

# A chronological review of the nomenclature of *Delphinus rostratus* Shaw, 1801 and *Delphinus bredanensis* (Lesson, 1828)

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**Abstract:** A chronological review is provided, elucidating the intertwined nomenclature of *Delphinus rostratus* Shaw 1801 and *Delphinus bredanensis* Lesson, 1828. Based on this review, *Delphinus rostratus* Shaw, 1801 is considered to be a senior synonym of *Ina geoffrensis*, and not a junior synonym of *Delphinus gangeticus* Lebeck, 1801. F. Cuvier in 1836 had found that the name *Delphinus rostratus* Cuvier was available for the rough-toothed dolphin, erroneously crediting his brother G. Cuvier 1812 and not Shaw 1801. The correct name of the rough-toothed dolphin is *Steno bredanensis* (Lesson, 1828). The type locality of the rough-toothed dolphin is the mouth of the river Scheldt. If Shaw's type specimen of *Delphinus rostratus* cannot be located and re-examined, it may be best to consider the name as "nomen dubium" because the description is insufficient for identification or else to ask the International Commission on Zoological Nomenclature to suppress the name.

## Editor's Note

*Upon his death, the cetological community, in Chris Smeenk, lost one of the greatest experts in cetacean nomenclature. Among Chris Smeenk's unfinished manuscripts there is a contribution modestly entitled "Steno bredanensis (Lesson, 1828) – a few notes on nomenclature" and even marked with a note "[not for publication]". We have had the privilege to read and comment on this very detailed and important piece of work and repeatedly urged Chris to publish his findings and eventually received his promise that he would proceed. We therefore feel content to share these findings under a new and more appropriate title - since the paper not only provides new important insights into cetacean nomenclature but also chronologically and profoundly unravels the intertwined and complicated history of the rough-toothed dolphin and one of its alleged synonyms, Delphinus rostratus Shaw, 1801.*

## Introduction

The review given beneath commences with the work of Shaw (1801) and takes the reader on a chronological journey to the present. For each work, detailed information is given as well as the consequences for nomenclature that are implied. Several quotations are given from historical documents in their original language. The editors have tried their best to translate these into modern English so that the reader can more easily follow the points

being made although we recognise that we cannot know exactly what the original author was meaning to convey. The English translations are given as footnotes.

## Chronological review

### Shaw (1801: 514)

Shaw (1801: 514) published the name *Delphinus Rostratus*, with a very brief description:

“Narrow-snouted dolphin.  
*Delphinus Rostratus*<sup>1</sup>. *D. rostro attenuato*.  
Dolphin with greatly attenuated snout.  
Known only from the head, or bones of the  
jaws. Supposed to inhabit the Indian seas. The  
jaws are extremely narrow in proportion to  
their length, which is about two feet: the teeth  
are small, not numerous, distant, and shaped  
somewhat like the molares of quadrupeds”.

This species has until now been assumed to be the Ganges dolphin, which in the same year had been described as *Delphinus gangeticus* by Lebeck (1801) and Roxburgh (1801), with Lebeck taking priority; see Kinze (2000) who, however, does not discuss the name given by Shaw. Whatever the specific identity of this animal, the name *Delphinus rostratus* Shaw, 1801 is not available for other species placed in the genus *Delphinus*. [Note: *Delphinus rostratus* Shaw, 1801 is a junior synonym of *Delphinus gangeticus* and therefore not available; in nomenclatorial terms it is preoccupied.]

It seems highly unlikely that Shaw’s brief description does indeed represent the Ganges dolphin. That species has very sharp and pointed teeth, totally different from Shaw’s description. The teeth of Shaw’s *Delphinus rostratus* appear to agree with those of the Amazon dolphin or boto, which have a unique structure, are differentiated, often obtuse, and the inner ones are often broadened and indeed could be described as being somewhat reminiscent of molars. In the following text, I have for practical reasons adhered to the common opinion that *Delphinus rostratus* Shaw, 1801 is a synonym of *Delphinus gangeticus* Lebeck, 1801, since re-identification of Shaw’s type specimen as an Amazon dolphin would have consequences for the name of that species, which would then become *Inia rostrata* (Shaw, 1801). This is undesirable for reasons of

stability. If the specimen cannot be relocated and re-examined, it would be best to either to ask the International Commission on Zoological Nomenclature to suppress the name *Delphinus rostratus* Shaw, 1801, or if the specimen cannot be relocated and re-examined<sup>2</sup>, to consider this “nomen dubium” in the absence of a more detailed original description.

### Georges Cuvier (1812: 9-10)

Georges Cuvier (1812: 9-10), in a paper largely dealing with a group of stranded pilot whales *Globicephala melas* near Paimpol in France, describes (1) two series of undocumented skulls in the Paris Museum, (2) a mounted skin with a very bulbous forehead received from Portugal, and (3) the drawing of a head of an animal from Canada.

The Paris skulls (1) clearly belong to different species:

“Or, le Muséum possède plusieurs têtes de deux vrais dauphins à museau grêle, différentes de celles du *delphis* et du *tursio*.

Les uns ont les mêmes dents grêles et pointues que les delphis, mais seulement au nombre de 35 partout, en totalité 140. Leur museau est déprimé comme celui du delphis, mais un peu plus court à proportion. Nous n’avons aucune notion de l’animal entier.

Les autres n’ont que 26 dents partout, 104 en totalité, fortes, coniques, tronquées au bout

<sup>1</sup> The use of capital letters here and in subsequent quotations follows the source text

<sup>2</sup> Editors’ note: George Kearsley Shaw was assistant keeper (1791-1806) and, subsequently, keeper (from 1806) of the British Museum Natural History Department until his death in 1813. He inherited the founding collection of specimens donated by Sir Hans Sloane. This included many in poor condition that were later destroyed. It is possible that the skull he refers to here was one of those and did not make it across London from the old Bloomsbury site to its present location in South Kensington since there is no record of it in the current archives.

comme celles du tursio; leur museau plus long encore que celui du delphis, en diffère en ce qu'il n'est pas déprimé, mais au contraire comprimé latéralement."<sup>3</sup>

Both series of skulls are left unnamed.

Of the mounted skin (2), Cuvier writes: "L'animal entier a été tout récemment rapporté de Portugal par M. Geoffroy. Il a le front beaucoup plus bombé que le delphis, et ceux qui l'ont empaillé l'ont peint d'un gris de perle en dessus et de blanchâtre au-dessous, ce qu'ils ont probablement imité d'après ses couleurs naturelles."<sup>4</sup>

Cuvier does not associate this skin with any of the above skulls. The history and provenance of this specimen has been unravelled and documented by Van Bree & Robineau (1973). It had come from the Amazon in Brazil<sup>5</sup> and, moreover, at the time, its skull was still in situ in the skin, so for that reason alone an association

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<sup>3</sup> English translation: "But the Museum has several heads of two narrow-snouted dolphins, different from those of delphis and tursio. Some have the same spindly and pointed teeth as the delphis, but only 35 each side of each jaw, 140 in all. Their beak is depressed like that of the delphis, but a little shorter in proportion. We have no notion of the whole animal. The others have only 26 teeth each side of each jaw, 104 in all, strong, conical, truncated at the end like those of the tursio; their beak even longer than that of the delphis, differs in that it is not depressed, but on the contrary compressed laterally."

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<sup>4</sup> English translation: "The entire animal was recently brought back from Portugal by Mr. Geoffroy. It has a much more swollen forehead than delphis, and those who have prepared the specimen have painted it pearl grey above and whitish below, which they probably have imitated from its natural colours."

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<sup>5</sup> It was thus an Amazon river dolphin (*Inia geoffrensis*).

with any of the above skulls can be ruled out.

Cuvier finally suggests that the drawing of the head of an animal from Canada (3) may be of the same species as the Portuguese (Brazilian) skin: "En parcourant les naturalistes nous n'avons guère trouvé qu'une figure de tête donnée par Duhamel (*Pêches*, II<sup>e</sup>. partie, section X, pl. X, fig. 4), sous le nom de *marsouin blanc*, qui paroisse s'en rapprocher un peu. L'auteur dit que le dessin lui en avoit été envoyé de Canada. Il semble aussi que c'est l'espèce légèrement indiquée par Shaw (*General Zool.*, tome II, part. 2, p. 514), sous le nom de *delphinus rostratus*."<sup>6</sup>

So, under the name *Delphinus rostratus* Shaw, 1801, Cuvier here combines – in a very tentative way – the skin of a species with a very bulbous forehead received from Portugal (later proved to have originated from Brazil) with the drawing of the head of an enigmatic animal published by Duhamel and said to have come from Canada [Note: and obviously referring to the beluga whale *Delphinapterus leucas*], and Shaw's specimen supposed to be from the Indian seas. Cuvier does not include the undocumented Paris skulls, which he leaves unnamed<sup>7</sup>.

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<sup>6</sup> English translation: "In browsing naturalists' reports we have occasionally found a figure of a head given by Duhamel (*Fisheries*, Part II, Section X, Plate X, Fig. 4), under the name of white porpoise, which appeared to be slightly similar to it [i.e. the Portuguese (Brazilian) skin]. The author states that the drawing had been sent to him from Canada. It also seems that it is the species suggested by Shaw (*General Zool.*, Volume II, part 2, p. 514), under the name of *Delphinus rostratus*."

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<sup>7</sup> In a paragraph also referring to *D. delphis*, he says: "cet autre dauphin dont nous avons parlé ci-dessus à 140 dents ou environ, que nous appellerons provisoirement *D. dubius*", i.e. in relation to the dolphin with around 140 teeth, he proposed to call it *D. dubius*. WoRMS ([www.marinespecies.org](http://www.marinespecies.org)) lists this species

## Georges Cuvier (1817: 278)

G. Cuvier (1817: 278), in his *Règne animal*, now clearly regards the skin in Paris and the Canadian animal as conspecific with *Delphinus rostratus* Shaw, 1801:

“*Le Dauphin à bec mince. (Delph. rostratus. Shaw)*

A tête plus bombée et à bec plus comprimé, plus grêle, avec seulement vingt-une ou vingt-trois dents coniques de chaque côté et à chaque mâchoire; ses teintes sont plus pâles, ce qui lui a valu le nom de *dauphin blanc*. On le dit des mers d’Amérique (2).” The footnote reads: “(2) On n’a encore gravé que sa tête et grossièrement. Duhamel, Pêches part. II, sect. X, pl. x, f. 4.”<sup>8</sup>

So, in *Delphinus rostratus* Shaw, 1801, Cuvier now positively includes the Paris skin obtained through Portugal, the Canadian animal of which he had seen a drawing of the head, and Shaw’s specimen. Again, he does not mention the undocumented Paris skulls.

## Desmarest (1817: 151-163)

Desmarest (1817: 151-163), in his encyclopedic

as “*nomen nudum*”, i.e. an unavailable or invalidly published name, although ITIS ([www.itis.gov](http://www.itis.gov)) lists it as “*nomen dubium*” and associates it with the valid name *Stenella attenuata* (Gray, 1846). Cuvier’s intent in naming the species “*dubius*” remains unclear.

<sup>8</sup> English translation: “The narrow-snouted dolphin. (*Delph rostratus*, Shaw) With a more swollen head, a more bulging and slender beak, with only twenty-one or twenty-three conical teeth on each side and in each jaw; its shades are paler, which earned it the name of white dolphin. It is said to belong to the seas of America (2). “The footnote reads:” (2) So far, we have only and roughly engraved its head. Duhamel, Fisheries part. II, sect. X, pl. x, f. 4”.

review of dolphins, describes as his “*Première Espèce*” (p. 151-152) the “\**Dauphin de Geoffroy, Delphinus Geoffrensis*, Blainville; *Dauphin à bec mince*, Cuv.”

Cette espèce est établie sur un individu de la collection du Muséum d’Histoire naturelle de Paris, rapporté du Portugal par M. le professeur Geoffroy Saint-Hilaire. Son corps est allongé, presque cylindrique; son front est beaucoup plus bombé que celui du dauphin ordinaire (*Delphinus delphis*); son museau est long, mince, étroit, analogue à celui du crocodile gavial; ses mâchoires, émoussées à l’extrémité, sont sensiblement égales en longueur, fort étroites, à bords parallèles, armées de chaque côté de vingt-six grosses dents coniques, également distantes, et s’engrenant lorsque la gueule est fermée; les antérieures sont un peu plus petites que les autres, et en général un peu émoussées à la pointe; toutes sont coniques, obtuses, avec une sorte de collet inférieurement, et en outre leur surface est rugueuse, ce qui offre un rapprochement avec le dauphin à bec mince, *Delphinus rostratus*, Cuv. Dans cette espèce, les yeux sont placés un peu au-dessus de la ligne de la commissure des lèvres; les nageoires pectorales sont grandes et attachées très-bas. Il n’y a pas de nageoire dorsale proprement dite, mais une sorte de pli longitudinal de la peau sur la partie postérieure du dos. L’évent a ses cornes tournées en arrière.”<sup>9,10</sup>

<sup>9</sup> The asterisk \* used here and in other quotes below, relates to a statement made in the text “Nous devons avertir que les espèces dont l’existence est bien constatée, seront désignées par une astérisque.”, i.e. we must warn that species whose existence is well established, will be designated by an asterisk.

<sup>10</sup> English translation: “Geoffroy’s dolphin, *Delphinus Geoffrensis*, Blainville; slender-beaked dolphin, Cuv. This species is based on an individual from the collection of the Museum of Natural History of Paris, brought back from Portugal by Professor Geoffroy Saint-Hilaire. Its body is elongated, almost cylindrical. The forehead is much more rounded than

This description clearly refers to a river dolphin. The cranial part of the skull is not described, as it was hidden in the mounted skin. Desmarest emphatically compares the rough surface of the teeth with that observed in *Delphinus rostratus*, his “tenth species” (see below). In the following paragraph, Desmarest emphasises that this species differs considerably from the Canadian animal which Cuvier had assumed was conspecific.

This is followed by a citation of a report communicated to Desmarest by de Blainville, who describes a dolphin observed on the coast of Brazil, which he regarded as conspecific with the previous species: “Il croit qu’il résulte de cette description, toute incomplète qu’elle est, une concordance assez marquée avec l’espèce rapportée par M. Geoffroy, du Portugal, et qui provenoit probablement aussi du Brésil.”<sup>11</sup>

that of the ordinary dolphin (*Delphinus delphis*); its beak is long, thin, narrow, analogous to that of the fish-eating crocodile; its jaws, blunt at the extremity, are equal in length, very narrow, with parallel edges, armed on each side with twenty-six large conical teeth, equidistant, and meshing when the mouth is closed; the anterior ones are a little smaller than the others, and generally a little blunt at the tip; all are conical, obtuse, with a kind of lower collar, and in addition their surface is rough, which offers a similarity with the slender-beaked dolphin, *Delphinus rostratus*, Cuv. In this species, the eyes are placed a little above the line of the corner of the mouth, the pectoral fins are large and held very low. There is no dorsal fin proper, but a kind of longitudinal fold of the skin on the posterior part of the back. The blowhole has its horns turned back.”

<sup>11</sup> “He believes that this description, incomplete as it is, is fairly consistent with the species reported by M. Geoffroy of Portugal, which probably also came from Brazil.”

This assumption later turned out to be correct, see van Bree & Robineau (1973).

Desmarest attributes the name *Delphinus Geoffrensis* to de Blainville, who communicated this to him in writing, hence the name should be attributed to de Blainville in Desmarest, 1817. The Paris skin is thus the holotype of this species (*Inia geoffrensis*), as identified by van Bree & Robineau (1973). Its skull was later extracted and has been extensively described and figured by these authors. Although referring to the “dauphin à bec mince” of Cuvier (1817), Desmarest does not include Shaw’s *Delphinus rostratus* in this species (see below) as Cuvier had done, and incorrectly and on page 160 confusingly attributes that name to Cuvier instead of Shaw.

As his “Troisième Espèce” (p. 153-154) Desmarest describes the “\*Dauphin de Shaw (*Delphinus Shawensis*, Blainv.); *Delphinus rostratus*, Shaw. (*general zoology*, vol. II, part. II, pag. 514; *Slender beaked dolphin*).

Cette espèce réunie par M. Cuvier avec celle qu’il appelle *dauphin à bec mince*, en diffère néanmoins beaucoup par l’extrême minceur de son bec, et doit en être séparée.

M. de Blainville, qui a observé une mâchoire d’un individu de cette espèce dans la collection du collège royal des chirurgiens, à Londres, en a fait une description fort détaillée, dont nous ne donnerons ici qu’un court extrait.

Au premier abord, on pourroit prendre ces mâchoires pour le museau du *gavial* ou du *crocodile tenuirostre*, tant elles sont grêles et allongées. Dans l’étendue de l’espace dentaire, les deux branches de la mâchoire inférieure sont absolument contiguës, les dents sont cependant un peu séparées en arrière, et elles se rapprochent d’autant plus qu’elles sont placées plus près du bout de la mâchoire, où enfin elles se touchent presque par leur base; ces dents sont plus ou moins déjetées en dehors, en général comprimées, fort larges, surtout celles du milieu; les postérieures sont

les plus longues; les antérieures sont presque carrées ou tétragones et extrêmement serrées à la base. Dans les grosses du milieu, la base est striée. La plupart de ces dents sont très-usées, etc. Leur nombre est de trente de chaque côté à la mâchoire inférieure et de vingt-huit à la supérieure. Cette mâchoire longue de deux pieds, est presque tout-à-fait droite, un peu plus élevée à sa base, et à peu près égale en hauteur dans toute son étendue, jusqu'à l'extrémité qui se recourbe brusquement en en<sup>12</sup> haut; sa largeur près de la tête est de deux pouces sept lignes et de sept lignes seulement vers son extrémité tronquée. La mâchoire inférieure est encore plus étroite que la supérieure.

Une portion de crâne jointe à cette partie, indique une forme de tête à peu près semblable à celle des autres dauphins. La peau conservée dans quelques parties est fort épaisse et recouverte d'un épiderme noir.

On ignore d'où provient cette singulière dépouille. Shaw, sur l'observation de ces mêmes mâchoires, soupçonne que le dauphin qu'il annonce plutôt qu'il ne décrit, sous le nom de *Delphinus rostratus*, vivoit dans la mer des Indes.<sup>13</sup>

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<sup>12</sup> There appears to be a typographical error in the original (1817) text here, and presumably should read 'brusquement et en haut'

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<sup>13</sup> English translation: "Shaw's Dolphin (*Delphinus Shawensis*, Blainv.); *Delphinus rostratus*, Shaw. (General Zoology, Vol II, part II, page 514, Narrow beaked dolphin.). This species, reunited by M. Cuvier with the one he calls the narrow-beaked dolphin, nevertheless differs a great deal from the extreme thinness of its beak, and must be separated from it. M. de Blainville, who has observed a jaw of an individual of this kind in the collection of the Royal College of Surgeons in London, has given a very detailed description of it, of which we shall give only a short excerpt here. At first glance, one could take these jaws for the muzzle of the gavia or fish-eating crocodile, as they are slender and elongated. In the extent of the tooth space, the two branches of the lower jaw are absolutely contiguous, the

So, this incomplete skull in London is the one described in 1801 by Shaw and thus the holotype of *Delphinus rostratus* Shaw, 1801. The description of the jaw, teeth and partial cranium does not agree with the Ganges dolphin, but very well fits an older specimen of the Amazon dolphin. If still preserved, it should be carefully studied and re-identified.

As his "Dixième Espèce" (p. 160-161) Desmarest gives: "Dauphin à bec mince, *Delphinus rostratus*, Cuv., Rapport sur les cetacés échoués à Paimpol, en janvier 1812. *Ann. Mus.*, tom. XIX, pag. 9.

Cette espèce est celle des dauphins à museau grêle jusqu'alors inconnue, dont M. Cuvier dit, dans son rapport, 'qu'elle n'a que vingt-six dents partout, cent quatre en totalité, fortes, coniques, tronquées au bout comme les dents du souffleur (*delphinus tursio*, Bonnaterre);

teeth are, however, a little separated behind, and they come closer as they are placed towards the end of the jaw, where finally they touch almost by their base; these teeth are more or less bent outside, generally compressed, very wide, especially those in the middle; the posterior ones are the longest; the anterior ones are almost square or with four angles and extremely tight at the base. In the big teeth of the middle, the base is striated. Most of these teeth are very worn, etc. Their number is thirty on each side at the lower jaw and twenty-eight at the upper one. This jaw, two feet long, is almost entirely straight, a little higher at its base, and nearly equal in height in all its extent, to the extremity which curls abruptly upward; its width near the head is two inches seven lines, and only seven lines towards its truncated end. The lower jaw is even narrower than the upper one. A portion of the skull attached to this part indicates a head shape similar to that of other dolphins. The skin preserved in some parts is very thick and covered with a black epidermis. We do not know where this unique body comes from. Shaw, on the observation of these same jaws, suspects that the dolphin which he claims rather than describes, under the name of *Delphinus rostratus*, lived in the Indian seas."

qu'elle a le museau plus long encore que celui du *delphinus delphis* et en différant en ce qu'il n'est pas déprimé, mais, au contraire, comprimé latéralement.<sup>14</sup>

M. de Blainville a été à même d'observer un crâne de cette espèce dans le cabinet de M. Sowerby, à Londres; et ce crâne est, au nombre de dent près, en tout semblable aux cinq ou six qui existent dans la collection du Muséum d'Histoire naturelle de Paris, et qui ont servi à l'établissement de l'espèce par M. Cuvier.<sup>14</sup>

Desmarest continues by citing de Blainville's description of this London skull, noting some differences with the Paris specimens, and describing the teeth: "Les dents de la tête qui fait partie de la collection de M. de Sowerby, n'étoient qu'au nombre de vingt - deux de chaque côté des deux mâchoires, en tout quatre-vingt-huit, ce qui diffère de ce que l'on observe dans les têtes du Muséum de Paris, qui sont munies de cent quatre dents. Mais ce qui est commun à toutes, et ce qui fournit un excellent caractère dont la remarque est due à M. de Blainville, c'est que ces dents, toutes absolument de la même forme, coniques, un peu courbées en arrière ou plutôt en dedans,

beaucoup plus grosses que celles du dauphin vulgaire et mousses à leur extrémité, ont une sorte de collet, et toute la partie saillante hors des gencives comme rugueuse ou plutôt guilochée.

On ignore dans quelles mers habite ce dauphin, mais il y a lieu de croire qu'on le trouve au moins quelquefois dans celles d'Europe, puisque le crâne que possède M. Sowerby étoit tout frais lorsque M. de Blainville en fit la description.<sup>15</sup>

Desmarest here describes a series of five or six skulls in Paris, obviously the same specimens mentioned in 1812 by Cuvier in the second paragraph of page 10 of his work, and regards a fresh skull in Sowerby's collection in London, reported by de Blainville, as belonging to the same species. The rough surface of the teeth is unmistakably described.

Desmarest's descriptions agree with the rough-toothed dolphin. Desmarest calls this species, at the time still only known from skulls, *Delphinus rostratus* Cuvier (as opposed to *Delphinus rostratus* Shaw), again erroneously referring to Cuvier's 1812 paper, though

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<sup>14</sup> English translation: "Slender-beaked Dolphin *Delphinus rostratus*, Cuv., Report on cetaceans stranded in Paimpol, January 1812. Ann. Mus., Tom. XIX, pag. 9. This species is that of the hitherto unknown slender-mouthed dolphins, of which M. Cuvier says, in his report, that it has only twenty-six teeth everywhere, a hundred and four in all, strong, conical, truncated at the end like the teeth of the bottlenose dolphin (*Delphinus tursio*, Bonnaterre); that it has a beak still longer than that of *Delphinus delphis*, and differing in that it is not depressed, but, on the contrary, compressed laterally. M. de Blainville was able to observe a skull of this species in the cabinet of Mr. Sowerby, in London; and this skull is, in every respect including the number of teeth, similar to the five or six that exist in the collection of the Museum of Natural History of Paris, and which were used for the establishment of the species by M. Cuvier."

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<sup>15</sup> English translation: "The teeth of the head, which is part of the collection of M. de Sowerby, were only twenty - two on each side of the two jaws, in all eighty - eight, which differs from what is observed in the heads in the Paris Museum, which are fitted with one hundred and four teeth. But what is common to all, and what provides an excellent feature, the relation of which is due to M. de Blainville, is that these teeth, all absolutely of the same form, conical, somewhat curved backwards, or rather inwards, much larger than those of the common dolphin, and blunt at their extremity, have a sort of collar, and all the part protruding from the gums as rough or rather braided. It is not known in what seas this dolphin inhabits, but there is reason to believe that one can find it at least sometimes in those of Europe, since the skull which Mr. Sowerby possesses was quite fresh when M. de Blainville made its description."

here Cuvier correctly mentions Shaw (1801) as the author and, moreover and importantly, does not include the Paris skulls in that species. Hence, the name *Delphinus rostratus* Cuvier is incorrectly used. Desmarest adds to the confusion by applying Cuvier's (1817) vernacular "dauphin à bec mince" to this species as well as to *Delphinus geoffrensis*.

So quite confusingly, Desmarest here describes three species which he associates in one way or another with Cuvier's (1817) "dauphin à bec mince". His "first species" is the Amazon river dolphin or boto *Delphinus geoffrensis*, which name he attributes to de Blainville. His "third species" has always been taken to represent the Ganges dolphin, but clearly is an Amazon dolphin, too. Desmarest calls it *Delphinus Shawensis* de Blainville or, correctly, *Delphinus rostratus* Shaw, which he states should be separated from Cuvier's "dauphin à bec mince". His "tenth species", described from undocumented skulls in Paris and London, can only be the rough-toothed dolphin, which he erroneously identifies with *Delphinus rostratus* Cuvier, 1812 (= Shaw, 1801).

### Desmarest (1822: 512-515)

Desmarest (1822: 512-515), in the second volume of his Mammalogie, does not basically differ from his 1817 overview, albeit that he changes the name of the Brazilian dolphin to "*delphinus Geoffroyi*", and the Ganges dolphin to "*delphinus gangeticus*, Lebeck". Of the remaining species he writes (p. 515):

"764 e. Esp. Dauphin à bec mince, *delphinus rostratus*.

(Non figuré.) *Dauphin à bec mince*, *delphinus rostratus*, Cuv. Rapp. sur les cétacés échoués à Paimpol en 1812. Ann. du Mus. tom. 19. p. 9. – Desm. nouv. Dict. d'hist. natur. tom. 9. pag. 160."<sup>16</sup>

<sup>16</sup> English translation: "764 e. Esp. Slender-beaked dolphin, *Delphinus rostratus*. (Not shown.) Slender-

After a diagnosis ("Car. essent."), Desmarest gives a more extensive description of the skull: "Descript. Cette espèce, dont on ne connoît que la tête osseuse, diffère du dauphin ordinaire,... Les dents, au nombre de vingt-six dans une tête décrite par M. G. Cuvier, et de vingt-deux seulement dans une seconde observée par M. de Blainville, sont toutes absolument de la même forme, c'est-à-dire, coniques, un peu courbées en arrière ou plutôt en dedans, beaucoup plus grosses que celles du dauphin vulgaire et mousses à leur extrémité, pourvues d'une sorte de collet à leur base, et elles ont toutes, leur partie sail-lante comme rugueuse ou guillochée.

Habit. Inconnues.

Patrie. Ignorée. La grande fraîcheur d'une tête possédée par M. Sowerby, a donné lieu à M. de Blainville de conjecturer que cette espèce habitoit les mers d'Europe."<sup>17</sup>

So here again, Desmarest's concept of *Delphinus rostratus* is incorrectly attributed to Cuvier (1812) under the latter's 1817 vernacular "dauphin à bec mince", and applies to the same skulls in Paris and London, although he

beaked dolphin *Delphinus rostratus*, Cuv. Rep. on cetaceans stranded at Paimpol in 1812. Ann. of Mus. tom. 19. p. 9. - Desm. nouv. Dict. of hist. natur. tom. 9. pag. 160."

<sup>17</sup> English translation: "Descript. This species, of which we know only the bony head, differs from the ordinary dolphin, ... The teeth, twenty-six in a head described by Mr. G. Cuvier, and only twenty-two in a second observed by M. de Blainville, are all absolutely of the same shape, that is to say, conical, somewhat curved backwards or rather inwards, much larger than those of the common dolphin and blunt at their extremity, provided with a sort of collar at their base, and they all have their prominent part as rough or braided. Habit. Unknown. Country. Ignored. The freshness of a head possessed by Mr. Sowerby, gave rise to M. de Blainville to speculate that this species inhabited the seas of Europe."



now seems to refer to only one of the skulls (with 26 teeth per jaw) in Paris described by Cuvier, and to the London skull (with 22 teeth per jaw) in Sowerby's collection, reported by de Blainville.

### Georges Cuvier (1823: 278)

G. Cuvier (1823: 278), in his review of cetaceans, now renames the Paris skin from Portugal *Delphinus frontatus* and expresses a different opinion on the other material:

“Une espèce de dauphin moins connue que les précédens, à la chute de sa convexité frontale plus rapide, le bec plus prononcé et plus comprimé...”

On a au Muséum un individu entier venu de Lisbonne et plusieurs têtes d'origine inconnue... Je nommerai maintenant cette espèce *frontatus*, pour éviter toute équivoque (1).<sup>18</sup>

The footnote (1) says “C'est le dauphin que M. Desmarest (Mammalogie, p. 512) nomme *dauphin de Geoffroy*... J'avois aussi soupçonné que ce pouvoit être celui que Shaw (Gener. zool., vol. II, part III, p. 514) indique d'une manière fort abrégée sous le nom de *delphinus rostratus*, et qu'il croit de l'Inde; mais il se pourroit aussi que ce dernier fût un vieil individu de *gangeticus*: toutes ces indications incomplètes ne servent qu'à mettre les naturalistes à la torture”.<sup>19</sup>

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<sup>18</sup> English translation: “A species of dolphin less known than the previous ones, with the downward slope of its frontal convexity steeper, the beak more pronounced and more compressed ... We have in the Museum a whole individual from Lisbon and several heads of unknown origin ... I will now name this species *frontatus*, to avoid any ambiguity (1).”

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<sup>19</sup> English translation: “It is the dolphin that M. Desmarest (Mammalogie, p.512) calls Geoffroy's Dolphin ... I also suspected that it could be the one that Shaw (... p 514) very briefly indicates under the name

Although Cuvier now obviously regards the series of skulls in Paris which he had described in his second paragraph in 1812 as conspecific with the skin from Portugal, he does not associate any of those with that specimen; as emphasised above, that would have been impossible, as its skull was still in situ in the skin. He also doubts where to place *Delphinus rostratus* Shaw, 1801. On p. 296 he gives an extensive description of one of the Paris skulls, although not mentioning the characteristic structure of the teeth: “Le *frontatus* (pl. XXI, fig. 7 et 8) s'en distingue davantage. Il a le museau plus comprimé vers le bout, un peu plus élargé vers son quart supérieur; le lobe du devant l'orbite plus marqué et séparé du museau par une plus grande échancrure; les os de nez plus larges, moins saillans et touchant aux intermaxillaires, la crête occipitale plus effacée; la tempe beaucoup plus grande, et l'occiput en conséquence plus étroit. Le vomer s'y montre en dessous comme dans les précédens.”<sup>20</sup>

Pl. XXI figs 8 and 9 show a dolphin skull which agrees well with that of the rough-toothed dolphin, although here too, the structure of the teeth is not visible.

The name *Delphinus frontatus* G. Cuvier, 1823

of *delphinus rostratus*, and that he believes it came from India; but it could also be that the latter was an old individual of *gangeticus*: all these incomplete indications serve only to torture naturalists.”

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<sup>20</sup> English translation: “The *frontatus* (Plate XXI, Figs 7 and 8) differs further. It has a beak more compressed towards the end, a little more enlarged towards its upper quarter; the lobe in the front of the orbit more marked and separated from the beak by a larger indentation; the larger nasal bones, less prominent and touching the intermaxillaries, the occipital crest more erased; the temporal bones are larger, and the occipital bone accordingly narrower. The vomer is shown below as in the preceding ones.”

thus appears to be based on composite material: the Paris skin from Portugal *Delphinus geoffrensis* de Blainville in Desmarest, 1817 (with the suggestion that *Delphinus rostratus* Shaw, 1801 may be conspecific), and a series of undocumented skulls in the Paris Museum.

In this connection, Cuvier's complaint about the incomplete descriptions by other authors, which to him only seem fit to torture naturalists, is quite ironic, since he himself provided perhaps the most inaccurate and puzzling accounts of all.

However, Cuvier's addition on p. 400 of his work is most important; it is here cited in full: "Addition importante a cette septième partie. Nous avons décrit, p. 296 ci-dessus, et représenté pl. XXI, fig. 7 et 8, les têtes d'une espèce de dauphin, que nous avons rapportées par conjecture à une espèce du cabinet du roi, qui a les mêmes dents à peu de choses près, et que nous avons nommée, p. 278, à cause de son front bombé, *delphinus frontatus*.

M. van Breda, très-habile professeur d'histoire naturelle à Gand, et gendre de feu mon ami Adrien Camper, vient de me communiquer le dessin de la véritable espèce dont proviennent ces sortes de têtes, ce qui est d'autant plus certain qu'il est accompagné du dessin de la tête de l'individu même d'après lequel est fait. Il en résulte que ce dauphin n'a pas le front relevé, mais que le profil de son crâne se perd insensiblement dans celui de son museau.

Le dessin d'un animal très-semblable a été envoyé de Brest au Muséum; en sorte que je ne doute point que nous n'ayons dans ces dessins et dans ces têtes la preuve qu'il doit être ajouté une espèce à la liste des dauphins authentiquement connus, et une espèce à museau pointu, mais non distinguée du front par une brisure marquée de son profil.

Sa dorsale est élevée et en demi-croissant, à peu près sur le milieu de sa longueur; ses pectorales sont taillées en faux, sa caudale est en croissant et échancrée au milieu. L'individu observé par M. van Breda avoit huit pieds de longueur.

*N.B.* Le *delphinus frontatus*, p. 278, a la dorsale presque aussi basse que le dauphin du Gange. Fin du cinquième volume."<sup>21</sup>

The seventh part of this volume, containing this "addition importante", was printed in 1825. The drawings shown to him in that year by van Breda from Ghent in present-day Belgium, of a fresh dolphin and its skull (no locality given) immediately made Cuvier realise that the skulls that he had assumed "par conjecture" to belong with the Paris skin with bulbous forehead, agreed with the one in van Breda's drawing. However, the latter's figure

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<sup>21</sup> "Important addition to this seventh part. We have described, p. 296 above, and represented pl. XXI, fig. 7 and 8, the heads of a species of dolphin, which we have reported by conjecture to be a species of the King's cabinet, which mostly has the same teeth, and which we have named, p. 278, because of its bulging forehead, *delphinus frontatus*. M. van Breda, a very skillful professor of natural history at Ghent, and son-in-law of my late friend Adrien Camper, has just communicated to me the drawing of the true species from which these types of heads come, which is all the more certain, accompanied as it is by the drawing of the head of the same individual. As a result, this dolphin does not have its forehead raised, but the profile of its skull is imperceptibly lost in that of its beak. The drawing of a very similar animal has been sent from Brest to the Museum; so that I have no doubt that we have in these drawings and in these heads the proof that a species must be added to the list of authentically known dolphins, and a species with a pointed beak, but not distinguished from the forehead by a marked break of its profile. Its dorsal fin is high and half-crescent shaped, about in the middle of its length; its pectoral fins are falciform, its tail is crescent-shaped and indented in the middle. The individual observed by Mr. van Breda was eight feet in length. *N.B.* The *delphinus frontatus*, p. 278, has the dorsal fin almost as low as the Ganges dolphin. End of the fifth volume. "

of the fresh animal showed a dolphin with a very flat forehead and a pronounced dorsal fin. By coincidence, Cuvier had also received a drawing of a similar animal from Brest in Brittany. He recognised that here was a species new to science, of which until then he only had a series of undocumented skulls in the Paris Museum. He now restricted the name *Delphinus frontatus* to the mounted skin in view of its bulbous forehead, but did not yet name the newly recognised species, which clearly was a rough-toothed dolphin.

By this action, the name *Delphinus frontatus* G. Cuvier, 1823 has become an objective synonym of *Delphinus geoffrensis* de Blainville in Desmarest, 1817 (*Inia geoffrensis*), and is not available for other species placed in the genus *Delphinus*.

### Lesson (1828: 206-207)

Lesson (1828: 206-207), in his volume on cetaceans, is the first to name this newly recognised species, which he arranged under de Blainville's "delphinorhynques", dolphins with a long and narrow beak. The paragraph on this species is cited here in full:

"Le delphinorhynque de Breda.  
(*Delphinus bredanensis*. Cuv.)

En figurant le crâne de cette espèce, M. Cuvier l'avoit rapportée au delphinorhynque de Geoffroy ou *delphinus frontatus*<sup>1</sup>. Ce savant, ayant reçu de M. Van Breda de Gand un dessin de l'espèce véritable d'où provenoient les têtes qu'il avoit examinées, a été conduit à reconnaître l'existence d'un cétacé nouveau et authentique (*Oss. foss.*, t. V, p. 400). Depuis on a aussi envoyé de Brest un dessin de dauphin qui se rapporte encore à ce delphinorhynque." The footnote reads: "<sup>1</sup> *Delphinus frontatus*, G. Cuv., *Oss. foss.*, t. V, pl. XXI, fig. 7 et 8 (par erreur). Addit. importante, G. Cuv. t. V, p. 400."

He continues: "L'individu observé par M. van Breda avoit huit pieds de longueur; une dor-

sale élevée et en demi-croissant, à-peu-près sur le milieu de la hauteur; des pectorales taillées en faux; sa caudale façonnée en croissant et échancrée au milieu. Mais ce qui caractérise cette espèce est le profil du crâne qui se perd insensiblement dans celui du museau, tandis qu'on remarque le contraire dans celui qui précède.

Sa tête osseuse<sup>1</sup> se distingue en effet par un museau plus comprimé vers le bout, un peu plus élargi vers son quart supérieur; le lobe du devant de l'orbite plus marqué et séparé du museau par une plus grande échancrure; les os du nez sont plus larges, moins saillants et touchent aux intermaxillaires. La crête occipitale est le plus effacée; la région temporale beaucoup plus grande, et l'occiput en conséquence plus étroit." The footnote says: "<sup>1</sup> G. Cuvier, *Oss. foss.*, t. V, p. 296." <sup>22</sup>

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<sup>22</sup> English translation: "The Breda Dolphin. (*Delphinus bredanensis*, Cuv.) In depicting the skull of this species, M. Cuvier had related it to the (small) dolphin of Geoffroy or *delphinus frontatus*. This scientist, having received from M. van Breda of Ghent a drawing of the true species from which the heads he had examined came from, had been led to recognise the existence of an authentic new cetacean (*Oss. V*, 400). Since then a drawing of a dolphin has also been sent from Brest, which still relates to this dolphin. "The footnote reads:" 1 *Delphinus frontatus*, G. Cuv., *Oss. foss.*, t. V, pl. XXI, fig. 7 and 8 (by mistake). Addit. important, G. Cuv. t. V, p. 400. " He continues: "The individual observed by Mr. van Breda was eight feet in length; an elevated and half-crescent-shaped dorsal, at about the middle of the height; falciform pectorals; its tail is crescent-shaped and indented in the middle. But what characterises this species is the profile of the skull, which is imperceptibly lost in that of the snout, while we notice the opposite in that which precedes. Its bony head<sup>1</sup> is distinguished by a beak more compressed towards the end, a little more enlarged towards its upper quarter; the lobe in front of the orbit more marked and separated from the beak by a larger indentation; the nasal bones are wider, less prominent and in contact with the intermaxillaries. The occipital crest is the most

He concludes: “Ce delphinorhynque sur lequel nous ne possédons que les renseignements qu’on vient de lire, habite les mers d’Europe.”<sup>23</sup>

Lesson kindly attributes the name *Delphinus bredanensis* to Cuvier who, however, had not named the species, or at least not published a name. In the index to this work (p. 440), Lesson listed the species as *Delphinorhynchus bredanensis*.

The locality of van Breda’s specimen remained unknown to Lesson, but he does mention the animal from Brest. His description of the exterior of the dolphin and its skull is nearly literally copied from Cuvier (1823, 1825) with only slight changes, hence the peculiar structure of the teeth is not mentioned here either: Lesson had only second-hand information, which he “vient de lire”. Nonetheless, Cuvier did not write nor provide the author with this text, such as de Blainville had to Desmarest (1817). The account on this species is by Lesson himself, though with due reference to and careful citation of Cuvier’s (1823-1825) descriptions. Schevill’s statement in Watkins et al. (1987: 78) that Cuvier “later” (meaning after 1823) “distinguished the species as *Delphinus bredanensis*” is incorrect; or at least, he did not publish that name.

Thus, the valid name of the rough-toothed dolphin is *Delphinus bredanensis* Lesson, 1828 (= *Steno bredanensis*), with Lesson as the author, not G. Cuvier, or G. Cuvier in Lesson, 1828 as it is given in most modern handbooks and other treatises: Rice (1998: 102), Reeves et

erased; the temporal region much larger, and the occipital bone accordingly narrower. “The footnote says:” 1 G. Cuvier, Oss. foss., t. V, p. 296. «

<sup>23</sup> “This (small) dolphin, on which we have only the information we have just read, lives in the seas of Europe.”

al. (2002: 346), Mead & Brownell (2005: 734), Jefferson et al. (2008: 191), West et al. (2011: 177) and Wang et al. (2014: 512). The name has been correctly used by Maigret (1994: 269), Miyazaki & Perrin (1994: 1), Rudolph et al. (1997: 10), Robineau (2005: 345) and others. The animals collected by van Breda and recorded from Brest, as well as the undocumented skulls in Paris regarded as conspecific by Cuvier, are syntypes of *Delphinus bredanensis* Lesson, 1828.

### Van Breda (1829)

Van Breda (1829) gives an extensive description of his specimen (in Dutch), accompanied by the drawings of the animal and its skull which he had shown to Cuvier. The picture of the animal is rather primitive, but the flat forehead and narrow beak are characteristic of the rough-toothed dolphin. He emphasises the differences of his dolphin from Cuvier’s *Delphinus frontatus*, but does not clearly describe or picture the structure of the teeth. He suggests adoption of the name *Delphinus Bredanensis* which he clearly attributes to Lesson, concluding with a brief diagnosis in Latin: “*Delphinus Bredanensis*, rostro valde acuto, fronte planâ, pinnis pectoralibus falcatis margine postero medio gibbo, caudali lunatâ emarginatâ”.

Strangely, van Breda still does not disclose where and when he obtained this specimen. In fact, the skull, recognisable from van Breda’s plate, that, following Schlegel (1862), was “[...] caught near the mouth of the river Scheldt”, was recently rediscovered by Bekker et al. (2016; cf. Heerebout et al. 2014) as it is preserved in the University Museum of Ghent.

### Fischer (1829: 505)

Fischer (1829: 505), in his Synopsis Mammalium, uses the name “*Delphinus Bredanen-*

sis Cuv.”, not attributing the name to Lesson. About the locality he adds: “*Ad oras Batavas. Van Breda.*” In those days, “*Orae Batavae*” applied to the coasts of the Netherlands and Flanders. Probably, Fischer had assumed this provenance, since van Breda was then based in Ghent.

### Georges Cuvier (1829: 288-289)

G. Cuvier (1829: 288-289), in the new edition of his *Règne animal*, very briefly mentions the following species:

On p. 288: “Notre *D. frontatus* n’a que vingt-une dents partout, plus grosses qu’au précédent, et le museau plus long et plus comprimée; on ne connaît pas son origine.”

On p. 289: “Un autre, que nous voyons aussi quelquefois (*D. rostratus*, Cuv.), a le museau grêle, et extérieurement tout d’une venue avec la tête, et les dents au nombre de vingt-une surtout. Sa dorsale est de grandeur ordinaire (2).”<sup>24</sup>

The footnote (2) does not concern the rough-toothed dolphin, but adds another species to his list. He clearly describes the flat forehead.

He concludes with the Ganges dolphin: “On doit distinguer de ce première groupe le *Dauphin du Gange* (*D. gangeticus*, Roxburg [= Roxburgh]), dont l’évent est en ligne longitudinale, et qui a les mâchoires grêles, renflées au bout. Il remonte très loin dans le Gange:

c’est probablement la *platanista* de Pline.”<sup>25</sup>

An unnumbered footnote reads: “N. B. Le *D. rostratus* de Shaw n’est que le *gangeticus*.”<sup>26</sup>

See Kinze (2000) for the publication dates of Lebeck and Roxburgh, who both described *Delphinus gangeticus* in 1801.

This account is utterly erroneous and confusing; Cuvier seems to have forgotten his observations made in 1825. Though referring the name *Delphinus rostratus* Shaw to the Ganges dolphin, he blatantly uses *Delphinus rostratus* Cuvier for the rough-toothed dolphin, as Desmarest (1817) had incorrectly done. He overlooks Lesson’s (1828) name *Delphinus bredanensis* for the species that he had recognised as new in 1825, and which Lesson had attributed to him.

### Frédéric Cuvier (1833: unpaginated; 1836: 156-158)

Frédéric Cuvier (1833: unpaginated; 1836: 156-158) published good descriptions, each accompanied by a lithographic plate (in 1833 hand-coloured, in 1836 reduced, in reverse and in black and white) of the animal from Brest, which indeed clearly is a rough-toothed dolphin. He also refers to the drawings that van Breda had shown to his brother Georges Cuvier. In 1833, he only uses a French vernacular “*Dauphin à long bec*”, but in 1836 applies the name *D. Rostratus*, since his brother had

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<sup>24</sup> English translation: “On p. 288: “Our *D. frontatus* has only twenty-one teeth everywhere, larger than in the previous one, and the beak longer and more compressed; we do not know where it comes from. “ On p. 289: “Another, which we sometimes also see (*D. rostratus*, Cuv.), has a slender beak, and externally in continuity with the head, and the teeth number twenty-one on each side of each jaw. Its dorsal fin is of ordinary size (2). “

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<sup>25</sup> English translation: “We must distinguish from this first group the Ganges dolphin (*D. gangeticus*, Roxburg [= Roxburgh]), whose blowhole is in longitudinal line, and which has slender jaws, swollen at the end. It goes very far upstream in the Ganges: it is probably the *platanista* of Pliny.”

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<sup>26</sup> English translation: “N.B. Shaw’s *D. rostratus* is only *gangeticus*.”

taken van Breda's animal "... pour type d'une espèce nouvelle qu'il nomma *rostratus* (1)",<sup>27</sup> the footnote saying: "(1) Cette espèce entre pour beaucoup dans le dauphin à bec mince de mon frère. Règ. anim., édit. de 1817, p. 278."<sup>28</sup>

This is incorrect, as in 1817 G. Cuvier had emphasised the bulbous forehead of his "dauphin à bec mince" and in 1825 had recognised that the newly distinguished species was different from his *Delphinus frontatus*.

Although F. Cuvier acknowledges that the name *Delphinus rostratus* had been given to the Ganges dolphin by Shaw (1801), he writes, overlooking or ignoring Lesson (1828): "Le nom de *rostratus* est sans doute celui que ce dauphin conservera dans les catalogues méthodiques, quoiqu'il ait été donné par Schaw [= Shaw] à l'espèce du Gange; mais ce dauphin du Bengale a lui-même changé de nom et comme genre et comme espèce"<sup>29</sup>, no doubt referring to the name *Platanista gangetica* (Lebeck or Roxburgh, 1801) although he does not specify, the generic name *Platanista* having been published in 1830.

Thus, F. Cuvier apparently found that the name *Delphinus rostratus* Cuvier had now become available for the rough-toothed dolphin.

Strangely, Robineau (2005: 351), in his review

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<sup>27</sup> English translation: "... for the type of a new species he named *rostratus* (1)",

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<sup>28</sup> English translation: the footnote saying: "(1) This species is a big part of my brother's slender-beaked dolphin. Reg. anim., ed. from 1817, p. 278.»

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<sup>29</sup> English translation: "The name of *rostratus* is undoubtedly the one that this dolphin will retain in the methodical catalogues, even though it was given by Schaw [= Shaw] to the species of the Ganges; but this Bengal dolphin itself has changed its name as a genus and as a species."

of the cetaceans of France, rejects the record from Brest, erroneously stating: "Cuvier fait référence à un dessin (non publié) reçu de Brest, ce qui paraît insuffisant". Obviously, he has overlooked the lithographs made after this drawing and published by F. Cuvier in 1833 and 1836, as well as the plate from a different source, published by Jardine in 1837 (see below).

### Jardine (1837: 252)

Jardine (1837: 252), in his natural history of Cetacea, gives the species as:

"Delphinorhynchus of Breda.

Plate XXVII.

Delphinorhynchus Bredanensis, Less. – D. Rostratus, Cuv. – Delphinus à long bec, Fr. Cuvier."

The genus *Delphinorhynchus* was used by Lesson (1828) in the index of his work (p. 440), not in the main text. Jardine's description is based on Lesson's account. Pl. 27 figures the animal washed ashore near Brest: "The specimen of which our Plate is a representation was stranded at Brest and there faithfully delineated." The hand-coloured lithograph clearly is of a rough-toothed dolphin, and is obviously based on another drawing than the one reproduced by F. Cuvier (1833, 1836). This plate too, has been overlooked by Robineau (2005).

### Schlegel (1841: 27)

Schlegel (1841: 27), in his review of cetacean species, calls the rough-toothed dolphin *Delphinus planiceps*, which name he erroneously attributes to van Breda (1829): "Delphinus planiceps, Tab. IV, Fig. 8 (Zähne). Unter diesem Namen aufgeführt von van Breda, Verhand. Nederl. Instit. 1829, p. 235, Tab. 1 et 2. Cuvier, Oss. foss. V, Pl. 21, Fig. 7 et 8, p. 278 et p. 296 hat zuerst den Schädel dieser Art abge-

bildet, aber denselben fälschlich als zu seinem *D. frontatus* gehörend, beschrieben, welchen Jrrthum er jedoch schon in dem nämlichen Werke p. 400, berichtigte, und kurz darauf, Règne an. p. 289, den früher von Shaw für den gangetischen Delphin gebrauchten Namen *D. rostratus*, auf unser Thier anwendete. Letzteren behielt auch Fr. Cuvier bei, der in seinen Mammifères ein bei Brest gestrandetes Exemplar abbildete. Fischer aber, Synopsis p. 505, nannte diese Art: *D. Bredanensis*.<sup>30</sup>

Schlegel too, overlooks Lesson (1828). He refers to both animals that had been figured: “Die äussere Gestalt des Thieres ist nur nach den beiden, bei Brest und an den holländischen Küsten gestrandeten Individuen bekannt”<sup>31</sup>, thus giving the Dutch coast as the locality of van Breda’s animal.

In fact, Schlegel had copied the name *Delphinus planiceps* from a label of an undocumented skull in the Leiden Museum. He corrected this error in 1862 (p. 85 – see below). He does not mention the structure of the teeth, nor is this character visible in his plate IV fig. 8. Robineau (2005: 346) repeats Schlegel’s erroneous attribution of the name *Delphinus*

*planiceps* to van Breda.

The name *Delphinus planiceps* Schlegel, 1841 is thus an objective synonym of *Delphinus bredanensis* Lesson, 1828. Its syntypes are the animals collected by van Breda and near Brest.

Gray (1846: 43), in his review of cetaceous animals, places *Delphinus rostratus*, erroneously attributed to Cuvier (1812) in the new genus *Steno*.

### Schlegel (1862: 84-86)

Schlegel (1862: 84-86), in his book on the mammals of the Netherlands (in Dutch), now opts for the name *Delphinus rostratus*, while in the same sentence recognising that Lesson had earlier named the species *Delphinorhynchus Bredanensis*, the name that Lesson had given in the index of his work. Again, Schlegel also mentions the animal from Brest.

Most importantly, he specifies that van Breda’s dolphin had been obtained in or near the mouth of the river Scheldt, that is, in the border area between Dutch and Belgian waters. He must have received this information from van Breda himself, as the two colleagues were well acquainted and had jointly published a paper on a cetacean subject. After the Belgian uprising in 1830, van Breda had left Ghent for a professorship at Leiden and later moved to Haarlem, where he became the director of Teylers Museum. The animal obtained by van Breda (cf. Bekker et al. 2016) represents the northernmost record of the rough-toothed dolphin in European waters and the only documented specimen from the North Sea to date.

### Later revisions

Later revisions concerning the name of the rough-toothed dolphin are not considered here, except for the following notes:

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<sup>30</sup> English translation: “*Delphinus planiceps*, Tab. IV, Fig. 8 (Teeth). Under this name listed by van Breda, Verhandl. Nederl. Instit. 1829, p. 235, Tab. 1 et 2. Cuvier, Oss. foss. V, Pl. 21, Fig. 7 et 8, p. 278 et p. 296 first depicted the skull of this kind, but mistakenly described it as belonging to *D. frontatus*, an error which he had already corrected in the same work p. 400, corrected, and shortly thereafter, to Règne. p. 289, formerly used by Shaw for the gangetic dolphin name *D. rostratus*, applied to our animal. The latter name was also kept by Fr. Cuvier, who depicted a specimen stranded at Brest in his Mammifères. Fischer, however, Synopsis p. 505, called this species: *D. Bredanensis*.”

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<sup>31</sup> English translation: “The external form of the animal is known only from the two individuals stranded at Brest and on the Dutch coasts.”

Hershkovitz (1966: 15) uses *Steno bredanensis* Lesson [= (Lesson, 1828)], wrongly mentioning *Delphinus rostratus* Cuvier (no year given) as type species, noting that the name *Delphinus rostratus* Desmarest, 1817 (which Desmarest attributed to Cuvier) was preoccupied by *Delphinus rostratus* Shaw, 1801. His overview is extremely confused and confusing, and contains numerous mistakes.

Schevill in Watkins et al. (1987: 78) uses *Steno bredanensis* (G. Cuvier in Lesson, 1828). He also mentions that Desmarest (1817) discussed the Paris skulls under the name *Delphinus rostratus* Cuvier, referring to Cuvier's 1812 paper, which is incorrect.

Maigret (1994: 269) correctly uses *Steno bredanensis* (Lesson, 1828).

Miyazaki & Perrin (1994: 1) correctly use *Steno bredanensis* (Lesson, 1828).

Rice (1998: 102) uses *Steno bredanensis* (G. Cuvier in Lesson, 1828) and states that the name *Steno rostratus* (G. Cuvier, 1817) had long been in use, but was preoccupied [by *Delphinus rostratus* Shaw, 1801].

Mead & Brownell (2005: 734) use *Steno bredanensis* (G. Cuvier in Lesson, 1828) and erroneously attribute the name *Delphinus rostratus* to Desmarest (1817)<sup>32</sup>.

Robineau (2005: 345-346) correctly uses *Steno bredanensis* (Lesson, 1828), but wrongly states that Cuvier (1812) included the Paris skulls in his *Delphinus rostratus*; he erroneously attributes the name *Delphinus planiceps* to van Breda (1829).

West et al. (2011: 177) use *Steno bredanensis*

(Cuvier in Lesson, 1828) and again wrongly attribute the name *Delphinus rostratus* to Desmarest (1817).

## Conclusion

In conclusion, the correct name of the rough-toothed dolphin is *Steno bredanensis* (Lesson, 1828). The type locality of the rough-toothed dolphin is the mouth of the river Scheldt. *Delphinus rostratus* Shaw, 1801 is considered a senior synonym of *Inia geoffrensis*, not a junior synonym of *Delphinus gangeticus* Lebeck 1801.

Re-identification of Shaw's type specimen as an Amazon dolphin would have consequences for the name of that species, which would then become *Inia rostrata* (Shaw, 1801). This is undesirable for reasons of stability. If the specimen cannot be relocated and re-examined, as seems likely, it would be best to consider this "nomen dubium", because the description is insufficient for identification, or else to ask the International Commission on Zoological Nomenclature to suppress the name *Delphinus rostratus* Shaw, 1801.

**Acknowledgements:** The editors thank Louise Allcock, Tom Jefferson, Vincent Ridoux and Maude Parent for their assistance with review and revision of this paper.

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<sup>32</sup> This error is perpetuated in online taxonomic resources such as WoRMS ([www.marinespecies.org](http://www.marinespecies.org)) and ITIS ([www.itis.gov](http://www.itis.gov)).



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## Samenvatting

### Een chronologisch overzicht van de naamgeving van *Delphinus rostratus* Shaw, 1801 en *Delphinus bredanensis* (Lesson, 1828)

Om de sterk met elkaar verweven naamgevingen van *Delphinus rostratus* en *Delphinus bredanensis* te ontwarren wordt een chronologisch overzicht gegeven van de totstandkoming van die naamgevingen. Op basis van dit overzicht wordt *Delphinus rostratus* beschouwd als een senior synoniem van *Inia geoffrensis* en niet als een junior synoniem van *Delphinus gangeticus* Lebeck, 1801. F. Cuvier meende in 1836 te weten dat de naam Cuvier beschikbaar was voor de snaveldolfin waarbij hij ten onrechte zijn broer G. Cuvier 1812 en niet Shaw 1801 de credits gaf. De juiste naam voor de snaveldolfin is echter *Steno bredanensis* (Lesson, 1828) met als type-lokaliteit de Scheldemonding. Aangezien het type-exemplaar van Shaws *Delphinus rostratus* niet kan worden gelokaliseerd om opnieuw onderzocht te worden, lijkt het meest voor de handliggend de naam te beschouwen als een 'nomen dubium', omdat de beschrijving niet voldoet aan de normen voor een juiste identificatie. Alternatief kan zijn de *International Commission on Zoological Nomenclature* te vragen de naam uit te sluiten.

Received: 12 June 2018

Accepted: 19 August 2018