A NEW GENUS, *PEPONOCEPHALA*, FOR THE ODONTOCETE CETACEAN SPECIES *ELECTRA ELECTRA*

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INTRODUCTION

On 20 August 1963 a porpoise was stranded on Hiratsuka Beach, Honshu, Japan. It was examined by M. Nakajima and M. Nishiwaki and was determined by them to be *Lagenorhynchus electra* as described by Gray (1846). On June 27, 1964 K.S. Norris obtained a stranded newborn specimen at Kahuku, Oahu, Hawaii (British Museum 1964–6–2–1). Communications were exchanged and it became evident that both animals might belong to the same species. In the Scientific Reports of the Whales Research Institue, No. 19, Nakajima and Nishiwaki (1965) concluded about their Hiratsuka specimen that it was clearly distinct from *Lagenorhynchus*, the genus to which the form had earlier been referred, and allocated it to *Electra* (Gray, 1868). However, Dr. P.J.H. van Bree of the Zoologisch Museum in Amsterdam, Mr. W. E. Schevill of the Woods Hole Oceanographic Institution and Dr. F. C. Fraser of the British Museum (Natural History) informed the authors that the generic name *Electra* was preoccupied by a genus of bryozoans, and hence not available for this species.

On 23 March 1965, a herd of about 500 porpoises of this species came into Suruga Bay, Honshu, Japan, and about half of them were caught. Most of the captives were sold for human consumption, and only 15 individuals were obtained and brought to the Whales Research Institute. Meanwhile. on June 15, 1965, Norris obtained another specimen from Lahaina, Maui, Hawaii. Examination of these specimens confirmed the idea that the species could not be assigned to the genus *Lagenorhynchus*, but was generically distinct from all other cetaceans. The authors, therefore, propose here a new generic name, *Peponocephala*, for the form, which is a delphinid odontocete cetacean apparently most closely allied to the genera *Pseudorca*, *Feresa* and *Lagenorhynchus*.

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COMPARISONS

About 10 species comprise the genus *Lagenorhynchus*. Of the northern hemisphere forms *L. obliquidens*, of the North Pacific, and *L. acutus* and *L. albirostris* of the North Atlantic are well known. Much less is known of the southern hemisphere species and more study is needed before the variation within the genus can be considered well understood. However, even in our present state of knowledge, *Peponocephala*

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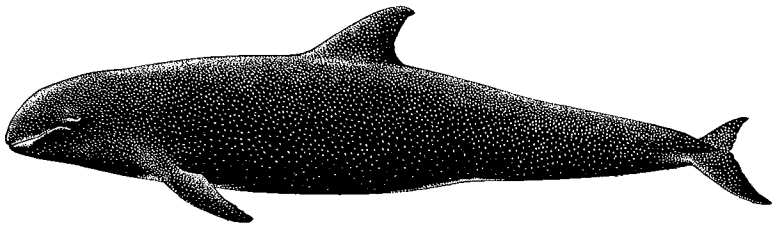

Fig. 1. Hawaiian porpoise, or many toothed blackfish, *Peponocephala electra*.

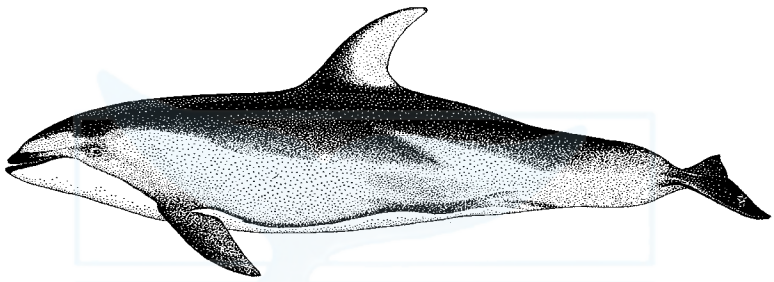

Fig. 2. Pacific white sided dolphin, *Lagenorhynchus obliquidens*.

Fig. 3. Atlantic white sided dolphin, *Lagenorhynchus acutus*.

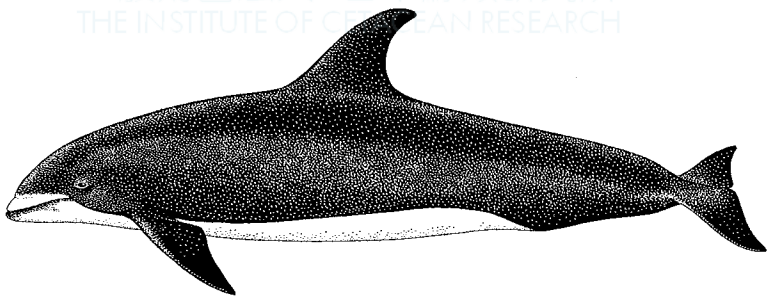

Fig. 4. White beaked dolphin, *Lagenorhynchus albirostris*.

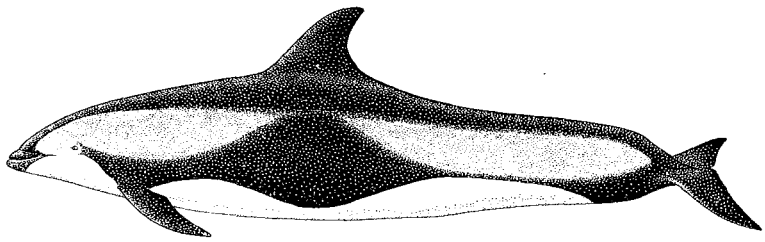

Fig. 5. Crusiger's white sided dolphin, *Lagenorhynchus crusiger*.

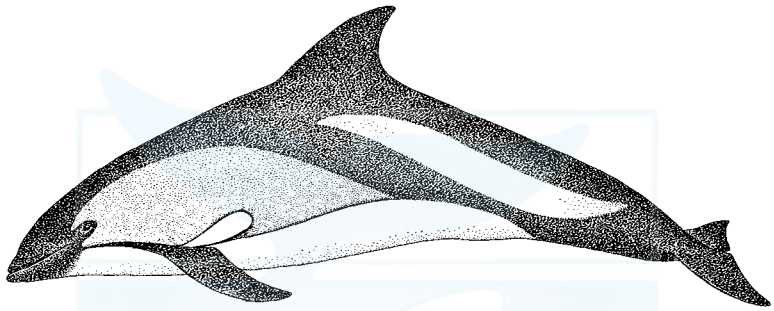

Fig. 6. Peale's porpoise, *Lagenorhynchus australis*.

Fig. 7. Dusky dolphin, *Lagenorhynchus obscurus*.

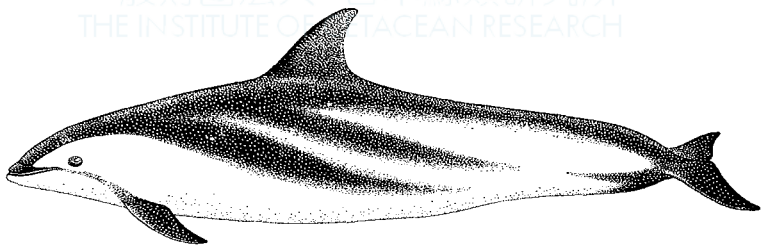

Fig. 8. Fitzroy's dolphin, *Lagenorhynchus fitzroyi*.

is clearly distinct from *Lagenorhynchus*, on the basis of the following characters.

The species of *Lagenorhynchus* have a beak clearly demarcated from the forehead or melon by a groove while *Peponocephala* has no beak, the forehead being rounded, curving smoothly from the anterior tip of the rostrum to the blowhole, and overhanging the lower jaw to some degree.

The antorbital notches of *Peponocephala* are larger and deeper than those of *Lagenorhynchus*, or even those of *Feresa*, which are unusually well developed. The dorsal aspect of the maxillary bones of *Peponocephala* shows a consistent narrowing about 1/3 the distance anterior of the base of the snout, while this feature is absent in *Lagenorhynchus*. In *Peponocephala* the anterior 3 cervical vertebrae are fused, while in *Lagenorhynchus* only the atlas and axis are fused. Phalangeal numbers are different in the two genera; *Lagenorhynchus* has 1 or 2 phalanges in the thumb while *Peponocephala* commonly has 3. *Lagenorhynchus* usually has 8 phalanges in the index (in exceptional cases reaching 10 is some species), but *Peponocephala* usually has 9. Generally speaking, *Peponocephala* seems to have one more phalanx in each digit than does *Lagenorhynchus*.

In addition to these distinctive features the body proportions of *Peponocephala* are much more reminiscent of *Pseudorca* and *Feresa* than *Lagenorhynchus*, the body being rather elongate and slim with a long tail stock. Further, *Lagenorhynchus* tends toward a complex dorsal and lateral pattern of distinct black, gray, and white areas, while that of *Peponocephala* is more unicolored with a pectoral blaze mark ventrally.

Peponocephala is separated from other beakless genera such as *Pseudorca*, *Feresa*, *Globicephala*, *Grampus* and *Orcinus* because tooth numbers in each row around 24, while these genera all have less than 15 in each row.

SUMMARY AND CONCLUSION

On the basis of a number of newly acquired specimens from Japan and Hawaii the odontocete cetacean known as *Electra electra*, and once relegated to the genus *Lagenorhynchus*, is found to be a distinct genus requiring a new name. The name *Electra* was found to be preoccupied by a genus of bryozoans.

The following features differentiate the form from *Lagenorhynchus:*

(1) The forehead of the form has no demarkated beak by a groove, and is rounded smoothly curved directly from the mouth to the blowhole,

(2) The antorbital notches are very much larger than those of other species,

(3) The first three cervical vertebrae are fused, while in *Lagenorhynchus* only the atlas and the axis are fused, and,

(4) In body form and color pattern the form resembles *Pseudorca* and *Feresa*, rather than *Lagenorhynchus*.

The authors propose the new genus *Peponocephala* for the form, and designate the form previous known as *Lagenorhynchus electra* as the type species. *Peponocephala* is of femine gender and means melon head (pepo: melon and cephalo: head).

The proposed generic name *Peponocephala* was suggested to us by Dr. Fraser.

ACKNOWLEDGEMENT

The authors extend their sincere appreciation to Dr. P.J.H. van Bree of the Zoologisch Museum in Amsterdam, Mr. W. E. Schevill of the Woods Hole Oceanographic Institution and Dr. F. C. Fraser of the British Museum (Natural History) for pointing out the preoccupation of the genus *Electra*. We also thank Dr. Fraser for suggesting the name *Peponocephala*.

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EXPLANATION OF PLATES

PLATE I

Upper: A heard of *Peponocephala electra* captured on 23 March 1965 at Tabi, Suruga Bay, Japan. (Photo by Dr. M. Nakajima)

Lower left: Frontal view of *Peponocephala electra* No. 6 (242 cm female).

Lower right: Frontal view of *Peponocephala electra* No. 2 (231 cm male).

PLATE II

Upper: Upper lateral view of the head of *Peponocephala electra* No. 2.

Middle: Lateral view of the head of *Peponocephala electra* No. 4 (248 cm male).

Lower: Frontal view of the head of *Peponocephala electra* No. 5 (246 cm male).

PLATE III

Lateral, dorsal and ventral views (top to bottom) of *Peponocephala electra* No. 1 (222 cm female).

PLATE IV

Lateral and ventral views of *Peponocephala electra* No. 2 (231 cm male).

Lateral and ventral views of *Peponocephala electra* No. 2 (231 cm male), and lateral and ventral views of *Peponocephala electra* No. 3 (169 cm female). (top to bottom)

PLATE V

Dorsal and ventral views of skull (Fig. 1 and Fig. 2) and inner and outer lateral views of mandible (Fig. 3) of a young male *Peponocephala electra* stranded at Kahuku, Oahu, Hawaii on 27 June 1964. [Photographs are courtesy of Dr. F. C. Fraser of the British Museum (Natural History)]

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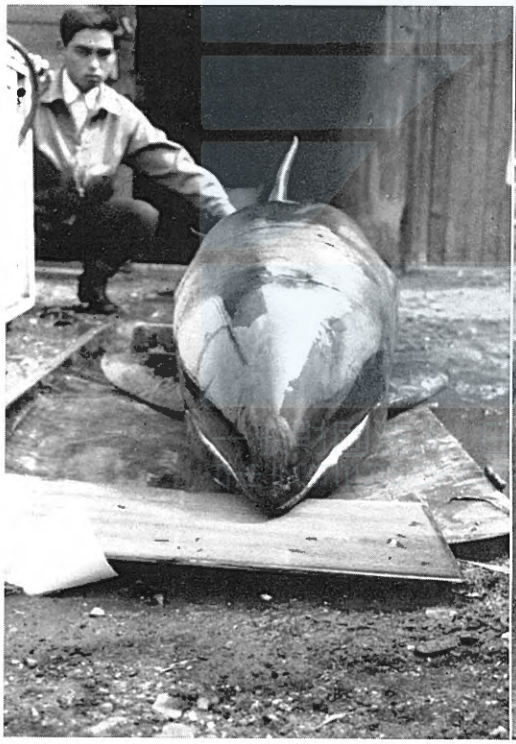

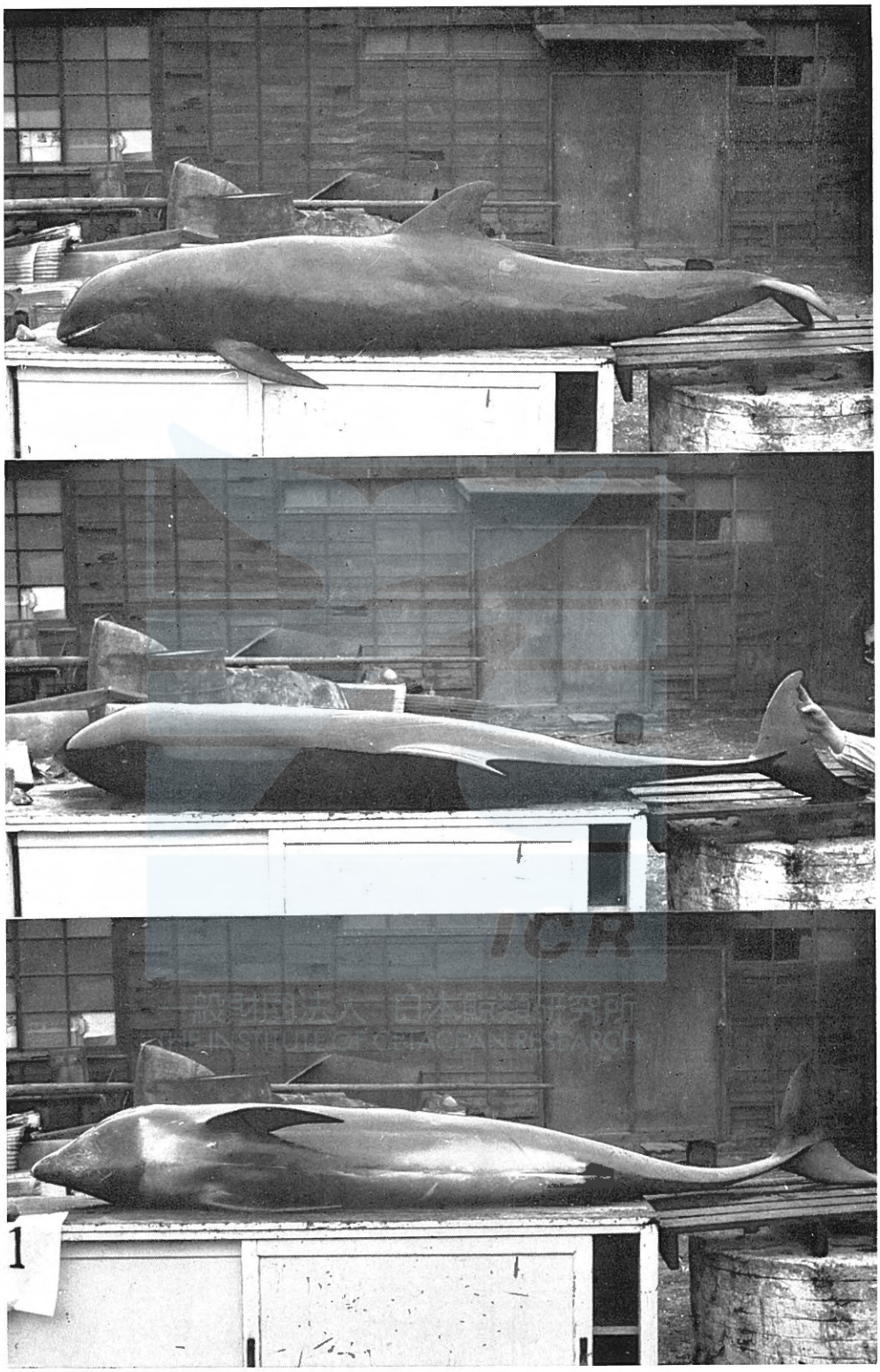

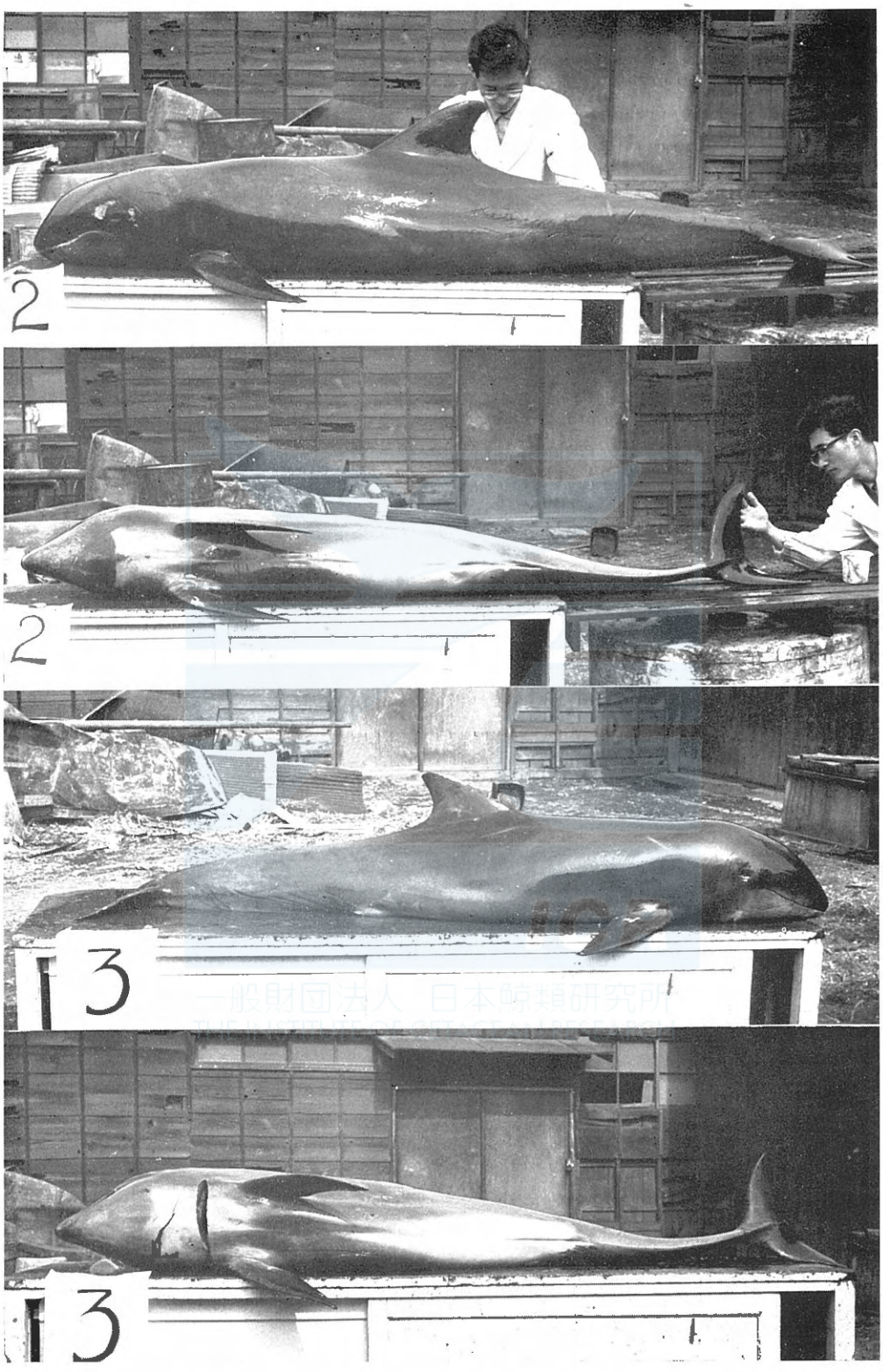
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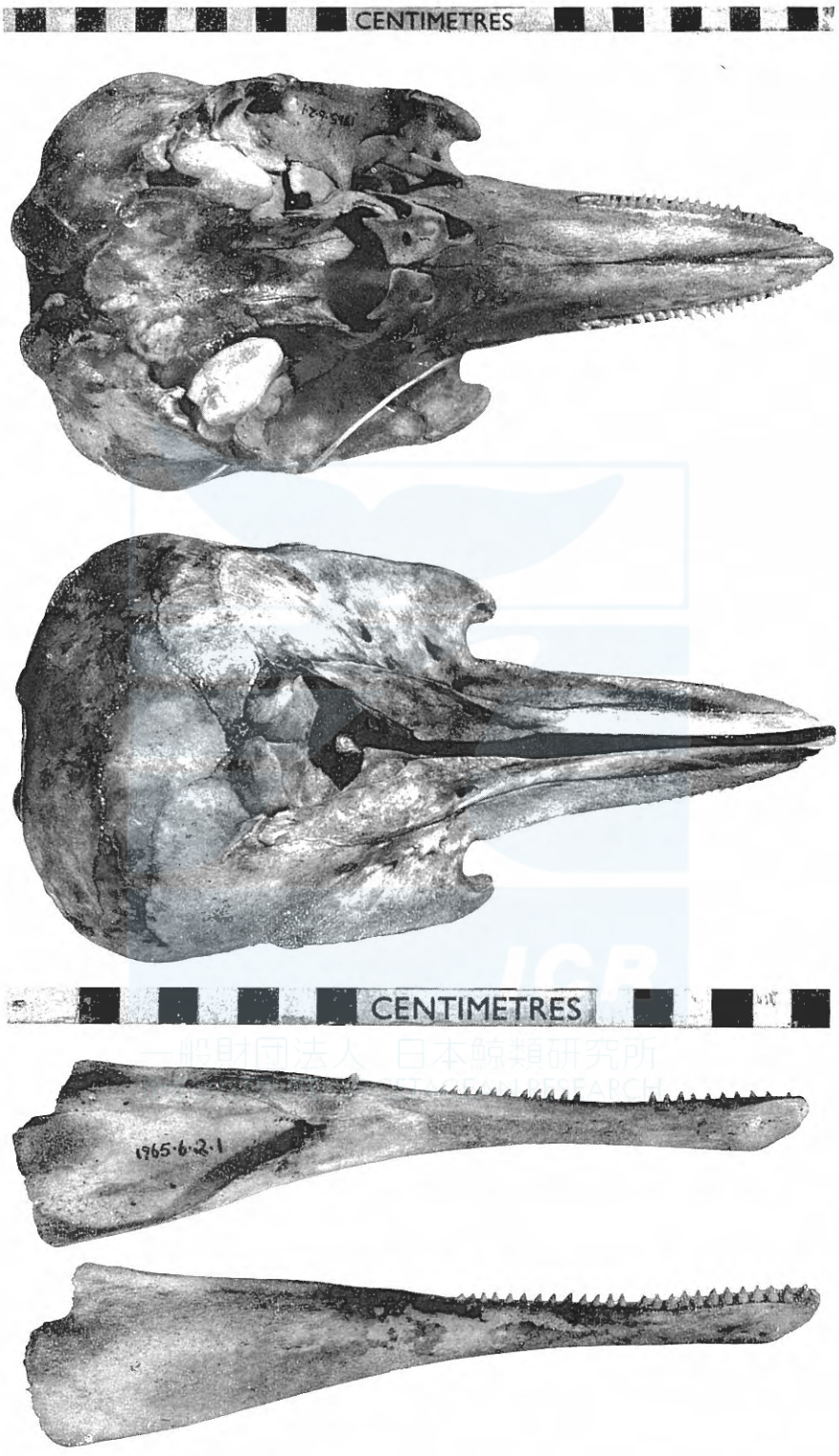
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