

ART. XVII.—*Notice of the Skeleton of the New Zealand Right Whale*
(*Macleayius australiensis*).

By J. E. GRAY, Ph.D., F.R.S., Hon. Mem. N.Z. Inst.

Plates XVI., XVII.

[Read before the Wellington Philosophical Society, 6th August, 1873.]

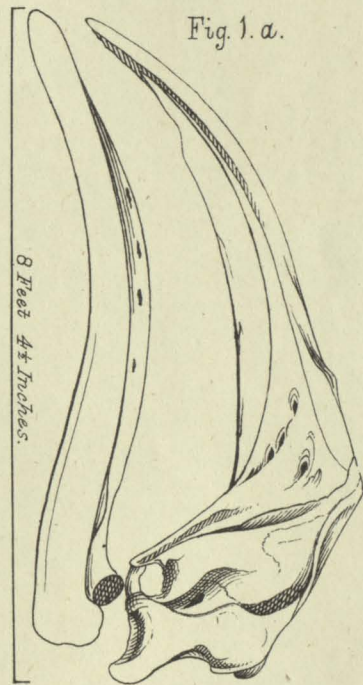
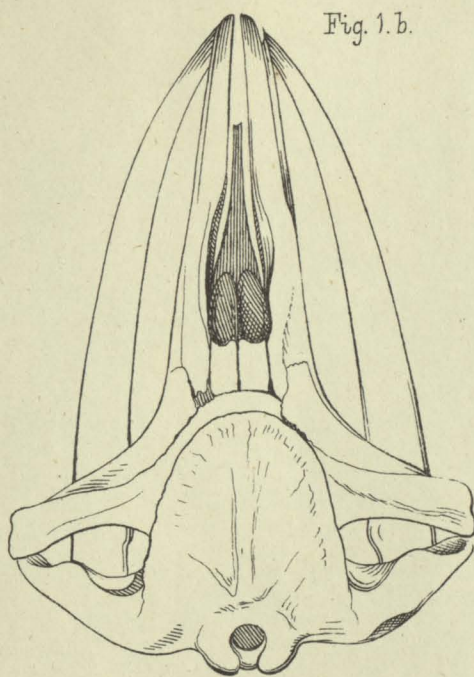
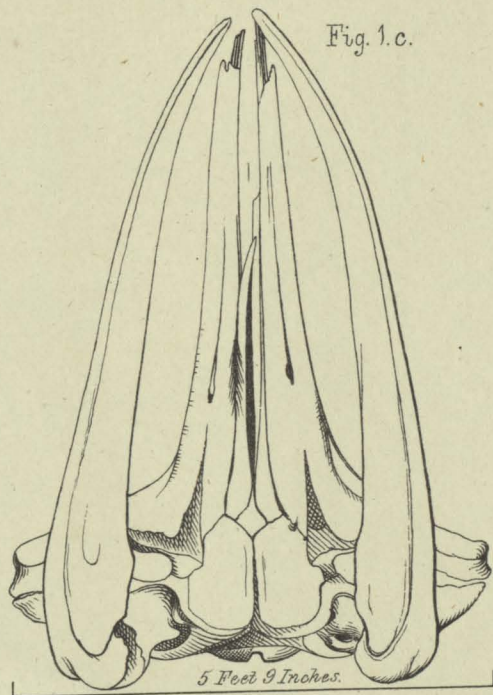
DR. HAAST has sent to England the skeleton of a whale from the coast of New Zealand. This skeleton is now in the collection of the British Museum. When first imported it was believed to be the New Zealandic whale, which I described and figured in Dr. Dieffenbach's "Voyage" under the name of *Balæna antipodarum*, which has been formed into the genus *Caperea*, on account of the peculiar shape of its ear bones. The examination of the ear bones at once showed that it was not that species, and proved that there were two Right Whales inhabiting the coast of New Zealand. The ear bone is so similar to those of *Eubalæna australis*, said to come from South Africa, in the British Museum, that it seemed as though it might be a specimen of that species, showing that it was common to the Cape of Good Hope and New Zealand. The examination, however, of the mass formed by the cervical vertebræ, and the form of the blade bone, showed that it was most distinct from the New Zealand and the Cape Whale; but it was soon apparent that the mass of cervical vertebræ very much resembled a similar specimen in the Australian Museum, at Sydney, of which Mr. Krefft had sent me four photographs, and which are copied in the "Catalogue of Seals and Whales" (p. 105, figs. 10 and 11; and p. 372, figs. 74 and 75), and described under the name of *Macleayius australiensis*.

The specimen now received chiefly differs from the photographs in the cervical vertebræ being much smaller but more complete, and in the lower processes of the second vertebra being longer and rather tapering at the end; but this may depend upon the age of the specimen, as the end of the process in this specimen is rugose, as if in progress of growth. I am, therefore, inclined to consider it as a specimen of the same species, or genus at least.

The specimen photographed by Mr. Krefft is much larger, and probably much more adult than the one we have received from New Zealand, as shown below:—

	Krefft.	British Museum.
Width of atlas about 25 inches.	about 19 inches.
„ lower processes of 2nd vertebra	„ 28·5 „	„ 19 „
Height from base of atlas to top of crest	„ 18 „	„ 15 „

The total length of the vertebræ of the New Zealandic specimen, placed close together, is 31 feet 6 inches. The length of the head 8 feet 6 inches,



SKULL OF MACLEAYIUS AUSTRALIENSIS.
Illustrating Paper by Dr. J. E. Gray,
on New Zealand Whales.

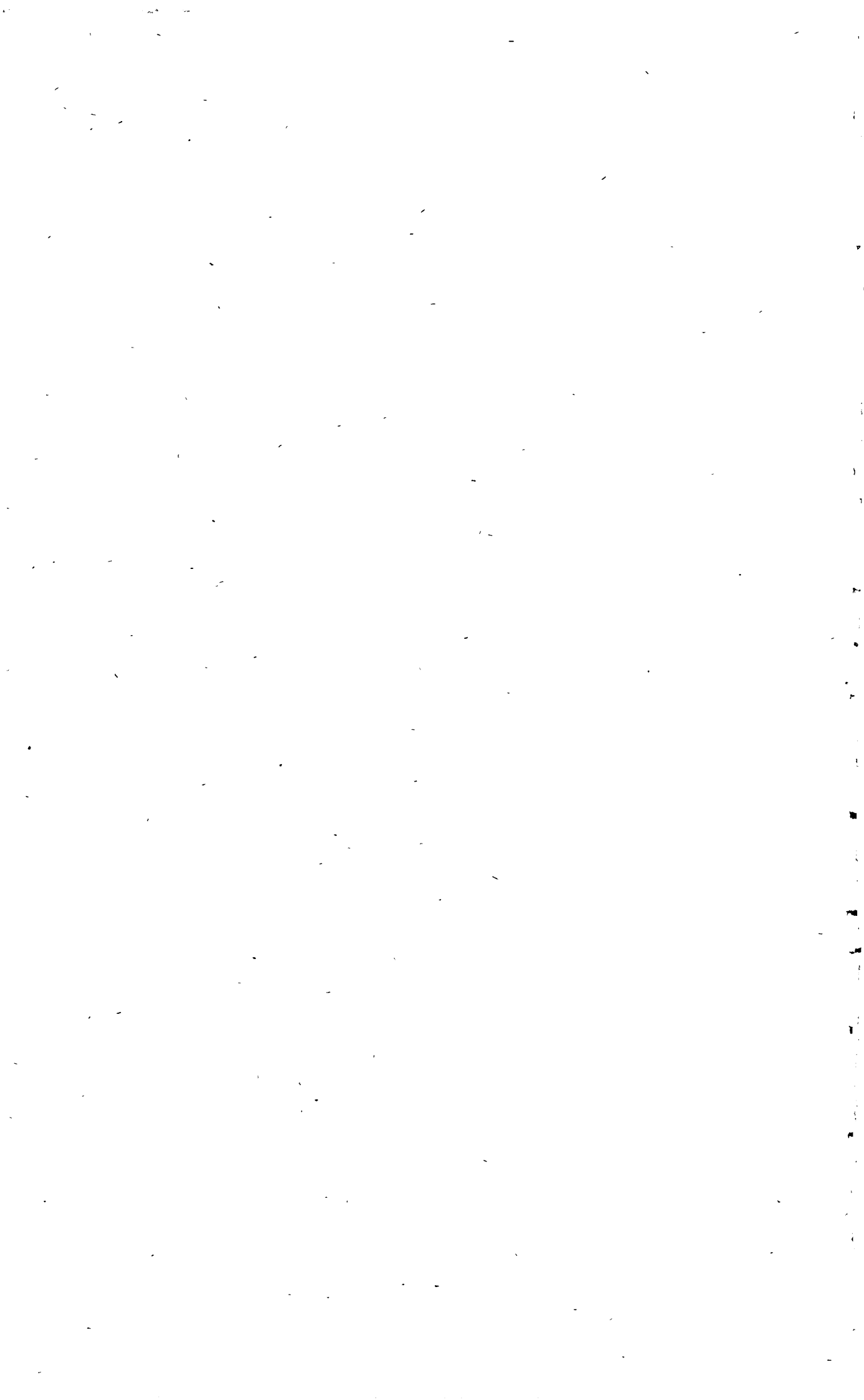
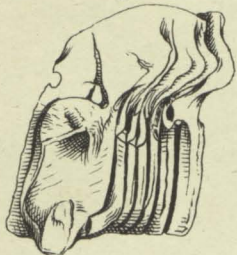
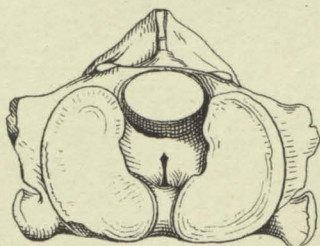


Fig. 2. a.



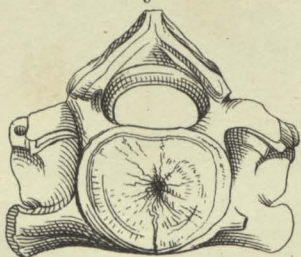
*Cervical vertebrae of
Macleayius australiensis (side view.)*

Fig. 2. b.



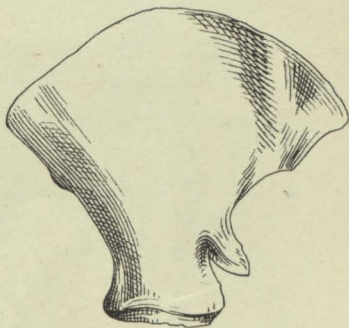
*Cervical vertebrae of
Macleayius australiensis (front view.)*

Fig. 2. c.



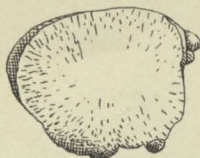
*Cervical vertebrae of
Macleayius australiensis (back view.)*

Fig. 4.



*Scapula of
Macleayius australiensis (inside.)*

Fig. 3.



*Sternum of
Macleayius australiensis.*

*Illustrating Paper by D^r J. E. Gray.
on New Zealand Whales.*

but over the curve of the nose 10 feet. The length of the vertebræ, 23 feet ; of the lower jaws, 7 feet 8 inches ; of the first rib, 3 feet 6 inches ; and of the middle rib, 7 feet 4 inches, as measured by Mr. E. Gerrard, jun., who observes that "the last small bone of the tail is wanting. There are eight chevron bones present, but I should think there ought to be one or two more small ones. One malar bone and the epiphyses of three vertebræ are wanting. I also think a few of the finger-joints are wanting, but it is difficult to be sure, as some are loose and others covered with skin ;" but we will determine when it is cleaned. The nasal bone is strap-shaped, more than twice as long as broad, with thick rounded front ends which are notched out in the middle. It is about $4\frac{1}{4}$ inches wide. The skull and lower jaw weigh rather above $5\frac{1}{2}$ cwt., each lower jaw being 90 lbs. The ear bone is very thick, triangular, with nearly equal sides. This is very like two ear bones which we have received from South Africa as those of the S. African Whale, *Eubalæna australis*, and the figures of the ear bones of that species given by Van Beneden (Ostéogr. Cét., t. I.; II., figs. 13 and 14). The differences between the New Zealand and the Cape Whales are so slight that it would be very difficult to express them in words, and indeed to distinguish the specimens from each other.

According to Van Beneden, the ear bones of the young *Eubalæna australis* are much more rounded, and have larger apertures compared with their size, than in the adults (see his figure t. 1 and 2, figs. 10 and 11).

The *os petrosum*, to which the New Zealandic specimen is attached, is very like, but rather smaller than the specimens we have of *Eubalæna australis*, said to come from the Cape, and like those figured by Van Beneden (Ostéogr. Cét., t. I.; t. II., figs. 13 and 14). We have a pair in the Museum very similar to the Cape and New Zealand bones, sent to the Museum as ear bones of the Sperm Whale, by Mr. H. H. Russell, but they differ from the three other specimens in having a much larger *os petrosum* and much longer strap-shaped truncated lobe.

The vertebræ are—seven cervical and forty-seven dorsal and caudal. The body of the first dorsal vertebra is ankylosed with the body of the seventh cervical, and there may be a last caudal vertebra wanting.

The cervical vertebræ are all united into one mass, and to the first dorsal vertebra by their bodies, and, all but the first dorsal, by the crests of the dorsal processes, which form a high arched ridge ; the crest of the second vertebra being much the largest, longest, and highest. All the vertebræ are furnished with a superior lateral process, that of the first and second being free at the base and united at the end ; that of the first very large, compressed, and truncated at the end. The upper one of the second, large, thick, and united to the upper part of the back of the process of the first. The upper lateral processes of the third to the seventh, compressed, slender, and free ; the third

being free half-way up the crest, and others more or less free to the crest itself. The lower process of the atlas, or first, entirely wanting; that of the second, large, thick, but compressed and truncated at the end, but probably in process of growth about as prominent as the upper process of the first. The lower process of the third, well developed, elongate, straight, much compressed, and truncated at the end; about one inch shorter than the large process of the second. The bodies of the fourth to the seventh vertebræ without any indications of inferior lateral processes.

The bodies of the third to the seventh vertebræ, very thin, not much more than half the thickness of that of the first dorsal vertebra, which is ankylosed to the last cervical vertebra. The neural arch and upper lateral process, which is similar in form to that of the last cervical vertebra, but much thicker and stronger, is entirely free. The articulating surface of this vertebra is nearly circular, being only a little wider than high. The front of the neural canal is nearly circular, but rather depressed—that is, a little wider than high, but regularly rounded. The canal at the hinder end of the vertebral mass is larger, rounded, but with a rather triangular top, and a little wider than high.

The first rib has a single head, and is wider at the sternal end.

The sternum is oblong, rather irregular in shape and thickness, being thicker on one side than the other, very spongy or rather—full of cylindrical tubular cavities. There are three convex cylindrical prominences of nearly equal size, placed without any apparent order, on its thick margin. It is rather curved, the surface is flat, but the lower one is rather distorted by the unequal thickness of the bone. It is $6\frac{1}{2}$ inches long, and about 5 inches wide.

The scapula is triangular, with a rounded end, rather broader than long—that is to say, 25 inches high and 27 inches broad at the widest end. The front margin has a broad compressed acromion process, which is bent towards the articulating surface and acute at the end, with a large arched outline which occupies about half the front margin. The disk of the outer surface is concave, with a large concavity in the middle of the upper half. The inner surface is nearly flat. There is no doubt that this bone is in process of development, for the terminal edge is very thick and truncated.

MACLEAYIUS AUSTRALIENSIS.

Macleayius australiensis, Gray, Cat. Seals and Whales, p. 105, figs.

10 and 11; p. 371, figs. 74 and 75, from Krefft's photographs. Suppl.

Cat. Seals and Whales, p. 46. Synopsis of Whales and Dolphins, p. 2.

Inhabits Australian seas (Krefft); coast of New Zealand (Haast).

Skeleton in the British Museum.