On the Sexual Maturity of the Sperm Whale (*Physeter catodon*) found in the Adjacent Waters of Japan (II)

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Material and Method

The material which serves as the basis for this study covers all the sperm whales caught by the Baikal Maru fleet of the Kyokuyo Whaling Co., Ltd. in the waters east of the Bonin Is., 25°19′N–26°50′N and 142°17′E–145°10′E (Fig. 1), during the period March 17–June 10, 1951. They consist of fifty five males of the body lengths between 38 and 53 Eng. ft. and one female of 38 Eng. ft. long.

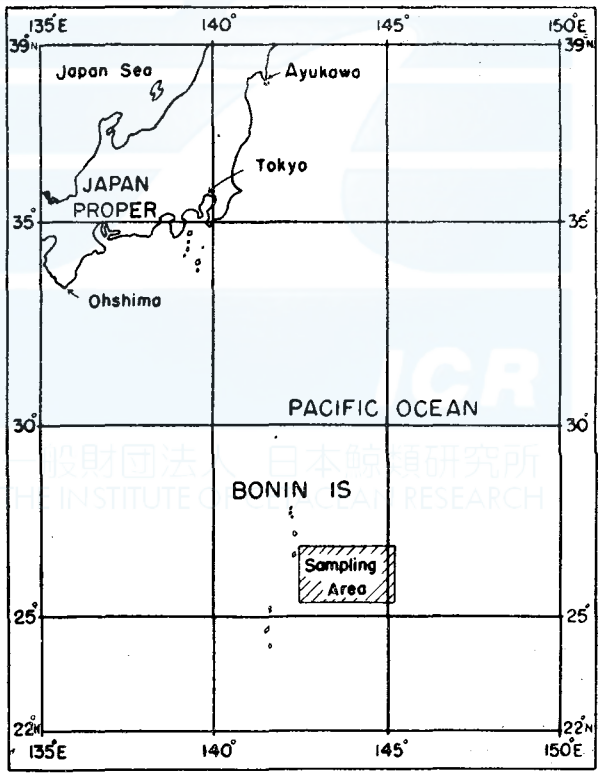

Fig. 1. Location of sampling area.

The method for the present study is the same as was used in the previous work (Nishiwaki & Hibiya: 1951).

We express our hearty thanks to the Kyokuyo Whaling Co., Ltd. for their immense cooperation in collecting the material and data for this study. We are grateful also to Messrs. Setsuo Mishimoto and Takehiko Kawakami, government inspectors of the Fisheries Agency, Ministery of Agriculture and Forestry, who directed the collection of the material on board. Our thanks are also due to Miss Hisako Jimbo who rendered much assistance in preparing the preparats for the histological study.

Result and Discussion

The result of the histological examination is presented in Fig. 2, where the right and the left testis of each whale are counted individually and those testes from which no spermatozoa were detected are classified into the "minus" or immature group irrespective of the feature of development of the testis tissue, as was done in the previous study.

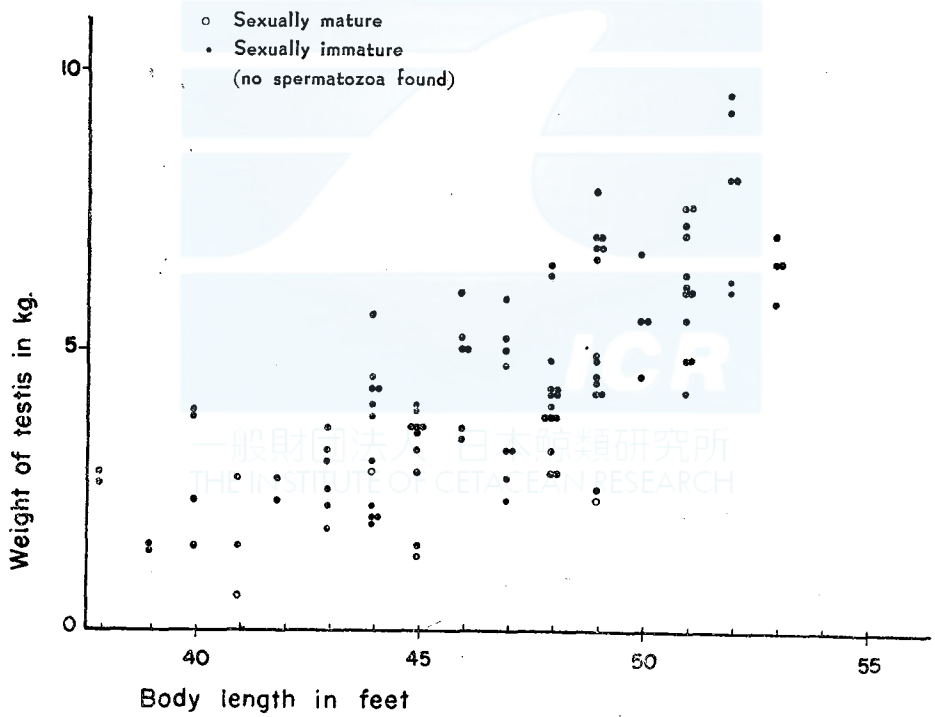

Fig. 2. Weight of testis and body length in the sperm whale caught in Bonin area, March-June 1951.

As is clear from Fig. 2, spermatozoa were found in all the examined testes except three, which respectively belonged to the males of 41, 44 and 49 Eng. ft. These males, however, were undoubtedly sexually mature, for spermatozoa were certainly found in their other testes.

In two of these males the weights of the right and the left testis differed markedly: the two testes weighed 0.6 and 2.7 kg. in the male of 41 Eng. ft. and 2.8 and 5.6 kg. in the one 44 Eng. ft. long. As it is usually the case that the weights of the two testes of a whale are very close, though they are not always exactly equal, it may be said that in these two males one of their testes represented unusually poorer development than the other. And it was in these smaller or poorly developed testes that the spermatozoa were not found. In the third male, of the length 49 Eng. ft., weights of the two testes were very close, measuring 2.3 and 2.5 kg. Though the detection of spermatozoa, which was made with the sample piece of the size of 1 cc., gave a negative result for one of the testes of this male, its two testes were hardly distinguishable from each other in point of the feature of the spermatids.

It seems that the foregoing evidences collectively lead to a conclusion that the male sperm whales in the adjacent waters of Japan reach sexual maturity at body lengths less than 38 Eng. ft., confirming the theory proposed in the previous study (Op. cit.).

In the course of the histological examination of testis samples, we came to notice that in the present study more spermatozoa could be found with less efforts than in the previous study. Such difference in the case with which spermatozoa are detected may closely be related to a periodicity in the activity of testis. This problem will be discussed when data covering different seasons and whaling grounds become available.

The only female sperm whale caught during the expedition with which this study is concerned measured 38 Eng. ft. in length. Her twelve corpora lutea, five to the right and seven to the left, were all old: as a matter of course, she was not pregnant.

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