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*Neophocaena phocaenoides asiaeorientalis* (Pilleri & Gihl, 1973),  
a synonym of the preoccupied name *Delphinus melas*  
Schlegel, 1841

(Notes on Cetacea, Delphinoidea VII)

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## ABSTRACT

The name *Delphinus melas*, given by Schlegel (1841) to a Finless Porpoise from Japan, is a junior homonym of *Delphinus melas* Traill, 1809 (now: *Globicephala melas*). The generic name *Neomeris* Gray, 1846 is preoccupied by *Neomeris* Costa, 1844; the valid *nomen novum* for Gray's genus is *Neophocaena* Palmer, 1899. *Neomeris asiaeorientalis* Pilleri & Gihl, 1973 belongs to the same taxon as described by Schlegel. Therefore the correct name of the Japanese form described by Schlegel is *Neophocaena phocaenoides asiaeorientalis* (Pilleri & Gihl, 1973).

Recently Pilleri & Gihl (1973), in a study of the cetaceans of Pakistan, described a new species of Finless Porpoise from the Far East (China and Korea), which they named *Neomeris asiaeorientalis*. The species differs from the Indian Finless Porpoise (*phocaenoides* G. Cuvier, 1829) in absolute and relative skull measurements, in the shape of the cervical vertebral complex, the posterior part of the mandible, in the length of the radius, and in some body dimensions. As holotype of their new species they designated specimen MCZ 19998 (Museum of Comparative Zoology, Cambridge, U.S.A.), a male, collected by F. R. Wulsin in the Yangtze River (Province of Kiang-su), 80 miles northwest of Shanghai, China. Although they studied other Finless Porpoises from China, they did not state whether these specimens must be regarded as paratypes.

Though the study by Pilleri & Gihl has to be taken seriously, they nevertheless made some mistakes. Firstly, the generic name *Neomeris* Gray, 1846, which they use, is preoccupied by *Neomeris* Costa, 1844 (a genus of poly-

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chaetous annelids); see the detailed study by Hershkovitz, 1961. It is irrelevant that *Neomeris* Costa, 1844, is now thought to be a synonym of *Ophelia* Savigny, 1818 (see Hartman, 1959); the generic name remains preoccupied. The valid name for this genus of Cetacea is *Neophocaena* Palmer, 1899.

A more serious omission that the authors have made, is that they did not study the holotype of *Delphinus melas* Schlegel, 1841 (though they knew of its existence, see page 118 of their paper), and that they did not consult the original descriptions of that species. It must be admitted that the history of the description of Schlegel's species is complicated and is not well understood by most authors. It therefore may be useful to publish a review of the history of the description of his species.

Under the heading "die Braunfische" [the Porpoises] Schlegel (1841: 32) wrote: "Den Braunfisches reicht sich eine neue Art ohne Rückenflosse von Japan an. Es ist dies: 3) *Delphinus melas*, n.sp. Fauna jap. Mammalia, Tab. 25 und 26 (Thier, Zähne, Schädel und Skelettheile). Von der Grösse des gemeinen Braunfisches, Körper jedoch schlanker, Stirn gewölbter, Schwanz länger; Brust- und Schwanzflosse länger und spitziger. Einfarbig schwarz. Ueberall 16 Zähne, mit seitlich zusammengedrückter, fast herzförmiger Krone. Schädel verhältnissmässig kleiner, nur ein Sechstel der ganzen Länge des Thieres einnehmend. Schnautze viel breiter, kürzer, flacher und vorn stärker abgerundet. Die übrigen Theile des Gerippes denen des gemeinen Braunfisches ähnlich; soll sich an Schlammigen Stellen des Meeresufer aufhalten. Es fragt sich, ob der Delphin ohne Rückenflosse vom Cap, dessen Cuvier, Règne an. I, p. 291, unter dem Namen *D. phocaenoides* erwähnt, hierher gehört."

From Schlegel's reference to the part "Les mammifères marins" of the volume "Mammifères" of the Fauna Japonica, of which Schlegel was co-author, it is clear that he expected that this part would be published at the same time or earlier than his "Beiträge zur Charakteristik der Cetaceen (1841)". In a footnote on page 2 of his Beiträge, he stated: "Fauna Japonica, Mammalia, Tab. 24 bis 30. Tafeln und Manuscript liegen vor, und sollen ehenstens erscheinen." \*) Due to circumstances unknown to us, the part on the marine mammals was only distributed in 1844 (see Mazák, 1967, and Holthuis & Sakai, 1970). Thus Schlegel's abbreviated description of *D. melas* in 1841 antedates the detailed description of the species by Temminck & Schlegel in 1844.

In "Les mammifères marins", *Delphinus melas* Schlegel, 1841, is described and depicted in detail. The authors wrote: "L'individu figuré sur le vivant et sous les yeux de Mr. [H.] Bürger par le Japonais Toioska (voir Pl. 4, fig. 1) [= tableau 25, fig. 1], fut apporté à ce voyageur par les pêcheurs japonais,

\*) In the last paragraph on page 26 of the part on marine mammals in the Fauna Japonica it is stated: "On peut consulter notre critique des indications fournies par les naturalistes sur cet animal [= *Rytina stelleri*], elle est insérée dans le premier fascicule de notre ouvrage intitulé: Abhandlungen etc.". This line indicates the same as stated before but could also be an indication that Schlegel was the only author of the part on marine mammals.

qui lui assurèrent que cette espèce vit le long des côtes de cet empire, et qu'elle a l'habitude de s'enfoncer dans le limon des endroits marécageux. La dépouille de cet individu ayant été détruite, nous n'en possédons que le squelette, dont nous avons figuré les parties principales." It is said that the specimen was: "un peu plus de quatre pieds [= 129.9 cm] de longueur totale". An important line in the description is the following one: "Les deux premières [vertèbres] sont fondues et ne forment qu'une seule pièce, assez grande et grosse, et pourvue de chaque côté d'un grand trou pour le passage des nerfs et des vaisseaux du cou; l'apophyse épineuse de cette pièce est très-large mais dirigée en arrière, et divisée en deux pointes par un profonde échancrure [emphasis added]."

In the second description of the Japanese Finless Porpoise the same mistake is made as in the first one. In both publications it is said that the porpoise has 16 teeth on both sides below and above. On plate 25 (fig. 2), however, 18 teeth are depicted above and below on the left side of the skull (for the actual number, see table I). The total number of vertebrae (= 63) are not given in the publications.

As H. Bürger rarely had the opportunity to leave the Dutch trading post on the artificial island of Deshima (Decima), constructed in the harbour of Nagasaki, this harbour must be regarded as the type locality. The specimen was probably secured in the period between 1829 and 1832. For the figures of Schlegel's *Delphinus melas* published in the marine mammal part of the Fauna Japonica, see figs. 1 & 2 of this paper.

The type of *Delphinus melas* Schlegel, 1841 (a complete, partly mounted skeleton) is still in the collections of the Rijksmuseum van Natuurlijke Historie at Leiden. It now bears the registration number RMNH 23079 (see also

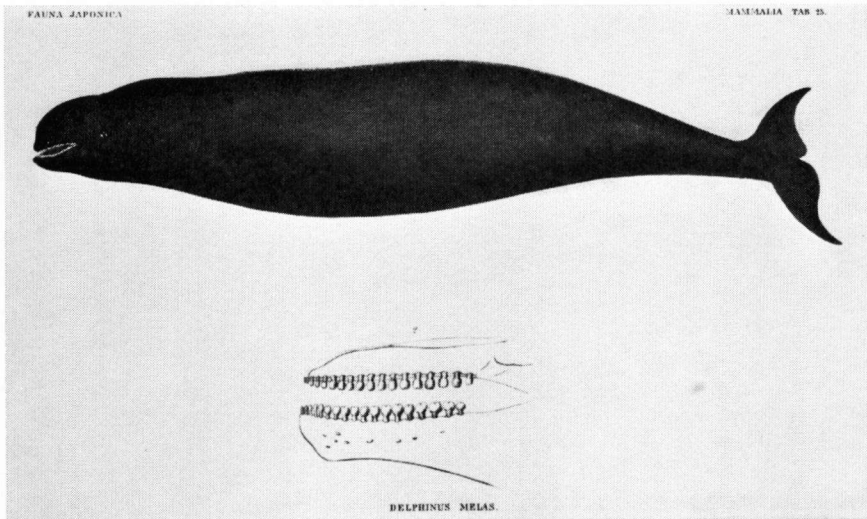


FIG. 1. Reduced reproduction of plate 25 of Temminck & Schlegel (1844), showing the holotype of *Delphinus melas* Schlegel, 1841.

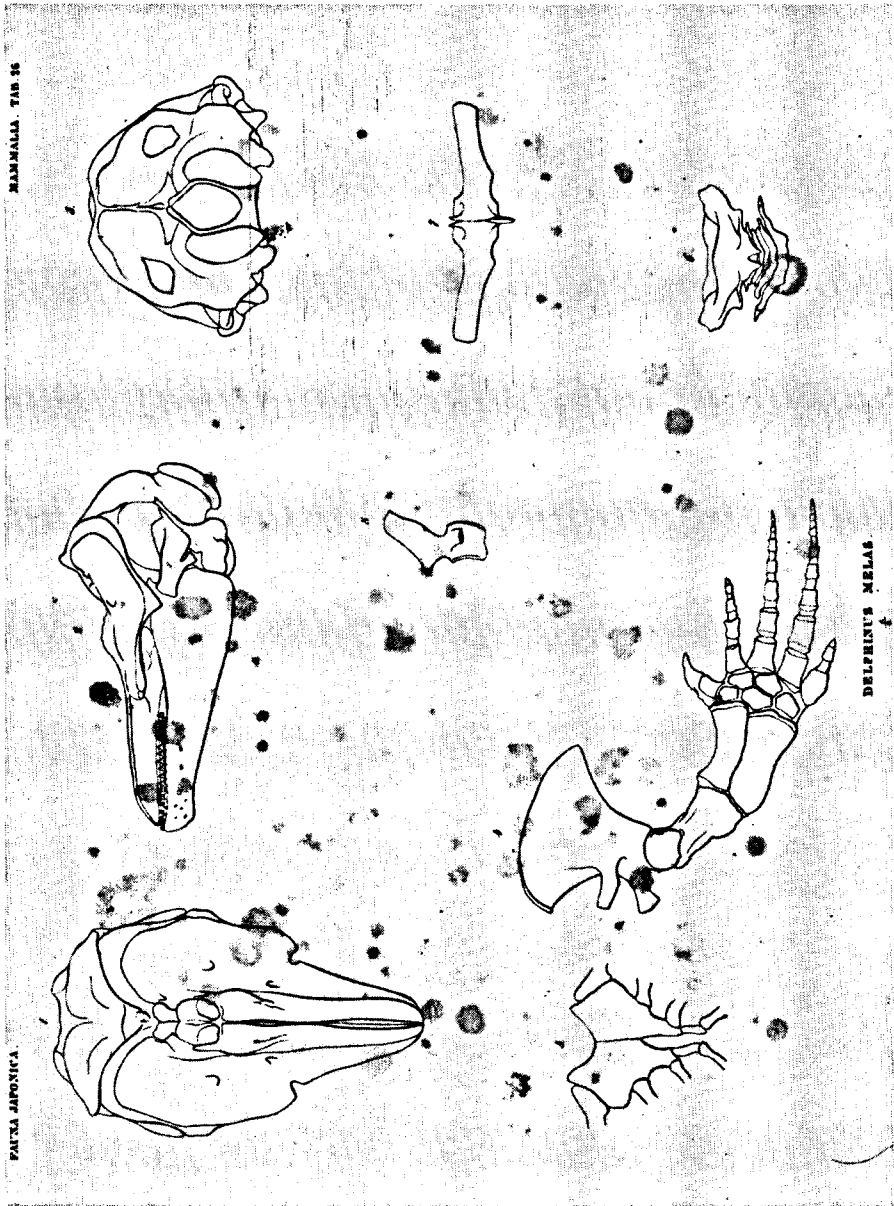


FIG. 2. Reduced reproduction of plate 26 of Temminck & Schlegel (1844), showing details of the skeleton of *Delphinus melas* Schlegel, 1841. Note the shape of the cervical vertebral complex (6). The spots on this figure are damp stains on the original plate used for the reproduction.

Jentink, 1887: 175). Thanks to the kind cooperation of Dr. A. M. Husson I was able to study the skeleton and measure the skull. Although True (1889: 116; copied in Pilleri & Gühr, 1973, tabl. 4) had already published measurements of the skull in the Leiden museum, I thought it useful to measure the skull again as I discovered that True took some of his measurements in a different way than is usual today. For instance, it appears that his length of the rostrum was taken from the tip of the rostrum to one of the antorbital notches. Nowadays this measurement is taken from the tip of the rostrum to the midpoint of the line connecting both antorbital notches. The measurements of skull RMNH 23079 are given in table I, together with the same data concerning two skulls of Finless Porpoises, present in the National Museum in Singapore. The measurements were kindly put at my disposal by Captain W. F. J. Mörzer Bruyns. The occurrence of Finless Porpoises in Malayan waters had been reported earlier; for the occurrence of the species in the Java Sea, see van Bemmelen, 1939.

TABLE I. Dimensions (in mm and in percentages of the total length of the skull) of the skull of the holotype of *Delphinus melas* Schlegel, 1841 (RMNH 23079), and of two incomplete skulls of Finless Porpoises preserved in the National Museum, Singapore.

	RMNH 23079		Singapore I		Singapore II	
	in mm	in %	in mm	in %	in mm	in %
Total length of skull	226	100.0	201	100.0	190	100.0
Tip rostrum to vertex	170	75.2	136	67.6	131	68.9
Rostrum length	78	34.5	63	31.5	64	33.6
Rostrum basal width	65	28.7	70	34.8	71	37.3
Rostrum, width at its middle	43	19.0	51	25.4	53	27.9
Rostrum, width at 3/4 of its length	35	15.5	41	20.4	40	21.0
Breadth across pre-orbital angles of supra-orbital processes	114	50.4	119	59.2	115	60.5
Breadth across post-orbital angles of supra-orbital processes	134	59.2	128	63.6	127	66.8
Zygomatic width	142	62.8	130	64.6	137	72.1
Width of braincase across parietals	117	51.7	112	55.7	115	60.5
Maximum width of premaxillae	37	16.3	36	17.9	36	18.9
Length temporal fossa (left)	56	24.7	46	22.9	50	26.3
Length temporal fossa (right)	55	24.3				
Height temporal fossa (left)	28	12.4	28	13.9	28	14.7
Height temporal fossa (right)	30	13.3				
Tip rostrum - nares	114	50.4	93	46.2	93	48.9
Length of upper toothrow (right side)	67	29.6	55	27.4	52	27.4
Length of upper toothrow (left side)	70	30.9	62	30.8	61	32.1
Tip rostrum - pterygoid	125	55.3				
Tip rostrum - median spine palate	120	53.1	90	44.8	90	47.3
Number of alveoli (upper - left)	18		19		19	
Number of alveoli (upper - right)	18		17		20	
Length mandible (at right)	164	72.5				
Height mandible at coronoid (at right)	45	19.9				
Symphysis mandibles (length)	13	5.7				
Length of lower toothrow (right side)	65	28.7				
Length of lower toothrow (left side)	67	29.6				
Number of alveoli (lower - left)	15	(+2)				
Number of alveoli (lower - right)	15	(+1)				

There is no doubt that the name *Delphinus melas* given by Schlegel (1841) and Temminck & Schlegel (1844) is a junior homonym of *Delphinus melas* Traill, 1809, and therefore preoccupied. It is rather puzzling that the authors should have chosen that name as they had already written in 1844 in a footnote on page 14: "Il est bon de remarquer, que ce nom a été autrefois employé par Mr. Traill, pour désigner le *D. globiceps*". The solution to the problem could be that during the first half of the last century the rules concerning the priority of names were less severely applied than nowadays.

If one compares the data concerning the holotype of *Delphinus melas* Schlegel, 1841 (see table I) with those of *Neomeris asiaorientalis* as published by Pilleri & Gahr (1973), one notes that no statistically significant differences exist and that the two taxa are conspecific. This conclusion is strengthened considerably by studying the detailed data on 18 Finless Porpoises caught in the Tachibana Bay near Nagasaki, Japan, published by Mizue, Yoshida & Masaki (1965). Their data on the skull and body dimensions and on the numbers of vertebrae, ribs and teeth are almost identical with those of the Finless Porpoises from China. As an example, the mean relative width of the rostrum in the Indo-Pakistani population is 34.24 (range 31.5—36.0; standard deviation 1.26), in the Chinese sample 30.92 (range 27.8—34.3; s.d. 1.78) and in the sample from Japan 31.56 (range 29.0—32.4; s.d. 0.24). The differences between the first sample and the two Far East ones are statistically significant; those between the Chinese and Japanese ones not.

An important difference between the western and far eastern populations, noted by Pilleri & Gahr (1973: 125), is the configuration of the cervical vertebral complex. This difference, as mentioned before, has already been described and figured by Temminck & Schlegel (1844). The difference in shape of the mandible between the two forms seems to be less constant. In the Leiden skull the shape of the right mandible is typical for the Indo-Pakistani population, the left one typical for the Sino-Japanese population, when the criteria given by Pilleri & Gahr are applied (see also plate V in Mizue et al., 1965). I doubt whether this difference really constitutes a taxonomic character.

There is no doubt about the fact that the other differences found by Pilleri & Gahr (1973) between the western and eastern populations of the Finless Porpoise are real and statistically significant. The problem, however, remains whether these differences are important enough to distinguish two distinct species. It is true that the importance given to morphological differences is a matter of personal preference and I hereby may refer to the well-known opposite groups of "splitters" and "lumpers" among taxonomists.

In Cetacea, statistically significant differences are found between animals from one population and animals from another. For instance, between specimens of the species *Tursiops truncatus* (Montagu, 1812) from western European waters and those from the coastal waters of Florida. In *Phocoena phocoena* (Linnaeus, 1758) between animals from the North Sea and those from the Baltic (S. H. Andersen, not yet published). If we accept that every

time small but statistically significant differences are found between populations separate species must be recognized, we then would enormously augment the number of species and this surely cannot be the aim of taxonomy.

Another factor, which might have induced Pilleri & Gühr to regard the Chinese Finless Porpoise as a distinct species, is probably based on the assumption that the Indo-Pakistani population is isolated from that of the Far East (see their distribution map on page 111). If one looks for information concerning other Cetacea from the coastal waters between Malaya and Hong Kong, one notes that almost nothing is known about their occurrence and distribution. The absence of such information can hardly be interpreted as a non-occurrence of Cetacea in these waters and until the area has been better studied, we cannot exclude the possibility that the populations of Finless Porpoises are in contact with each other (see also Nishiwaki, 1966: 40—42, and the paper by Giglioli, 1870, cited by Hershkovitz, 1966: 107).

If they are in contact, Finless Porpoises would occur in all the warmer waters along the coasts of southern and eastern Asia and it would not be surprising to find a clinal variation in such a ribbon-like distribution. The differences found between the Indo-Pakistani population and the Sino-Japanese population may be due to such a variation. Assuming that the above hypothesis is correct, we only assume for the time being the two populations as different subspecies.

Although it is evident from the foregoing part that Pilleri & Gühr did not describe a new taxon, the name they gave is nevertheless valid. Nomenclatorially it is of little importance whether the taxon is a species (according to Pilleri & Gühr, 1973) or a subspecies (as I believe). It is, however, clear that the holotype of the renamed taxon is the skeleton of the Finless Porpoise in the Leiden museum (RMNH 23079), collected by H. Bürger in the harbour of Nagasaki, Japan.

In conclusion of this article I like to thank most sincerely the following persons for their help and cooperation: Dr. A. M. Husson and Prof. Dr. L. B. Holthuis (Leiden), Captain W. F. J. Mörzer Bruyns (Bussum), and Dr. P. E. Purves (London). I also tender my sincerest thanks to Prof. Dr. G. Pilleri (Ostermundigen), whose valuable gift of a skull of *Neophocaena ph. phocaenoides* initiated this study.

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