

## NEW RECORDS OF SPERM WHALES WITH PROTRUDED RUDIMENTARY HIND LIMBS\*

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The first record of protruded legs in Cetacea is described by Andrews (1921) on a humpback whale caught in the off waters of British Columbia, Canada in 1919 which has remarkable protruded legs in the abdominal part of the body. As the second case having the pair of protruded hind limbs in Cetacea, a very interesting case of the sperm whale with rudimentary hind limbs is reported by Ogawa & Kamiya in 1957 (Ogawa & Kamiya, 1957). This sperm whale has not such a remarkable protruded legs as the humpback whale reported by Andrews, but the protruded legs are forming protrusions which clearly elevated like a dome. The height of the protrusions measures 5.35 cm in the right and 6.56 cm in the left respectively. There is well developed tibia from the pelvic bone to the dome of the epidermis and the tip of this cartilaginous stick intrudes a little the blubber of the protrusion of the skin. The case is considered as a abnormal retention of the early embryonic state (Ogawa & Kamiya, 1957).

In 1960, a sperm whale having such a protrusion is caught in the northern part of the north Pacific by Japanese whaling operation. The photograph in situ and description are remained but unfortunately the samples are missing and now under search. The sperm whale is caught on 16th July in 1960, at the position 51–52N and 171–22E in the north Pacific. The body length is 15.3 m and male testis weights are 5.3 and 5.1 kg, respectively. The thickness of the blubber is 12.5 cm in the dorsal fin part of the body.

The description says there are two protrusions like the mammae along the anal groove, and three photographs are taken by the observer.

As illustrated in figures and a plate, the protrusions are situated in the side of the anus of the sperm whale. And the protrusions are considered pointing the anterior direction of the body. In this point, the case is different from the former case in which the protrusions point the posterior direction. The protrusions are also considered somewhat higher than the case reported by Ogawa & Kamiya (1957) and curved to the anterior direction.

As it is clearly shown in figures in the plate, the white spot is found in the center of the cut protrusion. It is said the protrusion is easily cut by the flensing halberds, suggesting that the white spot is the soft bone not ossified. Ogawa & Kamiya (1957) state that the cartilaginous stick is present in their case, the top of which is clearly extends to the dome of the protrusion as illustrated in their figures.

From this figure, it may be considered that the cartilaginous stick is also longer than the former case, as the protrusions are longer and the cartilaginous stick is reaching as far as the half of the dome.

\* Dedicated to Professor T. Ogawa for his sixtieth birthday.

Another Japanese record is only remained in the biological record of the whales caught and there is a few suspect to the case. This sperm whale is caught at the position 51-07N and 179-29E on 5th July in 1956. The testis weights of which are 5.5 and 6.0 kg respectively and sexually mature. The blubber thickness is 13.0 cm and is moderate for the size of the whale.

Although the specimens and the photograph have not been remained, the note clearly shows the protuberances like mammae along the anus, and it is considered this would be enough to be described as the third case of the sperm whale with rudimentary hind limbs. The aspect of the protuberance is considered the same as the said case, although no detailed description is remained. Further it is considered the case is the highest one among three cases in those sperm whales. Above two cases are reported from the Japanese whaling expeditions in the Bering sea and the adjacent waters to Aleutian Islands, where only male sperm whales are the main constituents of the total sperm whale catch. From 1954 to 1961, some 12761 sperm whales have been caught by the Japanese whaling operations, so the percentage of the occurrence of the sperm whale with rudimentary hind limbs may be about 0.02 for the total catch in the Bering sea and the northern part of the north Pacific.

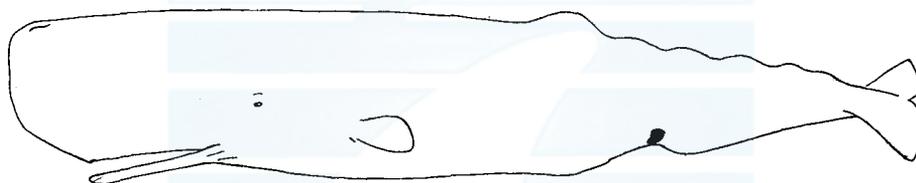


Fig. 1. Position of the protruded rudimentary hind limb in situ in the male sperm whale.



Fig. 2. Shape and position of the protrusion in the side of the anus. An arrow shows the anterior direction.

In the Japanese news paper, ' the Mainichi ' dated 18th May in 1959, a sperm whale with protruded rudimentary hind limbs is reported by AP Kyodo.

This record is based on the broadcast from Moscow and it is said that the one sperm whale has the legs like the other mammals in the abdominal part of the body. In the legs, there exist bones by examination using the X ray. The detail of the case is not clear, however, it is considered the sperm whale has protruded

legs longer than our case.

As the second case, Soviet news published by Soviet embassy in London on 22th May 1962 reports a sperm whale with protuberance which are considered legs, is caught in Kuril waters. The protuberances contain undeveloped thigh bones. The detail of the case is also unknown yet, but the case reinforces the consideration that the occurrence of protruded rudimentary hind limbs is highest in sperm whales.

There are no other record of sperm whales with protruded rudimentary hind limbs in Japanese observation, only 5 cases of sperm whales are available for the consideration. But I suspect the case having the protruded hind limbs in sperm whales shows a little higher percentage if the more strict research were made on all whales caught especially in the land whaling stations flensing many sperm whales in the adjacent waters to Japan.

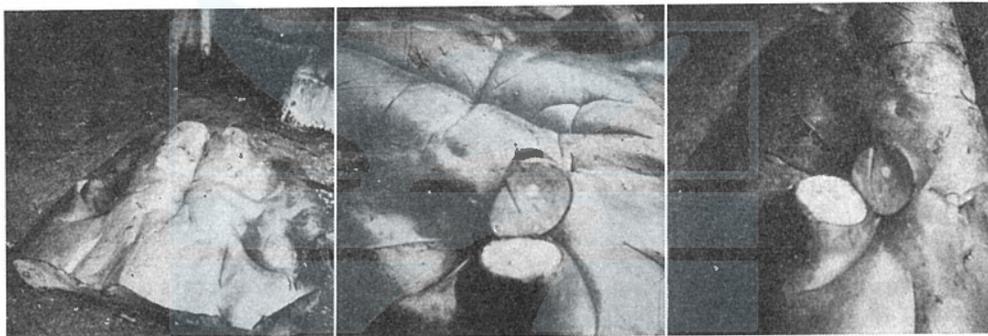


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 1. Two protrusions along the anal groove from the behind.

Fig. 2. The cut left protrusion showing the cut white cartilaginous stick in the center of upper piece. The right protrusion in the upper position of the photograph shows the pointing to the anterior direction of the body.

Fig. 3. The left cut protrusion showing the white cartilaginous stick in the cut surface. From the surface of the root of the cut protrusion, the stick situated a little outer position shifting the center of the protrusion.

When these 5 cases of sperm whales are compared with the baleen whale, only one case of a humpback whale is available. And it is safe to say the percentage of the occurrence of the protruded rudimentary hind limbs is higher in sperm whales than other baleen whales.

#### REFERENCES

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