

NOTICE OF REMAINS OF THE WALRUS

DISCOVERED ON THE COAST OF THE UNITED STATES.

DESCRIPTION OF REMAINS OF FISHES

FROM THE CARBONIFEROUS LIMESTONE OF ILLINOIS AND MISSOURI.

REMARKS ON SAUROCEPHALUS AND ITS ALLIES

OBSERVATIONS ON

THE EXTINCT PECCARY OF NORTH AMERICA;

REMARKS ON

THE STRUCTURE OF THE FEET OF MEGALONYX.

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Well-authenticated remains of the Walrus appear never to have been discovered in any other than the most recent geological formations.

In a report presented to the Lyceum of Natural History of New York, Messrs. Mitchell, J. A. Smith, and Cooper, give notice of the discovery of a specimen, consisting of the anterior portion of a Walrus skull, from the sea beach of Accomac Co. Virginia.* These gentlemen observe that the fragment bears the greatest resemblance to the corresponding portion of the skull of the existing species of Walrus, as compared with the figures given by Cuvier in the "Ossemens Fossiles." The specimen now preserved in the cabinet of the New York Lyceum, is represented in two outline figures by De Kay, who under the impression that it indicates an extinct species, has given for this the name of *Trichecus Virginianus*.†

In the summer of 1853, Professor J. F. Frazer of this city discovered the skull of a Walrus on the sea beach at Long Branch, Monmouth County, New Jersey. The specimen which has lately been presented to the Academy of Natural Sciences, has lost a portion of the cranium proper, and the exerted portion of one tusk, but otherwise, except being a little water worn, is in a good state of preservation. It is unchanged in texture, and nearly so in colour; and it belonged to an old individual, as all the sutures are completely obliterated. (Plate IV., fig. 1; V., fig. 1.)

* Annals of the Lyceum of Natural History, II. 271.

† Natural History of New York, Part I. Zoology, p. 56; pl. XIX. figs. 1 a, b.

The form of the facial portion of this specimen corresponds with that of the specimen from Virginia, above mentioned; and the entire skull closely resembles that of the recent Walrus, *Trichecus rosmarus*, as represented in the figures of Daubenton, Cuvier, and De Blainville; and its measurements also are sufficiently near those given by the first named author to recognise it as the same species.*

The tusks in the fossil curved downwardly in a diverging manner, and were about four inches distant from each other at their emergence from the alveoli, and ten inches at their tips. The remaining tusk in the specimen, is thirteen inches long from its alveolar border, and in this latter position it is three inches in diameter antero-posteriorly and one and three-quarter inches transversely.

The second incisor, and the succeeding three molar teeth, contained in the specimen, occupy an extent antero-posteriorly of four and a quarter inches. These teeth are quadrately rounded at their alveolar orifices, and are worn away at their triturating surfaces in an irregularly oblique manner. The first molar tooth is the smallest of the series; and the incisor and the other molars are of nearly equal size.

Quite recently Professor Geo. H. Cook, of New Brunswick, New Jersey, sent for my inspection, the facial portion of a Walrus skull, which also was discovered on the sea beach of Long Branch, New Jersey. The specimen was kindly loaned to Professor Cook by the Rev. Mr. Finch, of Shrewsbury, to whom it now belongs. It is unchanged from its original texture, but is brown from the infiltration of oxide of iron. It also belonged to an old individual, as all the sutures are obliterated, and the third molars together with the greater extent of their alveoli are gone. (Pl. IV., fig. 2.) In its anatomical details the specimen agrees with the corresponding portion of Professor Frazer's specimen, except that it is an inch and a half broader in the position of the canine alveoli, and the antero-posterior diameter of the tusks is rather less.

An important question now arises in relation to the age or geological period to which the three Walrus skulls, thus discovered on the coasts of New Jersey and Virginia, belong. As they appear to be of the same species as the recent *Trichecus rosmarus*, which once lived in great numbers in the Gulf of St. Lawrence, they are most probably the remains of individuals that were once floated upon fields of ice southerly, and left on the present United States coast. Or, perhaps they may be the remains of the same species which probably during the glacial period extended its habitation very far south of the latitude in which it has been found in the historic age.

* Histoire Naturelle, etc. T. XIII. 423.

MEASUREMENTS OF THE FOSSIL WALRUS SKULLS.

	Prof. Frazer's specimen.	Mr. Finch's specimen.
Greatest length of skull estimated,	15 inches.	
Length from mastoid ridge to front of canine alveolus,	12 "	
Greatest length of tempero-orbital fossa,	8½ "	
Length of skull from summit of tempero-occipital ridge to end of nose,	10½ "	
Breadth of narrowest portion of cranium,	3 "	
Breadth of cranium at mastoid processes,	11 "	
Breadth of face at canine alveoli,	8 "	9½ inches.
Height from palatal border to end of nose,	5¼ "	5 "
Height of anterior nasal orifice,	2 "	2 "
Breadth " " "	2¼ "	2¼ "
Length of exerted portion of tusks,	13 "	
Antero-posterior diameter of tusks at alveoli,	3 "	2¼ "
Transverse " " "	1¾ "	1¾ "
Distance of tusks from each other at alveoli,	4 "	3¼ "
Distance " " " tips,	10 "	
Length of inciso-molar series,	4¼ "	4¼ "
Distance apart of third molars,	2¾ "	2½ "
Distance apart of incisors,	11 lines.	14 lines.
Antero-posterior diameter of incisors,	14 "	14 "
Transverse, " "	11 "	11 "
Antero-posterior diameter of first molar,	9 "	8½ "
Transverse, " " "	10 "	10 "
Antero-posterior diameter of succeeding molars,	12 "	13 "
Transverse, " " "	12 "	14 "

In the course of the preceding investigations I was led to examine a specimen, in the cabinet of the Academy of Natural Sciences, consisting of the stuffed skin of a portion of the head enveloping the jaws of a species of Walrus apparently differing from the true *Trichecus rosmarus*, of which, as characteristic, I have viewed the figures of the skull and skeletons as given by Daubenton, Cuvier, and De Blainville. The specimen was presented by Sandwith Drinker, Esq., of Canton, China, and was probably derived from the Asiatic shore of the Arctic Ocean. From the worn condition of the upper incisors and molars, it appears to have belonged to an old individual; and in the case of the lower jaw, the teeth appear to have been entirely worn out. The tusks are very much longer and are narrower than in the *T. rosmarus*, and they curve downward, outward, and inward, instead of continually diverging, as in this species. At their emergence from the alveoli the tusks are two and three-quarter inches apart, near their middle five and a quarter inches, and at their tips only one inch. Their length is twenty-two inches and their diameter

at the alveolar border antero-posteriorly two and a quarter inches, and transversely one and a half inches. Towards their lower part they are twisted from within, forwards and outwardly.

Pennant, in speaking of the Walrus of Nova Zembla and the Frozen Sea, observes, "I entertain doubts whether these animals are of the same species with those of the Gulf of St. Lawrence. The tusks of those of the Frozen Sea are much longer, more slender, and have a twist and inward curvature."*

The superior incisor and molar teeth also are very much smaller than in the fossils of *T. rosmarus*, as may be seen by comparing the following measurements with those already given.

Diameter of the upper second incisor,	-	-	-	-	-	5½ lines.
Diameter of the upper first molar,	.	-	-	-	-	4½ "
Diameter of the upper second molar,	-	-	-	-	-	8 "
Diameter of the upper third molar,	-	-	-	-	-	7 "

The hairs of the upper lip of the *T. rosmarus* are stated by Shaw, to be about three inches long, and almost equal to a straw in diameter.† In the specimen under consideration, the hairs of the moustache are stiff-pointed spines, not more than one line long at the upper part of the lip, and they gradually increase in size, until at the lower and outer part of the lip they are about one inch in length.

[Dec. 22, 1856. Since presenting the above communication to the Society, the Academy has received from Mr. Drinker, of Canton, an entire specimen of the Walrus of Northern Asia. In this individual, which measures in a straight line eight feet from the nose to the tail, the tusks are ten inches long, and diverge from their alveoli to the tips, where they are five and a half inches apart, but they are slender, as in the stuffed head above mentioned, and appear as if they would ultimately have obtained the same length and direction. Perhaps the peculiarities noticed may prove to be of a sexual character.]

Plate IV., Fig. 1. Side view of the fossil skull, of the Walrus discovered by Professor Frazer, one-half the diameter of nature. Fig. 2. Inferior view of the specimen discovered by Mr. Finch, also reduced one-half.

Plate V., Fig. 1. Inferior view of Prof. Frazer's specimen.

* Arctic Zoology, I. 170.

† Shaw's Zoology, vol. I. Pt. I. p. 234.



Trichecus rosarius fossilis

