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A DOLPHIN (*STENELLA CAERULEOALBA*) WITH PROTRUDED RUDIMENTARY HIND LIMBS

SEIJI OHSUMI

On December 16 in 1963, a herd of about 450 blue white dolphins (*Stenella caeruleoalba*) was caught by fishermen at Kawana Beach in the eastern coast of Izu Peninsula, Japan. In the course of biological investigation on the herd, I found an individual with protruded rudimentary hind limbs.

Dr. Nishiwaki and his group have investigated this species of dolphin on about ten thousand individuals, but it is the first time for us to find such an individual.

On the protruded rudimentary hind limbs in the postnatal cetacea, there have been reported for one humpback whale (*Megaptera novaeangliae*; Andrews, 1921) and sperm whales (*Physeter catodon*; Ogawa & Kamiya, 1957; Nemoto, 1963). Slijper (1958) reviewed two similar records on a dolphin and a pilot whale.

Ogawa (1953) reported on the presence of the hind limbs in the embryos of the blue white dolphin. And he described that 14 mm long embryo had easily observable hind limbs, keeping pace with becoming smaller of hind limbs protrusion, in 25 mm long embryo the elevation of the flukes made appearance and in larger embryos, there remained no trace of hind limbs elevation at all.

Present individual is a male, and is 230 cm long. Body proportions are shown in Table 1. The proportions are not so different from the normal ones except only one part. The distance between anus and reproductive opening in this dolphin is shorter than the usual. Body colour and pattern of the individual is not different from normal individuals except the haunch portion. As shown in Plates I and II, the margin of pigmentation at anus is different with the normal. The margin of the insertion of the protruded hind limbs is white, and the hind limbs are black. Furthermore, one clear black line is seen along the margin of pigmentation in the ventral portion of each side. In general, there is abnormality in the haunch portion.

Weight of testes is 31.0 gr. in the left side and 29.8 gr. in the right side. In vas deferens fluid were observed many mature sperms. Then this individual is decided to be sexually mature.

Rudimentary hind limbs are protruded on either side of just the mammary slit. Distance between the both tops of limbs is 101 mm. The distance between both anterior margins is shorter than that between the posterior margins. Protruded limbs are ellipsoid. Base of the limbs are oval. The minor axis of the left and right limbs is 22 and 23 mm respectively, and the major axis of the left and right limbs is 28 and 33 mm respectively. The height is 10 and 13 mm in the left and right limbs respectively.

This specimen was preserved in the Department of Anatomy, School of Medicine, University of Tokyo, and anatomical study will be made on the internal structure of the rudimental limbs in the University.

I am much indebted to Dr. T. Kamiya of the Department of Anatomy, Univer-

TABLE 1. MEASUREMENT OF BODY PROPORTIONS FOR THE PRESENT SPECIMEN AND THE NORMAL SPECIMENS IN THE BLUE WHITE DOLPHIN

Items	Present (cm)	Normal (cm)*
Total length	230.0	221-239
Length of snout	12.0	10.5-12.0
Tip of snout to blow hole	32.0	29.0-36.5
„ angle of gape	27.5	25.0-27.5
„ center of eye	34.5	28.0-36.0
„ anterior margin of flipper	49.0	44.0-51.0
Notch of flukes to posterior margin of fin	106.0	96.0-106.5
Length of insertion of flukes	17.0	14.5-17.0
Notch of flukes to anus	70.0	61.0-69.0
„ to umbilicus	129.0	113.0-130.0
Anus to reproductive opening	13.5	15.0-21.0
Flipper, anterior margin to tip	32.0	29.0-31.5
„ broadest width	11.0	9.5-11.0
Fin, length of base	32.0	27.0-35.0
„ height	19.5	19.0-23.0
Flukes, total width	56.5	48.0-59.0

* from 6 specimens (males), body lengths ranged between 221 and 239 cm.

sity of Tokyo, who kindly took photographs of the specimen and gave me some measurements. And I also due to Dr. M. Nishiwaki of the Whales Research Institute to give me the chance to find the present specimen.

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PLATE I

Upper: A blue white dolphin with protruded rudimentary hind limbs. Ventral view.

Lower: A normal male blue white dolphin. Ventral view.

PLATE II

(Photographed by Dr. T. Kamiya)

Upper: Ventral view of the protruded rudimentary hind limbs.

Lower, left: Sidal view of the left hind limb.

Lower, right: Sidal view of the right hind limb.



