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On the description and the taxonomic status of *Delphinus holboellii* Nilsson, 1847 (Notes on Cetacea, Delphinoidea VI)

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ABSTRACT

Delphinus holboellii Nilsson, 1847 is a junior synonym of *Stenella coeruleoalba* (Meyen, 1833). The species is based on the complete skeleton of a juvenile specimen with an exceptionally high number of teeth. Attention is drawn to shrinkage in preserved skulls of Cetacea in the course of time.

Hershkovitz (1966: 29) in his checklist of recent Cetacea mentions as a probable junior synonym of *Stenella coeruleoalba* (Meyen, 1833):

"[?] *Delphinus Holbollii* Eschricht, 1847, Naturf. Möt., Kopenhagen, *ex* Nilson, 1847, Skand. Fauna, 1: 595 [works not seen, cited *ex* Gray, 1866, Cat. seals and whales Brit. Mus., p.251]."

By this citation and by the fact the species is not mentioned by True (1889), Trouessart (1898—99, 1904—05), Hall & Kelson (1959), and Ellerman & Morrison-Scott (1966) it is clear that little is known about the description of the species and its taxonomic status. It must be said, however, that the above-mentioned authors overlooked the publication by Lütken (1889: 48—49), in which the species was treated in detail. As it is likely that the name of the species may occur again and then cause confusion, it might be useful to discuss briefly the history of the species and its taxonomic status.

On July 12, 1847, Professor Eschricht, at the 5th meeting of the Scandinavian naturalists in Copenhagen, gave a lecture on the variability of skeletons of dolphins within the same species. At the same lecture he exhibited and discussed two new dolphins. "The first one with a long rostrum and a great number of teeth related to *Delphinus longirostris* [=

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Stenella longirostris (Gray, 1828)] but [coming] from Greenland [waters], and only of the size of a Harbour Porpoise [*Phocoena phocoena* (Linnaeus, 1758)]. The other one had much fewer teeth but a greater number of vertebrae, i.e. 92; this last one was called *Delphinus ibsenii* Eschr [icht, 1846] [a junior synonym of *Lagenorhynchus albirostris* (Gray, 1846)]".

A summary of Eschricht's lecture (see foregoing paragraph) was published in 1849 (: 611). In this summary no latin name was given of the first species; the name of it, *Delphinus Holböllii*, was mentioned in the lecture according to Lütken (1889: 48), but it does not appear anywhere in the printed proceedings of the meeting.

In 1847, however, after the meeting of the Scandinavian naturalists referred to above, the first volume of the second edition of the Scandinavian Fauna by Nilsson was published. In this book on pages 595 to 597, under the heading "Fintandad Delfin [Fine-toothed Dolphin] (*Delphinus Euphrosyne* Gray?)" the species *D. Holböllii* is discussed. The name of the species is first mentioned as a junior synonym of *Delphinus euphrosyne* Gray, 1846 (in turn a junior synonym of *Stenella coeruleoalba* (Meyen, 1833); see Fraser & Noble, 1970) on page 595 in the following way: "*Del. Holböllii* Eschr. Naturf. möt. i Köpenh. 1847?, mycket ungt ex. [= very young specimen]".

Under the heading "Anmärkn [= Comments]" Nilsson (loc. cit.: 596) further writes (freely translated): "Mr Eschricht's *D. Holböllii* is a very young animal from Greenland. The skull is 14 t. 2 l. long [= 370.46 mm], the mandible is 12 t. long [= 313.80 mm] and the toothrow 6 : 6 [= 169.98 mm]. Thus it is considerably shorter than our skulls [possibly coming from the Kattegat] and in spite of this, the width of it between the notches is 3 t. 3 lin. [= 84.99 mm] and the number of teeth is about 50. The nose rib [the ridge formed by the premaxillae] is furthermore broader than the lateral parts [of the rostrum] and has contiguous borders. [This last remark evidently refers to a condition different from that found in two skulls — possible from the Kattegat — kept in the Lund Museum of which he says: "the nose rib in the middle of the beak is "half-rounded" with vertical borders and narrower than the lateral parts]. For these reasons I consider it to be obvious that it is different".

Although Nilsson refers to the lecture by Eschricht and also attributes the name of the species to the same scientist, it was *he* who published the first description of the species under the binary name *Delphinus Holböllii*. The contradiction in citing it first as a junior synonym of *D. euphrosyne* and then stating that it was different from this species is of little importance nomenclatorially.

According to Dr. F. W. Braestrup of the Zoological Museum of the Copenhagen University (*in litteris*, 16-IX-1971) it nevertheless seems that Eschricht had accepted the identification of the specimen as belonging to *Delphinus euphrosyne*, for Lütken mentioned in the old register that it was exhibited under that name when he revised the collection. Lütken added to the register the note: "a *Delph. styx* Gr.?".

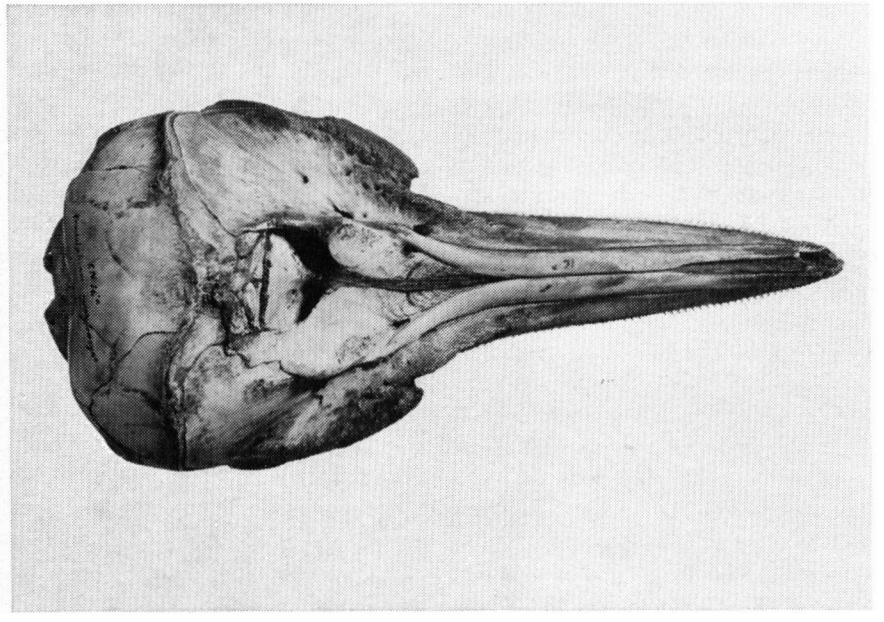

FIG. 1. Dorsal view of the skull of *Delphinus holboellii* Nilsson, 1847. Photograph by A. L. van der Laan — ZMA.

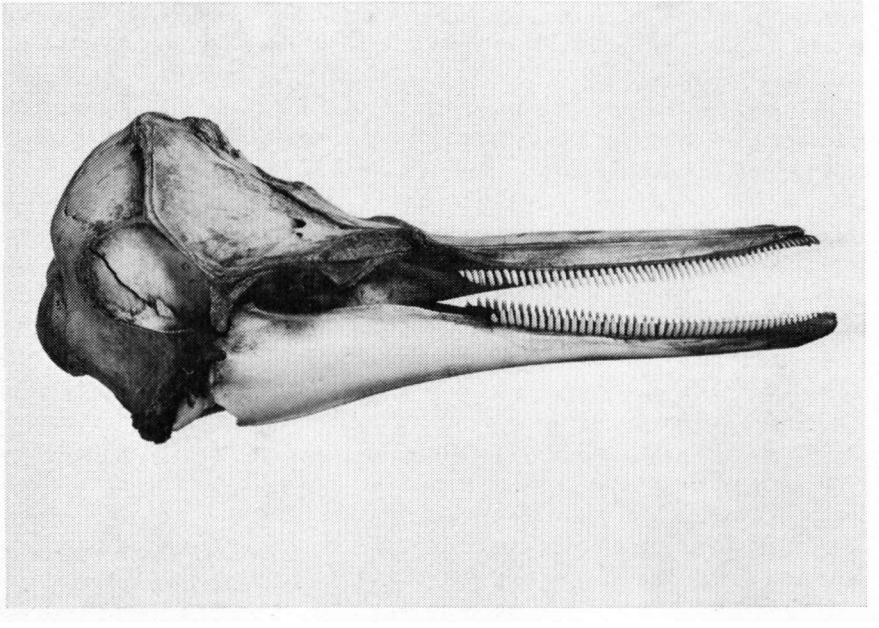

FIG. 2. Lateral view of the skull of *Delphinus holboellii* Nilsson, 1847. Photograph by A. L. van der Laan — ZMA.

In 1889 (: 48—49), Lütken returned to the subject in his study on small pelagic odontocetes from the Atlantic. He gave a short review of the history of the specimen, a description with measurements of the skull and post-cranial skeleton and published a drawing of the dorsal side of the skull. Although he discussed the dolphin under the heading *Prodelphinus Holbölli*, it is clear that Lütken was uncertain about its taxonomic status. He wrote (freely translated): "If this form should be identified according to the skull with one of the species figured by [Gray 1846], it should rather be with *P. styx* (loc. cit., pl. 21) than with *P. euphrosyne*, to which [species] — with much doubt — it was referred to by S. Nilsson, with the consequence that this dolphin species has in various places been referred to as belonging to the Greenland fauna (see Brown, 1868)". One nevertheless gets the impression that Lütken wanted to retain the species provisionally (see also the French summary of his study: 54—61).

Thanks to the kind cooperation of Dr F. W. Braestrup of the Copenhagen museum I was able to study the skull of the holotype of *Delphinus holboellii* (see figs. 1 and 2), and I have come to the same conclusion as that of my predecessors who studied the skull. Namely, that it is a somewhat aberrant skull of a juvenile *Stenella coeruleoalba* (Meyen, 1833) (junior synonyms: *Stenella styx, Stenella euphrosyne*). The supra-occipital crest is not yet developed, all the sutures clearly visible, the teeth unworn and the skull still has a smooth appearance. The only character, which separates it from other skulls of *Stenella coeruleoalba* is the large number of teeth (above 53—51, below 46(+4)—47(+4)). Normally the number of teeth (above and below) is between 40 and 45. True (1889: 64—65), however, mentions skulls with greater numbers of teeth, so the *holboellii* skull does not stand completely apart.

If one compares my measurements of the skull (see table I) with the measurements taken by Nilsson (1847, or communicated by Prof. Eschricht) and Lütken (1889) one clearly notes differences. These differences are not only caused by different methods of taking the measurements but also by the shrinkage of the skull in the course of years. This shrinkage can amount to 7 percent in some cases and one must make allowance for this phenomenon while studying lists of measurements published in the last century or in the beginning of this century.

Whether or not this young dolphin (total length of the mounted skeleton 126.5 cm) really was harpooned near Greenland cannot now be checked. Although *Stenella coeruleoalba* normally lives in tropical and warm temperate waters it is conceivable that a straggler could be found in subarctic or arctic waters. In this connection it may be important to note that on the (colder) Western half of the North Atlantic specimens of *Stenella coeruleoalba* have stranded on Sable Island (43° 57' N, 59° 55' W) and have been observed in the coastal waters of that island (Sergeant *et al.*, 1970).

Summarizing, I can confirm with certainty that *Delphinus holboellii* Nilsson, 1847 is a junior synonym of *Stenella coeruleoalba* (Meyen, 1833) and that the description of the species is based on the complete, mounted

TABLE I. Dimensions of the skull of the holotype of *Delphinus holboellii* Nilsson, 1847 (UZM - København CN 16*). The first three measurements between brackets after Lütken (1889 : 49).

	in mm	in %
Total length of skull	343 (350)	100.0
Rostrum length	190 (195)	55.4
Rostrum basal width	77 (83)	22.4
Rostrum, width 60 mm anterior to base	47	13.7
Rostrum, width at its middle	42	12.2
Rostrum, width at ¾ of its length	30	8.7
Breadth across pre-orbital angles of supra-orbital processes	139	40.5
Breadth across post-orbital angles of supra-orbital processes	157	45.7
Zygomatic width	156	45.5
Width of braincase across parietals	138	40.2
Maximum width of premaxillae	65	18.9
Length temporal fossa	52	15.2
Height temporal fossa	38	11.1
Tip rostrum — nares	231	67.3
Length of upper toothrow (right side)	163	47.5
Length of upper toothrow (left side)	163	47.5
Tip rostrum — pterygoid	241	70.3
Number of alveoli (upper)	53—51	
Length mandible	286	83.4
Height mandible at coronoid	50	14.6
Symphysis mandibles (length)	30	8.7
Length of lower toothrow (right side)	161	46.9
Length of lower toothrow (left side)	165	48.1
Number of alveoli (lower)	46 (+4) — 47 (+4)	

skeleton of a juvenile specimen of the Striped or Euphrosyne Dolphin, most probably caught near Greenland.

I am very indebted to Dr F. W. Braestrup of the Copenhagen museum for sending the skull of *holboellii* on loan and for the translation of some articles written in Danish. I also tender my sincere thanks to Mag. Søren Andersen at Odense, Denmark, for sending me photocopies and translations, and to Dr P. E. Purves, London, for reading and commenting on the typescript.

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