

Rehabilitation of *Platanista gangetica* (Lebeck, 1801) as the valid scientific name of the Ganges dolphin

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The Dutch scientist Heinrich Julius Lebeck's description of the Ganges dolphin is, based on a deduced latest date of publication 24 August 1801, given priority over William Roxburgh's account of the same species, for which no precise date could be established. Although very similar to the work of Roxburgh, Lebeck's paper shows independent text and figure elements; therefore, Pilleri's assumption that it is a plagiarism of Roxburgh's treatise is rejected.

Introduction

Until 1972, there was general agreement on crediting the original description of the Ganges dolphin to Heinrich Julius Lebeck in 1801 (Gray, 1846, 1850; Blyth, 1863; Anderson, 1879 (see Hershkovitz, 1966).

Pilleri (1972a & b, 1978) emphasized that the paper by Heinrich Julius Lebeck and the treatise by William Roxburgh on the same species were both published in 1801. In order to solve this evident problem of priority, Pilleri made no attempt to establish a more precise date of publication of the two papers, but pointed out that Home (1818) referred to Roxburgh as the original author. He recommended the replacement of *Platanista gangetica* (Lebeck, 1801) with *Platanista gangetica* (Roxburgh, 1801), on the assumption that Lebeck's paper was a German copy or translation of the article by Roxburgh. Neither *Delphinus gangeticus* Lebeck, 1801 nor *Delphinus gangeticus* Roxburgh, 1801 have been suppressed and therefore both names are available, but only one of them can be valid in accordance with the rules of the International Code of Zoological Nomenclature.

Pilleri's proposal has generally been followed (e.g., Reeves & Brownell, 1989; Jefferson et al., 1993; Rice, 1998) and was included in Opinion 1565 of the Bulletin of Zoological Nomenclature placing *Platanista gangetica* (Roxburgh, 1801) on the Official List of Specific Names (Rice, 1989). As will be shown, however, Pilleri did not stringently follow the rules set for establishing priority and used incomplete and circumstantial evidence in favour of Roxburgh. Moreover, the International Code of Zoological Nomenclature does not differentiate between originals and translations, so that point issued by Pilleri, whether true or not, is irrelevant to establishing priority.

The purpose of this paper is to elucidate whether Lebeck's article really is a German copy of Roxburgh and to establish a more precise date of publication, in order to settle the question of priority.

Methods

For the purpose of this work, Lebeck's and Roxburgh's original descriptions were consulted and thoroughly compared, and a review of subsequent literature was conducted.

The publication dates of the two papers were investigated by consulting the complete volumes of the journals in which they appeared and the book catalogues of the Frankfurt and Leipzig Easter and Michael Mass fairs (Anon., 1801), as well as through inquiries to the British Library and the Stiftung Preussischer Kulturschatz in Berlin, asking for archive material that could elucidate the dates of issue of the two papers. Biographical data on the two authors were collected, starting with a re-assessment of Pilleri's information (1972a & b, 1978). Lebeck was searched for in the files of missionaries of the Royal Archive in Copenhagen, the archive of the Francksche Stiftung in Halle and the University Library in Uppsala, as well as in the Dutch biographical literature. In addition, volumes of the *Asiatick Researches* (vols 5-6, 8-9) and *Der Gesellschaft naturforschender Freunde zu Berlin Neue Schriften* (vols 2 and 4) preceding or following the volumes containing the description of *Delphinus gangeticus* were consulted in search of further biographical information.

Biographies of Roxburgh and Lebeck

William Roxburgh (1751-1815) was an esteemed British botanist. His biography was published by Boulger (1897) and is repeated in Pilleri's accounts (referred to as Lee, 1897). Roxburgh worked in India from 1776 to 1797 (1776-81 in Madras, 1781-93 in Cocanada, and 1793-97 in Calcutta). In 1797-99 and again in 1805-08 he was forced to stay in Britain due to bad health. He had to leave India again in 1813, when his health finally broke down; he died in Edinburgh in 1815. Roxburgh was a board member of the Asiatick Society. He is also listed as an extraordinary member from the Coromandel coast of the *Gesellschaft naturforschender Freunde zu Berlin* (preface to *Neue Schriften*, vol. 2) and an honorary member of the same society (in the annual report published in the same journal). Many of Roxburgh's papers were published after his death by the Dane Nathaniel Wallich (born Nathan Wulff), one of his successors as director in the Botanical Garden of Calcutta and a personal friend.

Heinrich Julius Lebeck (1772-1800) was a promising student of botany and natural history in general and published at least five scientific papers (Lebeck, 1798, 1799a, 1799b, 1801, 1802), as reviewed by Pilleri (1978). Lebeck was neither a Danish missionary (Cuvier, 1823) nor a German missionary in Danish service (Gosch, 1875, also stated by Pilleri, 1972a & b), but Dutch, as corrected by Pilleri (1978). He was born on Ceylon, now Sri Lanka, which at that time was a Dutch colony (immatriculation data, University of Uppsala), presumably as the son of the Dutch government secretary Abraham Evert Lebecq, who died in 1777 (Molhuysen & Kossmann, 1933). As a boy he was apparently educated in the school of the Reverend Christoph Samuel John (1747-1813), and here he may have picked up the Malabar language, to which he referred as 'my native language' (Pilleri, 1978). John was German and had been educated in Halle. During the period 1771-1813 he was an ordained missionary in Danish service at the colony of Tranquebar (= Trankenbar; not Trivandrum as stated in

Pilleri, 1978). Here he co-founded a scientific society, Tranquebars Videnskabelige Selskab (Nørgaard, 1987). Through John, Lebeck may have had an opportunity to visit Halle during his travel to Europe in the early 1790s, as has been supposed by Pilleri (1978), but there are no records of him in the archives there (C. Keller, in litt. 1996). Lebeck became very interested in natural history and in 1794 continued his studies of natural history in Uppsala, Sweden, under Carl Peter Thunberg (1743-1828), a disciple of Linnaeus and himself a renowned botanist and ichthyologist. Thunberg had made his acquaintance of Lebeck's family on Ceylon on his way to Japan (Thunberg, 1800).

Lebeck was immatriculated at Uppsala in 1794 under the name Henricus Julius Lebeck Ceylonensis and in 1795 he obtained a *testamur* from the university. Lebeck left Sweden from Göteborg on a Swedish vessel in December 1795, bound for Bombay (van Steenis-Kruseman, 1958; Uppsala University Library, in litt.). He made a voyage to the Cape, Ceylon, India and Java (John, 1801). Letters from Lebeck to Thunberg and Hallenberg in Uppsala were sent from "Caep Goede Hoop" (Cape of Good Hope), March 1796; Jafnapatnam, December 1796; Colombo, February 1797; Calcutta, January 1798; Tranquebar, August 1798 and Batavia, February 1799 and onwards (Uppsala University Library). Pilleri (1978) quotes another letter to Dr Edward Smith of the Linnean Society in London, dated Calcutta, 26 November 1797, but this letter unfortunately only refers to items sent to London and does not give information on matters such as the collection of a dolphin, which took place that same month.

Pilleri (1978) overlooked the description by John (1801) of a new species of star gazer (Pisces, Uranoscopidae) in the paper immediately following Lebeck's description of the Ganges dolphin. Here, John named the new star gazer after Lebeck with the following justification:

"Eins [= Dr. Blochs herrliches Fischbuch] hat mein thätigster und für die Naturgeschichte brennender Freund Hr. Lebeck, die Krone meiner Erziehungsanstalt, der unter einem berühmten Thunberg in Upsala seine Wissenschaften fortsetzte, und so sehr bereicherte, erhalten, der darmit aufs beste wuchert. Nachdem er einen Theil von Cap de bonne Esperance, von Ceylon, von Bengalen und von der Küste Coromandel bereiset, gehet er nun nach Java. Die Naturforscher werden es mir folglich nicht verdenken, wenn ich ihm zu Ehren diesen Fisch *Uranoscopus Lebeckii* genannt habe."

[One of them (= the marvellous fish book by Dr Bloch) has been received by my most active and to the natural history most committed friend Mr Lebeck, the crown of my education college, who continued and enriched his science under a famous Thunberg in Upsala and who will make the best use of it. After he has traveled part of the Cape of Good Hope, Ceylon, Bengal and the Coromandel coast, he is now bound for Java. Naturalists therefore will not blame me for honouring him by naming this fish *Uranoscopus Lebeckii*.] John's name and description were acknowledged by Schneider (1801: 47-49) under the name *Uranoscopus Le Beck*. John had sent drawings and notes on the star gazer as well as the Ganges dolphin to Marcus Elieser Bloch (1723-1799). Schneider ascribed the picture and note on *Delphinus gangeticus* to Lebeck and forwarded the plates and manuscripts to the Gesellschaft naturforschender Freunde zu Berlin (preface to Neue Schriften, vol. 3), as Bloch had died in Carlsbad (now Karlovy Vary) on 6 August 1799 (Karrer, 1978), before John's letter had arrived there:

“Picturam et notitiam misit Johnius, et piscem pulcherrimum ab ardentissimo historiae naturalis amatore Le Beck cognominavit, cui picturam et notitiam delphini Gangetici debebat Blochius, quanquam aquis Caroliniensibus immortalus, antea quam literae Johnii cum picturis huc advenissent.”

In 1797, Lebeck stayed five weeks in Tranquebar visiting John, and again in 1798, when he apparently became a member of Tranquebars Videnskabelige Selskab, the scientific society around John (Nørgaard, 1987). He may have finished his paper on the Ganges dolphin there. The wording in John’s paper on the star gazer indicates that John wrote it shortly after Lebeck’s departure from Tranquebar in the autumn of 1798.

Lebeck’s profession in Batavia is given as mint master of the Dutch East India Company. Lebeck died on 12 June 1800 on Java (van Steenis-Kruseman, 1958; the year also reported in vol. 4 of the *Neue Schriften*). The Public Record Office in The Hague, however, gave 25 February 1801 as the day of his death (Pilleri, 1978).

Lebeck was an honorary member of the Asiatick Society for the years 1797, 1799 and 1802 (“Mr. Henry J. Le Beck”: *Asiatick Researches*, vol. 7: 513) and an extraordinary member of the *Gesellschaft naturforschender Freunde zu Berlin* (“Herr Henry Jul. Le Bec Esq. Zu Jaffnapatnam”: *Neue Schriften*, vol. 2: vi: 2) and also became a member of Tranquebars Videnskabelige Selskab.

Lebeck sent herbaria to Thunberg, who named the South African plant genus *Lebeckia* after him. Thunberg (1800: 139-140) states:

“Nomen in honorem D. Lebeck apud Societ. Ind. Commercior. Holland. in Java Officiar. Celeb. praesidis olim Discipuli omnium Carissimi.”

Comparison of the text of the descriptions by Lebeck and Roxburgh

Lebeck used the Bengali name “susuk” for the dolphin, whereas Roxburgh refers to it under the Hindi name “sousou”. It seems likely that both authors independently inquired after the vernacular name.

Both descriptions are obviously based on the same specimen; both authors give the same total length and weight, but only Lebeck provides the month and locality where the specimen was caught (November 1797, 1¹/₂ German miles = 11 km? from Calcutta), as was noted already by Eschricht (1851). For the rest, Lebeck and Roxburgh either give different values, or measurements that are not found in the other account (table 1).

The authors report different observations on organs and morphological features. Lebeck mentions the presence of four hard rays (“harte Strahlen”) in the flipper, whereas Roxburgh refers to the flippers as “oblique fanshaped”. Lebeck describes the dorsal fin as an elevated fatty fold (“erhabene Fetthaut”), Roxburgh states that there is no fin at all. Only Lebeck mentions a second specimen, which consisted of a rostrum only, and refers to the variation within the species. Both authors mention the presence of parasites, but only Lebeck states their presence also in the mouth and records their length as more than an inch. Lebeck compares the abdomen with that of the harbour porpoise *Phocoena phocoena* (Linnaeus, 1758) and refers to Bloch (the book given to him by John, see above).

In conclusion: The two papers are indeed similar, but at the same time show so

Table 1. Comparison of measurements and other information given in Lebeck (1801) and Roxburgh (1801).

	Lebeck	Roxburgh
Tooth count		
upper jaw	up to 60	30 per jaw half
lower jaw	54	30 per jaw half
eyes	1 $\frac{1}{2}$ " from gape	nearly 2" above posterior angle of mouth
ear opening	5" behind the eye	not given
blubber	1" thick	not given
flipper	not given not given	9" long 7" broad
fluke	not given not given	14" horizontal 2" crescent
genital slit	2" long not given not given	not given 12" behind insertion of pectoral fins 10" in front of anus
anus	1" behind genital slit	not given

many differences that the possibility of a direct translation must be ruled out. I therefore treat them as independent descriptions of the same specimen.

Comparison of the accompanying figures

Eschricht (1851) judged both Lebeck's and Roxburgh's drawings as crude and provided a third drawing by Thornam (fig. 1).

Lebeck's paper is accompanied by four figures (fig. 2), Roxburgh's only by one, representing the dolphin's external features (fig. 3).

Lebeck's drawing of the animal (fig. 2.1) looks more crude than Roxburgh's (fig. 3), so the latter could be a corrected and amended version of the former. Both drawings show fish-like flippers and flukes with five and four stripes, respectively. Only Roxburgh's drawing shows the ear opening. The tooth counts of both drawings do not agree with what is stated in the text.

Lebeck's figure 2 (fig. 2.2) also shows the animal from the ventral side. It is a much more realistic drawing than his first figure, giving the position of the anus, genital slit and the correct shape of the flippers and flukes. Lebeck's figure 3 (fig. 2.3) shows the upper and lower jaws with the tongue and palate exposed. The variation in size of the teeth is clearly indicated, though the number of teeth may not be in accordance with the real count. Lebeck's figure 4 (fig. 2.4) illustrates the peculiar-looking penis.

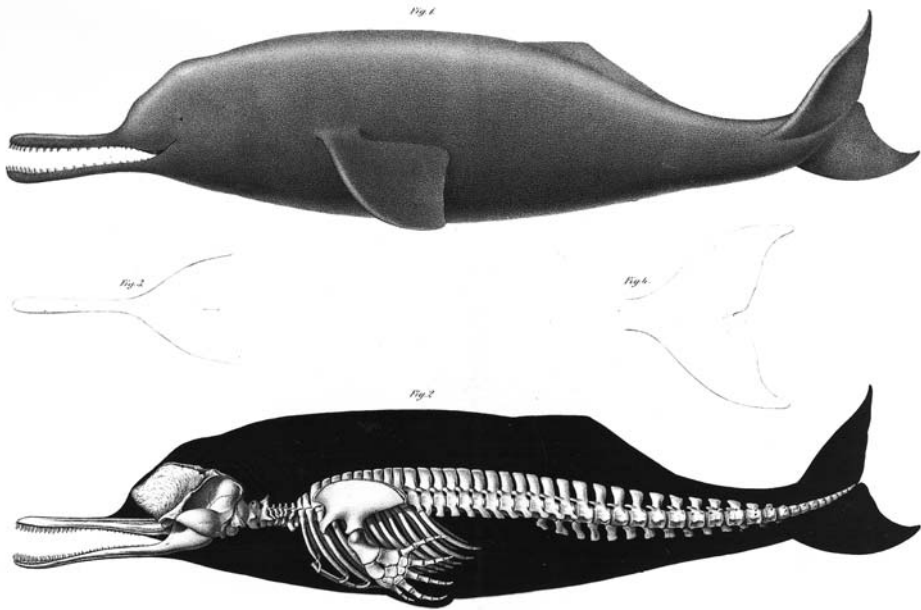


Fig 1. Plate accompanying Eschricht (1851).

In conclusion: the two habitus drawings show obvious similarities. The three extra drawings provided by Lebeck clearly indicate that his is an independent paper.

Relationship between Lebeck and Roxburgh

It is beyond doubt that Lebeck's and Roxburgh's descriptions are in some way related and that the authors were acquainted with one another. Both were members of the two learned societies mentioned above. Lebeck visited Roxburgh at his home in Calcutta in 1797 (letter to Thunberg) at the time the specimen was collected. Roxburgh had communicated a paper by Lebeck in the *Asiatick Researches* (Lebeck, 1798), which may indicate earlier contact between them. Pilleri (1972a & b, 1978) pointed out that only Roxburgh used the wording "new species" in the title. Both Lebeck and Roxburgh, however, recognize a fifth (= new) species of dolphin (as interpreted by Eschricht, 1851). It is, of course, not possible to judge on this basis which paper contains the original description. Pilleri (1972a & b) assumed that Lebeck was a German missionary and that only Roxburgh "would have had the basic knowledge of anatomy that would have made him competent to deal with a dolphin" (implicitly, Lebeck had not?), followed by: "It is inconceivable to me that a man of his experience would need to copy a report of Lebeck. The contrary is much more plausible" (Pilleri, 1972b: 347).

In 1978, Pilleri directly accused Lebeck of scientific plagiarism, further based on a comparison of Lebeck's (1798) account on the Ceylonese pearl fishery with de Jonville's (1801) unpublished memoir on the pearl fishery dated Colombo, 24th April 1801. Pilleri (1978: 18) calls this work of Lebeck "superficial and journalistic", though

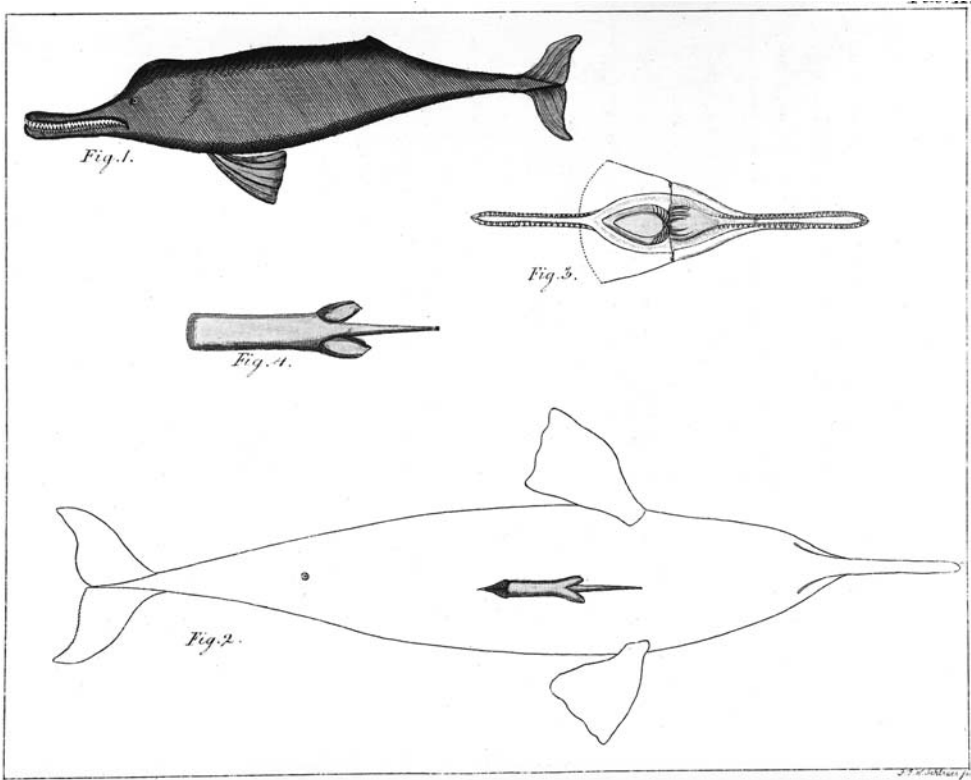


Fig 2. Original figures in Lebeck (1801).

at the same time adding, referring to Lebeck's detailed zoological information: "In the light of his letters, it seems hardly possible that he could have acquired so much knowledge in such a short time during his travels." And: "It is highly improbable that Lebeck could have identified the invertebrates himself." Pilleri suggests that Lebeck got "some very precise information" from de Jonville. However, Pilleri was unaware of the fact that Lebeck grew up on Ceylon and may have had training in natural history (John's school in Tranquebar) from childhood. Lebeck was younger and hence a less experienced writer of scientific papers than Roxburgh (and de Jonville). Lebeck's account on the Ganges dolphin is indeed brief, but the more elaborate account given by Roxburgh could equally well be a communication of Lebeck's somewhat shorter paper. In support of this, it can be argued that Roxburgh was very ill when the dolphin was collected (November 1797), as in the same year he had to leave for Scotland due to ill-health (Boulger, 1897). This may explain the general wording for the distribution of the species in Roxburgh's account, in contrast to Lebeck's more exact date and locality, and perhaps also Roxburgh's omitting certain anatomical details which Lebeck recorded, possibly because Roxburgh was not on the spot himself. After his stay in Calcutta, Lebeck visited Tranquebar, where his friend John may have encouraged him to report his findings. Probably, John sent both his own and Lebeck's manuscript to Berlin and both papers were edited there.

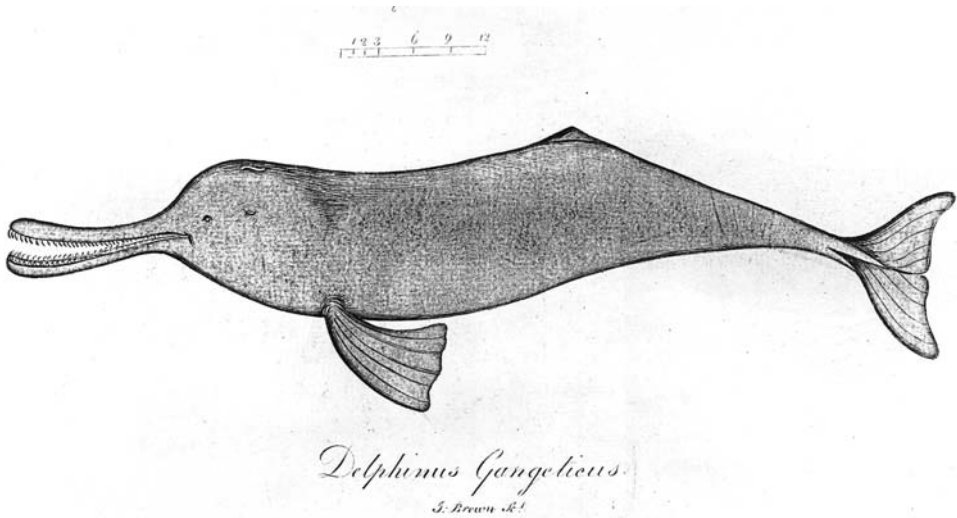


Fig 3. Original figure in Roxburgh (1801).

According to Pilleri (1972a & b), the Asiatick Researches must have been available in Calcutta, but perhaps not *Der Gesellschaft naturforschender Freunde zu Berlin Neue Schriften*. However, John received the German journal in Tranquebar and also was an honorary member of the Asiatick Society. Roxburgh himself too, was a member of the Berlin society (see above). We do not know whether Roxburgh could read German, but through John or through other naturalists (e.g., in the nearby Danish colony of Serampore), translations of the *Neue Schriften* may have been available to English scientific circles in Calcutta. Roxburgh worked in Madras from 1776 to 1778 and may already at that time have made the acquaintance of John in Tranquebar. Pilleri presumes that the second rostrum could only have been shown to Lebeck in Calcutta. However, the scientific circles there were not the only ones in the area and Lebeck could also have seen the specimen within the group around John who, as shown above, was a keen scientist and a co-founder of the scientific society in Tranquebar.

Pilleri (1972a & b) emphasizes that the measurements given by Lebeck are in British units. He assumes that, if the original contribution had been in German (or Dutch), one would logically have expected German units. Actually, Lebeck's paper gives the distance of the locality in German miles (which could have been an adaptation by the journal), whereas the measurements of the animal are recorded in Imperial British units. But then, these were used or known in all European colonies as well as in local trade. The assumption that Lebeck would have used German units therefore seems unlikely.

In conclusion, Pilleri's arguments for Roxburgh being the original author are doubtful. Most important, however, they are irrelevant to the question of priority.

Date of publication

Volume 7 of the Asiatick Researches may have been distributed as separate sheets. The British Library could not establish the exact date of distribution for the sheet containing Roxburgh's paper or for the whole volume (British Library, in litt. 1996).

On a subsequent page of vol. 7 a letter dated Columbo, 27 September 1801 is published and hence the volume cannot have been circulated earlier than this date. Considering the time it would have taken for this letter to arrive from Colombo in Calcutta and the time needed for printing, vol. 7 may not have been distributed before the first months of 1802. Volume 7 also contains a list of members for the year 1802 (p. 513), which too, would indicate circulation during 1802. Thus, 1801 could be the official year for the volume, but hardly the actual year of publication.

Volume 7 of the Asiatick Researches must have been published later than September 1801, which is not a precision of the date. Therefore, in accordance with the International Code of Zoological Nomenclature, it must be dated 31 December 1801.

Volume 3 of Der Gesellschaft naturforschender Freunde zu Berlin Neue Schriften appeared as a single volume and contains a preface dated 28 April 1801, so the volume was distributed no earlier than this date. Schneider (1801: iv), in his introduction to the Systema Ichthyologiae, refers to Bloch's obituary, to be published in "Socii Berolinensis Societatis naturae curiosorum in Volumine III. novorum Commentariorum, quod nundinis his Lipsiensibus prodetur." [Der Gesellschaft naturforschender Freunde zu Berlin Neue Schriften vol. 3, which will be announced at this Leipzig fair; interpreted by Karrer et al. (1994: 107) as "which is due out in the coming Leipzig Fair"]. Karrer et al. (1994: 102-103) established that a display edition of the Systema Ichthyologiae was shown at the spring fair in Leipzig in 1800, but that Schneider completed the work only in 1801. The deadline for inclusion in the Easter fair catalogue for the year 1801 was the week before the fourth Sunday of Lent which in that year fell on 15 March, i.e. more than six weeks before the date of the preface to vol. 3 of the Neue Schriften. Therefore, the Michael Mass catalogue has to be considered, in which the third volume is indeed listed as "fertig geworden" (= finished; Anon., 1801: 537). This means that vol. 3 cannot have been distributed later than 24 August 1801, the deadline for inclusion of new publications in the Michael Mass catalogue for the year 1801.

Hence, I consider Lebeck's account to be dated 'before 24 August 1801' and, since this predates Roxburgh's treatise, the valid scientific name of the Ganges dolphin is:

Platanista gangetica (Lebeck, 1801)

Delphinus gangeticus Lebeck, 1801: 280-282.

Delphinus gangeticus Roxburgh, 1801: 170-174 (junior synonym and homonym).

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