

V. — MISCELLANEOUS.

ART. XLV.—*Preliminary notice of a ZIPHID WHALE, probably Berardius Arnuxii, stranded on the 16th of December, 1868, on the sea beach, near New Brighton, Canterbury.** By JULIUS HAAST, Ph.D., F.R.S.

[Read before the Philosophical Institute of Canterbury, May 5, 1869.]

TOWARDS the latter part of December, last year, it was stated that a whale had been stranded on the sea beach, near the mouth of the Avon. Unfortunately, the notice reached me too late to enable me to see the body in its fresh state, and when I went to the sea beach the blubber had been cut off nearly a week, and the animal was already in such an advanced state of putrefaction, that the external appearance was greatly destroyed. Before entering into a description of its affinities and peculiarities, I may be allowed to offer a few observations on its capture.

Mr. William Walker, a fisherman, living near the mouth of the Avon, one mile and a half below New Brighton, observed, on the 16th of December, early in the morning, that a huge animal was in the surf, making the most strenuous efforts to return to deeper water. The fisherman had only a large sheath knife with him, with which he stabbed it several times, making it bleed very freely. Each time when the surf reached it, it threw out a large quantity of water and sand from its blowers, like a fountain; at the same time it moved its tail with such vehemence, that it threw its captor several times, when he came too near it. Seeing that he could not manage the large animal by himself, he returned home to fetch a rope, a larger knife, and assistance. After having, with some trouble, placed the rope round the tail, and fastened it securely to the stump of a tree on the beach, he inflicted with the large knife some deep wounds, from which the blood ran copiously; but the animal, notwithstanding this great loss of blood, still lived for fourteen hours. The fisherman also put a large stick several times into its mouth, which, to use his own words, made the whale "bellow like a bull."

A very interesting fact may be deduced from the observations of Mrs. Walker, who accompanied her husband on the second trip. She told her husband that each time he put the stick into the whale's mouth, she could see several large teeth in front of its lower jaw, which, however, were not observed by anybody else, and the existence of which was only revealed when the skull was cleaned, when, in front of the lower jaw, two large triangular and moveable teeth on each side became exposed. It thus seems that the Ziphid Whales, when defending themselves from their enemies, or attacking their prey, have the power to protrude these four teeth at will. Such a hypothesis gains still more in probability, when we consider the nature of the principal food of the animal, which, judging from the contents of its stomach, seems to consist almost exclusively of the common sea-spider, or Octopus—a cephalopod which, as in the Northern hemisphere, does not seem to be very numerous along the coast. In the stomach of the whale in question there was about half a bushel of the horny beaks of this cephalopod, which were nearly all of the same size. It would be rather difficult for any whale to obtain possession

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of such an agile animal as the Octopus, had not nature furnished the former with the means of taking good hold of it. It is interesting that the allied genera *Ziphius* and *Hyperoodon*, of the Northern hemisphere, feed also on similar species of cuttle-fish, as I learn from a paper of Dr. J. E. Gray, of the British Museum ("Proceedings Zoological Society, 1868," p. 422). Also, the Sperm Whales are said to feed almost exclusively upon the same voracious animal, which, by its agility and organization, is so well adapted to make great havoc amongst the smaller inhabitants of the sea. And, as Dr. Gray justly observes, it proves, at the same time, that these cephalopods, although apparently of rare occurrence, must in many localities be very numerous, as it would otherwise be impossible to understand how they could furnish those huge whales with sufficient food.

When I proceeded to the beach, the animal was still lying in the surf, partly covered by sand, but still intact. I measured its length exactly, and found it to be 30 feet 6 inches, from the tip of the nose to the end of the lobes of the tail. The colour of the whole animal was of a deep velvety black, with the exception of the lower portion of the belly, which had a greyish colour. The tail was 6 feet 6 inches broad, and had the usual two falcate lobes. The dorsal fins were situated near the neck, a little above the middle of the body, and were 17 inches broad, and 19 inches long. They had a triangular form, and one of them was buried in the sand when I saw the animal first. The dorsal fin was unfortunately destroyed when I first inspected the whale, so that I cannot describe its form and position from my own observations; but Mr. Walker told me that it was small, had the usual falcate form, and was situated not far from the tail.

I may here observe, that from the form of the skull and some other characteristics, it appears evident that this whale is the *Berardius Arnuccii* of Duvernoy, of which a specimen was caught in 1846, in Akaroa harbour, the skull of which, of a length of four feet, is at present in the Imperial Museum, in Paris. The animal to which it belonged is described as having been thirty-two feet long, and possessing a large dorsal fin, with a large boss or hump in front of it. As putrefaction and the cutting off of the blubber had greatly changed the outlines of the animal, I could not observe whether it possessed the larger boss in front. Mr. Walker did not speak of it when he gave me a description of the animal as it appeared when captured. However, as the figure of the skull, as given by Duvernoy in the "Annales des Sciences Naturelles," and copied into Dr. Gray's "British Museum Catalogue of Seals and Whales," is identical with that of our own specimen, I do not hesitate to state that both belong to the same species. It also seems to me that this whale is very local, probably inhabiting only the coast of New Zealand, and perhaps the regions south of it, because, as far as I can find, it has never been observed elsewhere. It has without doubt not been met with on the coasts of Australia, or it would not have passed unnoticed, as, amongst others, the energetic director of the Australian Museum, Gerh. Krefft, F.L.S., has not observed it. I may here state that the form of the skull is very peculiar, reminding one strongly of that of a dolphin.

There seems to be nothing known of this peculiar whale, except its external appearance and its skull, and it is, therefore, a matter of congratulation to us, that we shall be able to supply all the details of its osteological characteristics, which are peculiar in many respects.

The specimen in our possession was evidently a young animal, because all the disc-like epiphyses of the vertebræ are still detached. The same is the case with the epiphyses of the limb-bones, which are not yet united with them; also, the sutures of the cranium are not yet obliterated. The beginning of coalescence is, however, to be observed in the seven cervical vertebræ, of which

the three first are already ankylosed, the two first completely, and the second and third only partially, as the neural arches and transverse processes are not yet united in one bone. In the allied Hyperoodon all the cervical vertebræ are coalesced, and it is therefore possible that when Berardius is in an adult state, the same will take place. The Ziphius has six cervical vertebræ separate, and it will therefore be necessary to examine very carefully into the character of the uncoalesced vertebræ of our skeleton before giving a decided opinion upon the subject. It possesses ten dorsal vertebræ, in common with *Ziphius Sowerbiensis*; the hyperoodont whales have nine, and the dolphins thirteen to fifteen. I have not yet been able to count and examine the lumbar and caudal vertebræ, as the animal was in such a state of putrefaction, that after cleaning the bones as well as possible, and leaving often a great portion of the vertebral column together, we put them at once to macerate. We obtained only one of the small pelvic bones, the other having probably been washed away by the surf; it might, however, owing to its diminutive size and sticking loosely in the flesh, easily have been overlooked. As soon as the bones are clean, so that I can examine them, I shall offer a few more observations upon the osteology of this remarkable animal, for the complete skeleton of which, the Canterbury Museum is indebted to the members of the Philosophical Institute, without whose pecuniary assistance I should have been unable to secure it for the Provincial collections.

ART XLVI.—*On UNIVERSITY EDUCATION, as adapted to the circumstances and prospects of the Colony of New Zealand.* By CHARLES FRASER, M.A., F.G.S.

[Read before the Philosophical Institute of Canterbury, June 2, 1869.]

MUCH useless discussion may be avoided, and our progress greatly facilitated, if from the very outset, we come to a distinct understanding upon the following three points:—1. What is a University? 2. What should be its distinctive objects in the colony? 3. How far may we expect to carry out any good system within the next few years?

(1.) In regard to the first question,—What is a University? the two oldest Universities in Europe furnish us with somewhat opposite definitions. The University of Bologna was a Corporation of Students; the University of Paris was a Corporation of Teachers. It would probably be nearer our mark to combine the two, and to contemplate the establishment of a Corporation of Teachers, Graduates, and Students, under the presidency of certain officers appointed by the Government. Of course the privileges and powers of the three classes named would be different; but it seems to me that all ought to have their share of influence in the conduct of business.

(2.) The distinctive objects of a Colonial University cannot be better described than in the words of the charter, granted by Her Majesty to the University of London:—“the advancement of religion and morality, and the promotion of useful knowledge, by holding forth to all classes of Her Majesty’s subjects, without any distinction whatsoever, an encouragement for pursuing a regular and liberal course of education, by offering to persons who desire to prosecute or complete their studies such facilities, and conferring on them such distinctions and rewards as may incline them to persevere in their laudable pursuits; and for the purpose of ascertaining by means of examination, the persons who have acquired proficiency in literature, science, and art, by the pursuit of such course of education, and of rewarding them by academical degrees, as evidence of their respective attainments and marks of honor proportioned thereunto.” In other words, University Education in the colony