

COMMENTS ON DR. PÉRINGUEY'S NOTE ON WHALES.

BY ARTHUR F. BEARPARK.

(With one Text-figure.)

With reference to the note on whales by Dr. Péringuey, published in the 'Transactions of the Royal Society of South Africa,' vol. ix, pt. 1, I feel that certain statements contained therein cannot be allowed to pass without challenge.

To deal *seriatim* with the points in question, I will first draw attention to the fact that the size of a whale cannot be safely estimated from the size of its jawbones. The most notable factors affecting the size of the jawbones are the age and sex of the animal, therefore more evidence is required before a length can be assumed for the particular whale which Dr. Péringuey describes (p. 73) as about 100 ft. long.

Balenoptera borealis (p. 74).—It is not easy to understand why Dr. Péringuey should say this whale was considered as rare in the Northern Hemisphere. The very name suggests the North. Those who have studied whales look upon *B. borealis* as a very common species occurring in both hemispheres. For instance, Lydekker, in his 'Guide to Whales,' etc., exhibited in the British Museum, p. 20, records that 771 of these individuals were captured in Finmark in 1885. Further records of *B. borealis* in the waters of the Northern Hemisphere will be found in the publications of—

Salvesen, T. E., 'Journ. Roy. Soc. Arts,' March 29th, 1912, p. 522.

Andrews, R. C., Assistant Curator of Mammals, American Museum of Natural History, "Shore Whaling," 'National Geographic Magazine,' vol. xxii, No. 5, May, 1911, p. 430.

D'Arcy, Wentworth Thompson, 'The Scottish Naturalist,' No. 81, September, 1918, p. 198.

Southwell, T., F.Z.S., 'Seals and Whales of the British Seas,' 1881, p. 77.

Beddard, F. E., M.A., F.R.S., 'Book of Whales,' 1900, p. 155.

Harmer, S. F., Sc.D., F.R.S., 'Cetacea Stranded on British Coasts,' 1915, pp. 5, 6, and 11; 1918, pp. 5, 12, and 13.

Bower, T. W., 'Alaska Fisheries, etc.,' Report of the United States Bureau of Fisheries for 1918. Bureau of Fisheries Document No. 872, p. 64.

Cocks, A. H., M.A., F.Z.S., 'The Zoologist,' London, vol. ix, 1885, No. 100, pp. 135, 141, 143; vol. x, 1886, No. 112, pp. 121, 122, 128, 129, 136; vol. xi, 1887, No. 126, pp. 207, 208, 211, 219, 222; vol. xii, 1888, No. 138, pp. 201, 202, 204, 206, 208.

Therefore, in my opinion, the statement that *B. borealis* was considered rare in northern waters is somewhat misleading.

Feeding habits.—Investigation of the food of whales is a matter of vital importance in studying the great question of the migrations of these mammals, and it is therefore to be regretted that the statements in the note under review about the feeding habits of whales—as to whether they are ichthyophagous or “planctonophagous”—are difficult to reconcile with widely observed facts. Dr. Péringuey states (p. 74) that *B. borealis*, *B. physalus* and *B. musculus* are not planctonophagous, except perhaps occasionally, whereas, as a matter of fact, all these whales regularly feed on the Plankton whilst in South African waters. From an examination of the stomachs of some hundreds of specimens of *B. musculus*, *B. borealis* and *B. physalus* in South Africa, I am in a position to state definitely that it is only on some occasions that fish, or the remains of fish, have been found therein, whereas the small crustaceans are invariably present. I have not, so far, observed any indication of a fish diet in the stomachs of *B. musculus*, and all available literature refers to this whale as feeding solely on the Plankton. In the case of the two other species I am inclined to agree with Andrews ('National Geographic Magazine,' Washington, vol. xxii, No. 5, p. 427), who states that “The whale-bone whales probably never eat fish of any kind if other food is to be had, although there is some evidence that *B. physalus* is in some degree ichthyophagous at certain periods in the Northern Hemisphere, this state of affairs being probably due to partial failure of the Plankton supply. Ichthyophagous whales are easily identified by the presence of fish-scales in the stomach, which scales apparently take a much longer time to digest than either the flesh or bones of the fish. On the other hand, a Plankton-eating whale is, as a rule, very easily identified by the exudation of *terra cotta*-coloured fæces, but if such be not present, an examination of the stomach will instantly determine the question. Dr. Péringuey probably knows that I hold no brief for the Norwegian whalers to whom he refers (p. 75) as being unreliable, yet if he would go for a trip on a whaler, any experienced Norwegian gunner would probably be able to show him Fin, Blue and Sie Whales actually feeding on the Plankton.

If the investigator requires further information about the food of the whalebone whales, I would refer him to the following publications:

D'Arcy, Wentworth Thompson, 'The Scottish Naturalist,' No. 82, October, 1918, pp. 232–233.

Clark, R. S., M.A., B.Sc., 'South Atlantic Whales and Whaling,' 1919. (Shackleton's 1914–1917 Expedition.)

- Jardine, W., F.R.S.E., F.L.S., 'Cetacea,' 1837, pp. 128, 136.
 Burn Murdoch W. G., F.R.S.G.S., 'Modern Whaling and Bear-Hunting,' 1917, p. 254.
 Lydekker, 'Guide to Whales in the British Museum,' pp. 18, 20.
 Beddard, F. E., M.A., F.R.S., 'Book of Whales,' 1900, pp. 154, 156, 158.
 Southwell, T., F.Z.S., 'Seals and Whales of the British Seas,' 1881, p. 77.
 Andrews, R. C., Assistant Curator of Mammals, American Museum of Natural History, "Shore Whaling," 'National Geographic Magazine,' vol. xxii, No. 5, May, 1911 (Washington), pp. 427 and 431.
 Olsen, O., "The Bryde Whale," 'Proc. Zool. Soc. Lond.,' pt. iv, December, 1913, pp. 1073-1090.
 'Report of the Interdepartmental Committee on Research and Development in the Falkland Islands,' pp. 9, 10, 11, 40, 46, 47, 55, 73, 74, 75, 81, 90, 95, 101, 102, 117, 118, 133, 134.

A study of these, along with the information I give, will, I submit, demonstrate that Dr. Péringuey is in error about the feeding habits of the whales.

Dr. Péringuey's conclusion (p. 74), that *B. brydei* is ichthyophagous, is correct, but his premises are wrong. One cannot arrive at a conclusion as to whether a whale feeds on the Plankton or fish from the evidence of the baleen fringe. For instance, this fringe is at least as coarse, or probably coarser in *B. musculus* than in *B. brydei*, but there is no evidence that *B. musculus* is ichthyophagous. All observers agree that the food of the *B. musculus* consists of small crustaceans, therefore Dr. Péringuey's reasoning breaks down in the face of established facts. Olsen states ('Proc. Zool. Soc. Lond.,' pt. iv, December, 1913, pp. 1073-1090) that the food of *B. brydei* consists chiefly of fish, but that it occasionally takes crustaceans, with which observations I agree.

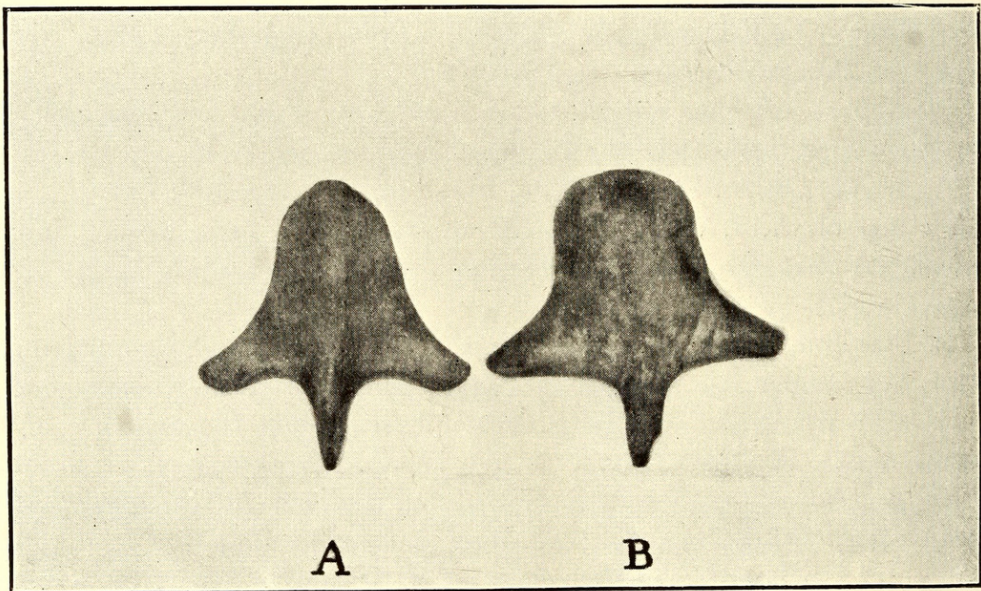
Dr. Péringuey's remarks about the asymmetry of skeletons of Cetacea are by no means clear to me, but the difference in shape of the sterna of *B. borealis* and *B. brydei*, as shown by the photographs, is of considerable interest. Not, however, from the standpoint of demonstrating the specific distinctness of the two mammals, which has already been established, but because the sternum of *B. borealis*, as shown in the photograph, is quite different in shape from the sternum of a normal specimen of this whale. The abnormal form of the breast-bone in the photograph is remarkable, but it is not safe to use this specimen as an example for comparison with the sternum from another species of whale. I submit a photograph showing normal specimens of the sterna of *B. borealis*.

Humpback whales.—I have measured a number of these in South Africa

which have exceeded 50 ft. in length. Such whales are not rare, therefore Dr. Péringuey's statement on p. 75 should be modified.

The statement that this species possesses a penis bone requires confirmation. Eleven humpback whales recently examined by me gave negative results. The alleged penis bone shown in position in the skeleton of the Humpback whale in the South African Museum, Capetown, resembles very closely one of the pelvic bones of a sperm whale.

It is not my intention to speak here on the great question of the possible extermination of whales. I submitted some suggestions for the control of the whaling industry to the Dominions Royal Commission, March, 1914 (Minutes of Evidence, pp. 322-329), and, *inter alia*, the question of Antarctic



A is that of a male 46 ft. 4 in. long.
B is that of a female 51 ft. 9 in. long.

whales migrating northwards in order that their young should be born in comparatively warm seas was discussed.

I would like, however, to remark that there is no evidence which points to any possibility of whales being exterminated. There is, however, reason to believe that the whaling industry will suffer through whales becoming scarcer.

I am dealing elsewhere with the whole question of the preservation of whales and the whaling industry; my object in submitting the present comment is the purely scientific one of endeavouring to apply the test of careful observation to assertions claiming to be fact.



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