MESOPLODON BOWDOINI STRANDED AT AKITA BEACH, SEA OF JAPAN

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INTRODUCTION

Most of the news on stranded whales or dolphins in the coast of Japan by the Japanese local news papers are customarily sent to the Whales Research Institute. On 28th May, 1960, some cutting from the news paper arrived at the Institute. The author was informed through these cuttings, that a sei whale was found stranded on a beach near Akita City, and the article containd photograph showing the dissection of the whale by some fishermen and teachers to teach about whales to their primary school children. The photograph is shown in Fig. 1.

Seeing the photograph, the author perceived that the whale was not

Fig. 1. The whale was dissected by primary school teachers for practical education. (Photo by "Akita Sakigake News")

a sei whale but belonged to the rare *Mesoplodon* species. The whale had been caught only a few days before (on 22nd May, 1960) so the author telephoned to the Fisheries Section of the Akita Prefectural Office to investigate how the whale had been disposed of and where the bones of the whale had been carried out to. According to the report from the Section, almost all of the bone had been buried in the beach where the whale had been found stranded.

At that time the author was very busy, because he had just returned from Ryukyu and was planning to go to investigate fur seals in Ozuchi, Iwate Prefecture, in about two weeks. The author decided to go to Akita on the way from investigate fur seals.

Fig. 2. The whale and the family of the fisherman, many parallel lines can be seen.

About a month later from the time the author read the news, he went to Akita City. A staff of the Fisheries Section of the Akita Prefectural Office guided him to the exact spot where the whale was found stranded, on the Shimohama Beach which is about 30 minutes by car from Akita City.

In the morning of 22nd May 1960, a fisherman named Nenosuke Akai who lived near the beach found a small whale kicking and struggling on the beach. He killed the whale and pulled it on to the sand with the help of his son and neighbours. They had never seen such a whale, so they went to the primary school nearby to ask to what species it

belonged. The available picture book was not so detailed, and teachers told them that the whale might be a sei whale. They thought it was an unusual chance to teach the children about whales, so they took them to the beach show them the whale.

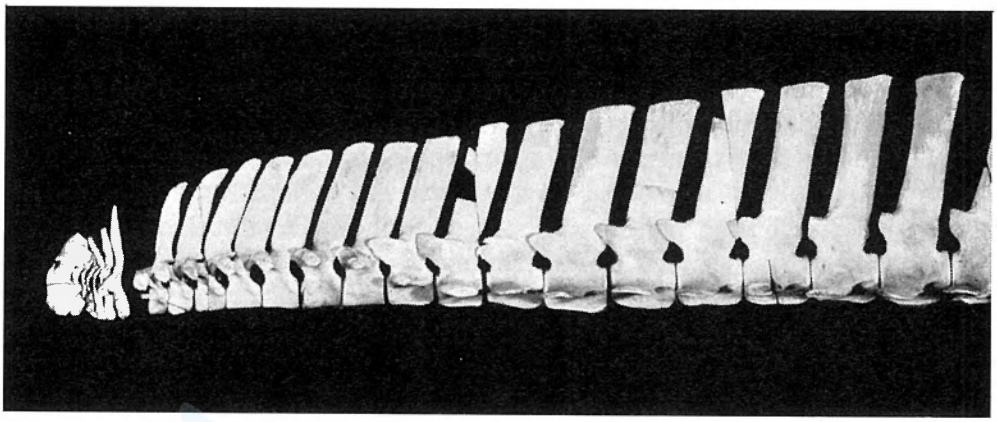
Mr. Akai's family and teachers dissected the whale, after which the meat and blubber were sold in the Akita fish market as human food. The bone was buried in the beach because they thought that the bone might become a specimen of a whale.

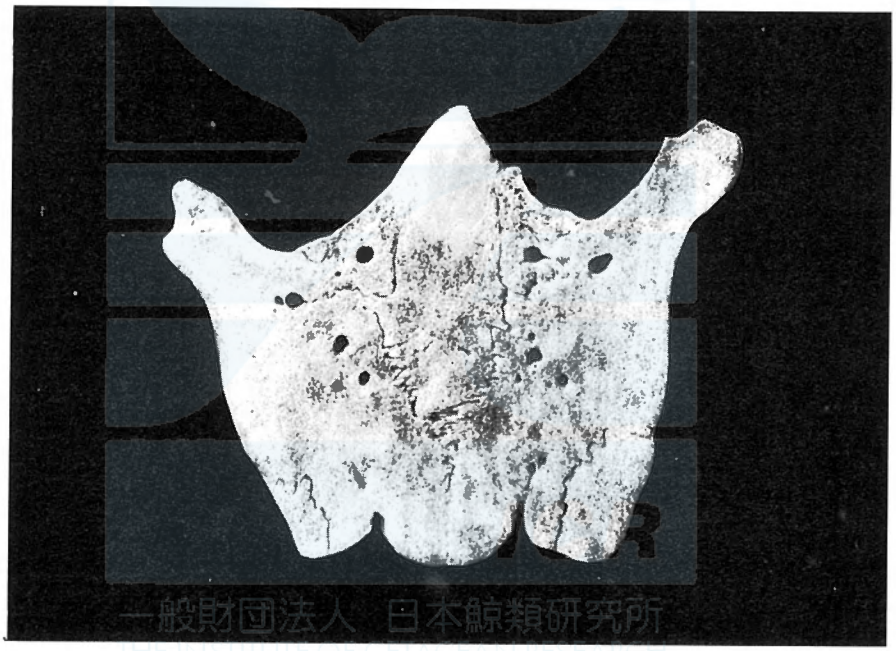
Fig. 2 shows the whale with Mr. Akai's family soon after it was taken. As shown in Fig. 2, many parallel lines are drawn on the skin surface of the whale. The author presumes these parallel lines are

Fig. 3. Tailflukes. (after this photograph was taken, the tailflukes were carried out then thrown away)

scars from the teeth of whales of the same *Mesoplodon* species, when they had fought with each other. A white patch is clearly seen on the left side of the body slightly forward from the dorsal fin. It seems to be a group of scars when the whale had incorred from strong rivals. Considering from these scars, the whale might have been defeated by its rivals and was so tired that it got stranded on the beach.

The author went to the beach with Mr. Sudo who is a staff of the Fisheries Section of the Akita Prefectural Office and had some labourers to excavate the bones of whale. Fortunately, in spite of its having been buried in the sand, the skeleton was unearthed in a very good condition.





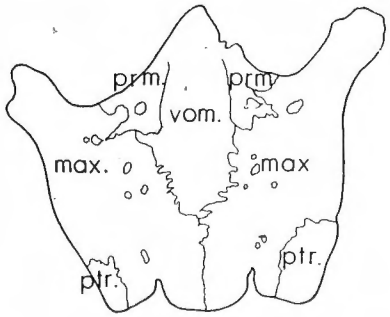
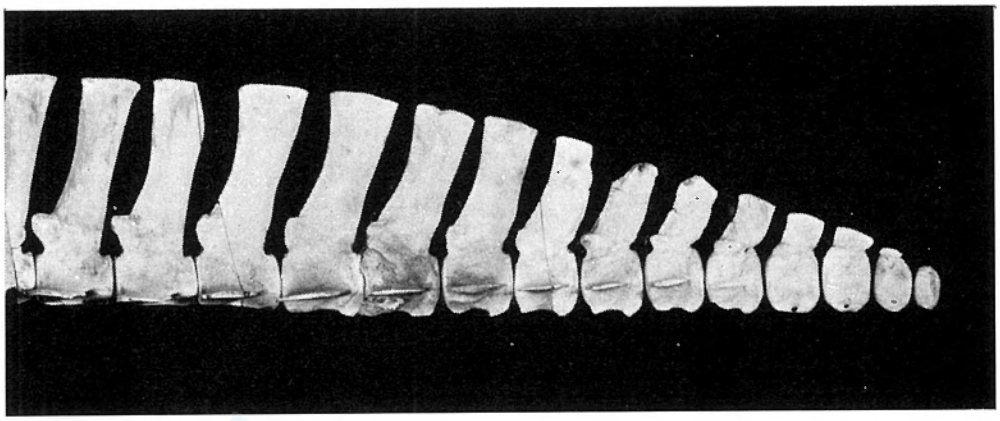


Fig. 5. The cross section of the snout, the vomer is well ankylosed with the premaxillae. (prm. . .premaxilla, vom. . .vomer, max. . .maxilla, ptr. . .pterygoid.)



↖↗ Fig. 4. Lateral view of verteblral column. Caudal vertebrae after 12th are lost. Deduced formula is C 7+D 10+L 10+Ca 19=46.

As shown in Fig. 3, the tail flukes had been cut off at its insertion and it was carried away by a staff of the Akita Fish Market to his house. He intended to make it into an ornament, but was forced to throw it away into a river due to the dirty dripping of the whale oil. Probably, he considered that the tail flukes were same as the caudal fin of a fish. Through this accident some caudal vertebrae contained in the flukes (probably 8 vertebrae) were lost. Also the right pectoral limb had been carried and was thrown away by him. The author regrets them very much that this accident had occurred. Though some of other parts of the skeleton had been cut with a saw at the time of dissection, most of them were preserved in a fairly good condition and be investigated. The left ribs were slightly more complate than the right ribs which were lost except for several number of heads. They probably had been dug out and carried away by stray dogs, for the right ribs had been buried nearer the surface. Though the skinned snout together with the mandibule and the mandibular teeth had been cut off to be made into an ornament, the dripping caused them to be buried in the sand in the original form and were later collected by the author.

Consequently, the cross section of the snout, shown in Fig. 5, was made at the point measuring 363 mm from the tip of the snout along the vomer. The point of cross section coincides to the most anterior part of the pterygoids. As is shown in Plate I the section is made abliqurely to the antero-posterior, infero-superior and lateral axis, which causes the asymmetry of the section.

The unearthed bones were skeletonized unexpectedly well, so they were packed at once in a box and sent to the Whales Research Institute, and were boiled there to make a complete specimen.

TABLE 1. DIMENSIONS OF SKULL

	mm	Percentage to the length	Percentage to the breadth
1. Total (condylo-basal) length	682	100.0	200.6
2. Length of rostrum (median)	403	59.1	118.5
3. Breadth of rostrum at base	186	27.3	54 7
4. Breadth of rostrum at middle	52	7.62	15.3
5. Breadth of rostrum at the position just above the teeth	46	6.7	19.7
6. Breadth of rostrum at the highest point of anterior palatin suture	126	18.5	37.1
7. Breadth of rostrum between the antorbital notches	191	28.0	56.2
8. Depth of rostrum at middle	68	10.0	20.0
9. Depth of rostrum at the position just above the teeth	62	9.1	18.2
10. Depth of rostrum at the hfghest point of anterior palatine suture	102	15.0	30.0
11. Length of premaxillae	L: 608	89.1	178.8
	R: 619	90.8	182.1
12. Breadth of premaxillae at middle of rostrum	41	6.0	12.1
13. Breadth of premaxillae at expanded proximal end	131	19.2	38.5
14. Breadth of premaxillae at in front of anterior nares	112	16.4	32.9
15. Breadth of pramaxillae opposite premaxillary foramina	70	10.3	20.6
16. Breadth of premaxillae opposite maxillary foramina	65	9.5	19 1
17. Greatest breadth of premaxillae opposite anterior nares	112	16.4	32.9
18. Least breadth of premaxillae opposite anterior nares	107	15.7	31.5
19. Least distance between the postero-dorsal margins of the maxillary foramina	78	11.4	22.9
20. Least distance between the postero-dorsal magins of the premaxillary foramina	48	7.0	14.1
21. Least pistance between the maxillary foramina and premaxillary foramina	L: 23	3.4	6.8
	R: 28	4.1	8.2
22. Distance from posterior border of maxillary foramina to anterior extremity of maxillary protuberance	L: 127[1)]	18.6	37.4
	R: 134	19.6	39.4
23. Length of nasal suture line	66	9.7	19.4
24. Greatest breadth of nasals	45	6.6	13.2
25. Greatest breadth of superior nares	52	7.6	15.3
26. Diameter of orifice of poserior nares immediately behinc pterygoid processes	116	17.0	34.1
27. *Distance from tip of rostrum to* bottom of maxillary notches	L: 401	58.8	117.9
	R: 405	59.4	119.1
28. ——anterior end of vomer	422	61.9	124.1
29. ——anterior margin of superior nares	L: 502	73.6	147.6
	R: 504	73.9	148.2
30. ——nosal vertex	583	85.5	171.5
31. ——medial sture line of posterior end of pterygoids	560	82.1	164.7
32. ——line joining anterolateral processes of moxillae	571	83.7	167.9
33. ——occipito-forutal vertex	607	89.0	178.5
34. ——posterior menian end of maxillae on palate	429	62.9	126.2

	mm	Percentage to the length	Percentage to the breadth
35. ——botton of tubal notch (median)	376	55.1	110.6
36. ——most anteior port of palatine	L: 363	53.2	106.8
	R: 363	53.2	106.8
37. Length of vomer visible on palate	243	35.6	71.5
38. Breadth across middle of orbits	340	49.9	100.0
39. Diameter of orbit (antero-posterior)	L: 97	14.2	28.5
	R: 95	13.9	27.9
40. Greatest breadth across supra-orbital plates of maxillae	335	49.1	99.7
41. Greates breadth across post-orbital processes	346	50.7	101.7
42. Breadth across zygomatic processes	333+[1]	48.8+	97.9+
43. Breadth across posterior margins og temporal fossae	236	34.6	69.4
44. Greatest breadth of cranium at parietal region in temporal fossae	305	44.7	89.7
45. Length of temporal fossae	L: 86	12.6	25.3
	R: 89	13.0	26.2
46. Depth of temporal fossae	L: 62	9.1	18.2
	R: 67	9.8	19.7
47. Length of tympanic bone	L: 45	6.6	13.2
	R: 48	7.0	14.1
48. Greatest breadth of tympanic cone	L: 32	4.7	9.4
	R: 33	4.8	9.7
49. Breadth of occipital condyles	118	17.3	34.7
50. Breadth of foramen magnum	43	6.3	12.6
51. Length of occipital condyle	L: 80	11.7	23.5
	R: 80	11.7	23.5
52. Height vertex to inferior border of pterygoids	303	44.4	89.1
53. Length of wandible (median)	599	87.8	176.2
54. Length of wandibular ramus	L: 610[1]	89.4	179.4
	R: 611	89.6	178.7
55. Distance from anterior end of wandible to coronoid process	L: 589	86.4	173.2
	R: —[1]		
56. Length of symphysis	L: 143	21.0	42.1
	R: 142	21.0	41.8
57. Distance from anterior end of mandible to anterior end of alveolus	L: 149	21.8	43.8
	R: 148	21.7	43.5
58. Distance from anterior end of wandible to posterior end of alveolus	L: 260	38.1	76.5
	R: 260	38.1	76.5
59. Depth of wandible at posterior wargin of tooth	L: 89	13.0	26.2
	R: 88	12.9	25.9
60. Depth between angle and coronoid process	L: 126[1]	18.5	37.1
	R: —[1]		
61. Minimum depth of wandible between tooth and coronoid process	L: 90	13.2	26.5
	R: 90	13.2	26.5
62. Breadth across wandiblar condyles	287[1]	42.1	84.4
63. Length of tooth	L: 164	24.0	42.9
	R: 158[2]	23.2	46.5
64. Breadth of tooth (antero-posterior at crown)	L: 101	14.8	29.7
	R: 98	14.4	28.8
65. Breadth of tooth (transvers at crown)	L: 24	3.5	7.1
	R: 24	3.5	7.1
66. Length of tooth row	L: 342	50.1	100.6
	R: 340	49.9	100.0
67. Length of alveolus	L: 121	17.7	35.6
	R: 120	17.6	35.3

1) has deficit
2) tip broken

TABLE 2 DIMENSIONS OF VERTEBRAE (mm)

Number of vertebrae		(1)	(2)	(3)	(4)	(5)	(6)	(7)
C	1st					193	45	51
	2nd	36	43	118	154	173	—	—
	3rd					136[1]	34	49
	4th	15	58	71	122	120+[2]	42	39
	5th	15	58	71	147	114+[2]	43	41
	6th	16	58	75	159	100[3]	46	45
	7th	19	62	76	220	147	51	46
D	1st	26	58	66	261	162	59	48
	2nd	41	54	61	285	171	58	46
	3rd	52	50	61	292	175	59	45
	4th	63	51	62	306	165+[2]	60	49
	5th	69	53	64	321	174	60	45
	6th	76	58	68	325	174[4]	58	45
	7th	84	56	74	327	171	51	47
	8th	91	58	79	335	171	49	45
	9th	86+[5]	61	79	365	251	45	42
	10th	103	66	80	377	320[6]	46	38
	11th	111	72	84	396	332	41	38
L	1st	114	76	86	417	316+[2]	47	38
	2nd	120	79	89	426	240+[2]	45	39
	3rd	124	81	91	441	205+[7]	42	39
	4th	129	85	93	457	167+[8]	43	36
	5th	137	90	97	462	319[9]	37	34
	6th	142	95	98	465	307[10]	31	30
	7th	150	95	100	456	321+	27	26
	8th	154	100	101	447	318	19	23
	9th	153	103	104	427	264+[11]	17	20
Ca	1st	150	107	108	424	303[12]	17	17
	2nd	143	109	125	405	282[13]	13	15
	3td	135	108	111	380	217+[14]	11	12
	4th	127	113	108	339	245[15]	8	11
	5th	123	112	118	284+[2]	191	8	10
	6th	111	114	117	253	168	8	8
	7th	108	109	109	220	128	5	7
	8th	100	102	98	136	103	—	5
	9th	89	102	90	155	95	—	3
	10th	69	94	89	114	92	—	—
	11th	62[2]	81	82	81	85	—	—

(1) Length of body at center
(2) Height of body at front end
(3) Breadth of body at front end
(4) Total height from anterior bottom
(5) Breadth of transverse processes
(6) Greatest height of neural canal
(7) Greatest breadth of neural canal

1) has dificit on right transverse process. Approximate.
2) has dificit.
3) deformed.
4) the front end of bods strongly deformed.
5) has deficit on the posterior end of body.
6) has deficit on right transverse process.
7) has large deficit.
8) excluded right transverse process. encluded value 288+.
9) Deformation and deficit on left and right transverse processes respectively.
10) has deficit on sight transverse process. excluding left proeess 165.
11) deficit on both transvearse process.
12) pathological change, dificit on transverse process.
13) dody front greatly pathological change.
14) both transverse process broken, pathological change on the body.
15) right transverse process broken, left side only: 104 mm.

NOTE ON THE EXTERIOR

The external measurements and the morphological observations of the present specimen are very difficult to goage as in the case of the previous specimens in Japan. It is only known that the specimen was a 6 meter long male whale and several photographs of it were taken before dissection. The weight of the soft part is olso unknown.

OSTEOLOGICAL AN TAXONOMICAL DISCUSSION

At the beginning of the study, the author selected some species of *Mesoplodon*, which might coincide with the present specimen from the Table 6 of "A beaked whale *Mesoplodon* stranded at Oiso Beach, Japan" which was published in the Scientific Reports of the Whales Research Institute No. 13, 1958. The present specimen is compared with *M. bidens*, *M. stejnegeri*, *M. bowdoini*, *M. densirostris* and *M. ginkgodens* in the following paragraphs.

Skull: The measurements of the skull are shown in Table 1. The size of the skull is not very different from those of the above species. The author thinks that the age through ossification is at about the same stage as the two specimens that he has reported in his previous papers. But the vomer was markedly developed. The first character of the skull is the relative position of the premaxillary and maxillary foramina.

Moore, J. C. of the American Museum of Natural History has stated that "the relative position of the premaxillary foramina and the maxillary foramina is variable within the sample now known of *Mesoplodon mirus* and, for this species, has no taxonomic worth. In *M. gervaisi* its worth is very doubtful. The proposition may be more constant in some of the other species of *Mesoplodon*, but its advocates have not demonstrated that this is so any more firmly than they have for *gervaisi* and *mirus*", in his study titled "New Records of the Gulf-Stream Beaked Whales, *Mesoplodon gervaisi*, and Some Taxonomic Considerations".

The authors of the report of the *Mesoplodon* stranded at Oise Beach in their wishes to express that the specimen of the Oiso Beach is different from any other previous species, they alluded to *M. mirus* and *M. gervaisi* without sufficient data, and they may have said too much. The authors think that the relative position of the premaxillary foramina and maxillary foramina is a more suitable character in identifying the species than the presence or absence of the lateral basirostral groove in the various other species of *Mesoplodon*.

Moore has explained the 25 distinctions between *M. gervaisi* and *M. mirus*. The work regarding the distinctions is very valuable in the

accumulation of knowledge on the *Mesoplodon* study. The author, however, would like to know which is the most fundamental charactor for classifying the various species of *Mesoplodon*. From considerations of the present knowledge, the author cannot help relying on the relative position of the premaxillary foramina and the maxillary foramina in classifying the various species of *Mesoplodon*. The author accepts, of cause, that *M. mirus* or *M. gervaisi* are exceptions, and would like to accumulate more data on this specific subject.

The author was accumulated perhaps a too great a number of dimensions, figures and plates on the specimens, but wishes to make them available as data in determining the species of *Mesoplodon*.

The premaxillary foramina of the present specimen are situated more caudally from the maxillary foramina. From this fact *M. bidens* and *M. ginkgodens* were omitted from the comparison with the present specimen. The middle figure in the Plate II clearly shows this character.

The second character is the existence of the basirostral groove. The basirostral groove of the present specimen could be seen clearly from the tip of the snout to the forepart of the antorbital notch, but it was shallow and inconspicuous. Ravan discribed that this character is absent in *M. stejnegeri* and *M. bowdoini*. The present author, however, already mentioned in his previous paper that the groove is remarkably present in *M. stejnegeri* and *M. bowdoini* (Nishiwaki & Kamiya, 1958, p. 69). In the first and second characters the present specimen can not be classified in the three species, *M. stejnegeri*, *M. bowdoini* and *M. densirostris*.

The third character is the shape of the teeth and the position where the teeth are situated. All of these three species have very large teeth, but the compressed rate is different. The teeth of *M, stejnegri* are strongly compressed at the rate of Ca. 1/7 between antero-postero length and transverse thickness at crown. And the root of the teeth are directed extremely foreward. The teeth of *M. bowdoini* have the rate of 1/3–1/4, and the teeth of *M. densirostris* have the rate of 1/2–1/3. The teeth of the present specimen have the rate of Ca. 1/4. According to the preceding authors, the lengths of symphysis are short in these species. The length of symphysis of the present specimen is also short. In the present specimen the teeth are situated entirely behind the symphysis.

Other observations made on the skull are as follows. The maxillary protuberance is pronoucedly large, and the distance from the occipital condyle to the premaxillary foramen is much less than the greatest width of the skull.

The author hopes to discuss not only on the measurements of the skull, but also the shape of the skull with the Plate XII–XV of the previous report (Nishiwaki & Kamiya, 1958)

There are considerable differences in dorsal view of the maxillary notch of the various species including the present specimen. The author can not explain this difference now.

In the lateral views of the various species, the skull of *M. bowdoini* (No. 31756 of the American Museum of Natural History) closely resembles that of the present specimen. Furthermore, when compared with the mandibles, especially in the dorsal view, the present specimen strikingly resembles the specimen of *M. bowdoini* (No. 31756 of AMNH).

Length of symphysis and situation of teeth are quite similar, only the bending of the teeth are different. The author thinks that this difference usually occurs in the same species of whales. As in discriptions of the previous authors, the teeth of the present specimen are also very large and imposing. In the frontal edges of the teeth some erosions were seen. The eroded parts on the teeth are where the teeth have grown from the gum, and the teeth have heavier erosion on the inner surfaces of the teeth plates. The intensity of erosions was found to be about the same degree on both sides. From the observation of the skull with the mandible attached, there is a considerably wide speace around the teeth. Caries of teeth were considered, the erosion is too bisymmetrical on the bilateral teeth, and there is no sign of invalid tissue. From these characteristics, this erosion might have occurred simply through rubbing. What has caused this rubbing? The author can think of no other cause than the rubbing of the teeth with the skin of the upper jew. It is a very strange matter.

Vertebral column. The dimensions and the photograph of the lateral view of the vertebral column are shown in Table 2 and Fig. 3 respectively.

Cervicals: Detailed explanations on the cervicals by previous authors are very scarce. The author considers that classifying dolphin species by means of the shape of cervicals simultaneously with the skull dimensions is available.

He has aimed mainly at innatal ankylosis of cervicals. The author had a chance to compare the cervicals of the three specimen; *M. ginkgodens*, *M. stejnegeri* and the present specimen. In the case of *M. ginkgodens*, the first three cervical vertebrae are ankylesed at the bodies as well as at the neural arches. The 4th and the 5th cervical ones are also ankylosed with each other, but it is considered that there is a chance occurred postnatally. On the cervical vertebrae of *M. stejnegeri*, only the atlas and the axis are ankylosed, and other five

free. In the present specimen the first three cervicals are ankylosed and the remaining four are free. The characteristics of these fixtures

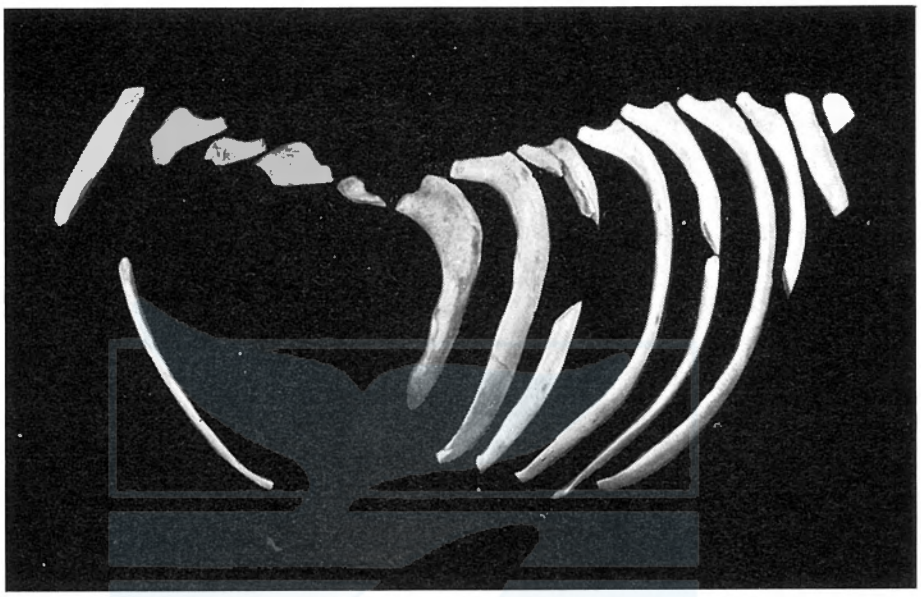


Fig. 6. Medial view of the vertebral ribs, the major parts of the right side were excavated by wild dogs.

TABLE 3 DIMENSIONS OF RIB (mm)

Number of rib	Straigh length		Length along visceral border		Breadth at middle		Depth at middle		Breadth at heads	
	L	R	L	R	L	R	L	R	L	R
1*	342	—	310	—	48	—	23	—	84	—
2*	494[1]	—	523	—	54	—	21	—	—[2]	83
3*	—[2]	—	—	—	—	—	—	—	82	80
4*	586	—	666	—	38	—	18	—	81	82
5*	—[2]	—	—	—	—	—	—	—	81	—
6*	637	—	750	—	42	—	17	—	80	—
7*	—	—	—	—	—	—	—	—	75	—
8	—	—	—	—	—	—	—	—	38	39
9	—	—	—	—	—	—	—	—	38	—
10	—	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—

* two headed 1) has deficit 2) broken

can not be understood by taking the measurements, and the shapes of the cervicals closely resemble each other even in the different species. Precise observations of the real specimens, therefore, are necessary.

These characteristics on the cervical vertebrae are also considered as an important feature.

Dorsal, lumbar and caudal vertebrae: The numbers of dorsal vertebrae are usually determined by the number of the ribs. However, the last rib is difficult to find in many cases. In such a case the discription will be based on an unexactly number. The same can be considered regarding the lumbar or the caudal vertebrae. The author therefore mainly used the shapes of the vertebral bones and the number of the attached bones as supplementaly factors. The present specimen has incomplete number of ribs as shown in Fig. 6. Judging from the above factors and data, the dorsals are determined as ten, 7 two-headed ribs, 2 jointed ribs and a non-jointed rib. The number of two-headed and jointed ribs is the same as other specimens of *Mesoplodon*, but the number of non-jointed rib is a question. The author determined the number of ribs by the shapes of the lateral processes of the vertebrae and the protuberance of the under surface of the centrum vartebrae. The protuberance of centrum on the 18th vertebra is not higher than that of the 19th, but that of the 17th and the frontward vertebrae are very low. Considering this fact, the number of dorsals might be 10, i. e. the number of ribs is presumed to be 10. Observing the first chevron bone is also unavoidable at times. The protuberance of the centrum vertebrae are devided into two lines when the chevron is attached, and those on the under surface of the first caudal is usually Y or V shaped. This fact is shown Fig. 3 of page 43 in the Scientific Reports of the Whales Research Institute No. 14, 1959. In that Fig. 3 the first caudal are shown in the middle.

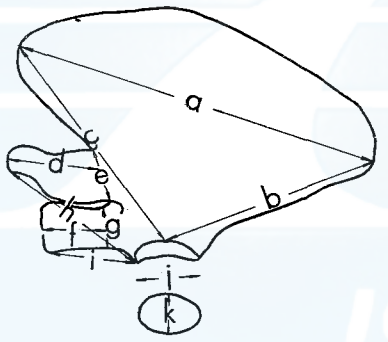
In the Fig. 3 of the present specimen, the 28th bone of the vertebral column is the first caudal vertebra. A half rounded projection can be seen at the rear end of the under surface of the bone, and this is the part to which the chevron is attached. These projections are clearly seen on the following bones. The chevron bones of the present specimen were collected from the sand thoroughly with the caudal vertebrae attached. Only the first chevron is divided two pieces, the other chevrons are fused as a single bone. The caudals after No. 12 are contained in the part of the tailflukes. The tailflukes were cut by a saw at its insertion. Even 1/4 of caudal No. 11 was cut off. Although the exact number of caudals are unknown, the estimated number contained in the tailflukes are usually 8 in the *Mesoplodon* species. The number of caudals that have no neural processes is generally 9. Judging from these hypothesis, the number of caudals in the present specimen are presumed as 19. The vertebral formula of the present specimen therefore is shown as C 7+D 10+L 10+Ca 19=46.

All the epiphyses of the vertebrae were fused to their centrum and the epiphyses of all the other parts of the skeleton were observed as being in the ankylosed condition. For that reason the present specimen is very old, without mentioning its physical maturity.

All cervicals, 2nd, 3rd and 9th dorsals, 3rd 4th, 7th, 9th and 10th lumbars, 4th and 11th caudals of the vertebrae have some incised scar caused by a saw. The first to the 3rd dorsals, the 8th lumbar and tne first and 2nd caudals have some pathological deformity.

Pectoral rimb: The right flipper was not collected as mentioned above. In spite of the careful excavation, some phalangeal bones of the left flipper were lost as shown in Plate VI due to its having been buried naked. The author can not give his opinion on these skeletons. Both the scapulae were collected and observation shows that the shape is similar as in other species of *Mesoplodon*. Measurements are given in Table 4.

TABLE 4 DIMENSIONS OF SCAPURA (mm)

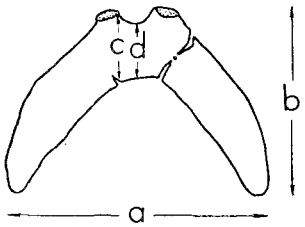


	L	R
a.	386	388
b.	254	250
c.	269	263
d.	107	—
e.	61	—
f.	80	—
g.	48	—
h.	155	—
i.	104	—
j.	72	71
k.	55	56

Sternum and Hyoid bone: The sternum consists of four segments as in the other *Mesoplodon* species. The right side of the bones were lost due to cutting by the saw. Photograph and dimensions of the hyoid bones are shown in Plate VI and Table 5 respectively. The basihyal and thyrohyals are ankylosed. The shape of stylohyals are different from the two previous specimens in Japan.

The bones around the pelvic region could not be found at the excavation. It may have been carried to the market with the fresh. Judging from these osteological and taxonomical discussion, the present specimen is considered as a *Mesoplodon bowdoini*. This is the first record on this species in Japan, especially at the coast of the Sea of Japan.

TABLE 5 DIMENSIONS OF BASIHYAL, THYROHYALS AND STYLOHYALS (mm)



a.	192	The greatest length and		
b.	142	breadth of stylohyals		
c.	55	L	155	51
d.	41	R	153	50

TABLE 6 DIMENSIONS OF CHEVRON BONE (mm)

Number of chevron bone	Greatest length (antero.posterior)	Greatest breadth (transverse)	Greatest height (supero-inferior)
1st	69	21	31
	64	18	28
2nd	94	49	73
3rd	94	66	128
4th	113	70	150
5th	90	67	125
6th	84	67	103
7th	85	65	91
8th	82	54	67
9th	60	46	41

SUMMARY

A six meter long male whale had been found stranded at Akita Beach attended to the Sea of Japan.

Almost all of bone had been buried in the beach, but unfortunately, the tail flukes including about eight bones of the caudal vertebrae and the right pectoral limb had been lost, because of these parts were carried out to the fishmarket then thrown away.

Judging from the osteological and taxonomical discussion, the present specimen is considered as a *Mesoplodon bowdoini*. This is the first record on this species in Japan. The referred reasons are as follows.

1. In spite of the kind suggestion of Moore, the author cannot help relying on the relative position of the premaxillary foramina and the maxillary foramina in classifying the various species of *Mesoplodon*. The premaxillary foramina of the present specimen are situated more caudally from the maxillary foramina.

2. The basirostral groove of the present specimen could be seen clearly, but it was shallow and inconspicuous.

3. The teeth of the present specimen have the rate of 1/4 between antero-postero length and transverse thickness at crown. The length of symphysis is short and the teeth are situated entirely behind the symphysis.

4. The vertebral formula of the present specimen is shown as C 7+D 10+L 10+Ca 19=46.

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The author would like to express his sincere thanks of Mr. Nenosuke Akai and his family for their kind presentation of the specimen that they have caught. Sincere thanks are also given to Mr. K. Ishiwaka and the staff of the Fisheries Section of the Akita Prefectural Office for their appropriate supervision in preserving the specimen. Particularly to Mr. M. Sudo who had excavate the bones of the whale with the author. The author is deeply grateful for his kindness.

The author is most grateful for the courtesy extended by the Akita Sakigake News who had been so kind as to furnish him with the photographs of the whale.

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EXPLANATION OF THE PLATES

PLATE I

Skull of *Mesoplodon* from Akita Beach with mandible attached; lateral, dorsal, anterior and posterior views (top to bottom).

PLATE II

Lateral, dorsal and ventral views (top to bottom) of skull of *Mesoplodon* from Akita Beach.

PLATE III

Lateral, dorsal and reversed lateral views (top to bottom) of mandible of *Mesoplodon* from Akita Beach.

PLATE IV

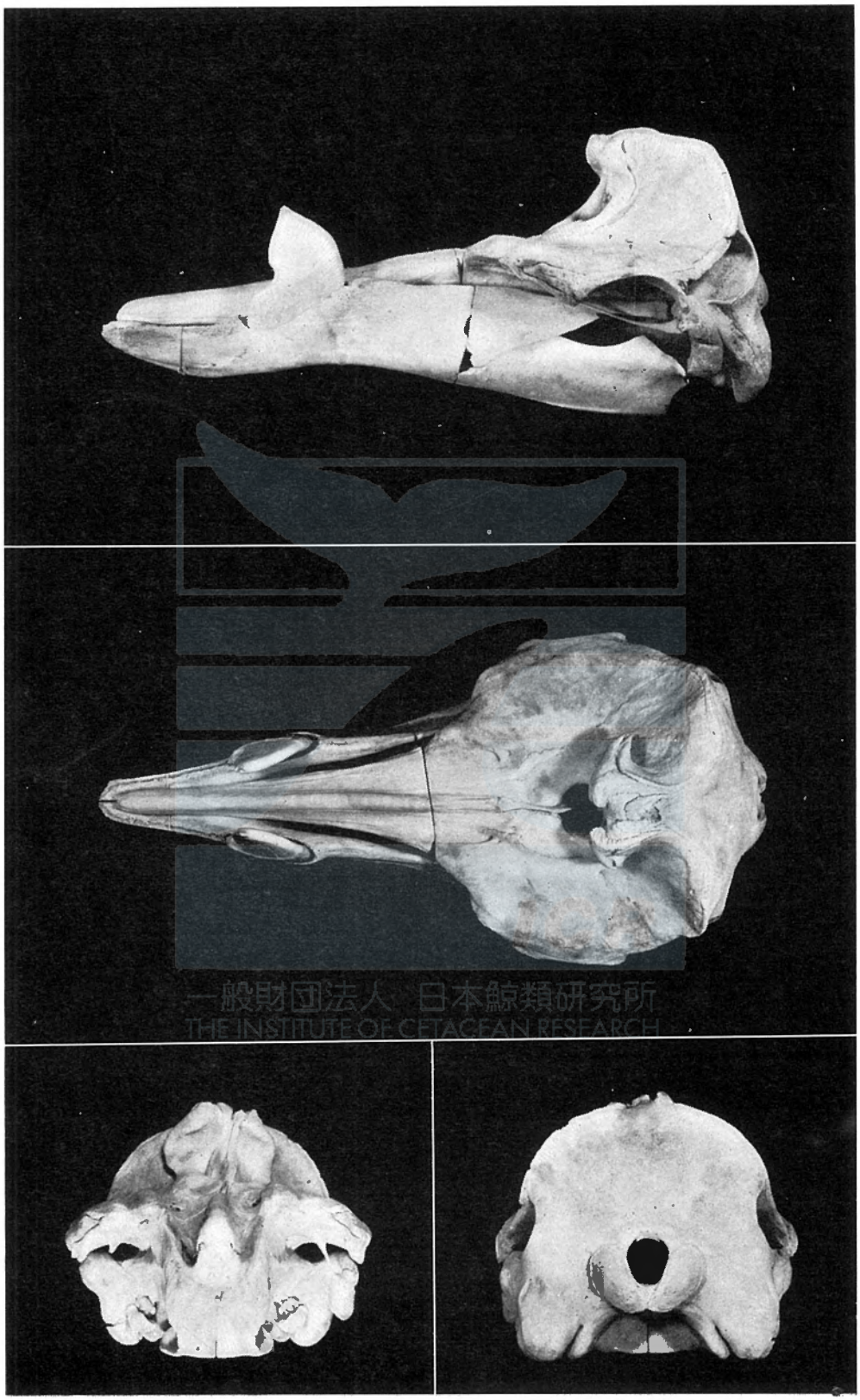
Teeth of *Mesoplodon* from Akita Beach. (Left one in figures is right side tooth).
Fig. 1. Reversed lateral view.
Fig. 2. Lateral view.
Fig. 3. Dorsal view.
Fig. 4. Rostral view.

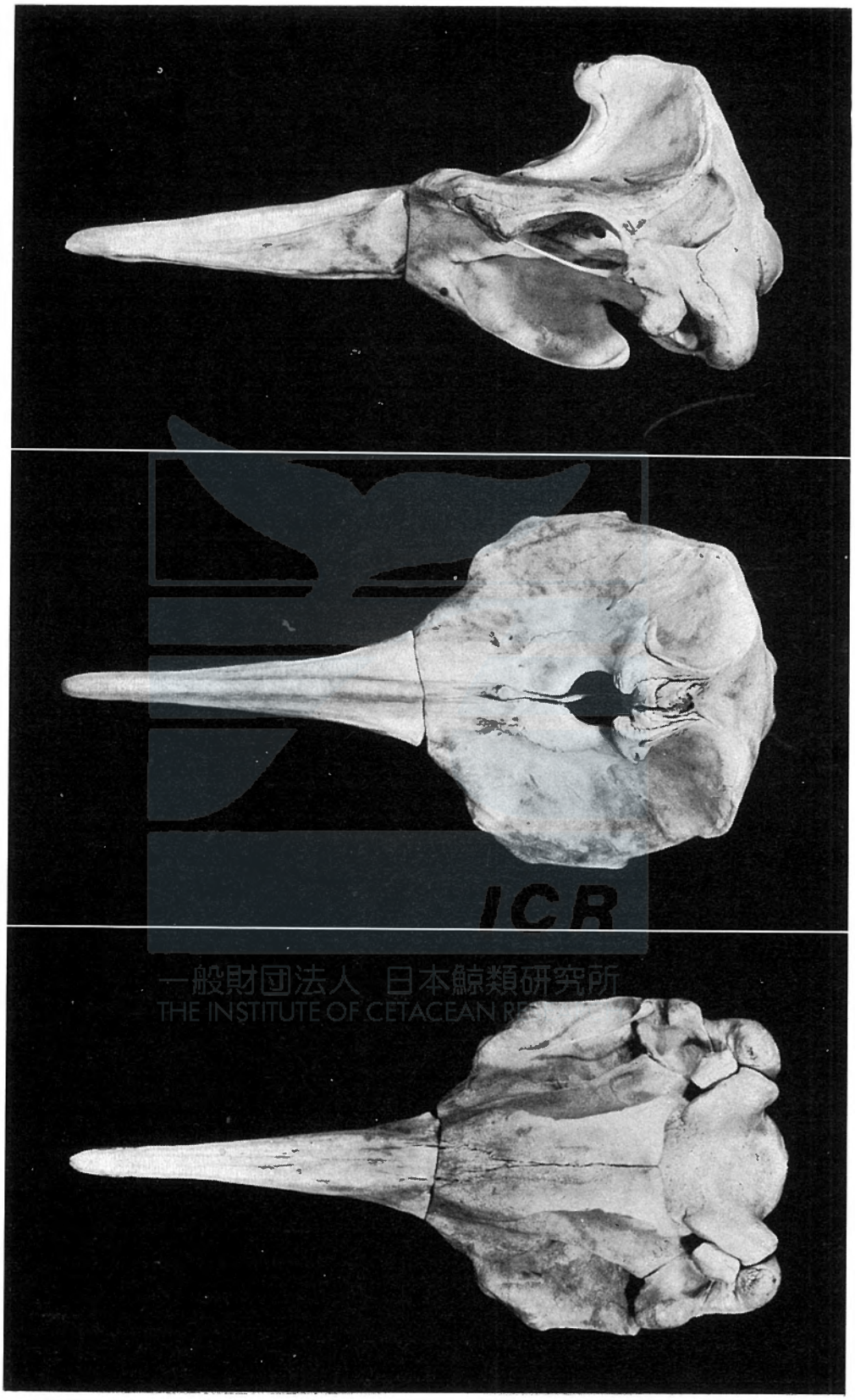
PLATE V

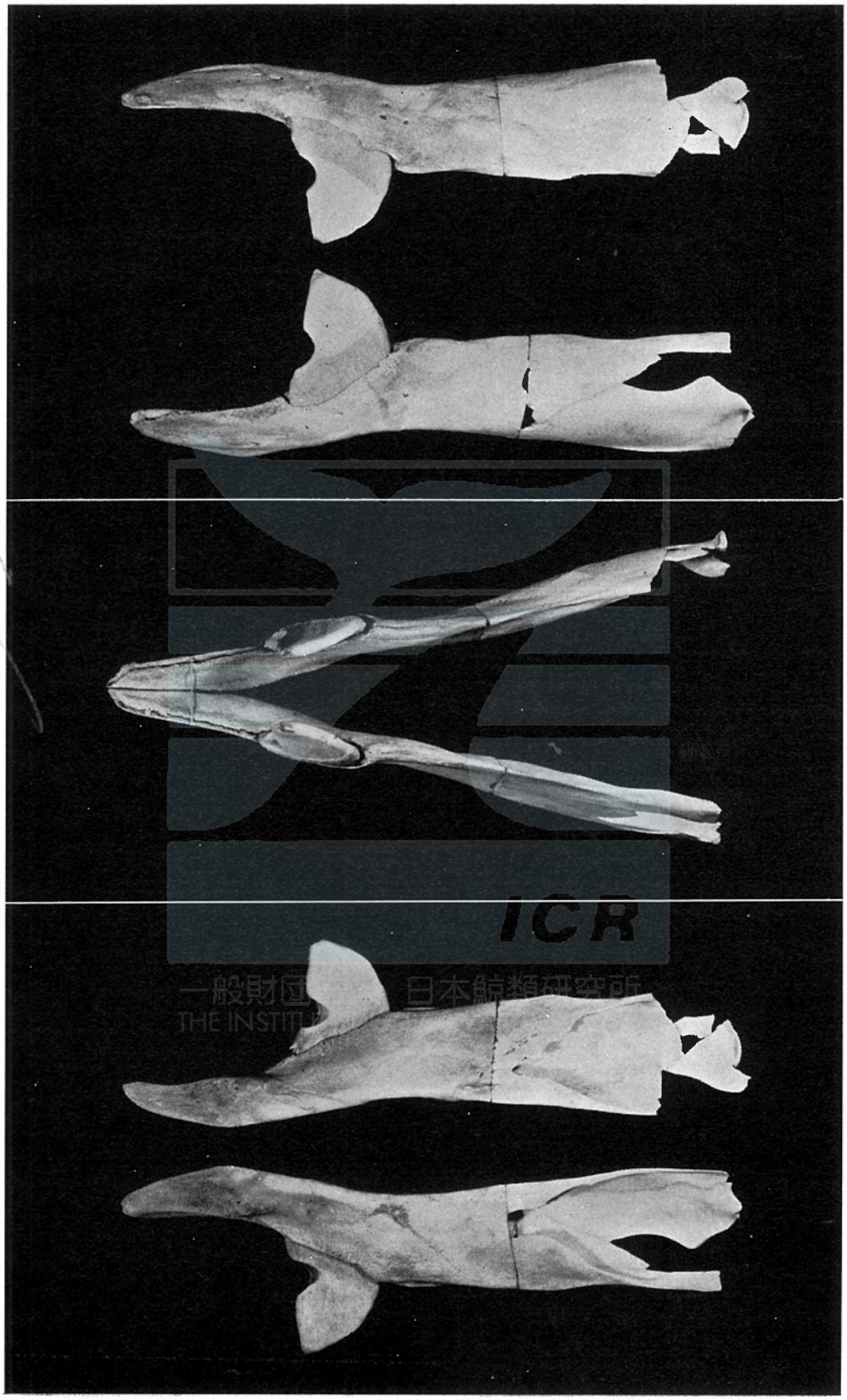
Figs. 1 and 2. Lateral and caudal views of cervical vertebrae of *Mesoplodon* from Akita Beach.
Figs. 3 and 4. Cranial and caudal views of each bones of cervical vertebrae of *Mesoplodon* from Akita Beach.
Fig. 5. Left side lateral views of each chevron bones (from the first to 9th, left to right respectively).

PLATE VI

Fig. 1. Dorsal view of left pectoral limb with scapula attached, and right side scapula (dimentions are shown in Table 5).
Fig. 2. Dorsal view of sterum, right sides are cutted away by a saw.
Fig. 3. Dorsal view of hyoid bones (dimentions are shown in Table 6).







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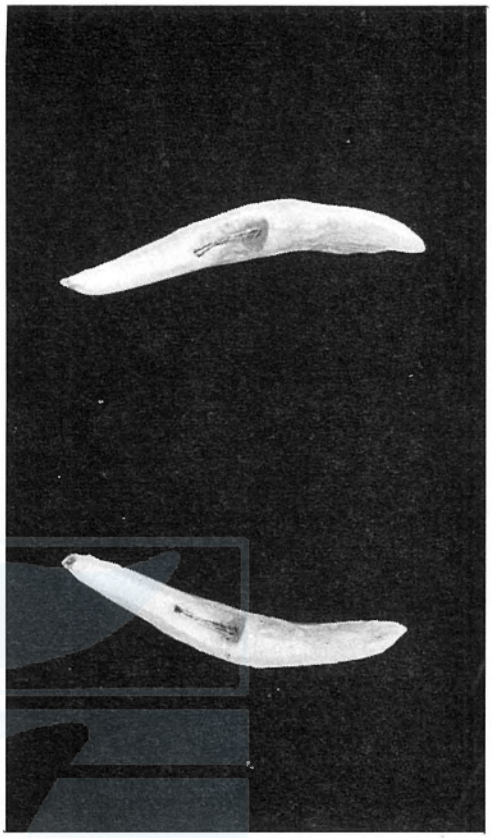

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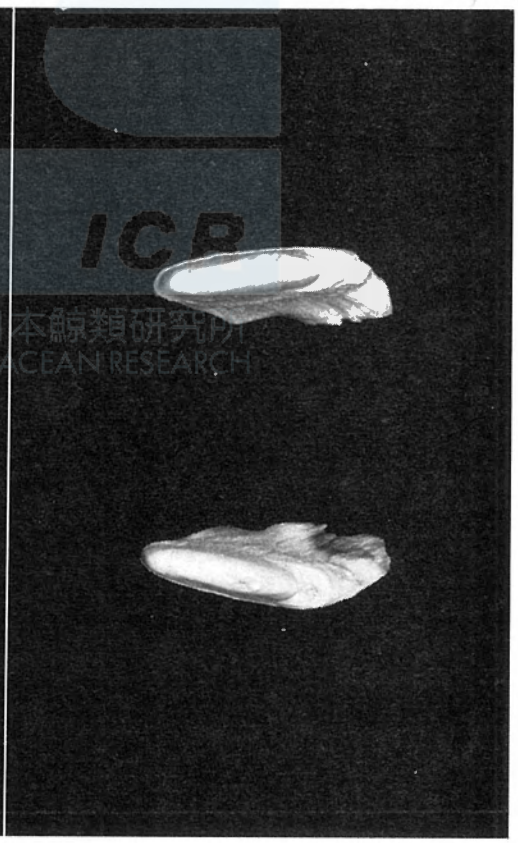

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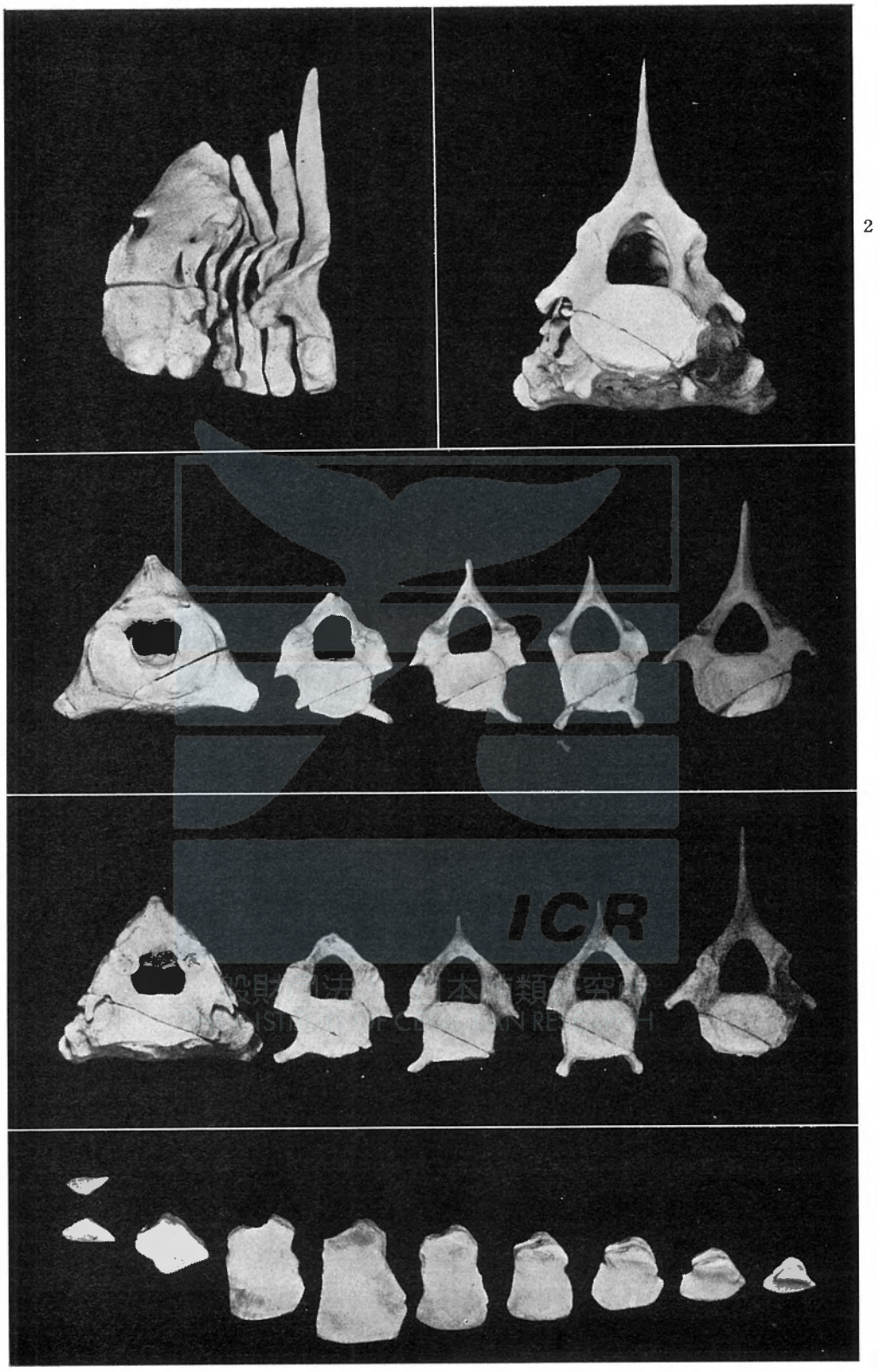

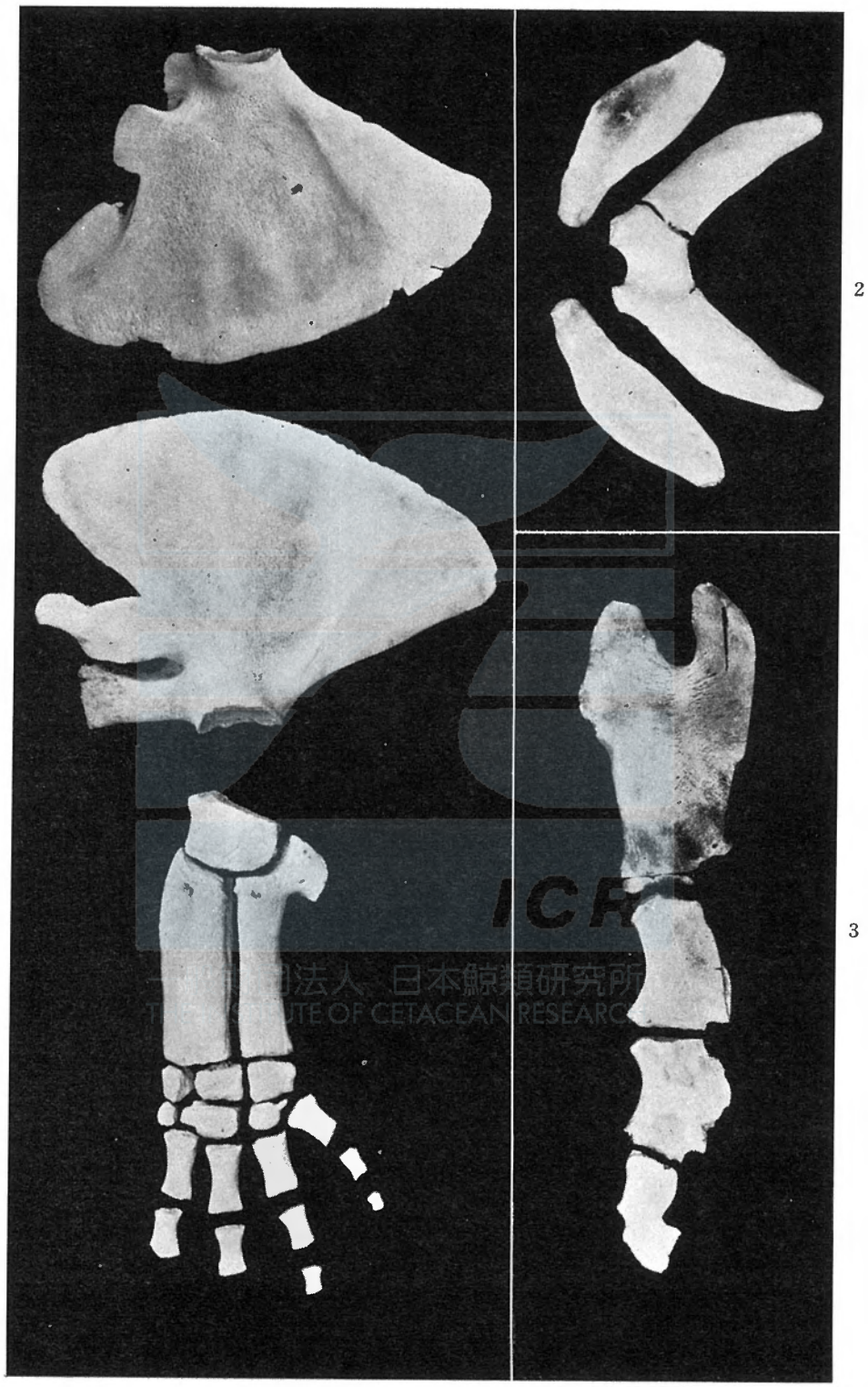

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