<td>233</td>
</tr>
<tr>
<td>19 &quot; &quot; &quot; post. n.</td>
<td>146</td>
</tr>
<tr>
<td>20 &quot; &quot; &quot; ant. &quot; &quot;</td>
<td>203</td>
</tr>
<tr>
<td>21 &quot; greatest breadth</td>
<td>57</td>
</tr>
<tr>
<td>22 Height dorsal (vertical)</td>
<td>37</td>
</tr>
<tr>
<td>23 Flukes tip to tip</td>
<td>435</td>
</tr>
<tr>
<td>24 Greatest breadth flukes (ant. post.)</td>
<td>108</td>
</tr>
<tr>
<td>25 Deep notch of flukes</td>
<td>20</td>
</tr>
<tr>
<td>26 Length left lobe</td>
<td>230</td>
</tr>
<tr>
<td>40 Length row of baleen</td>
<td>38.5</td>
</tr>
<tr>
<td>41 &quot; longest plate baleen</td>
<td>90</td>
</tr>
<tr>
<td>45 &quot; white portion &quot;</td>
<td>170</td>
</tr>
</tbody>
</table>
No. 13  
Finback  
May 22, 1929 - Arkansas

A dark whale - much darker - than others.  
Beak narrow and 18 inches of its  
'legs' below. The whole length from tip  
to a little behind of 'corner of mouth'  
are very dark slate (almost black).  
The dark area is narrow at the tail end  
of ramus, widening progressively.  
Fifteen folds number left fin and  
dark - Thirty-four furrows over  
left eye are dark - 15 predors are dark  
the rest are white.  
The slate under the fin is in the  
shape of two broad bands (almost  
white) broken only by by two white  
lines from base of fin to tip of fin  
and back, which run obliquely  
downward to backward.  

Flukes - The dark edging below is fairly  
heavy.  

Pretends - The whiteness of the lower surface  
runs up over the edge (outside) above  
for the distal 1/2 of the fin.  

slides  
The peduncle is thickly scarred.
<table>
<thead>
<tr>
<th>Measurements of No.13</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>1560</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>390</td>
</tr>
<tr>
<td>Notch to slant</td>
<td>515</td>
</tr>
<tr>
<td>Pinnas breast</td>
<td>643</td>
</tr>
<tr>
<td>Navel</td>
<td>366</td>
</tr>
<tr>
<td>Post. nict. of pectoral</td>
<td>450</td>
</tr>
<tr>
<td>Pectoral tip to first inflexion</td>
<td>163</td>
</tr>
<tr>
<td>Anterior nict.</td>
<td>230</td>
</tr>
<tr>
<td>Greatest breadth</td>
<td>53</td>
</tr>
<tr>
<td>Height dorsal-ventral</td>
<td>451</td>
</tr>
<tr>
<td>Flescher tip to tip</td>
<td>410</td>
</tr>
<tr>
<td>Breiten flescher (ant.-post.)</td>
<td>100</td>
</tr>
<tr>
<td>Depth of notches</td>
<td>20</td>
</tr>
<tr>
<td>Distance right loop axially</td>
<td>220</td>
</tr>
<tr>
<td>Depth peduncle at anterior flukes</td>
<td>85</td>
</tr>
<tr>
<td>Anulus to penis</td>
<td>128</td>
</tr>
<tr>
<td>C -- navel</td>
<td>&lt;35-3</td>
</tr>
<tr>
<td>Number of throat furrows</td>
<td>76</td>
</tr>
</tbody>
</table>
Blue Whale of May 24/110, Akwaiwa. A very light whale. The back from tip of fin back is gray with scattered light markings, a nearly root of fin. Rest of the back (posteriorly) is thickly marked with light gray, on the peduncle being almost solid. The sides of the peduncle are not only thickly covered with very light gray markings but also many rather small white scars. This gives the peduncle the same "crenelled" appearance which I observed on the Blue Whale at Akwaiwa.

Under the fin, is a large white patch and a line of scattered white markings run obliquely downward backward from it. Also on the side for a directly opposite navel are many white markings.

Round's light bluish white, throat patches under it are rather darker. On the throat foods there are one white markings but a few only ones on breast.

(Pecked) Photographed, above has proximal 1/3 all slate gray and distal 2/3 has ant. edge white, this band becoming
broader toward tip. Tip is injured.
Believe white. White.

Dorsal
Has anterior sides light caused by the rather faint grayish lines running down to back from ant erior edge. Tip is dark gray to black. Has been injured at abdomen past edge.

Flukes
Has central portion white thick lined with rather coarse gray lines. The anterior edge is heavily lined. The posterior edge is almost, almost as wide as one its tip. The under side is different from the majority of Belmar Whales. The white is more distinct. The remaining lines are broader and not so close together, or have seem only one or two others like this specimen.
1. Total length
   = 2.850
2. Fin base to eye
   (below corner)
   = 4.70
3. Notch to anus
   = 2.20
4. "   "  anterior of dorsal
   = 5.60
5. "   "  posterior of dorsal
   = 1.490
6. Pectoral tip to head of humerus
   = 3.60
7. "   "  posterior of nictitans
   = 2.48
8. "   "  "   of ant.
   = 3.10
9. "   "  greatest breadth
   = 8.8
10. Height dorsal (vertical)
    = 1.9
11. Greatest breadth, flukes (ant. post.)
    = 1.25
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Length all back</td>
<td>1660</td>
</tr>
<tr>
<td>2</td>
<td>Cir. of body off. tip of fin laid back</td>
<td>880</td>
</tr>
<tr>
<td>3</td>
<td>Snout to eye</td>
<td>330</td>
</tr>
<tr>
<td>4</td>
<td>Blowhole center</td>
<td>260</td>
</tr>
<tr>
<td>5</td>
<td>Post. vent. pectoral</td>
<td>620</td>
</tr>
<tr>
<td>6</td>
<td>Dorsal</td>
<td>1270</td>
</tr>
<tr>
<td>7</td>
<td>Eye to ear (center)</td>
<td>130</td>
</tr>
<tr>
<td>8</td>
<td>Above ear</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>Opening of eye</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>notch of flukes &amp; anus</td>
<td>160</td>
</tr>
<tr>
<td>11</td>
<td>Mammary slit</td>
<td>600</td>
</tr>
<tr>
<td>12</td>
<td>Navel</td>
<td>820</td>
</tr>
<tr>
<td>13</td>
<td>Pectoral dorsal</td>
<td>470</td>
</tr>
<tr>
<td>14</td>
<td>Pectoral tip &amp; head humerus</td>
<td>300</td>
</tr>
<tr>
<td>15</td>
<td>Post. vent.</td>
<td>220</td>
</tr>
<tr>
<td>16</td>
<td>Sande</td>
<td>260</td>
</tr>
<tr>
<td>17</td>
<td>Greatest breadth</td>
<td>70</td>
</tr>
<tr>
<td>18</td>
<td>Height of dorsal ventral</td>
<td>82</td>
</tr>
<tr>
<td>19</td>
<td>Flushed tip to tip</td>
<td>430</td>
</tr>
<tr>
<td>20</td>
<td>Greatest breadth ant-post</td>
<td>170</td>
</tr>
<tr>
<td>21</td>
<td>Depth notch</td>
<td>30</td>
</tr>
<tr>
<td>22</td>
<td>Length right lobe (axially)</td>
<td>205</td>
</tr>
<tr>
<td>23</td>
<td>Left</td>
<td>248</td>
</tr>
<tr>
<td>24</td>
<td>Depth peduncle anterior flukes</td>
<td>125</td>
</tr>
<tr>
<td>25</td>
<td>Between</td>
<td>190</td>
</tr>
<tr>
<td>26</td>
<td>Length right blowhole straight</td>
<td>45</td>
</tr>
</tbody>
</table>
32. Length left flank whole straight = 40
33. Depth antem. = 4
34. " " postem. = 35
35. Length of max. slit = 20
36. Dist. between " = 23
44. Number of throat furrows = 65

The rudimentary teeth in this specimen were well developed.
10 P.M.

Finback 7 pm. May 24/10 Alaska

Back slate - the slate reaches
on to the side 90 cens. from the
mid-dorsal line, opposite the tip
of the fin and back.

Feet: margins bluish white at
distal end shading into very
light gray proximally - Right
required very dark slate.

The widest peduncle light bluish gray.

Arms edge white for whole length above
rest blue-gray. Below, posterior edge
has edging one inch wide of grayish,
and distal 1/4 of fin is grayish. Del
rest white below.

Flukes: white below, except tips, posterior
edge nearly to notch, and anterior
edge dark slate. The slate on anterior
edge is narrow near insertion of
flukes & toward tips becomes
broader. The posterior dark edging
is about 8 inches wide. The white
is not lapped.

Pristis are all yellowish white,
except the prismatic 1/6 which are
grayish for whole length of plates.
There are 9 white plates in the white
posterior middle right side - the white plates
shades gradually into the dark-edged
plates. [14 prox. ribs on]
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Total length</td>
<td>11.35</td>
</tr>
<tr>
<td>Second base</td>
<td>2.02</td>
</tr>
<tr>
<td>Bowl of center</td>
<td>1.70</td>
</tr>
<tr>
<td>Post. mast. &amp; pectoral</td>
<td>3.50</td>
</tr>
<tr>
<td>Eye to base center</td>
<td>8</td>
</tr>
<tr>
<td>Above</td>
<td>7</td>
</tr>
<tr>
<td>Opening</td>
<td>4</td>
</tr>
<tr>
<td>Ventr. gills to max. length</td>
<td>4.04</td>
</tr>
<tr>
<td>Post. mast. &amp; pectoral</td>
<td>3.30</td>
</tr>
<tr>
<td>Pectoral</td>
<td>8.03</td>
</tr>
<tr>
<td>Pectoral tip to head bunneren</td>
<td>1.60</td>
</tr>
<tr>
<td>Post. mast.</td>
<td>1.00</td>
</tr>
<tr>
<td>Ant.</td>
<td>1.30</td>
</tr>
<tr>
<td>Greatest breadth</td>
<td>3.6</td>
</tr>
<tr>
<td>Height dorsal</td>
<td>2.0</td>
</tr>
<tr>
<td>Flukes tip to tip</td>
<td>2.45</td>
</tr>
<tr>
<td>Length left lobe axially</td>
<td>1.37</td>
</tr>
<tr>
<td>Greatest thickness flukes at mast.</td>
<td>2.3</td>
</tr>
<tr>
<td>Sperm peduncle at</td>
<td>7.1</td>
</tr>
<tr>
<td>Between 6 arms</td>
<td>1.39</td>
</tr>
<tr>
<td>Length row of baleen</td>
<td>1.90</td>
</tr>
<tr>
<td>Longest plate</td>
<td>0.95</td>
</tr>
<tr>
<td>Number of plates of baleen</td>
<td>3.06</td>
</tr>
<tr>
<td>Foren jaw extends beyond upper</td>
<td>1.6</td>
</tr>
<tr>
<td>Length white portion of baleen</td>
<td>4.0</td>
</tr>
</tbody>
</table>
4:45 a.m.

Fibback 5 May 28/10 Awhara

The whale was not drawn entirely out of the water at first, so it was necessary to take its length in two sections—it is undoubtedly correct. Was taken along back annual.

Rather a dark whale. Back in slate shading into gray on the sides & corners. —Slate covers back nearly down to root of fin.

Tail stock — name is copper & yellow of throat, below whorls—very dark slate (almost black).

There are 11 dark spots under left eye—and 32 dark furrows—this is all the furrows on the left side of throat from the very median line are dark. There are 14 pink furrows in throat between eyes, these being therefore entirely on the right side.

The two gray bands under the fin are very broad being broken only by the two light bands from the front of the fin & the tip black back—these light bands are very narrow.

Right ramus is very light gray, it is highest at tip (here almost white) and gets darker gradually toward the proximate part. The inside of the right ramus is dark slate; inside left ramus is light gray.
Pectorals. Above plate distant has ant. edge white, tip of wing. Below white, having tip, posterior edge grayish, above white, except.

Brittle. Dirty or yellowish white, extreme tips which are gray. The posterior plates for about 1/5 inches have bristles all brownish-gray. Telson begins 16 cent from tip of opisthont. The white portion of the telson on the right side is 2 cent. in length. But plates which have their lower halves white are buff dark (outer edges) extend for 20 cent. further. Thus the white portion fades gradually off into the dark.

Mucous membrane in roof pocket is purplish white - rather flesh colored streaked with purple.

The hairs on the mandibular symphysis were 2.5 mm. long and embedded half their length. They were very closely spaced and could be pulled out with little difficulty. Were dirty white.

Ribs. 14 pairs of ribs (sure)

Skull. Length straight below = 4/5 cent.

Jaw. \[ \text{curved}: 11 = 470^\circ \]
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>19.10</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>35.2</td>
</tr>
<tr>
<td>Flank to eye</td>
<td>80.5</td>
</tr>
<tr>
<td>Eye to ear (center)</td>
<td>8.6</td>
</tr>
<tr>
<td>Ear above</td>
<td>7</td>
</tr>
<tr>
<td>Ear opening</td>
<td>9</td>
</tr>
<tr>
<td>Ear</td>
<td>3</td>
</tr>
<tr>
<td>Notch fleckes to anus</td>
<td>3.35</td>
</tr>
<tr>
<td>Femur</td>
<td>4.65</td>
</tr>
<tr>
<td>Navel</td>
<td>5.35</td>
</tr>
<tr>
<td>Post. n.t. dorsal</td>
<td>4.30</td>
</tr>
<tr>
<td>Pectoral tip to head</td>
<td>1.24</td>
</tr>
<tr>
<td>Pectoral tip to head</td>
<td>2.05</td>
</tr>
<tr>
<td>Post insertion</td>
<td>1.25</td>
</tr>
<tr>
<td>Ant.</td>
<td>1.70</td>
</tr>
<tr>
<td>Greatest breadth</td>
<td>3.0</td>
</tr>
<tr>
<td>Fleckes</td>
<td>3.70</td>
</tr>
<tr>
<td>Armes to penis</td>
<td>1.30</td>
</tr>
<tr>
<td>Navel</td>
<td>3.23</td>
</tr>
<tr>
<td>Length baleen rostrum</td>
<td>3.40</td>
</tr>
<tr>
<td>Length baleen plate</td>
<td>2.92</td>
</tr>
<tr>
<td>Membrane between femo</td>
<td>6.4</td>
</tr>
<tr>
<td>Length while posterior baleen</td>
<td>7.0</td>
</tr>
</tbody>
</table>
9 P.M.
Finschh 7 May 29/10 Aikawa

This whale was measured by the

cutters and as the head was well

under water it can be by no means

sure that the length as taken was

correct.

A dark individual. Left side
top of head slate. Right side, toward

that side of blowhole, it confed

distinguishing lighter color near

the remainder of the right side

seemed to be the same as the left

side top of head. Right remains

white at top, shading backward into

very slight French gray — many

white "scars" in remains. Between.

The very dark band running out of
corner of the mouth right side reaches

half way to the fin incision. Between

the corner of the mouth to the fin, right side, an irregular

patch of gray runs downward

which covers 1/3 fold. The grayish

covers the entire space & forms a

rough semi-circle between

these two points. At the root of the

fin a rather small & indistinct

grayish band goes down to rock

outside. It is then a whiteish

space of about half the length of
the fin laid back, a gray band 4 ft. long + 18 inches wide, runs down + back. This band is well marked + square at the distant end. Next comes a white space + then I observe the tip of the fin laid back, a third short band begins which merges into the gray of the sides.

From the end of the pectoral, the line of right gray is almost straight; it then begins to slant down regularly to the flukes, where it is reaching within turns or three inches of the mid-ventral line at the flukes insertion. The gray goes into the white of the sides rather abruptly; many white stains on the peduncle.

1. Total length (measured by whaleman along side) = 60 ft.
2. Notch of flukes + part. mist. of dorsal = 440
3. Pectoral tips + head of humerus = 200
4. Greatest breadth = 5.5
5. Depth peduncle at ant. inst. of flukes = 80

(Tip of pectoral badly injured)
No. 19

Süi whale 5 June 8/10 Aikawa

This whale was drawn entirely out for the ship and I took the measurement with the greatest care. I did not get an opportunity to examine carefully the back or top of head. Observation showed it to be dark slate. The left lip & rami of mandible have the upper half dark gray and the lower half very light gray becoming almost white at lip. Inside of right ramus of lip is dark slate. The throat and breast are white to a point about opposite the middle of the fin laid back. Have a band about 1/25 cent. in width with irregular margins, which extends back to a point a little behind the maxilla bone from the sides entirely across belly. This band is gray & considerably darker than the colored sides of the peduncle. On the left side of this gray area the dark gray from the upper half of the lower lip extends back towards becoming wider & wider until between corner of mouth & anterior insertion of pectoral it spreads outward & downward in a large, wide blotch of irregular margins. Directly under the left fin there dark area
it is considerably darker than
From a point about
opposite the mand the dark slate of the back
shades off gradually into gray on the
dorsal sides which covers the entire
ventral line from the anus to the fleshed
ventral line from a little behind
mand to the anus. Here is a narrow
area of light pink. The sides of the
body are covered with small rounded spots
(having rounded corners) which seem
to be composed of fine wavy lines radiating
outward from a common center.

as in the sketch. I have noticed many
markings on the Finbacks of Blue
whales here, and on the Finbacks of
Alaska and Vancouver Whales. Whether or not
they are caused by a parasitic fixture
yet determined.) There were also a
great number of white scars on
the sides of the body which were un-
doubtedly produced by a parasitic
civilized by some sort. As I found
fresh pits, some partly healed,
& others entirely so. In the fresh
pits were granular in
membranes evidently left by the parasite when it
was detached from its host. On
the Finbacks of Blue Whales the same
pits were & scars were found.
I did not have an opportunity to examine the right side of this whale carefully, but from hurried observations I believe that the right manus was mostly light gray and that a somewhat darker gray cloth similar to the one on the left side, was present under the fur. There was also a distinctly lighter area near the left eye but how far it extended I could not tell as the blubber was removed before I had a chance to describe it. (See No. 4.)

The central portion of both lobes of the flukes (below) is light gray about like the sides of the peduncle. The distal half of each lobe as well as a wide posterior margin of the edges is dark gray. Above the flukes are dark gray like the back.

The upper surface of the fin is blue slate which lightens somewhat along the anterior edge from the middle of the fin forward. Below the anterior half of fin the whole length is light blue gray which shades off very gradually into darker gray of the posterior half. The color of the lower surface seems to be produced by extremely fine white scales which...
run from the tip down the posterior border curving obliquely off toward the anterior edge near the base of the fin the lines run in a curve across a fin from post to ant. edge. These lines are extremely fine that it looks like solid color and can only be detected under close examination.

The lower half of the anterior edge is slight gray. The upper half is darker gray. The line of division being well marked.

The fin is narrowly lanceolate in shape. The anterior edge is (almost) straight very slightly convex. The posterior edge swells gradually outward and backward toward the tip. There is a long curve until about middle of fin is reached, when it turns very gradually inward to the posterior angle which is not thinly marked. The fin is under the middle of its length and it is here that the anterior edge is thickest. From that joint the ant edge tapers gradually toward tip until it becomes thin. The posterior edge is thin but fairly rigid until the point of greatest curvature is reached, where from there to the caudal the posterior edge is loose skin.
Dorsal

The dorsal fin is large and high, deeply concave and deeply paleate. The tip "over hangs" so greatly that it will rest on the deck, resting on the side. The color is dark slate like the back. [Photographed]

Baleen

It was impossible to get a very good view of the baleen of the whale while it was intact as the light was poor. Harmen said the baleen of the anteriour half of the rows seemed to be all white. The baleen of the proximal half were all grayish. Since the very proximal portions (about 1/6 of its entire rows) and baleen were all grayish, I counted carefully the plates on the left side from the very anteriour to the most posterior ones. Then we hung 290 on this side.

The anteriour plates of baleen for 16 cent. See one each side were yellowish white. The baleen examined carefully all the baleen plates which were spread out to dry in the sun upon the deck.

The color of the baleen is very hard to describe as much as it changes.
with the angle of light. When examined in the dark party of the plate possessed a marked under
angle. At one angle its color of the plate was a beautiful blue; at another angle the color was light green. When examined out of the sun the color was a deep blue-black which, however, changed to a lighter shade when held at a different angle. Along the inner basal edge, the majority of the plates had longitudinal bands of yellowish white which shaded into gray and finally into a narrow band or transverse of the main plate. The width of the white and gray bands varies greatly; some plates had a white band 35 to 40 mils wide shading into a gray band of similar breadth. There were the most antenines of the row. Others had only a narrow edging of gray. My study of the talcan of No. 4 showed that the white basal stripe is widest at the antenine portion of the talcan row becoming less and less toward the back until it is lost entirely in the posterior 1/3 of the row. Three hundred & eleven plates were spread upon the slip to dry, out of a
This number 230 had white or gray along its edge. Eighty-one plates showed no light color. Of course these plates were only those which were of commercial value.

All the plates are transversely scaly in perfection to the size of the plate, the ridges being fully as prominent as those of the Finbacks or Blue whale. As in the true lazi, the ridges are most prominent in the bony portion of the plate. The hinges of all these plates were yellowish white except at the tips of the plates where the coarse muscles became grayish or brownish.

**Osteology**

The right scapula of this whale was pared, cleaned, measured & photographed.

1. Height (vertical) = 5-75" mile.
2. Greatest width = 9-60" "
3. False acromion (median) = 70" 260
4. Coracoid = 240" 110
5. Ant. part. length glenoid fossa = 2-00" "
6. Wrist coracoid = 9-00" "
7. Coracoid acromion distally = 40" "

The scapula is wedge-shaped. The suprascapular edge is remarkably flat, differing at a sharp angle to meet the posterior edge which is straight after
it rises above the neck of the scapula. The concave edge is irregularly convex. The curve of the scapula meets in a regular curve to meet the concave border. The junction edge of the scapula is straight after it leaves the neck of the scapula; the concave edge is irregularly convex. The concavity is long, slightly curved and is directed outward a somewhat upward. It is about the same breadth throughout.

The concave is directed inward and downward. It narrows gradually as it is 40 mm. broad at its distal end.

The prescapular fossa is not well defined.

The formula of the phalanges is:

II III IV
4 7 5 3

The 2nd digit including metacarpal:

<table>
<thead>
<tr>
<th>Digit</th>
<th>Length</th>
</tr>
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<tbody>
<tr>
<td>2nd</td>
<td>480</td>
</tr>
<tr>
<td>3rd</td>
<td>710</td>
</tr>
<tr>
<td>4th</td>
<td>600</td>
</tr>
<tr>
<td>5th</td>
<td>340</td>
</tr>
</tbody>
</table>

(over)
last phalany of 2d digit is 25 mil. long

... 15 "

... 40 "

... 30 "

The last phalany of the 3rd digit is 16 mil.

from the flange tip of the fin.

The last phalany of the 4th digit is 60 mil.

from the edge of the fin.

It will be seen that the formula

for the phalanges of this specimen

is similar to that of the whale no. 2, which

The latter formula is II III IV V

4 6 5 3 2

yet I am absolutely positive that

both are correct. The fins of both spec-

imens were dissected by myself

with the greatest care, but there is no

possibility that any of the phalanges

of no. 2 were overlooked.

There are 5 carpal ossifications — 3 in the

proximal row and 2 in the distal row. The

ossification opposite the base of the 4th and 5th
digit is the largest of them all. The one

next it is a little smaller. The same next to this is still smaller.

The tips of the distal row are small.
The flexor tendons prominent.

Had just begun to occupy — Nov. 25, 1876.
**Ratitinae**

The patagia or the proximal ⅔ of its length are almost straight. They then turn rather abruptly inward meeting at an acute angle.

**Measurements No. 9**

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<thead>
<tr>
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<tr>
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<tr>
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</tr>
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<td>Hand hole</td>
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<tr>
<td>Post. insert pectoral</td>
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</tr>
<tr>
<td>Eye to ear</td>
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</tr>
<tr>
<td>Armpit</td>
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<td>Opening</td>
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<tr>
<td>Ear</td>
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<tr>
<td>Flippers to anus</td>
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<tr>
<td>Penis</td>
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<td>Wrench</td>
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<td>Post. most of dorsal</td>
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<tr>
<td>Pectoral</td>
<td>9.20</td>
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<tr>
<td>Pectoral tip &amp; head brachiums</td>
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<td>Post. insert</td>
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<tr>
<td>Ant.</td>
<td>1.40</td>
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<tr>
<td>Gastrocnemius</td>
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<tr>
<td>Dorsal, ventral length</td>
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</tr>
<tr>
<td>Flippers tip to tip</td>
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</tr>
<tr>
<td>Ant. &amp; post head</td>
<td>9.8</td>
</tr>
<tr>
<td>Depth notch</td>
<td>2.0</td>
</tr>
<tr>
<td>Length right leg axially</td>
<td>17.8</td>
</tr>
<tr>
<td>Left</td>
<td>18.51</td>
</tr>
<tr>
<td>Thickness flibes at insertion (over)</td>
<td>2</td>
</tr>
</tbody>
</table>
29. Depth funnel at r.m.s. pl. 70
31. Length right blank hole (ft.) 36
32. " left " 36
33. Dist. apart " ant. 4
34. " " post. 23
39. Length baleen raw 263
41. " longest flake 75
42. Number plates baleen (left side) 290
44. " throat flukes 50
8.30 P.M.

Friday 2 June 9110 Aukawa

This whale, the largest Fastback I have ever seen, contained a fat tail (7) about 3 ft long. This animal presented peculiarities of coloring which I have never seen in a Fastback before. They were striking that Mr. Matsumama, the cutting manager, asked me if I did not think it a cross of Fastback & Sea Whale. I do not believe that such could have been the case, as the color peculiarities were simply exaggerations of the usual Fastback type. The baleen, fins, flukes, etc., were all typically Fastback.

I did not have an opportunity to examine carefully its head. The back was neutral tint shading off into light gray on the sides. The tip and right edge of the rostrum were marbled with white, black slate, and brownish-gray for a distance of 180 cent.

On the under side it was white, light pink. This area was the same excepient as the white portion of the baleen row. There was a semicircular arc at the front of the left fin, which was distinctly lighter in color than back. A similar one appeared to be on the right side but this was shifted before I could examine it carefully.
The sides of the peduncle are light gray which from the anus back become only a very narrow, nearly straight strip, this is lost entirely about 2/3. in front of the flukes in certain, the gray covering the central line fades. Just behind the anus two narrow, points extend obliquely forward from the gray of the lower sides, but do not meet in the mid-ventral line. On the left side, all of the furrows from the mid-ventral line are dark.

On either side of the belly opposite the tip of the fin, laid back, two gray bands extend downward and backward obliquely meeting on the mid-ventral line to form a V, the apex being about four feet in front of the umbilicus. The right arm of the V is solid color, the left arm is broken. A narrow broken band of grayish extends from the apex of the V back to the navel. Opposite the middle of the fin, laid back on the left side and a grayish blotch on the right side instead of a blotch it has the form of a round band which meets with the right arm of the V a short distance from the apex.
come down not quite meeting the
marginal line. (It was this fortifying
peculiarity of coloring which suggested
the Dei Whale to Mr. Matthewson)

Flukes

Have a wide and a posterior border of
very dark gray (below) & the tips for
one fourth of each lobe are dark gray.
The posterior border is much wider than
the anterior — above all slate gray.

Peduncle — Above, fin all slate gray; the ant.
edge is white. This shows in the sup-
erior surface of the fin and a narrow
band for whole length of ant. edge.

Belonging, with much gray along
posterior edge of distal half; this narrows
parallel gray lines run from tip
toward to center of fin. There is also
a grayish blotch at posterior margin
which extends across first half way to
anterior's edge. Tips not injured.

Measurements

1. Total length (measured to nearest 1/16") = 66 11/16
2. Forehead = 4 1/4
3. Eyes to ear = 1 9/16
4. " above " = 7
5. " of ear = 10
6. Ear = 1 1/4
7. " of tip = 2 1/4"
21  Breast pecoral
23  Fleshes tips of tips (estimated from length of lobes) = 440
26  Length right lobe tip to notch along post. border = 225
27  " left " equally = 225
40  " row of scales
41  " length plate
Length white part of scale (night side) = 105
128 white plates in white portion

Top of head, back, sides black. Below, the throat, breast, belly has a good deal of white which is usually in small flecks. The flanks are nearly all black. One or two of the flanks are edged with white. The white spot is characteristic of the San. I Alaska. Humpbacks were

give one. The flanks are nearly all black. One or two of the flanks are edged with white. The white spot is characteristic of the San. I Alaska. Humpbacks were

seen between the fins. An midventral line was well marked. Another small patch of pink on midventral line directly below corner of mouth. The eyelids are flecked with white. Much white in flecks about eye & corner of mouth. "Puffer track" about genitalia. "Fury track" back to "hump" on lower edge of peduncle. A little white about mouth. There were few of the circular & semi-circular markings on back. A few small white flecks & dots on the upper sides of the peduncle.

Black above & below with only a very few white flecks at near tips.

Below white except for an irregular blotch at base, an edging 1/2 wide along post. edge & a few spots at tip. Black above with a very few white markings at tip. The fins were colored exactly like typical ones of San. I Alaska.

Eight barbules on ant. edge - 1st is permanent, next two bars rounded,
Flukes (cont.)

External characters

Dorsal

Dakem

4th prominent, next 2 low & easy to see
Up fairly prominent. The 1st, 2nd & last
Two have barnacles.

The post. edge of the flukes is scalloped
as in Alaska & Van Kranenius. Many
barnacles on tips.

The upper edge of the peduncle between
dorsal & flukes is circularized. There
are seven "saddle" - low, near
There are 10 tubercles along right ramus.
Many barnacles on "chin" & fore-throat.

The tubercles on tip of cartilage seemed
to be arranged like those of Van Kranenius -
did not count them. Stomach
contained Enflamaria

Has a little white along anti-edge &
tip. It is low & has typical New York
shape. (Photographed)

Bristles dirty white & grayish brown
band along whole length of dakem near
extreme base, except the very anterior
portion. Tips of first 1/2 of row are
grayish & proximal portion has bristles
all gray.

Interior muscles pink

This whale had a very short head, the
under jaw projecting far beyond upper
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>1. Total length</td>
<td>880</td>
</tr>
<tr>
<td>2. Snout to eye</td>
<td>217</td>
</tr>
<tr>
<td>5. &quot; &quot; Flank crease</td>
<td>15.5</td>
</tr>
<tr>
<td>6. &quot; &quot; Post. nuch. fin</td>
<td>310</td>
</tr>
<tr>
<td>10. Eye opening</td>
<td>7</td>
</tr>
<tr>
<td>12. Wrench flex. arms</td>
<td>220</td>
</tr>
<tr>
<td>15. &quot; &quot; Naval</td>
<td>390</td>
</tr>
<tr>
<td>16. &quot; &quot; Post. nuch. dorsal</td>
<td>290</td>
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<tr>
<td>17. &quot; &quot; Post. nuch. crease</td>
<td>610</td>
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<tr>
<td>18. Pectoral tip to head (Inches)</td>
<td>279</td>
</tr>
<tr>
<td>19. &quot; &quot; Post. nuch.</td>
<td>222</td>
</tr>
<tr>
<td>20. &quot; &quot; Ant. &quot;</td>
<td>238</td>
</tr>
<tr>
<td>21. Greatest height</td>
<td>6.9</td>
</tr>
<tr>
<td>22. Dorsovertical height</td>
<td>13</td>
</tr>
<tr>
<td>23. Fin base tips</td>
<td>310</td>
</tr>
<tr>
<td>24. &quot; &quot; Ant. post. crease</td>
<td>94</td>
</tr>
<tr>
<td>25. Depth between caudal flukes</td>
<td>58</td>
</tr>
<tr>
<td>30. Baloon row length</td>
<td>207</td>
</tr>
<tr>
<td>31. &quot; &quot; Length</td>
<td>50</td>
</tr>
<tr>
<td>33. Jaw to jaw beyond operculum</td>
<td>40</td>
</tr>
<tr>
<td>44. Number sharks found</td>
<td>28</td>
</tr>
</tbody>
</table>
7:30 P.M.

No. 21

Finback 5 June 10/10 Aikawa

A light whale. On the right side of the head a light area which has its genesis in a little anterior to the fin runs up as far as opposite blowholes, a little to the other side of the median ridge of the rostrum of shades gradually off into the slightly darker left side. It is lightest near the blowholes along the edge of the rostrum. The slate color of the extreme dorsal ridge is narrowing shades off gradually into the gray of the sides. The sides of the body from the fin back as far as the ends of the funnels is a darker gray than that of the sides of the peduncle but shades into it very gradually. From the dorsal fin back to the flukes the slate of the mid-dorsal region extends only about 12 inches onto from the median line shaking off then gradually into the light gray of the lower sides. The line of the light gray runs parallel with the axis of the body until it reaches the penis when it slants obliquely down and back until it just reaches mid-ventral line at the flukes, but no where excludes the white of the mid-
central region. There are a great number of scars in the peduncle some of them oval and some irregular and branching white lines about 1/2 inch wide.

The gray, oblique band opposite the 1/3 of the fin laid back is short and not heavy on either side. There is only a suggestion of the oblique gray band which usually runs down from the root of the pin. On the right side under the pin, 13 funnions are dark and the remaining ones pink (light). Under the corner of the mouth in the right side 15 folds are gray— the dark bank running out of the corner of the mouth is short.

The right ramus & lip are very light gray proximally while shading into white distally, except the extreme edge of the lip which is gray. The very light gray of the proximal half of ramus shades very graduely into darker gray at the fin interceptant. The right lip & ramus is dark gray inside.

The left ramus & lip are dark gray, the dark shading off gradually with exterior of the throat. Under the left corner of the mouth 14 folds are dark gray— the points of gray running forward to above eye.
Fair

Below white - the distal 1/3 marbled with gray,
the antlers' edge white throughout front.
Margin gray - gray at notch a dark
Almost all white.

Measurements: No. 23

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<th>No.</th>
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<th>Measurement (mm)</th>
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<tr>
<td>1</td>
<td>Total length (taken by cutters)</td>
<td>1550</td>
</tr>
<tr>
<td>2</td>
<td>Snout to eye</td>
<td>390</td>
</tr>
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</table>
| 3   | " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " 

- Height dorsal vertical (measured) = 20
- Elbows tip to tip = 820
- Length malleus row = 380
- Lower jaw beyond with white portion of malleus length = 110
A grayish band (narrowly marked) about 3 inches wide, curves upward then downward from ear to eye; about ear this grayish area is wider, clubbed aft just back of ear. (Ear is a narrow slit, quite long - longer than usual.) Out of the post. corner of its ear a white band 4/5 inch wide runs backward, left naming every back groove. The general color of whale is very light. The two narrow gray points which extend forward to avens below are strongly marked.

Below has dental half all gray - 2 darker gray bands marking the course of the 2nd to 6th digit, coming from tip a little more than half way to base of middle of fin. The posterior gray margin extends in a sweep across base almost to anterior edge - anterior edge is delicate flesh pink above all blue gray. The tip of the left fin has been "chewed." 4 teeth marks very distinctly. 57 corals as this a Kieler had caught hold of the tip of the whale had pulled it out of his mouth "shredding" the whole tip. The could rest have been done by sharks.

Baleen: Bunches of whale baleen can (except with paunch) have gray tips, thus becoming of greater extent.
"Blister" was not a term used by the author. The word "blister" is not used in the text. The text discusses the appearance of the skin of the whale, noting the presence of "blister" and the way it was raised like a "water blisters" when pulling the skin off. It also describes the edges of the blisters and how they were raised and adhered to the dermis. The text also mentions the presence of small, round blisters on the skin of the whale, which were similar to the "blister" described earlier. The text concludes that these blisters were raised and adhered to the dermis, and that they were not "water blisters."
The flakes below have wide and open margin of dark grey and the rest is shell, faint, not white; alone slate.

**Measurements:** 20:23

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<th>Description</th>
<th>Measurement</th>
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<td>...</td>
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<td>4</td>
<td>Posterior fin</td>
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<td>Eye to ear</td>
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<td>8</td>
<td>&quot; ear &quot;</td>
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<td>9</td>
<td>Flakes &amp; manner</td>
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<tr>
<td>10</td>
<td>&quot; navel &quot;</td>
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<td>11</td>
<td>&quot; posterior dorsal &quot;</td>
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<tr>
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<td>&quot; Front tip to humeral &quot;</td>
<td>1.89</td>
</tr>
<tr>
<td>14</td>
<td>&quot; ... &quot;</td>
<td>12.0</td>
</tr>
<tr>
<td>15</td>
<td>&quot; &quot; and &quot;</td>
<td>15.9</td>
</tr>
<tr>
<td>16</td>
<td>&quot; breaks &quot;</td>
<td>4.81</td>
</tr>
<tr>
<td>17</td>
<td>Length balancer row</td>
<td>27.5</td>
</tr>
<tr>
<td>18</td>
<td>Longest plate</td>
<td>55.5</td>
</tr>
<tr>
<td>19</td>
<td>Lower jaws beyond taffiener</td>
<td>2.8</td>
</tr>
<tr>
<td>20</td>
<td>Number slender furrows</td>
<td>0.3</td>
</tr>
<tr>
<td>21</td>
<td>Length white part of balzen</td>
<td>6.5</td>
</tr>
</tbody>
</table>
No. 24/ Right Side of the nostrum on the back of the head, dark blue gray; darker than the peduncle a good deal. Back also dark blue gray. The general effect of color given by the whole is much like a blue whale—very bright color but more bluish on the whole cl. believe.

Sides of right lower lip very bluish all right blue gray. The edge of the lip being a triple darker, as did not see the left ramus. The central portion of throat & breast white, the furrows being pinkish. Under the corner of the mouth on the right side there are 14 furrows, which are dark gray or slate. An orange, yellowish, with greenish line running, of gray from the fold from the corner of mouth under chin to a point nearly opposite the tip of fin and back, where it terminates and runs across belly, gaining the gray of the flanks, on the other side. The belly is dark bluish blue, gray, darker than the sides, immediately behind above it, from the navel to across the ventral line is bluish white. The sides of the peduncle are beautiful light blue-gray coming lighter.
toward the ventral line. Between the flukes and
arises this color into bluish white,
but behind the arises the ventral line
line is blue gray, and does not be-
come white. The sides of the peduncle
are beautifully marked with light
lines which radiate from a common
center, like this, the central
axes being directed at various
angles to the lines running
into joining each other. It is a very
difficult pattern to describe. There
are also many other white
speci-
which
seem to have been caused by a parasites
covered. These are one "jet" which contains
a granular membrane like that in
similar jets in Blue-Finback Whales.
Below same color as sides of peduncle,
except for an anterior, front, and tip margin.
By dark gray. The flukes are lined in
same manner as those of the Blue
Whales, the lines running across in
a curve upward from and, almost
to front edge—above same.
Each lobe of the flukes is nearly
triangular. The posterior ed fore
straight except for a very shallow
concavity at tip. The anterior margin
is straight with just shade of
near the insertion. The anterior edge joins the peduncle abruptly, and does not present that gradual slope so characteristic of the Humpback. The axis of the lobe makes an angle of about 45 degrees with the axis of the peduncle — it is nearly a right angle.

Below anterior half for whole length.

Very light gray — posterior half gray.

The fine lining is very distinct on this whale; the lines come down from tip along post. edge still narrow across fin. Near base the lines curve from past. to ant. edge the convexity of the curve being up. Above all gray.

Bristles white — the posterior half has the tips grayish and the extreme proximal portion mattting gray. The plates have the same white tips, gray strips along inner anal edge & the same coincidence that I spoke of before.

Piles

14 yrs (same)

Navel is about 10 inches, behind the end of the longest finuna and is not at the end of the furrows as in Blue-Finback whales.

Edges of skin below pink for 31 cm on each side. Both lower lips inside have upper halves dark gray, lower halves gray peppered with dark gray.
<table>
<thead>
<tr>
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<th>Value</th>
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<tbody>
<tr>
<td>Total length</td>
<td>14' 2&quot;</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>27.5</td>
</tr>
<tr>
<td>&quot;&quot; &quot;&quot; fluke</td>
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<tr>
<td>&quot;&quot; &quot;&quot; front inc. pectoral</td>
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<tr>
<td>Eye to chin</td>
<td>71</td>
</tr>
<tr>
<td>&quot;&quot; &quot;&quot; above</td>
<td>9</td>
</tr>
<tr>
<td>&quot;&quot; &quot;&quot; opening</td>
<td>8</td>
</tr>
<tr>
<td>Ear</td>
<td>1.31</td>
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<tr>
<td>Notch flakes to axis</td>
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<td>&quot;&quot; &quot;&quot; &quot;&quot; naval</td>
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<tr>
<td>&quot;&quot; &quot;&quot; &quot;&quot; front inc. dorsal</td>
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<tr>
<td>Dorsal height</td>
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<tr>
<td>&quot;&quot; &quot;&quot; &quot;&quot; ant. and inc. length</td>
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<tr>
<td>Flukes tip to tip</td>
<td>50</td>
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<tr>
<td>Breach</td>
<td>97</td>
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<tr>
<td>Right line near axis</td>
<td>190</td>
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<tr>
<td>Census &quot;&quot; &quot;&quot; naval</td>
<td>26.5</td>
</tr>
<tr>
<td>Jaws balane row</td>
<td>25.0</td>
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<tr>
<td>Lunge st place</td>
<td>76</td>
</tr>
<tr>
<td>Jaw, jaw, jaw upper</td>
<td>17</td>
</tr>
<tr>
<td>Number theraft'y</td>
<td>32</td>
</tr>
</tbody>
</table>
Humpback 3 June 17/10 Arkansas

The whale was very fat thick. The rubber was very fat thick.

Head, sides and back, black — the sides and back marked with a very few small white flecks. Right lower lip thickly marked with circles or semi-circles of white. The throat and breast thickly marked with black in flecks or dashes that are usually directed obliquely down and back. On the right side of the throat just under rear of the back white is about equal in quantity. A black band, thickly slashed with white runs obliquely backward from right fin, meeting at the mid-ventral line a semilunar band from left side, thus forming a rough V. The apex of the V is opposite a point about 1/3 the length of the fin where hand back, a few white flecks and streaks between fin and eye.

A forward of penis sheath is a wide semi-circular band of white, & from this forward it narrows to a narrow black vertical line. About the 'hump' on the navel lumps is much white & many circles. The left runners & lips are black marked with only a few circles of white.
The tip of the snout is white below on both sides. The tongue is blue slate. The mucous membrane in the roof of the mouth is white tinged with purplish.

**Flukes**

Below white on a warmer and a port. Band of black along the edge of the peduncle almost to mouth. The port edge is also marbled with black. Above black with some white centers. Port. margin of flukes scalloped but not deeply.

**Fins**

Hass has usual thump back shape. Has both the entire and the tip the edge with white. Above black with many white circles entire. Port. edge—a cluster of circles near the port. margin & another cluster at the front. edge near the tip—contains edge white, with some black at base & of the 8 tubercules. Below some white except for a small black blotch at base & a little black at the tip.

When looked at from from & back hollies. Wrinkles show dark brown-gray with a warmer dirty light gray band in the center of the row for half to the anterior half. The posterior half has all wrinkles dark brown-gray.
Measurements of Humpback No 25.1
Total length straight notch to tip under jaw = 46.7”

1. " " overback " " amount = 13.75"
2. " " amount = 330
3. " " " overhead = 250
4. " " ear = 15
5. " " " ear = 15
6. " " " ear = 1
7. " " notch flukes to anus = 320
8. " " " flukes center = 46.32
9. " " travel = 60.52
10. " " post mast. dorsal = 43.3
11. " " " post mast. peduncle = 740
12. " Protoral tip to head bunrness = 407
13. " " " post mast. = 330
14. " Height dorsal = 15
15. " Flukes tip to tip = 48.5
16. " Greatest breadth flukes ant. post. = 115.1
17. " Depth peduncle at ant. post. 9 flukes = 100
18. " Between flukes & anus (at lower lump) = 15.0
20. " Peduncle base rear = 310
21. " Longest plate = 74
22. " Number throat furrows = 23
23. " Tip of belum 120 after at wettest point as lyerstand in position
No. 26

Sib Whale A. June 12/10 Arkansas

A light whale—side of pedicle a beautiful light blue gray marked as I last described in No. 24. The band running across belly was not strongly marked in this whale. Between penis and the mid-ventral line is white. I marked upper half of life blue-gray—lower half light gray flecked with dark gray.

Flukes below lined as are those of a Blue Whale.

Dorsal dark gray.

Breasts of baleen all white, very fine & thick—they have not the usual gray tips. The breasts of bodies Nos. 24 are thicker than in any whale I have ever seen.

Parched ging of mouth below for 40 cent. on each side. Tails of baleen rows are positions are 165 cent apart at their widest.

13 yrs. 7 months.

Total length

= 13.50

Snout to eye

= 2.61

Blowhole

= 2.00

Post. nostril fur

= 4.70

Eye to ear

= 7.4

" above "

= 6

" opening 

= 7

Ear "

= 3
notch of flukes' to anus  = 360
  "  " post-anal dorsal  = 420
  "  " "  " pectoral  = 890
  "  " common dorsal  = 5.2
  "  " right lobe of flukes' gondol  = 17.5
  "  " anus to navel  = 270
  "  " right vallum  = 270
  "  " longest plate  = 7.51
On the evening of June 13th, 1903, the "Abalone Man" Capt. Shorty brought in five specimens — 2 specimens of Fagenomythus oblincus Gill, and three adult examples of Tursis borealis (Peale). The specimens had been killed for the day previous, and were not described by me until the morning of the 14th. The composite head of course set sin to a certain extent and these animals were more or less swelled by the settling of the tissue. The actual circumferences in life: the pectorals believed to be affected by the slightest degree decomposition.

The specimens were placed side by side on a convenient table and I had examined them at my leisure, thus having one of the greatest opportunities for direct comparison, & being able to note individual sex differences. They were also compared with figures published in Tenis Krypkins' "Reptilia," a copy of which fortunately had reached me at the time.
This specimen was, however, the teeth however, being unknown.

Color: The extreme tip of the mandible is black for 1/2 mil. There is the junction immediately succeeding an bluish white for a distance of 70 mil. except the extreme edge of the mandible tip which have a narrow edging of black. Behind this is a funnel shaped area of pale color the "arcus" of the funnel being 135 mil long and occupying the central area of the mandible; the sides of the mandible above this are black. The greatest width of the funnel shaped pale area is 180 mil.

A narrow white line runs down the exact center of the point then the plate area of the anterior end of the line spreading out and shading off gradually into slate. The posterior end of the median white line continues gradually until it is 30 mil wide where it suddenly becomes two and each arm running obliquely backward and upward to the anterior posterior of the sectorial fins, cut near obliquely at the middle base of the fin ending in a point. The white begins again at the extreme base of the fin running straight back for a distance of 10 mil, then curves rather abruptly downward.
toward the ventral line, at their course back along the mid ventral line of the body in a band of varying width. This manœuvre point between the fluk fins then, and this band is 38 and wide. It widens slightly at the penis slit, curves in a bit between the penis and anus. They run backward regularly to the flukes along the mid ventral edge of the peduncle and is lost to me from the notch of the flukes at the same point that the heel of the under surface of the flukes is lost. The edges of the white area are sharply defined, but from the rear back to flukes to along the edges for一段 cent. The lack of color is slate shading imperceptibly into the black.

I am convinced that if the animal were examined immediately after death that this slate shading along the edges of the white would be considerably more distinct than they are at present.
except for the upper edge of the peduncle for a distance of 25 and places the end of the edge or the flukes which is distinctly slate color shading into the black. Also the edge of the upper tip on each side for a short distance in white. I believe that if examined under a lens the color of the upper parts would be found to be dark slate and not black.

Flukes. Above black evidenced to slate.
Below a narrow band of dark slate

mark across flukes along side of median keel. The posterior edge has a margin of slate, widest at notch, then joining the anterior bands. Rest of flukes below are white.

Pectorals. Above black, below black except for the marks joined of white which recurves up in the base from the white of the breast.

Color Variations

N0 27.8
N0 28.8 has the white near the tip of its under jaw not so long. There is no white edging to the upper jaw on the left side just a suggestion of it on the right. The white median band between pectoral fins is much narrower than in N0 27.8. This plate along the edges here is more distinct. The
The flukes below have a little wider dark slaty band along the median line. The flukes above are of a lighter slaty than Nu. 27.

Nu. 29.

The fine white line in the throat is short posteriorly. The throat slaty area is indistinct. The white tip is obsolete. The white and ventral band between them is much broader than in the other two. The flukes below have the tips dark slaty. Flukes above lighter slaty than Nu. 27 – same color as Nu. 28.

Variations in body form

Nu. 28? is very slender and does not appear to be greatly extended by gas. It is strikingly different from Nu. 29? in body outline, which is a decidedly thicker. Thicker than Nu. 27? is intermediate between 28? and 29?.

The outline of the body of 28? seems to be fairly typical and may be described as follows: From the short ventral center the broad outline of the head slants back gradually to a point opposite a little anterior to the corner of the mouth when it flattens off.
at the blowhole, then becomes gradually making the outline of the back between the fins of spine convex. The upper edge of the peduncle a little behind anus is fairly straight. Below the edge of the peduncle from flukes down is fairly straight, from that point gradually swelling outward to form belly. The belly of breast line more gradually slopes on throat.

Ventrals in head shape.

The above fin slant from the mid in a little longer in nos 27 3 than in nos 28 0 - ed in the former the head platters off from the corner of the mouth. In 28 0 the flatland area begins a little anterior to this. This is the "forehead" is higher in the strike more abrupt. In 28 0. In 29 9 the head outline is distinctly different. The plan of more accent and although it is not longer, the fin is decidedly more depressed giving the head a much sharper appearance. The forehead is longer. This sharpness to the anterior portion of the body is accentuated by the fact that the body behind the fins is much thicker than in the others. This is

a sexual difference
since the two males don't show it

seemed from above the same
differences appear in No 29 9. The head
is much more compressed
and is sharper

Osteology

when removing the phalanges I detached the
anterior wall with great care & the following
results are certainly correct.

No 29 9

Tooth formula 47-46 teeth not closely

in 47-46 sockets & could be easily

moved with the fingers; teeth second slightly
outward, & very sharp. The anterior mes of
each jaw are exceedingly small & if they
had not been counted in fitting the jaws
would almost certainly be given as
different because the very anterior anterior
mes would surely be lost by ordinary
preparations. This would undoubtedly
account for the discrepancies in the
formula given by 1 *wise for this species.

Plus 7 prs - the last 2 prs short & immobile
called "floating" Fine 7 prs. 5 pairs articulate
to the sternum & two pairs to the cartilage on
its extreme lower end.

3 lumbar vertebrae.

15 dorsals referre counting the ones opposite
the two floating pairs, 6 18 as the lumbaris
would he two less the anterior two more.

1st breaks No. 27.

42-44 two teeth in mandible very small.

17 pros. 7 rows. The 20 and 2 pros. floating.

30 lumbar vertebrae.

The first three chevrons are extremely small, the 4th increases in length abruptly, the 5th, 6th, and 7th increase regularly, the 8th and 9th are about of equal length. The 9th is slightly longer than the 8th, & in the longer of the series, the remaining ones decrease gradually in length.

In No. 29 there were only two minute chevrons at the beginning of the series, it was increasing the lumbar vertebrae. Obtained.

20.

In No. 28.

45-44 The tips of the mandible & maxillae are broken.

There are 30 lumbar—three anterior first chevrons.

L. oblinaidae No. 31.

13 pros. 7 ribs, 5 articulates & sternum.

22 lumbar.

4 small anterior chevrons = the 8th is highest of series.

29-30 teeth, 2 not teeth very small.

29-29 above & below.
13 pores of 7 ribs:

29-28 Undoubtedly the variation in the dental formula
28-27 in the dental formula

for all members of the Delphinidae

is largely due to the presence or absence of the mitten anterior + postmitten teeth
in both jaws. In most species these teeth are exceedingly minute and
in some species never even present at all. In the majority of museum specimens they would be lost.

3 small anterior chevrons the 6th

increasing abruptly in size — the 10th

is the highest of all, i.e.,

21 finnbones

C D F Ca

7 13 21

no 28 (cont)

Phalanges (right pectoral) I II III IV V taken as fixed
The terminal phalanges 1 7 6 3 2

by digits IV & V are circular — that of digit V is

exceedingly minute. That of digit III is also

very small. They are to be sealed —

3 phalangeal bones? & 3 dental rows.
No. 27: *Pirus bresolae* (Peale) June 12 1910 Aikawa Nid.

- Total length straight across to notch of flabellum: 21.5
- Over back: 2.15
- Greatest circum. of body opposite tip of funis and back: 9.3
- Smallest to eye: 3.3
- Bladder center: 3.4
- Corner of mouth: 2.3
- Post. unit. flap (vaginal): 6.9
- Flabellum jaw to common of mouth: 2.3
- Eye swelling: 5.3
- Post. angle / pedicle: 4.1
- Pedicle tip to post. angle: 2.15
- Post. angle / pedicle: 2.7
- Greatest breadth (at angle): 9.0
- Tip edge from base to angle: 7.5
- Angle / tip: 1.3
- Width at base: 5.10
- Flabellae tip to tip: 3.5
- Greatest breadth ant. post.: 1.3
- Depth notch: 2.0
- Length right lobe axially: 2.0
- Left: 2.2
- Depth peduncle at ant. end: 6.3
- Between flabellum: 1.16
- Distance tips of bladder: 2.9
- Length bladder curved: 4.0
- Length aneal opening: 3.5
- Penile slit: 2.0
Dist. between caud. fins below = 3.15

1st fin, "  = 3.45

Fins on 

9

Height of eye above line of mouth = 1.5

Length of body = 5.3

V of " = 1.45

Girth head at eye = 6.18

Body = 4.12

Body fin to pectoral = 5.5

Breadth of snout at base = 2.6

But. from corner to corner = 5.3

Stomach contained many small fish bones

Measurements

No. 28

Pursio borealis (Peale) June 21, 10

Aikia

Length straight snout to notch = 19.75

" on back = 20.46

Cir. of body off side fins laid back = 8.55

Snout to eye

" on curve mouth = 20.4

" on

beak (center) = 3.03

" par. large pectoral = 6.17

Length eye of width 

Notch pectoral to anus = 6.12

" penis = 6.50

" navel = 8.75

" par. fin to pectoral = 14.10

Pectoral tip to par. fin = 19.7

" caud. fin = 2.6

" greatest breadth (at angle) = 8.5
Toward caudal man fish banner - the ventral would seem to indicate surface.

Sample spot. edge from base to angle = 6.0
" " " " angle " tip = 128
Width " at base = 105.
Length of break = 5.0
Height eye above line of mouth = 10
Length V of break (approximately) = 100
Girth head at eyes
Body " across
" " in front of fins
Dist. from corner to corner of mouth over head = 256.
Breath mouth at base of V (cone curve) = 25.
Apex under pant to corner of mouth
Flukes tips to tip
Greatest breadth flukes and post.
Depth with of flukes
Flank right side axially
" " left
Depth pelvic at anal, most flukes
" " between or and " arm " arm = 125.
Length across tips of flanks
" curved
" anal opening
" penis slit
" anal
Dist. between and, level of fin below post
Top banner goes to beginning of white banding on them = 3.98
Width of white band at branching behind pair = 6
" " between first and = 15.
Length of white patch on tip of lower fins = 2.15.
measurements

No. 29  Turris borealis f.  June 12 1/10  Anhara Japan

<table>
<thead>
<tr>
<th>Measurement</th>
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<td>2.110</td>
</tr>
<tr>
<td>Over back</td>
<td>2.175</td>
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<tr>
<td>Car. of body opposite tip of fin &amp; back</td>
<td>1.040</td>
</tr>
<tr>
<td>Snout to eye</td>
<td>3.515</td>
</tr>
<tr>
<td>Corner of mouth</td>
<td>2.551</td>
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<tr>
<td>Blascol (center)</td>
<td>3.68</td>
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<tr>
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<td>2.731</td>
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<tr>
<td>Tip lower jaw to corner of mouth</td>
<td>2.68</td>
</tr>
<tr>
<td>Length eye opening</td>
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<tr>
<td>Notch flukes to analae</td>
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<td>Clitorae</td>
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<tr>
<td>Mammary slit</td>
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<tr>
<td>Ant. and</td>
<td>2.80</td>
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<tr>
<td>Angle tip</td>
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<tr>
<td>Width at angle</td>
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</tr>
<tr>
<td>Base</td>
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</tr>
<tr>
<td>Length of beak</td>
<td>7.51</td>
</tr>
<tr>
<td>Girth head at eyes</td>
<td>6.80</td>
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<tr>
<td>Body n. anes</td>
<td>4.20</td>
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<tr>
<td>An. front of fin</td>
<td>8.90</td>
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<tr>
<td>Corner to corner of mouth over head</td>
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<tr>
<td>Breadth of mouth at back of tail (max. curve)</td>
<td>6.3</td>
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<tr>
<td>Height flukes, tip to tip</td>
<td>4.02</td>
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<td>Dep. med.</td>
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<tr>
<td>Length right eye axially</td>
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</tbody>
</table>
definite at flakes inserted  
- between " and upper = 90

D in. between tips of bladelike

bladelike curved  
- anal opening  
- median "  
- Dart between " "  
- length genital plate  
- Dart between posterior spine below  
- " and " "  
- spines jaw beyond pectoral  
- " beginning of white on dorsal  
- width of white back branch below from  
- " " - unravel behind 1st head  
- length bladelike patch on tip 17 lower jaws - 96

measurements

No 30

L oblique axis 3 1/2 June 12 1/10 Aitana

length straight vertebral to flanks = 17.81

" over back " "  " = 18.70

snout to eye  
- " corner of mouth = 2.80

" " bladelike (centra)  
" " pectoral, pectoral  
" " base of dorsal (posterior) = 10.11

eye to ear (centra)  
- " above  "  "  "  
- opening  
- ear  "

notch flabel to corner  
- " " pectoral  
- " " post-mid. of orbital  
- 2.351
<table>
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<td>&quot;</td>
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<tr>
<td>&quot; at base</td>
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</tr>
<tr>
<td>Nuchal plates to nuchal</td>
<td>128.9</td>
</tr>
<tr>
<td>Height dorsal (vertical)</td>
<td>180</td>
</tr>
<tr>
<td>Dorsal tip to tip</td>
<td>445.1</td>
</tr>
<tr>
<td>&quot; greatest breadth (with fin)</td>
<td>160</td>
</tr>
<tr>
<td>&quot; depth, mouth</td>
<td>30</td>
</tr>
<tr>
<td>&quot; length, right side approx</td>
<td>260.1</td>
</tr>
<tr>
<td>&quot; left</td>
<td>260.1</td>
</tr>
<tr>
<td>Depth peduncle at an. mast, round plates</td>
<td>158.1</td>
</tr>
<tr>
<td>&quot; between</td>
<td>18.1</td>
</tr>
<tr>
<td>&quot; anterior</td>
<td>18.1</td>
</tr>
<tr>
<td>Finped. whole across tails</td>
<td>52</td>
</tr>
<tr>
<td>&quot; caudal</td>
<td>48</td>
</tr>
<tr>
<td>Dist. between ant. mast. of fins below</td>
<td>2.20</td>
</tr>
<tr>
<td>&quot; post.</td>
<td>2.65</td>
</tr>
<tr>
<td>Foren. fin, beyond upper</td>
<td>51</td>
</tr>
<tr>
<td>&quot; length, base of dorsal</td>
<td>250</td>
</tr>
<tr>
<td>&quot; V left side of head (approx)</td>
<td>100</td>
</tr>
<tr>
<td>Corner of mouth, anterior to fin</td>
<td>240</td>
</tr>
<tr>
<td>&quot; center of eye</td>
<td>50</td>
</tr>
<tr>
<td>Girth of head at eyes</td>
<td>620</td>
</tr>
<tr>
<td>&quot; body in front of pints</td>
<td>928</td>
</tr>
<tr>
<td>&quot; at caudal</td>
<td>56.5</td>
</tr>
<tr>
<td>Dors fin: corner to corner, 17 mouth head</td>
<td>360</td>
</tr>
<tr>
<td>Height eye above line of mouth</td>
<td>23.5</td>
</tr>
</tbody>
</table>

A scar on side, half way above right pints, on one side, lirved in front of upper corner of mouth, possibly a little more dark gray along anterior edge of dorsal than in No. 15, otherwise the same as No. 14. As concerns the backbone, the blood vessels in front of it are down and the gill opening is down and forward. The stomach is empty.
No. 318

C. obliquinervis & June 12/10

Length straight = 1760

" own back = 1880

Snout to eye = 273

" " common \(7\) month = 203

" " base of maxillary = 253

" " post. nict. pectoral = 48

" " \(1\) dorsal = 1092

Eye to eye \(= 64\)

" " above = 5

" " opening = 20

" " lateral = 1

Middle radius \(= \) 21.3

" " " elastic = 5.98

" " " mandible \(= 5.80\)

" " " nasal \(= 9.60\)

" " " post. nict. dorsal = 5.20

" " " pectoral = 12.83

Relaxed tip \& post. nict. = 2.45

" " " " = 3.15

" " greatest width (length) = 2100

" " base = 110

Height dorsal \& ventral = 180

" " " \(= 23\) 10

Flanks \& tail = 440

" " " greatest width anti-post = 168

" " " depth= 33

" " " length nose to anal = 260

" " " left = 250

" " " " " = 1051

" " " " " ins. anal = 175

" " " " " = 143

" " " " " length between eyes = 26

" " " " " curved = 43

" " " " at front of fins anteriorly below = 148

" " " " " posteriorly = 249

" " " " " opening = 13

" " " " " maximum = 20

" " " " " " = 43

" " " " " " = 7

" " " " " " = 230

" " " " " " = 510

Girth of head \& eyes = 678

" " " " " body in front of fins = 578

" " " " " at anus = 351

" " " " from corner \& corner of maxillary head = 390

Height of eye above line of mouth = 281

In the specimen the head is a little less distinct \& the line of the head is straight from the snout to the head. That is, there is here "lip" in the Outline of this specimen at the head. Many small fish came in stomach.
June 18/10, Arkawa

This persons was not seen by me until the 22nd, having been hid for four days. The station master had theire ides removed by cutting down the median line of the belly. The roost of the appendage remained intact until my return, when it photographed measured and described. I have compared the specimen point by point with Turner's figure of Phoecea dalei published in this "Delfinrakta" and find the following differences:

1. The white area on the sides of D. dalei begins anteriorly about opposite the anterior edge of the dorsal fin. In this specimens, the white side area extends posterior to a point slightly beyond the insertion of the pectoral fins.

2. In D. dalei, the upper edge of the white area is almost on a line from the corner of the mouth to the pectoral fin. In this specimen, the upper edge of the white area is considerably above such a line.

5. In one specimen, the lower edge of the pectoral fin is just anterior to the pectoral insertion, which is a patch of gray marked with short horizontal black lines. This...
Patch in distinct. P. dalli presents
its coloration.

4. The outline of the posterior half of
the body of our specimen is totally
modified that of P. dalli and it
is unlike that of any other form
with which I am familiar.
The upper lower edges of the posterior
are not flat and edge-like as
in P. dalli. The edges are rather blunt
but not below. They gradually
gradually to the upper edge.
The body is apparently thicker than in P. dalli.

Description:

Color entire.

Head, back, upper sides black. A
white area occupies the lower side
completely extending horizontally.
This white area extends forward to a point slightly
beyond the anterior occurrence of the
frontal fins, on the central part of
the body the superior edge of the white
area is almost straight, anteriorly the
end is rounded. The lower anterior
edge extending back down obliquely
running on to the breast.

A line behind the posterior extension of the fin.

Between the fin the back
of the throat extends backward in a
pronounced bend on the mud —
central line of the head, 2 1/2 in. behind the front met. 1 1/2 in.
The rest of the body brown & body white.
Posteriorly the white side area ends in a
false tubercular band on either side, the
basal of the peduncle surrounding
on the midventral line running for-
w ard, they are more or less circular, a few mm.
The lower half of the peduncle forms
a space just in front of the feebler
ventral ctenidium is occupied by a grayish
patch thickly marked by short parallel
black lines. On the ventral edge of
the peduncle this area is 1 1/2 in.


The antero-lateral edge of each lobe is
slightly convex, considerably so at tip.
The post-edge is almost very slightly
curved. The tips are somewhat short.

There is a deep notch.
The fullest bifurcations are black except
for a whitish band which runs from
the ventral side of the notch along the
front edge obliquely across the lateral
lobe to the double line to the antero-
edge & from there to the tip.

Three colored the same.

Black alone & feebly except for a small
area of grayish, faintly marked at the angle.
on the post edge. At the edge of the fin strongly convex. Post edge concave. But this angle is rounded and not sharp. The feeler is half white marked with a few scattering black, parallel lines. Entire post edge dark. 14 small tubercles along body tip of fin. The dorsal is dark.

Peduncle

The anterior of the peduncle presents the most peculiar character about this fish. From the dorsal fin to a point 30 to 40 mm. anterior to plates encompassing the upper edge, as almost parallel with the axis of the body, at that point, it drops downward. The plaques which upper edge is then sharp.

The lower edge of the peduncle presents a prominent rounded "chisel", beginning immediately behind anus and ending 20 mm.

This peculiar shape to the peduncle gives the animal a "chubbly", appearance.

The lower jaw projects slightly beyond upper. The head is bluntly rounded rapidly from the eyes to the snout.
Osteology of Phocaena 2032

I suspected the specimen with extreme care and there is no possibility that the following respects are not absolutely correct.

There are 17 pairs of ribs - the next to the last rib on each side is long and is attached to the transverse process of the vertebrae. The last pair of ribs and short "floating" might easily be overlooked. Then are twenty-six lumbar vertebrae if the vertebrae opposite to the pair of floating ribs is counted as a lumbar. If it is counted as a dorsal, the number of lumbaros will be twenty-five.

There are 35 chevrons in the cervical series. The two or three small chevrons at the beginning of the series commonly present in porpoises are absent in this specimen.

The first chevron is long but free distally. The laminae of the 2nd are very broad, the spine is pointed distally, it is slightly longer than the first.

The 3rd is of about the same width as the first but is longer than the 2nd.

The 5th and 6th are very narrow.
and are somewhat shorter than the 3rd. The 6th is slightly wider & longer than the 5th, the 7th is longer & broader than the 6th & the 8th is the longest of the series. From this back they decrease gradually in length & increase, many gradually in breadth. These observations made of the chemas in situ — whether or not the actual measured length would correspond with this or not I can't tell until they are cleaned. The 8th is however the highest or longest as the series stand in position. The anterior teeth of this series are directed both forward & posterior and considered antero-posterior movement. The 2nd & 15th chemas are about equal in length as they stand in position. The last chemas is exceedingly minute but it ossified — 1. The last two canals very small, all teeth very small 19-19 Posterior teeth in both jaws 22-22 exceedingly minute 22nd show how many the grains aloha, the almost are distinct, each of which the teeth may be found.
Measurements of Phocina No 32

Total length straight from snout to vent = 1915

Snout to eye
- corner of mouth = 233
- blowhole center = 250
- post. conf. pectoral = 415
- dorsal = 1110

Trip lower jaw to eye
- and edge blowhole = 260
- corner of mouth = 134
- and base pectoral = 305

Eye to blowhole ventral
- lower jaw to mouth, boundary white area on side = 310
- blowhole to and edge base of dorsal = 505
- lower jaw to penis

Lateral white area along mid ventral line = 785

Depth body 24 inches anterior to flukes = 270

Ventral eye anterior
- notch of flukes & anus = 620
- penis = 765
- post. base dorsal = 1010
- pectoral = 1550

Pectoral tip to head base

- post. anterior
- and.
- greatest breadth (at angle) = 105
- base = 103

Height dorsal ventral = 1651
Temphum tan coronal
Flukes tip to tip = 360
Ant. post. breadth flukes (greater) = 469
Depth notch
Temph right lobe at nearly = 180
close to
Depth peduncle at ant. & next of flukes = 106
and at nearly = 251
and nearly (which is when upper edge begun slope down) = 30
Depth peduncle at lower protrubance = 245
Sampl base the lower flaps = 49
Except = 5.7
Dist. apart of fins anteriorly below = 15.7
... postierily = 203
Temph and opening
Lower jaw extends beyond siff e = 7
Dist. from corner of mouth area head = 276
Girth of head at eyes = 656
... in front of pectorals = 836
... body at post. muscul's & dorsal = 1284
... anal = 817
Corner of mouth & tail, mind. of fish = 210
Dist. of eye above line of mouth = 20
Length white area on sides (ant. & post.) = 17.5
Dorsal fin begins 2.5 mid. behind the
junction of the 1st & 2nd thirds of body.
Total length (measured along side)
Engenobranchus obliquidens 21 June 1910 Akaiao Japan

This specimen was harpooned from the W/F "Daikai Maru no 2" about 500 miles from Akaiao. The animal was taken on the deck of the ship and lived for about three hours, finally dying from loss of blood. While alive it studied its carefully taken color notes immediately, and also taking a circumference measurement.

The animal "blew" every few seconds, opening the blowhole widely, at the appearance as a circular opening. This was accomplished by drawing the tissues between the fonts of the blowhole downward and forward. No vapour was visible when the animal "blew" probably because of the frequency of the respiration.

The eye was always closed when the finger or any other object approached it, and the right seemed fairly good. While the animal was alive it frequently raised its head and postent part of the body from the deck with a convulsive motion. Also it closed its jaws sharply upon a stick when it was placed in its mouth. It seemed to have considerable biting power and imagine could produce rather a severe wound.

On the same day that this specimen was secured a number of others were
seen in schools of five or six. They swum along the surface frequently, but did not leap entirely out of the water as I have seen D. delphis do so profusely. On the day following the capture, I saw several more schools of the same species. The guineers tell me that they see this species frequently and it would seem to be abundant. D. bonalis has also been reported as abundant by the guineers.

A line of dark gray 10 mil. wide runs from the corner of the mouth in a slight curve down to the anterior insertion of the pectoral fin. It begins again at the base of the fin above, 40 mil. from the posterior insertion, curves slightly upward and then downward, upward again in a long sweep, finally downward running off the peduncle 50 mil. behind the anus. The dorsal comes down further on to the belly 160 mil. from the post. insertion of the fin.
All the interior, brain, belly, and pectoral fins below the ledges, white. On the sides from the middle of the dorsal fin to beyond the eye is a roughly elliptical area of light gray. Its lower edge banded by the dark gray line which separates it from the ventral white area. This elliptical light gray area is 150 mil wide in vertical diameter at its widest point. It is prolonged forward along the upper part of the V-shaped crease on the snout and shades gradually into the dark gray of the rostrum. The eye is situated in a broad, flat area of darker gray, the anteriormost part of which is fully exposed forward. The edge of the rostrum from a distance of 70 mil from the point of the V is washed with gray. The rest of the head to the back is very dark gray, especially the posterior insertion of the dorsal fin. The dark gray of the back tapers down to meet the white of the belly in a band 210 mil wide. This dark gray band divides the light gray area of the sides of the anteriormost portion of the body from anteriormost area color on the lower half of the peduncle which extends back to the flukes. The median keel of the flukes is also light gray. The upper corner of the light gray
Pectoral area is prolonged forward in a rapidly narrowing streak of gray which reaches a point near the rock nearly opposite the posterior insertion of the pectoral fin. Opposite the base of the dorsal this gray band is 110 mm. wide. The edge of the lower tip is dark gray which widens abruptly into a cap of dark gray 35 mm. long at the mandibular symphysis.

Pectoral Above: The anterior half of the pectoral fin is for the entire length its dark gray, which shades into a lighter gray of the posterior half. The whole tip of the fin is inclined to be a little lighter shade even along the anterior edge.

Below: The fins are like the superior surface except that the entire base is lighter.

The angle of the posterior edge is sharp — prominent.

Dorsal: The anterior dark gray, at the base this dark gray edging is 30 mm. wide but narrows rapidly toward the tip until it is only 15 mm. wide. The remainder of the sides and the tip of the dorsal is like the light gray of the sides of the body.

Flukes: Almost below dark gray.

As I have remarked these described was written while the animal was...
egret alive. A short time after death the colors had begun to change; the dark gray of the back had become black and the light gray of the sides of the body was much darker. In consequence of these changes the contrast between the light and dark colors does not show in the photographs in its real value. The egret is a really beautiful animal when seen while retaining its natural colors.

External notes:

The tip of the fin laid back is exactly opposite the anterior margin of the dorsal — thus at the point of greatest pitch.

There were no evidences of hair upon the body or head.

The stomach was empty.

The center of the eye directly below the blowhole — the blowhole is not quite regularly semicircular.

The superior outline of the peduncle from the dorsal to a point 3.30 mm. from the neck of the peduncle is almost a straight line; it then rises slightly (about 10 mm.) until it slants gradually down to the flesh, its ridge becoming lost half way across its surface. The upper edge of the peduncle is rounded near the dorsal but gets gradually sharper
where its outlines begins to rise
smooth at its very apex at the anterior
extension of the fluke. The posterior
edge of the dorsal is very thin—it and
edge meet.
There is a slight ridge near the anterior
of the head, at the edge.
The V of the beak is shallow, does not
meet in front, it is 90 mil. long on
the left side and 100 mil. from
the corner of the mouth.

@ osteology

Os premaxilla lies at an angle—the ant. end
is tipped slightly upward—gonoidal fossa
is in an almost parallel line with body
axis—acromion points inward

13 pairs of ribs
5—articulate & sternum

21–26 dental formula

26–26

Measurements of No. 5
Total length amount to which straight
over back
= 1710
= 1810

Nose to eye center
Ear
Woolrock (center)
post. inf. peduncle
Dorsal
Eye to ear center
= 2750
= 335
= 295
= 0.35
= 1020
= 1.4
Papillary mound to corner of mouth = 23.5
Center of mouth to axilla, inner, dorsal = 21.0
Center of eye to center of eye = 51.0
Center of glabrous to center of eye = 17.0

Length eye opening

... can... = 22
Notch flushes to anus

... " " penis slit (center) = 66.5
... " " navel (not certainly located) = 90.5?
... " " posterior, dorsal = 78.0
... " " " pectoral = 12.00

Prelum tip to head fowmer (left) = 3.20
... " " " ant. = 2.34
... " " " ant. = 3.05
... " " greatest breadth (at angle) = 10.2
... " " " base = 11.0
... " " distance between ant. of insertions below = 21.0
... " " " part. = 25.0

Height dorsal ventral

... " " " axile = 16.3
... " " " arse straights = 24.0
... " " " base straights = 23.0

Flashes tip to tip

... " " greatest breadth (notpost.) = 43.2
... " " " depth notch = 30
... " " " length right lobe axially = 37.7
... " " " left = 27.9

Greatest thickness flush of insertions = 5.5
Depth behind at corner of mouth / flushes = 10.0
... " " " behind = 7
... " " " arms = 18.0
Length across tips of flounces: uncurled = 26
... " " " curved = 4.0
... " " " penes rest = 10.5
Glaocephalus Eanmorus. Cape, 3 June 24/0 A.D.

This specimen, an adult female, was taken by Capt. E. L. Green, on June 24th. It was measured by me the same evening and photographed and described the following morning. I had been expecting this specimen of this species from Capt. Olsen of the "Rebekka Mann," who told me that he saw several schools the day before I had fixed at one.

I compared Eanmorus's figure with this specimen before it was placed and noted the correspondence on the plate. In his figure, the superior outline of the body is almost a straight line, and is far from being the case in this specimen. The eye in his figure is not correctly placed—it is directly above the corner of the mouth. In my specimen the eye is almost a considerably behind the mouth corner.

In Eanmorus's figure, the throat is much too full; there is also a rather strong diastema in the outline of the base of the dorsal in Eanmorus's figure is much too short. The pectoral fins are also
placed too high on the side. The color of
Sauvages's specimen is given as "entirely black" - this is not the
case in my individual. it
color is as follows.

The color of the entire upper parts
is black with the exception of an area
immediately behind the dorsal fin
which is light gray. This gray area
has roughly the shape of a quarter,
its
shape directed backward toward the pectoral
and its longitudinal axis being the
ridge of the back. The edges of this light
area grade imperceptibly into the black
of the back, excepting at the pectoral
where the transition is more abrupt. The
anterior length of this gray area is
60 mm. it is fundamentally elongated
extent - horizontally from the ridge
of the back is 200 mm. on neither
side. There is a small dark gray
60 mm long by 10 mm wide, just below
the anterior insertion of the pectorals on the
left side only. The dorsal fin is faintly
tinged with grayish - almost imperceptible.
The lower parts are black except as
follows: from the navel a narrow, pumpkinish-gray line, starting
as nothing, narrows

on the exact
center of the ventral surface, becoming gradually wider as it goes toward
until slightly behind the anterior
mountain of the pectorals it spreads
and into a fan-shaped, pale, purplish
gray area. The anterior end of this
area is notched in the center & has
rounded corners. It is 14.20 mil. 

From the tip of the sensorial 

(3)

is
directly between the pectorals before
the line spreads out & it is 16 mil. wide.
The purplish gray area joins the navel
from the navel backward a
less clearly defined, but wider,
purplish-gray, broad extension, backward
broadening gradually until at penis
it is 14.0 mil. wide, cd. narrower a
little between penis & arm. Then
wider again slightly, cd. arms abruptly
into the dorsal opening & is cd. 

There is no indication of light-colored
in the ventral surface behind the
arms except the spot below the glabella
insertion already referred to.

The interlayer of the epidermis is as thick
as that of a Megaptera;

Echimene
The anterior of the peduncle is very minute that shown in Scannier's figure. Instead of having the inferior curve nearly straight, it is a short dec- 
scendence anterior to the flukes, it is as follows:

From the posterior edge of the dorsal there is a gradual slope downward to a point opposite the penis; then there is a gradual rise until at a point midway between the flukes' insertion & the anus, the curve reaches its greatest height; here the peduncle is deepest. From this point, the slope to the flukes is gradual & not abrupt as in Scannier's figure.

The lower outline of the body is as follows: — From the tip of the lower jaw to the penis, the outline of the breast & belly is a regularly convex line but not as strongly convex on the throat as is shown in Scannier's figure. There is a sharp dip between the penis & the anus; the peduncle swells out a little directly behind this, then slopes gradually to flukes. The point of greatest swelling of the lower edge is a little anterior to that of the greatest
Fleebes

Have the anterior edges regularly convex
the post edges very slightly concave.

Dorsal

The posterior edge of fleebes very sharp.

Pectorals

Are strongly falcate at their posterior.

The angle of the posterior edge is 140°.

Blowhole

Situated in a decided depression.

Navel

The tip of the head from blowhole to dorsal is flat.

Head

The head is globe-shaped.

The greatest thickness (depth) of body is at a point
a little behind the anterior margin of the dorsal fin.
Vertebral formula:

C D T L S Th 13 28 = 39

The last caudal is above the size of a small frog. The dissections were made with great care and the results are entirely correct.

14 p.frs. more posterior

19 chevrons in series — the last is very small.

The first pair of chevrons are very small and the laminae are far apart distally — the 2nd is larger and still well separated distally — the 3rd is same height as 2nd but the laminae touch distally; they are not joined by ossification however. The 4th is same height as 3rd but are joined distally by ossification; the 5th is higher than 4th. 7 th has a longer spine. The 6 th is higher than 5 th whereas shorter laminae have longer narrower spine. The 7 th is same height as 6 th but the spine is wider. The 6 th & 7 th are highest of series; from this point back, the spines widen & decrease in height gradually. The last chevron is exceedingly small but is ossified.

These observations were made while the series were in situ & do not mean the actual measured lengths of the chevrons.

Dental formula

8-8

8-8
Measurements of G. commersoni

Tong length straight = 4.940

Over back = 5.000

Snout to eye:
- Blind area (anterior of head) = 6.90
- Base of dorsal (posterior) = 20.40
- Ant. whirl, over side = 15.60
- Pectoral = 7.50
- Corner of mouth = 4.00

Extremity of head to eye (straight) = 4.90
- Ant. base dorsal = 13.40
- Post. pectoral (over side) = 11.70

Dart from eye to ear (center) = 2.70
- Eyes above ear = 5.00

Length eye opening = 3.1
- Ear = 1

Eyes above corner of mouth = 2.40
- To straight = 12.60

Parabola, find = 7.30
- Eye to center of blind area = 5.00
- Blind area to post. pectoral = 14.80
- Supr. mand. jaw to ant. swirl, pectoral = 7.30
- Girth of body at anus = 17.70

Ventricle of flukes = 6.10
- Ant. " dorsal = 2.340
- Pectoral = 2.150
- Post. " dorsal = 2.320
- Head " eyes = 2.010
- Corners of mouth = 1.900

Note: all dimensions to nearest 0.001
length of flukes to penis (center) 
" " " " nasal " 
" " " " pos. mid. dorsal (straight) 
" " " " " " " pectoral 
length pectoral tip to head of pectoral straight 
" " " " pos. mid. dorsal (straight) 
breath " base 
" " at angle 
height dorsal vertical 
lengh " base 
lengh pectoral axially 
flukes tip to tip 
" " greatest breath ant. - post. 
" " depth notch 
" " length right lobe axially 
" " left " 
" " greatest thickness at section's 
depth peduncle at flukes section's " " " " " kilimann's " " " " " " " " length blashke across tips 
" " curved 
dist. apart of fins below post. caudally 
" " " " " " anter. 
length anal crease 
" " nasal " 
" " penis " 
upper part extends beyond lower 
mm. 2,180 2,960 2,960 2,960 ? 1,060 80.5 1,030 55.5 1,130 2,960 300 2,750 6,900 1,020 1,180 310 720 951 12.3 500 470 2,361 40 2,465 30
Sword Fish July 19/10 Aikawa

I did not see this fish until two days after it had been killed; at this time the color is as follows:

Back and upper sides dark purpleish brown shading into light brown on the sides; belly, ventral and lateral purpleish white; abdomen from ventral fin to upper part of side.

Upper lobe of tail like back. Lower lobe tinged with silver, all of eye brown.

Measurements are in cm.

Total length center of tail to tip of mouth = 2760

Tip of snout (snout to eye) = 1160 (center of eye)

Breadth at base = 420

Height 2nd dorsal = 80

Breadth at base = 89

Height 1st ventral = 231

Breadth base of 1st ventral = 250

Height 2nd ventral = 69
Tail tip to tip = 700
Length upper side equally = 550
" lower " " = 500
Point from center tail to center of camber flange = 250
Length base of camber flange = 200
This specimen had been killed two days before it examined, but it was in good condition.

In general the color description of no. 18 applies to this specimen, the following points:

- The anterio-posterior view of the light gray areas just above the eyes forward, are wider and lighter than in no. 18. The lighter ones meet in the middle line; the man front part become a little darker just at the middle line. The back below the V is all dark gray — the light gray areas is all above the V.

- The dark gray line, which demarcates the white ventral, from the gray side areas is a little wider than in no. 18, also 1/40 inch from the post. insertion of the fin. This is a sharp triangular projection of the gray line downward into the white of the ventral parts.

- This was not found on any of the other specimens.

- The light gray area on the sides behind the dorsa is covered the entire sides and but the back. In no. 18 it only covered the lower half of the peduncle. Just anterior to the pectoral ventral the pectoral dorsal
The dark gray anterior side of the dorsal is wider than in 1815. That is, the light gray only covers the posterior half of the fin as the anterior half is dark gray.

The upper corners of the light gray fin are drawn forward into a narrow band out to the back and forward almost to the bluish.

External characters

The tip of the pectoral lobe does not quite reach a line drawn down from the anterior commissure of the eye. In 1815, it does.

The anterior commissure of the eye is a little more backward than in 1815, and the center of the eye is below the horizontal.

The stomach was empty.

Measurements

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length from snout to notch of pectoral</td>
<td>2.250</td>
</tr>
<tr>
<td>Total length from snout to notch of pectoral over back</td>
<td>2.310</td>
</tr>
<tr>
<td>Size of eye</td>
<td>2.34</td>
</tr>
<tr>
<td>Corner of mouth</td>
<td>2.62</td>
</tr>
<tr>
<td>Blowhole (center)</td>
<td>2.50</td>
</tr>
<tr>
<td>Posterior of pectoral</td>
<td>2.10</td>
</tr>
<tr>
<td>Dorsal</td>
<td>12.45</td>
</tr>
<tr>
<td>Tip of mandible to corner of mouth</td>
<td>2.62</td>
</tr>
<tr>
<td>Corner of mouth to back of dorsal</td>
<td>2.55</td>
</tr>
<tr>
<td>Center of blowhole to snout</td>
<td>1.87</td>
</tr>
</tbody>
</table>
Common mental & motor sectional = 235.
Height eye below line of mouth (cent. cm.) = 2.5
Distance from corner to corner of mouth & ear head = 4.0
Length back from eye of one tip of mouth
Breadth " at " " (cen. cm.) = 106
Blindside to and incline. bor. = 675
Girth of head at eyes
... " body in front of face
... " at anus
Length eye opening
Navel from base
... " clitoris = 6.76
... medical slit (center) = 6.63
... navel (center) = 11.34
... post. inst. dorsal = 10.10
... " " pectoral = 15.40
Picture tip of head humerus
... " post. position
... ant. "
... " break, at angle
... " base
Height dorsal vertical
... " axial = 16.50
... " base = 26.50
Length " base = 2.90
Navel " base
Greatest breadth ant. post. = 15.51
Length right lobe of 36.07
... left " " = 30.47
Thickness of flesh of miscarriage = 110.
Depth of notch of flukes = 35
Depth peduncle at nn constricts = 110
... between notch & arms (missing) = 207
Length bladette straight across tips = 29
... curved = 36
Dist. between pectoral fins below anteriorly = 244
... posteriorly = 277
Length median opening
Length interior mesenynchymal slit = 15
Fenoe's fins projects beyond upper = 9

Relic = 14 p.s. attached & 1 p.s. unattached,
the latter being only about 2 inches long.
Dental formula 30-30
29-27

Vertebral formula
C  D  T  Ca
7  14 (or 13)  19 (or 15)  37 = 77

Chevrons 29
The first chevron has only the small laminae
of the right side present.
The chevrons of the next four vertebrae are
analyzed into a weak bar, the laminae
of both sides being present.
The chevron of the caudal has only the right
laminae present—that of 7th caudal
consists only of left laminae.
The chevrons of the 8th & 9th caudals
have the laminae counted by digitally...
but no species—the 10th chamber has a short spine; the chambers 7 & 13th��al is highest of series as they stand in position. There are 29 chambers counting those of small and lar as four.
Sperr 3 July 14/10 Aikane Japan

Color: Gray (light) oval marks at
+ the eyes, and a few small circular
- marks on the right side; also a few
+ small marks on the left side.

Length: 96 in.

Width: 9 in.

Height: 105 in.

The mark on the right side is
+ from the head to the eyes.

No. 47

Sperr 3 July 14/10 Aikane

This whale was drawn on July 14,
+ and the mark measured carefully.

Color: Gray (light) oval marks at
+ the eyes, and a few small circular
+ marks on the right side; also a few
+ small marks on the left side.

Length: 96 in.

Width: 9 in.

Height: 105 in.

The mark on the right side is
+ from the head to the eyes.
The top of head is straight, then the dip at base of skull in back outline like a bit of a small Archimedeans behind kingfisher dorsal ridge. Swelling of the head at eye the millet is like this

From a little below line from eye to end of head the lower half of head (or cographer jaw) is wedge-shaped. Roughly this is shape of cross section of head at rear.

On the throat from the beginning of the branchings of the mandibular rami & I locate behind corners of mouth, then are 30 short creases: 5 on each of chin median throat ridge; the longest of these is 60 cm. Which 7 pleats narrow & deep.

There are a few fresh deep "cups" entirely left by parasites circumpedia (measurements are on a separate page)
Measurements of No. 47

Total length, notch of flukes to extreme head = 145

Ex. of head to eye = 3.8

Post. iris, bl. = 5.4

Corner of mouth = 3.2

Nose to mandible = 3.2

Ex. of head to "tip" in back another at base phalanx = 4.6

Nasal flukes to anus = 6.3

Nasal (center) = 7.6

Nasal = 7.6

Center of dorsol. "hump" = 3.7

Perpendicular to head, inner = 7.4

Post. inst. (head to hand) = 9.7

And = 1.3

Greatest breadth = 7.5

Height of "hump" vertical = 3.5

Greatest breadth, flukes (and post.) = 11.3

Depth, femur at ant. flukes (rest) = 9.0

Length, bl. bl. (st.) = 6.0

Curved (long. post.) = 6.8

Aims to femur center = 1.7

Nasal = 3.0

Ex. of head to tip of mand. jaw = 9.0
July 14/10. Arkansas Japan

Shewn to July 14/10 Arkansas Japan

Plaunit anti 1st female tip as usual

carefully.

General color slate - same light grey,

markings about genitalia

as in others.

A slight dip at base of head - a slight

concavity in head outline.

Meat very dark red. Blubber

yellowish white.

Measurements

7th length ex. of head to notch

Ex. of head to eye

" ex. of head to eye

" ear

" posterior splenial

" corner of mouth

Tip reachable to ear

Eye to ear

" above

" opening

Ear

Width flukes to anus

" " " penis (center)

" " dorsal hump (center)

Breadth flukes (ant. post.)

Depth peduncle of flukes six

Length of peduncle (st.)

" axially

Anus & center of penis

Depth notch of flukes

= 1875

= 3751

= 411

= 5125

= 317

= 222

= 46

= 15

= 7

= 9

= 405

= 572

= 530

= 104

= 85

= 41

= 48

= 167

= 31
Redrawn From

Skeledon taken

Gen. H. July 23/0 aikawa

Whole drawn out & slip measured carefully.

Color

General color slate. Much light gray about genitalia and on sides directly above a far lateral line. Fleshes & fleshes of light gray along ventral line almost to flanks. Small scattered patches of flecks of light gray on breast near corner of mouth.

The extremity of the head (the lower two thirds) is white; the upper third is very light grayish which shades gradually into the white of the lower two thirds. On the sides of the head from the extremity to the corner of the mouth there is a very light gray "crossed" in every direction with white lines and narrow bands.

The whole mandible from a joint posterior to the branching of the ramus is white marked rather faintly with small oblong grayish marks pointing back and aft from a point a little behind the corners of the mouth to the branching of the mandibular ramus...
(that is the area occupied by the throat crease) the color is mixed gray & white, "pepper & salt."
The color of the body changed very quickly from slate to brownish black when the animal was drawn out of the water.

There are a great number of charateristic short shallow creases or throms between the brain of the mesenbehne & a point a little behind the corners of the mouth.

At base of skull when the head was disarticulated from the vertebral column, the head was 7.7 ft. 6 inches in diameter, including blubber.

The entire epidermal layer peel off very easily—the outer one is almost as thin as that of a Titanic whale.
The "rumples" of blubber extend forward as far as a point opposite the eye, but only on top of head.

Just behind corner of mouth blubber is 36 cent. thick—this is my thickest place on head.

Blubber forms, with a yellowish
The branch behind occurs as pronounced
The trunk is slightly sloped
like this:

Above the bone plate with no marking 'The anterior (posterior) is strongly + regular, convex. The ant. edge is a slightly convex.

23: In the mitten jaw there were 24 teeth all but four of which (2 on each side) were embedded in the gum & could only be found by cutting out at. The teeth that were visible circle about the middle of the jaw. Very small in comparison with those of a Nile, feinbok or Stenbok.

The rubber is comparatively thin, must cover a layer about 6 cm thick of large tendons (bulb an inch in dia.) running from top off. Below this is a second thick layer of fat thickly sewn then with small fibrous bundles. Next comes the afferentatic case which contains the oil in a more or less liquid
condition – it is probably wholly
departed in life.

Below the case
it is much narrower in turn
than with a bulk of transverse
fibres which consist of a large
thick ridge.

**Vertebras**

**Measurements**

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length of head &amp; trunk</td>
<td>59 1/8&quot;</td>
</tr>
<tr>
<td>Ex. of head to eye</td>
<td>3 3/4&quot;</td>
</tr>
<tr>
<td>Notch flukes &amp; anus</td>
<td>4 6/6</td>
</tr>
<tr>
<td>&quot; 11 11 penis</td>
<td>6 3/6</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 anal</td>
<td>7 5/6</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 central hump</td>
<td>6 8/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 post. mid. pectoral</td>
<td>10 1/8</td>
</tr>
<tr>
<td>Pectoral tip to head humerus</td>
<td>16 8/0</td>
</tr>
<tr>
<td>&quot; 11 11 &quot; &quot; 11 post. scapula</td>
<td>11 4/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 &quot; &quot; 11 post. scapula</td>
<td>14 8/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 greatest breadth</td>
<td>7 8/0</td>
</tr>
<tr>
<td>Height. humerus vertebral</td>
<td>6 0</td>
</tr>
<tr>
<td>Flukes tip to tip</td>
<td>4 5/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 greatest &amp; pectoral</td>
<td>15 7/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 greatest &amp; spine</td>
<td>4 5/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 greatest &amp; back</td>
<td>2 8/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 spine</td>
<td>2 8/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 spine</td>
<td>2 2/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 spine</td>
<td>2 3/0</td>
</tr>
<tr>
<td>&quot; 11 &quot; &quot; 11 spine</td>
<td>2 3/0</td>
</tr>
</tbody>
</table>
Finback of July 24/10 Aikawa
A dark whale.

Total length seen to notch along side = 30' 6"
Flukes to foramen, posterior = 43'
" " dorsal (foot) = 15' 5"
" " vertical = 14' 6"

These measurements were taken by myself with the cutter's line.

Finback of July 25/10 Aikawa
A rather dark whale. Behind them, the gray on the sides cover a narrow strip, on the ventral edge of the peduncle (it comes down further than normal on the side). The white ventral line in its widest place behind the anus is only 18" wide. The points extending toward the anus are well marked.

Where the gray portion of the side of the throat or breast fades into the white ventral region, they had turned to a light sepia by the time it was brought to the station having been in the sun for a considerable time. I have seen the same thing present in many of the finbooks where they had been for some hours in a strong sun. This will explain.
why one European author described the color of Baleen bowhead physalus as having the dark upper parts into slight sepia - then into the white of the lower region. In fact the first Finback I ever saw (at Tenos) I described in this way.

The gray prolongations or flukes are broader and longer than on the left side reaching the hind vertical line. There is also a narrow striping of gray on the vertical line a little anterior to the ventral.

Pectoral

Has the usual coloration of the Finbacks.

Baleen

Has typical Finback shape, in this whole the upper white portion of the baleen on the right side is lacking. From a distance of 20 inches from the tip, the baleen plates are light colored but only 2 are entirely white & the effect is like that of the harp whale baleen when observed at a great distance. The usual white portion of the upper edge of the baleen is present but is not clean white - it is tinged with grayish. The baleen plates are stiffer and look...
exactly like those of other Denticotes.

Measurements

<table>
<thead>
<tr>
<th>Description</th>
<th>Eng. Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length alongside</td>
<td>60' 4 1/4&quot;</td>
</tr>
<tr>
<td>Flukes to post, infra. pectoral</td>
<td>42 5/8&quot;</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; dorsal</td>
<td>16</td>
</tr>
<tr>
<td>Least to eye</td>
<td>13 3/4&quot;</td>
</tr>
<tr>
<td>Flukes to arms</td>
<td>18 3/4&quot;</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; ventral</td>
<td>26 3/4&quot;</td>
</tr>
<tr>
<td>Pectoral tip to head, humerus</td>
<td>8 1/4&quot;</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; ant. cirr.</td>
<td>7</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; post.</td>
<td>5 3/4&quot;</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; greatest breadth</td>
<td>1 10&quot;</td>
</tr>
<tr>
<td>Height dorsal vertebral</td>
<td>15&quot;</td>
</tr>
<tr>
<td>Lengths of bone row</td>
<td>12 10&quot;</td>
</tr>
<tr>
<td>&quot;          &quot;          &quot; longest pate bone</td>
<td>3&quot;</td>
</tr>
</tbody>
</table>

These measurements were taken with a cloth tape as all the succeeding ones will be. My steel tape is broken.
Blue Whale; July 24/10

A light whale. The line of white marking from root of fin down to back is scarred. The light gray marking are especially thick on lower back above dienally about four small white scars on peduncle. The light gray markings follow down close to the ends of the folds but do not run over the then. There are a few grayish markings on upper surface of fin. A few large ash gray markings on night remains. Daniel can now see the anterior edge where the shape like that's

15 pm nice sun

milk

Milk was flowing from mammae and the mammary glands were greatly enlarged. The look like stipe of the hemp stalk which I described at Van. 15 a.

The upper edge of the seafowl showed plainly causing a depression immediately above it (before turning) and believed than my theory that the depression observed in the neck of living stumps 8
Furbooks, in produced by the action of the cephalic muscles, is correct.

Measurements:

Total length with trunk = 76' 10''
Snout to eye = 15' 10''
whale
length = 14'
with " dorsal
arcs = 18' 4''
" " naval
" " pictorial post. cent. = 21' 6''
Height dorsal = 33.8'
Pictorial tip to head shawer = 36''
" " " mit. cent. = 9' 4''
" " " post. = 7' 6''
" " breadth = 2' 10''
Eye to ear = 4' 2''
29 M. - cut at 4 a.m.

20.5 - 6

Sperm Whale, July 28/10, Alaska
Cut at 2 feet under water.

Color: General color dark. There is a large
V-shaped patch of pure white extending
back to genitalia, well up on each side. This is same place where others
are usually gray and some shape of
pitch but larger. Immediately above
it on the upper side is a small
patch (circular) of pure white; there is
also a large triangular patch of white
at anterior base of dorsal hump.

The sides from the white patch
forward to pectoral fins are
headed with gray, gray marking
about genitalia. A good many
white scars from mouth circling
closer half of head.

Pied, a few rather small gray
markings above.

Four small crescentic aft
of dorsal hump.

Teeth: 23-20 upper teeth not visible.
Measurements

Total length ex. of head to notch alongside = 37'-2"


  notch to ramus center = 13'-9"
  "  to ramus center = 12'-4"
  "  to ramus center = 12'-4"

Ex. of head to eye (straight) = 7'-9"


  Pecums tip to tip = 9'-10"
  "  mean measurements = 12"
  "  between " = 8"
  "  height bump (vertical) = 10"
  "  front tip to head borrom = 3'-9"
  "  ant. part = 3'-3"
  "  breack = 1'-8"

Specimen of July 25/10 Arizona

General color slate, much light gray

abont, vessel in the usual semicircular

patch-gray on sides above vessel in

formless patches & markings, and

forward, on sides to form small

fecks. On the head from the bezohle

a line to the eye, are a few

gray markings, also a few white circles,

like those in Steenrock. Edges of

upper lips and jaw white - mouth

white except for a few circles of

white.

Head

I don't believe that ages makes any

difference, or at least not very little,

in the shapeness of the V of the lower

portion of head, all the specimens d
Tears examined have been about the
same.

There is a bundle on each side at the
mandibular canines.

There seems to be no definite arrange-
ment of the third premolars in this
species but their position remains
constant.

Milk was flowing from the mamma
above and below plate. The posterior edge
strongly convex of the anterior margin
gave slightly so - notch deep. The higher
point of in the convexity of the
posterior edge is at the junction of
the front & second thirds of the
plaque (provisionally)

24-24

The teeth sharply & only slightly
wear on the "anterior-outside". The
tees in the upper jaw are visible
in several places. They are usually
situated above & a little in front of
the socket into which the lower too shifts.

In some cases however they are a
little behind & above socket & in
others directly above it.

They were about fifty individuals
in this school.
10 pro.

There is a gradual but more pronounced
bridge in head outline just in front of
and above eye. The eye itself is very
small & deeply situated. It does not
bridge outwards as in the Mystacoceti. The
lids are thick and heavy; there are
two short semicircular creases, one
above & one below the eye. The general
effect reminds me of an elephant's
eye. One is hazel brown.

The ear is an elliptical opening
one inch in diameter (horizontal) esti-
nated eleven inches behind and
four inches below the eye. A good-sized
pencil could easily be inserted for its
entire length. (The auditory
meat is three much larger than
in the Mystacoceti.)

Measurements

- Total length (ex. of head to notch) = 33' 11"
- Notch to flippers to center of mouth = 13' 2"
- Center to corner = 11' 1"
- "  " "  " mandible = 16' 3"
- "  "  " pectoral (post. axil.) = 23' 1"
- Ex.of head to eye = 7' 4"
- "  " to corner mouth = 5' 10"
- "  "  "  " mandible & corner = 11' 3"
- 1/4 yd manageable & corner = 5' 4' 6"
Width between corners of mouth (bela) = 2'-10"
Eye to corner of mouth = 2'-4"
...blankets (center) = 6'-8"
...length blanket (straight) = 12"
... (curved) = 13"

End of blanket to tip of mandible (closed) over curve of side of head = 3'-3"
Tip of lower jaw to ex. of head - taken in center of head from line drawn up from lower jaw = 1'-6"

Height line up vertical center = 2'-9"
Flokers tip to tip = 3'-3"
Ant. post breadth = 12"
Dep. notch = 11"
Eye to ear = 2"
...opening = 1"
Ear = 1"

Fin tip to head dimension = 3'-5"
..." ant. = 2'-10"
...breadth greatest = 1'-8"

The measurements from tip to posterior of fin is very unsatisfactory & can
... deemed to be accurately taken, these
...have omitted it.
Specimen: July 29/10, Aizuwakamata, Japan
Drum on one side, male had two horns.

General color slate. There is a crescent-shaped patch on front of genitalia as usual, & gray extends up to the mid-lateral line.

The gray patches are large & heavy. Many light gray flecks & dashes along sides, on the sides of the peduncle, and a scattering along of them, gradually forward on to the lower back.

A few extend forward on the sides as far as pectorals. A few gray flecks & patches between pectorals on the breast. No light gray immediately about navel. A few light gray flecks on inner sides near & behind first hump. A spot-like line of scattered rather large light gray marks from eye to blowhole. A few two-thirds of extremity of head while mixed with gray. Lower lip is white & mandible white, its central portion's thickly marked with small, longitudinal oval gray spots.

The outline of top of head from the extremity to face of crown is slightly concave. Face of skull is slightly concave of face of skull, there is a rise of from base to finest bump.

Back incline very slightly concave.
from the first hump to the plectus
the nostrils of peduncle ridge as a
straight channel broken by perforating
and a second hump” just in
front of plectus which is as
large as the first hump.

Post. eye injured

The cheeks are very short to
irregular and constantly moving frequently.

They occupy a space from the branching
of the maxillae up to about one foot
behind corners of mouth. They are
only on the central line on one side of
the median “keel” do not extend
up to corners of mouth.

The blanchale is situated in the region
of a prominent ridge or swelling
which rises abruptly on the left side of
the head near the extremity, the anteri-
rior end of the blanchale is just behind
behind a line drawn from the extremity of the head.

Below the swelling of the blanchale on
the left extremity of the head is a broad,
shallow but well marked depression
which runs from the extremity of
the head to about one fourth the position
end of the blanchale where it terminates
out of sight. The thick

Throat

Blanchale
of the blowhole is higher than the dome (or that on its left side) and more or less uniformly towards on this specimen the blowhole is not angular & does not have the shape seen in the former ones it is like this:

10 p.m.

The animal seems to have a disproportionately short head. When much a great difference in size between the male & females was found, variations in the proportions of the body may also be expected.

**Measurements**

- Total length ex. of head & notches: 41.2"
- Notch flanked & ante: 13.3"
- Navel: 22.5"
- Anterior dorsal bump: 16.4"
- Posterior: 5.4"
- Post. intern. pectoral: 27.10"
- Ex. of head to eye (straight): 8.5"
- Ex. of head to corner of mouth: 7.3"
- Trip mandible to: 5.10"
- Dist. between corne.: 7.9"
- Eye to ear: 10"
- Above: 2.3"
- Opening: 2.8"
- Ear: 1"
Ex. of head to post. nict. pectoral = 13'-10"
Fur length bl. . . . . . . . . . . = 1'-4"
Fur tip to head between: " breadth = 4'-2"
Flubbles tip to tip: " depth needed = 2'-2"
Height between: " ant. post. breadth = 11'-10"
Dirt. between mammae: " length = 13"
Dirt between mammae: " length = 18"

No. 9

Spent 9 July 29/10 (yin.?): Arkansas
Cig in the water at end of wharf.
General color slate—little gray about hand, but the light gray color is heavy
down sides from opposite travel to neck. A few white flecks on throat, light gray flecks along the superior edge of the pectorals from across the abdomen to flecked. The whole lower half of head is light gray marked
with very light gray dashes.
Cross sections of head is thin.

Tenth 0 =0, antennae teeth 24 - 24 not above gum
Measurements of no 59

Total length (by cutters) = 30'
Flukes tip to tip = 8' 11''
Notch to hump (center) = 14' 1''

'' center
Hump height = 7''
Ex. of head & eye (straight) = 7' 10''
'' '' ' cor. 7 months = 6' 5''

Tip mandible & '' '' = 4' 4''
Eye to blowhole = 7' 6''
Blowhole (center) to tip of mandible = 5' 1''
Length blowhole (straight) = 10''

Blowhole angular = 30''

Fin tip to head hump = 3' 6''

Width = 1' 7''

No 60

Sperm July 29/10 Aikawa Japan

This whale contained foam in no 60.

General color slate: The light gray color is in bands about 2 inches wide which run from genitalia to lower sides forward, half way to pectoral fins, and continue these bands end in a mass of fine dots which reach nearly to the pectorals and give a 'pepper & salt' effect. The band on the ventral surface run from the genitalia to the mouth coniencing together there in a point. These bands give a peculiar striped
Appearance to the whole
angular like u is 59 only the angle is
a true right angle

The eye was preserved in alcohol.
The eyeball has the shape of a wide ellipse
almost round; its circumference is 175 mil. (terminal) The pupil is 1 cm.
in length and slightly elliptical shaped.
The iris is dark chestnut, its long
diameter is 2.5 mil. There is then a
narrow ring of yellowish white, which is
sharply differentiated from the outside
elliptical ring of dark gray. The surround-
ers of the eyeball is yellowish white.

No sign of cataract was
found by cutting into the gum.

Measurements

Total length (by cutters) = 31'
Notch flection to bump = 14'-1"
" " " curve = 10'-7"
Height bump = 8.5"
Eye of head to eye = 7'-9"
" " " corner of mouth = 6'-1"
Tip of mandible to " = 4'-9"
Dirt between " = 2'-11"
Eye to Ear = 12"
" " corner of mouth = 2'-4"
Sperm Fundus 3 (mature male)

This animal was fully formed and had thick blubber, its being submental layers to give every appearance of being ready for birth. I am sure it would have been born within a few days.

Genital canal of very light plates - a little lighter than the adulti. The entire inner section of the head, from a point a little behind and below eye to the marked depression below the blowhole is white tinged with grayish, an area at the base of the skull in a line with the beakhole is grayish white.

From navel to anus & a little way up on sides white with streaks of bluish along sides nearly to paws. The interior lower parts from navel to a point about of opposite eye are very light grayish. The upper lips & edge of mantle pure white.

Lips plates like body, the left lobe below has a scattering line of white spots (small) from the anteriorm median half way across lobe also on the anteriorm edge. Right lobe unmarked.

Head outline has one concavity (it is a straight slant upward from extreme to proximal end. There is then a sharp dip at base of head and a slight
conveying to hump. From hump back
work to a short distance from plebeke
miretrain the body arcline in a straight
descended plane broken slightly by two
dow eccentrications — there is just an
imagination of a second hump — and
then the plan to the plebeke is raped.

On the sides the plebeke is 2½ inches
thick.

The bones were almost all perfectly
ossified with soft bone.

The long axes of the scapulae are not
stands in position as vertical — the glenoid
fossa is tipped forward at a slight angle —
the acromion is quite deeply embedded.
The center of the glenoid fossa of the scapula
is exactly above the anterior edge of
the sternum as they stand in position.

Only the posterior half of the scapula
lies on the ribs — the anterior half covers
the space between the first rib and the
base of the skull which in life is
occupied by the quillar cartilage.

The first rib articulates directly to the
sternum; the next two — have long
ternal ribs which articulate to the sternum.
The costal cartilages are the fourth and
fifth ribs are closely joined to the
fourth articulates to the sternum and th-
Fish does not reach by about an inch. The ninth and tenth costal ribs are close together but do not reach sternum. The eighth is very short and is only a point of cartilage.

There are ten pairs of ribs, the last two being very short.

The tube of the blowhole (which is lined with dark epidermis) runs along floor under the blubber, and opens on the left side of the top of the head near the extremity. Directly below the blowhole tube is the case containing the more or less liquid of pneumaece. The walls of this case are tough and fibrous.

Below (slightly) the pneumacetic case is a second tube lined with gray epidermis which opens forward around the anterol end of the oil case into the blowhole. Posteriorly this second tube opens into a large shallow upright chamber lined with epidermis immediately behind which lies immediately behind the posterior end of the barrel-like pneumacetic case. A tube the size of my finger at the bottom leads from this shallow chamber into the posterior nasal opening. The tube which leads to the interior blowhole tube which leads into the posterior nares.
is the size of three fingers — much larger than the common one.

Under the oil case (below the second tube) is a more permanent is a solid condenser, which is run thru with small fibers.

Preliminary. The formula for the phalanges of one of the festoons is as follows:

\[
\begin{align*}
1 & \quad 2 \quad 3 \quad 4 \\
3 & \quad 5 & \quad 4 & \quad 2 \\
\end{align*}
\]

Measurements

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length (straight)</td>
<td>39.5</td>
</tr>
<tr>
<td>... over back</td>
<td>40.5</td>
</tr>
<tr>
<td>Ex. of head to eye straight</td>
<td>7.8</td>
</tr>
<tr>
<td>... cor. of mouth</td>
<td>6.5</td>
</tr>
<tr>
<td>Tip of mandible</td>
<td>4.0</td>
</tr>
<tr>
<td>Corner to corner of mouth (below)</td>
<td>3.0</td>
</tr>
<tr>
<td>... of mouth to eye</td>
<td>5.4</td>
</tr>
<tr>
<td>Eye to Winkle (center)</td>
<td>6.6</td>
</tr>
<tr>
<td>Can. Winkle to tip of mandible (closed)</td>
<td>8.2</td>
</tr>
<tr>
<td>Ex. of head to post. wrist, fin</td>
<td>13.3</td>
</tr>
<tr>
<td>Eye to ant. wrist, fin</td>
<td>3.9</td>
</tr>
<tr>
<td>Length Winkle straight</td>
<td>9.3</td>
</tr>
<tr>
<td>... curved</td>
<td>1.1</td>
</tr>
<tr>
<td>Eye to Ear</td>
<td>13.1</td>
</tr>
<tr>
<td>... above</td>
<td>1.5</td>
</tr>
<tr>
<td>... opening</td>
<td>3.3</td>
</tr>
<tr>
<td>Ear</td>
<td>4</td>
</tr>
<tr>
<td>Watch flanks &amp; arms</td>
<td>7.4</td>
</tr>
</tbody>
</table>
Notch pludes to nasal = 2.160
" " " penis = 1.900
" " " post. intern. spine = 2.790
" " " cent. dorsal hump = 1.660

Plubes top to tip = 10.10
" ant. post. breadth = 0.05
" length right lobe axially = 0.05
" " left " = 0.15
" depth notch = 0.10

Height hump vertical = 0.70

Depth body at plubes inserted = 30.3
" " between " " & anus = 5.09

Semi-cir. body at anus = 7.70
" " " in front of spine = 1.000
" " " head at eyes = 0.05

Dist. between anterior, spine below = 0.45
" " post " " " = 0.45
" in tip to ant. " " = 0.46
" " post " " = 0.45
" " breadth = 0.25.
July 30, 1910, Aikawa

A strongly finished whale. A white band runs from anterior to posterior of the back obliquely ending at rind ventral line about 15 inches in front of pinnons. The band parallels with the ends of the pinnons. Between this white band and the ends of pinnons the field an dark gray, thus making a band of dark gray about 15 inches wide which is darker than the surrounding body parts and in the band I have referred to in other descriptions. The white band is prominent in other specimens — in other whales I have seen it was only suggested.

From navel to genitalia's ventral line is white — from genitalia to pinnus ventral line is like sides of peduncle. Many small patches of white about genitalia.

Great number of white scars on peduncle sides. Thirteen folds on right side on right side are gray. About two feet anterior to pinnus the gray markings cease leaving this plain blue gray.

The dark blue gray of the dorsal ridge occupies just the upper fourth of the peduncle and shades gradually into lighter blue gray. The grayish markings on dorsal quarter are not thick or very dark. Anterior to the...
dorsal fin the dark blue gray occupies the upper one-third & shades into light blue gray in lower two-thirds. There are a few scattered gray markings over vertical line betweenoreal & ends of pectoral. 4 very few run one an to body.

**Measurements**

Total length (by courtesy) 13124 = 5'6"
Note to crane

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 434  | 14' 3"
| 483  | 15' 10"
| 153  | 1' 9"
| 94   | 8' 1"
| 330  | 10' 10"

Depth peduncle at pectoral insertion 5'3" 1' 9"

Height dorsal

1'12 = 1' 8"

Pectorals ant-post back

Fin tip to back humerus 2'18 = 7' 2"

Fin tips 1'6"

Width body 1'45 = 1' 9"

Width body 1'46 = 1' 6"

No. 62  Sea Snake & July 31/10 Ondawa

Entire ventral side from end of pectoral back light pink - near flukes the pink occupies only the very edge. There is gray band across belly & thus very little gray on sides.

Right lip gray shading into very light gray on ramus. The gray of the deep ex- tension, fin & just above fins (including eye) all the folds of the central throat.
breast are tinged with pink. The
fores of the belly have little pink— an
almost white. On the right side only
the name is gray but the gray color
spreads out backward an to 10 folds
between carines of mouth & fin.
The pink in the furrows is deeper
than that in the folds. There is a
suggestion of the gray abdominal
band but it stops for short of the
vertical line & is only suggested.

Tip of head clean blue slate, there
are three prominent but broken
ridges on each side of the median
ridge & running parallel with it.
These ridges begin opposite 3th scale
and rise each one is about 6 inches
from the median ridge, at the tip
of the snout where they end the
two lateral is about 2 inches from the
median ridge.

Under edges of mouth for about one
foot are feathery
Below here are a narrow posterior edge of
gray and dirt of lower surface a delicate
pink thinly lined with fine gray
lines so that general effect is a deep
lighter than sides of bed nicle. The
fine gappy, lines come from anterior
edge in a curve across lobe curving
in toward vertex. On basal portion
of lobe they curve across from outer-
side edge & then turn sharply inward
running along past edge.
The general effect of flutes below
is purple-gray.

Measurements:

Total length
1283 = 42' - 2"

Flutes tip to tip
v 348 = 11' - 5"

Left lobe axially
v 190 = 6' - 3"

Right lobe
v 193 = 6' - 4"

Height dorsal
v 31 = 12" - 2"

Width flutes to dorsal
v 368 = 12' - 1"

" " " " anus
v 366 = 12' - 1"

" " " " naval
v 556 = 18' - 3"

" " " " post. inst. front & limb
v 279 = 9' - 2"

Standing ears
v 236 = 7' - 9"

From tip to head biceps
v 178 = 5' - 10"

" " " " post, nape
v 120 = 3' - 11"

" " " " " ear
v 157 = 5' - 2"

" " breadth
v 33' = 1' - 2"

Blubber, lighter pink.
2063

Sei Whale 1 Aug 1910 Aikana

Top of head all clear dark blue gray of the same slate-gray

parallel on each side of mid-nipple

that I described in last whale. They

go clear to tip of snout. There is

also on each side a deep crease about

a foot long opposite the anterior

half of the whale.

White throat and breast a little

in front of pines light gray - the furrows

are dark gray and the folds lighter.

On left ventral side there a point

about two feet anterior to fin's about

left fore and pines furrows, the

folds are strongly pinched furrows also

This point is comparatively small.

Right lip gray shading into lighter

gray on ramiens which is same color

as throat and breast. There is a

small pink patch just below

mandibular symphysis.

There are 16 folds in the pink ventral

patch. The abdominal folds back

of the pink patch are gray tinged with

pink.

Peduncle light blue gray. The gray

markings external on the ends of

furrrows here are scattered.

4 central portion (below) very light.
gray (lighter than sides) & a wide feature
edge dark gray also a very narrow anterior
edge of dark gray above blue gray
like head & fork
Dorsal ~ Blue gray

Measurements
Total length by callipers
Flutes tip to tip
1 " to dorsal
... " anus
... " penis
Height dorsal
Snout to eye
... " blephar
Fin tip to head shimmers
... " past, must
... " and "
... " mouth

Blubber a delicate pink
10.30 a.m. Roko Mau

Note 11

Finback 3rd Aug 5/10 A.T.
Right ramus & lip light gray except near tip which is white. The gray
points which recur up to each ramus are not indicated.
On the left side the dark gray color
comes into the light yellow from
the median line at the tip of the
fin.

The curve of upper edge of peduncle
down to flukes was more abrupt
than that of lower edge

Unique light amber.

Angle of flukes with body axes.

Rims 13 frames wide.

Measurements.

Total length = 61'-9"
Width flukes & eye = 45'-10"

Arms = 16'-9"

Pins = 21'-6"

Mand = 27'-3"

Dond = 14'-10"

Fin tip to head = 14'-3"

And. = 7'-7"

Post. = 5'-7"

Breast = 8'-10"

Height dersol = 2'-5"

Sum. & eye = 12'-11"

And. post. behind flukes = 3'-7"

Eye & ear = 2'-11"

Fingel length at whulabow = 3'-2"

Length white portion of tail = 2'-10"
Ski Whales Color

Aug. 2nd & 3rd, I spent outside on the W/F "Norwegian". Four ski whales were killed during that time as follows:

- No. 39: 34 ft. 11 in.
- No. 41: 41 ft.
- No. 43: 43 ft. 11 in.
- No. 47: 48 ft.

Aug. 2nd

No. 49 had the throat, breast & abdomen in folds light pink. The furrows of the entire throat were dark gray. On the breast & abdomen a few furrows were pink. There was no gray band extending across abdomen. Around the entire ventral line of the peduncle was pink - a little deeper pink than the folds. There was no bluish tinge to the general body color. The color of the peduncle & sides was very light gray, fading into the light pink. The ventral surface very gradually.

The top of the nostrils from the tip to the eye was clear gray (not very dark). From the eye the gray head color extended in a curve up & back on to the dorsal surface, there was a space about two feet wide directly above the pines which was much lighter gray than the back color.
and the line where the two colors met was well marked.

A band of dark gray as broad as prominent, inserted from end of
fins, and uniform breadth, extended along and back obliquing almost
to central line.

Nos. 67 and 68 had the throat fumous all dark gray. The fold of the throat and breast were not pink but white.

The general color of the body was much darker than that of Nos. 77 and 80. No. 67 had a broad area of on the abdomen clear mouse gray.

Thick from above the whales would look like ice's

The under side of the flukes of Nos. 1 and 2 were very light gray almost white and unusual.
"M. Taylor." 3.30 P.M.

Sei Whale 8 Aug 5/10 Alaska Nebinger

Throat fields white — Right ramus of right Gray shading into pinkish white on lower portion of ramus. Flukes at about the same angle as a Finback.

Total (by rule) = 48' - 4" 1473

Flukes to dorsal = 14' - 2" 432

"" "" ankles = 11' - 11" 363

Front of eye = 9' - 3" 282

" " Blowhole = 7' - 1" 216

Height dorsal = 1' - 6" 46

Notes on a female Sei Whale 8' - 6" long taken from a female 48 ft. long killed Aug 5/10 (No. 266)

The blowholes are situated between and above two prominences which meet anteriorly forming a V. By inserting my fingers in the blowholes and pressing downward and forward enough to open the interior nasal passages, the prominences at the sides rai the front of the nostril were considerably raised. This must be the position taken assumed during the expiration as the expulsion of the breath opens the interior nasal passages.

By spreading the nostrils, varied they took the form of a wide ellipse which, as shown by my sketch, is their condition during inspiration, both edges of the blowholes were toward the inner
slightly of the outer edge. I believe this for that the only difference in the position of the nostrils during the two respiratory acts is that the adjacent edges are raised to a greater extent because of the wider opening of the nostrils during inspiration than during expiration. I am aware that this view is contrary to the position taken by me in a recent paper. However, I can convince that this is correct. Before I had yet experimented on a whole whale, this was my view.

No. 70
Saw whale 3 Aug. 1810 at Lena 90 N. Y. E.
Entire thirteen centimeter breach and abdomen light pink furred deep pink - between coronary and other skin pink. The line pink unmarked of an under five - opposite middle of fin laid back a sharp light gray band remains obliquely down - back - the vertical line pink to about 6 from front of lower -
Ventral at end of furrows - This whale had a great quantity of partly digested fish in its stomach. Capt. Andersen told me it was pursuing a school of small fish when he killed it. The fish were said to be sandeels.

Total length (with cutters measure) = 41 6' 1265.5

Finibles to anus = 11'
" " , " , " navel = 17' 6"
" " , " , " post ventral fin = 26' 6"
Measurements of sperm whales taken at Akahama, Japan, during season of 1909

**Sperm** 60 ft

```
25.
40 ft
25.
43 ft
27.
40 ft
```

Nine sperm taken at Oginokawa were not measured during 1909.

In all the whales which I have examined of all species, there were considerable differences in body proportions, viz., in the relation of the circumference to the length. Some whales were very thick; others being long and slender comparatively.

---

**No. 72**

**Mizuma** 8 Jan., 1909 - Akahama

**Vertical surface and flippers -** flathead, breast, abdomen & vertical line of fin and alment & flippers - on right side. There is a few pinnas near each groy, but none all pink.

**Total length:** 30' - 10''

**Flukes & anal - 13' - 5''**

```
18. 18. = 8' - 2'' 2 4 5
```

**Flukes (nail to tip - along beat edge):** 3' 11'' = 119'

```
T 7' 5'' = 23 4
```

**Swan to eye:** 6' - 1'' = 185'

**Breadth:** 11'' = 28

**Blindfold:** 4' - 10'' = 147'

**Height dorsal:** 10'' = 25'

**Fin up to ant. mast:** 3' - 11'' = 119'

---

**July 21**
Notes on Humpback Skeleton No 25

This specimen was sent for me, but the skull was badly broken by a boulder from one of the harpoons that I decided not to send it to New York.

C D 0.8 Ca 7 14 33 = 84

done containing

could not be sent of the lumber empties,

14 jars of ribs

The atlas is free; it has a low spine, 5 thick transverse processes which extend directly outward. The metaphyses are low, thick with tubercle-like.

The axis and 3rd cervical are ankylosed by their neural arches, the centrum being free.

The axis has upper, lower, transverse processes; on the right side these are ankylosed to form a ring; on the left side they do not meet, their being one of the space of 80 mils between their distal ends. The transverse processes are directed outward somewhat backward; the neural spine is a low ridge. The 3rd cervical has a slender upper, lower processes + a thick about lower process, directed strongly downward.

The lower face of the 5th is the last vertebrae with a lower transverse process. The upper processes become thicker as they go backward. The spines of the 4th & 5th vertebrae are very low, but that of the 6th is higher. 

they then all rise gradually, all the cervical
except the 2nd & 3rd are fixed.

Measurements of atlas

Height: vertical anterior face = 360

Breadth: greatest across transverse proc. = 680

across articulare facets for occipital condyles = 390

Axis

Length greatest = 370

Breadth: across transverse proc. = 830

Length: upper transverse proc. (from face) = 200

lower (from side) = 140

Breadth of articulare facets for axis = 423

Skull

Length: palatine = 710 straight

Breadth = 320

Length: maxilla from inner to base below = 2900

skull straight below = 3710

posterior = 2870 straight

Breadth: at middle (over curve) = 840

Length: nasals = 255

Breadth: of orbital process & frontal at orbit greatest = 260

Inside orbit = 220

Distance from proximal end of maxilla (or nasal) to the
orbital end of its orbital process = 1135

Breadth across occipital condyles = 425, curved

Depth of

greatest breadth: skull = 320

Greatest breadth: skull [aquaminal] obtained by adding
to the left side the dints that the aquminal projects
beyond the frontal process on the right = 2110 + 100 = 2210 and
The proximal ends of the nasals maxillae and premaxillae are almost on a line with each other.

The inner is membranous between the maxillae below, also between the premaxillae, but very slightly at their proximal ends.

Measurements of whales taken atacock during 1910—measured by cutters. All measurements should be discounted about 3 feet.
May 3  |  Sei 46  |  4-2  |  F
May 3  |  Sein 49  |  4-2  |  F
May 7  |  Fainbook 60  |  4-2  |  F
May 10 |  Fainbook 64  |  4-2  |  F
May 12 |  Fainbook 64  |  4-2  |  F
May 14 |  Fainbook 63  |  4-2  |  F
May 17 |  Fainbook 61  |  4-2  |  F
June 10 |  Fainbook 47  |  4-2  |  F
June 13 |  Fainbook 63  |  4-2  |  F
June 13 |  Fainbook 14  |  4-2  |  F
June 14 |  Fainbook 48  |  4-2  |  F
June 17 |  Fainbook 62  |  4-2  |  F
June 19 |  Fainbook 17  |  4-2  |  F
June 19 |  Sei 43  |  4-2  |  F
June 20 |  Fainbook 60  |  4-2  |  F
June 23 |  Sei 47  |  4-2  |  F
June 24 |  Sei 350  |  4-2  |  F
June 26 |  Sei 345  |  4-2  |  F
June 29 |  Fainbook 70  |  4-2  |  F
June 29 |  Sei 46  |  4-2  |  F
June 29 |  Fainbook 68  |  4-2  |  F
July 3  |  Fainbook 57  |  4-2  |  F
July 7  |  Fainbook 71  |  4-2  |  F
July 7  |  Sei 51  |  4-2  |  F
July 9  |  Fainbook 53  |  4-2  |  F
July 12 |  Fainbook 56  |  4-2  |  F
July 13 |  Sei 346  |  4-2  |  F
July 16 |  Sei 50  |  4-2  |  F

General color slate - much white.
Mouth and gullet gray.
Ref of each to the farthest mid-lateral line. The white extends forward
where there are bands of stripes, suffused with fine gray dots - which does
not extend forward to a large grayish patch at and base of dorsal fin.
The colors of the rock above the mid-dorsal line are unmarked.
Ref of each to eye - "crumpled" retains no upper mid-dorsal
Ref of each to eye - The

| Total length:
| 39.5 |
| Finkbeiler:
| 2'1 |

Flank fin: 24.5
Nape: 15.3
" arms: 7.3
" hands: 17.5
Height fin: 11
Length of head & eye: 10.10
Length of jaw & contents: 6.8
Fin of head: 4.3
" color: 3.6
July 16  Finsback 70
July 16  Finsback 70
July 18  Finsback 62
July 18  Finsback 62
July 18  Finback 62
July 18  Finback 62
July 18  Finback 62
July 19  Sei 54 3
July 20  Sei 54 3
July 20  Finsback 64 9
July 21  Finsback 64 9
July 22  Sei whale 52
July 23  Finsback 63 1
July 23  Sparrow 47
July 23  Sparrow 37 9

WP 7 3 Finsback Aug 2 10
Total length = 39'

Intermediate between class I and III

Sighted Sei whale 1st time.
Also one which I found on the beach from a Sei whale.
The first side of the Sei whale which I saw this season, was
sighted; also one which I saw bringing fins, and which

Two sperm July 28 10
Capt. McJinlonas killed two sperm while small
with me harpoon.

Battlecry
July 30 10
Capt. Olsen saw many Battlecane Whale

Today.
Finbokh See no. 22 for good external description.

Colors

See whale no. 213 for this.

Astrocyde

Colors deep blue, to other shades of green—some olive green. The red of various shades from dark red to carmine. The others of yellowish white mingled with purple. All taken June 12/10 at Chukuey Japan.

A group Finbokh taken at Chukuey June 14/10

4.8 feet long. 31 tons. 68 brute force—The pectoral alone had the entire anterior edge white—the dark gray prolongation in rear almost absent. Wide were showing which ran down for a short distance. Slightly opposed the tip. Male fin laid back. I found one of the records parameter on Chukuey's animal.

For good description of Finbokh see no. 378.

Finbokh

Fur markings about eye and near Finbokh

See no. 373.

Finbokh

Wore pelage absent.

See whale no. 54 for absence of which taken.
On June 11/10 a Finback whale of 44-1/2 ft. long was brought in at Haida. The body was the host of a parasite which I had never seen on whales before, nor have I known of its record.

For some time past I have recorded the presence of white and gray "scars" on the sides of certain bodies, but especially the sides of the peduncle, of Blue, Finback, and Sei whales. These scars are in the form of oblong spots composed of fine heavy lines radiating outward from a common center.

The three I have observed them must frequently on Finbacks, and Sea Whales, and they were present on nearly all of the Finbacks which I observed in Alaska and Vancouver Island. Although not as great a extent as in the Japan whales, it was clear this was a parasite of some sort, but one had never seen the animal before.

On this whale a great many were present and there were many ready in different stages - some containing the larval form almost healed. The larva, however, apparently fastens to the skin and travels a short distance forward, going deeper into the body as it proceeds.
Length of skeleton
Length of skull (straight)  
Breadth ... greatest
Length of rostrum  
Breadth ... at middle
Length of mandible (27)
Breadth ... greatest

Lines of the scar. The fine wriggling lines which radiate out from the center are apparently formed during the healing process after the parasites have left the host. At the bottom of each scar which contained a parasite was a sack containing more or less pus. The parasites were embedded to about 1/2 inches in some, while others had traveled a considerable course appearing again about 2 inches from the point of entrance. The parasites are about 8 inches long with a transverse band which encircles itself in the latter.

They could be pulled out with difficulty. They were most plentiful on sides of pelvis and on the transverse, hips & back as well - few on the breast fold. Some of the scars were irregular & branching while some did not have the wriggling wriggling lines in healing out from them - the majority however were of the wriggling type. The scars on the Blue & Sea Whales are caused by this same parasite I am sure.
In British Museum is a sheet of Megoptera from California.

The banana (Coronica) was present on the tip of the head of a Finback, 42 ft. long, taken at Sitka in June 18. This same whale had sustained an injury apparently to the upper surface of the head. The epidermis was in the form of round "islands" about 4 inches in diameter—sometimes detached, sometimes the edges touching. These were situated on a yellowish white granular surface. This was also present in one or two places near the eye. It may have been caused by a parasitic worm, but it is believed it was from external injury. The whole top of the head was marked with long, narrow white streaks which were apparently scratches.

At Sitka the whalers had a pink spot on beam as the salmon were running the same thing on one or two days. I had a very nice view of a school of a black and white striped dolphin which I am certain was Tapperochynchus melanocephalus, and I was close to them and had good opportunities for observation.
The length of the white portion of the blubber was in many cases indeterminate, but in some individuals the separation between the light and dark portion was abrupt; in others there was a gradual shading off from the white into the dark. The plates of transition, having half their external edges white and half dark.

All of my measurements of 'length of longest portion of blubber' are taken along the inside of the plate from the gum to the tip, not including the skin.

The sternum of an adult finback which I photographed at Aikawa, Japan, is most nearly of the shape of Fig. 21, page 141. I call it 'Whalebone Whale.' It is half way between Fig. 21 (page 141) and 49 (page 187).

The outer layer of the epidermis of finback is much thicker than that of either Blue, Finback or Sei whale.
Captain Jackson and his son both believe the Humpback to be the most widely distributed of the large whales. All the whaling captains say that the Humpbacks and Blue Whales are the first to leave the hunting grounds—either as they are frightened away much quicker than the Sperm Whales.

They tell me that here at Akawau in August and Sept. the Sperm Whales are in schools of from 100 to 500 individuals. Captain Jackson and his father both agree that in these two months many times one will find schools of ten or six females and only one large male sperm.

Captain Jackson tells me that he sees many porpoises one side near Akawau that he recognizes at least three kinds, one of which does not have a dorsal fin. Probably this is a Pilot Porpoise.

Captain Ellefson says that the Sperm Whales here are larger than those at Norway. All gunners agree that they look the same as the Norwegian sperm.
His Eilefson Skjulestok Stokke Stt.
Norway

Winter Finback whale
about 75 or 80 ft
Winter sei 45 ft whale
$1,500

Winter Humback whale
40 ft. $10,000

Winter Baleen 75 ft whale
14,000 or 5,000 - 85 ft
about $9,000
Winter sperm 40 ft whale
$2,500 - about same size
in smaller area because
meat not good treat

Summers
Sei whale about 500 years
Finback
$150 or 150

Newspaper
Finback

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<th>Aron</th>
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<th>Japan</th>
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Kamisaka
Y. E. Andersen
Aaröünd Paröd
Norrøn
J. Tönsberg
Norrøy
J. Tönsberg
Norrøy

S. Samuelsen
Ostervik Høthe
J. Tönsberg
Norrøy
Humpback worth best of all
about 3,000 lbs

70 or 80

3,000 lbs

1,000

25 or 30

Seller

Fairback

Humpback

Cal. Grey Whale

100 lbs blue whale worth 8 yrs.

100

Fairback

10 yrs.

100

Sea whale

3 yrs. (1912-1915)

100

Cal. Grey

2 yrs.

100

Bryde's

4 yrs.

100 lbs fresh blue whale worth 4 yrs.

Blue whale

Fairback

Humpback

Paid worth 100 lbs about 8 yrs. of all whales

Wages of quartinees

100 to 200 per mo.

Wages &c. to April

BONUS: Blue, Humpback & Finback = $35.


Summer, Oct. 1st to April 1st

BONUS: Blue, Finback & Humpback = $44.00.

Sperm, Sea & Whale = $43.2

Cutters get wages of $13 to 15 per mos. & board.

BONUS: Whales larger than 50 ft = $5.00 per

shorter

Cutting Foremen get

Wages $75 per mo.

Clk. 18 yrs. or older

1. Tony Hori, Kabushiki Kaisha

2. Hisao Sato, Kabushiki Kaisha

3. Masa Sato, Kabushiki Kaisha

1st. Nagato Hori

2nd. Hori, Kabushiki Kaisha

3rd. Kurosawa, Kabushiki Kaisha

4th. Oyama, Kabushiki Kaisha

5th. Negishi, Kabushiki Kaisha

6th. Tanaka, Kabushiki Kaisha

7th. Harano, Kabushiki Kaisha

8th. Tanaka, Kabushiki Kaisha

9th. Kurosawa, Kabushiki Kaisha

10th. Hori, Kabushiki Kaisha