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PHYSETER MACROCEPHALUS LINNAEUS, 1758, THE VALID NAME FOR THE SPERM WHALE

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With 3 plates

No uniformity exists in the use of the scientific name for the Sperm Whale, one of the earliest known and most familiar of the whale species. Both the names *Physeter macrocephalus* Linnaeus, 1758, and *Physeter catodon* Linnaeus, 1758, have been widely used for it. Hershkovitz (1966: 116-120) in his check-list of the Cetacea listed 18 references (1758-1964) to the specific epithet *catodon* (an epithet that he accepted himself) and 24 references (1758-1957) to *macrocephalus*; as only the most important literature was cited by Hershkovitz, the usage of both epithets is far greater.

In view of the lack of uniformity in the usage of the scientific name of the Sperm Whale, it is essential that its valid name be established. Of the two names, which were published simultaneously by Linnaeus (1758: 76) in the 10th edition of his *Systema Naturae*, *Physeter macrocephalus* unequivocally refers to the Sperm Whale and no doubt has ever been attached to the identity of that species. Linnaeus's description and references given under *Physeter catodon*, however, are rather obscure and for a long time were not well understood. Therefore the epithet *macrocephalus* before 1911 was used for the Sperm Whale by practically all authors. In that same period the epithet *catodon* was thought to refer either to (a) a distinct species, (b) a juvenile of *Physeter macrocephalus*, or (c) *Delphinapterus leucas* (Pallas, 1776); but before 1911 it was never adopted for the Sperm Whale, not even by those authors who thought *P. catodon* to be a juvenile of *P. macrocephalus*.

In 1911 Thomas (1911: 157), who at that time was one of the foremost authorities on mammalian systematics, decided that *P. catodon* and *P. macrocephalus* were definitely synonymous and he accepted the name *P. catodon*

for the species, as that name had line priority over *P. macrocephalus*. Thomas was followed in this decision by many but not by all authors.

In 1938 Boschma (1938: 161, 166) pointed out that the identity of *Physeter catodon* of Linnaeus is doubtful. Also he made clear that the first author known to him, who synonymized *P. catodon* with *P. macrocephalus*, viz., Murray, 1866, adopted the latter name for the species. Boschma therefore correctly decided that *Physeter macrocephalus* is the valid name for the Sperm Whale.

HersHKovitz (1966: 121) did not agree with Boschma and restored the name *P. catodon*; as HersHKovitz's check-list is of extremely great importance, his decision is likely to be followed by many zoologists using his fundamental work. As in our opinion his conclusions are incorrect, we thought it worth-while to go deeper into the question here.

First the position of the name *Physeter macrocephalus* will be considered and next that of *Physeter catodon*; a discussion of the nomenclatural status of the two nominal species concludes this note.

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Physeter macrocephalus Linnaeus, 1758

Linnaeus's (1758: 76) definition of *Physeter macrocephalus* is as follows:

P. [hyseter] dorso impenni, fistula in cervice.
Catodon fistula in cervice. *Art. gen.* 78. *syn.* 108. *Faun. svec.* 262. *Syst. nat.* 39. n. 2.
Cete. Clus. exot. 131.
Cete Clusio descriptum. Will. icht. 41.
Balaena major in inferiore tantum maxilla dentata macrocephala bipinnis. *Raj. pisc.* 15:11.
Habitat in Oceano Europaeo.
Longitudo saepe sexaginta pedum.
Sperma Ceti e ventriculis cerebri.

Linnaeus's description is very short and superficial, but it does fit the Sperm Whale. Of the seven references to previous publications in which the species is mentioned, the first is to Artedi (1738, *Genera Piscium*: 79). Artedi's account is the following:

CATODON *fistula in cervice.*
Balaena Major, in inferiore tantum maxilla dentata, macrocephala, bipennis. Sibbaldi.
Ray p. 15.
Cete. Clusii Exot. l. 6. c. 17.
Cete Clusio Exot. l. 6. descriptum, Pot-Walfisch Batavis maris accolis dictum. Will.
p. 41. à *Trumpe, Purchasii.*
Longitudo 50 ad 60 pedum. Crassities ad 30 ad 36. Dentes 42 in maxilla inferiore, duplici ordine dispositi, & totidem in superiore alveolo. Magnitudo dentis ut pollex viri praegrandis. Caput magnum.
Fistula magna in postica capitis parte.
Anno 1598 & 1601 in littus Hollandicum ejectus fuit.
Ex cerebro hujus piscis conficitur sperma Ceti dictum.

The second of Linnaeus's references is to Artedi (1738a, *Synonymia Nominum Piscium*: 108), who gave the following account:

CATODON *fistula in cervice*. Art.
Balaena major in inferiore tantum maxilla dentata macrocephala bipinnis. Sibbald. Raj.
Cete. Clus. exot. l. 6. c. 17
 Let. theatr. belg. part 1. l. 3.
 Metern. hist. belg. part. 2. l. 22.
Cete clusio descriptum, Pot-Walfisch batavis maris accolis dictum. Willugh. p. 41.
Cete Pot-Walfisch batavis maris accolis dictum clusii exot. Raj. p. 11.
Cetus dentatus. Charlet. p. 167.
A Trumpe Purchasii.

The third of Linnaeus's references is to his own (Linnaeus, 1746: 98) *Fauna Suecica*, where it reads:

CATODON *fistula in cervice*. Art. gen. 79. syn. 108.
Clus exot. l. 6. c. 17. *Cete*.
Willug. ichth. 41. *Cete clusio descriptum*.
Raj. pisc. 11 *Cete Pot-waliish batavis maris accolis dictum*.
 Habitat in Mari norwegico.

Linnaeus's (1758) fourth reference is to the ninth edition of his *Systema Naturae* (Linnaeus, 1756: 39), which deals with the species in a single line: *Catodon fistula in cervice*. Art. Syn. 106. Fn. 262. *Cete. le Cachalot*.

Clusius (1605: 131), to whom Linnaeus refers next, gave under the name "Aluid *Cete admirabile*" a very good description and figure of a Sperm Whale stranded in 1598 on the Dutch coast near "Berchey" (= Berkhey or Berkheide, a village no longer extant, that was situated on the North Sea coast of the province of Zuid-Holland between Scheveningen and Katwijk). Clusius also mentioned a specimen stranded in 1601 "in littus Batavicum Beverwicanum" (= the North Sea coast of the present province of Noord-Holland near Beverwijk), and one stranded in 1577 near Saaftingen (province of Zeeland, Netherlands). Clusius's description is reproduced here as pls. 1, 2.

Linnaeus's sixth reference is to Willughby (1686: 41, pl. A1 fig. 3), who dealt with the above whales from Berkhey and Beverwijk, practically literally copying Clusius (1605). On pl. A1 fig. 3 Willughby gave a figure of a Sperm Whale clearly based on the same specimen as the one figured by Clusius.

The last of Linnaeus's references is to Ray (1713: 15), whose account of the species is very short:

Balaena major, in inferiore tantum maxilla dentata macrocephala, bipinnis; Clusio Pot Walfish, Purchasio à Trumpe. v. Autorem.

It is clear that neither Linnaeus, nor Artedi, Willughby or Ray provided original observations, but that all of them based themselves on previous

authors, foremost among whom Clusius (1605). Artedi (1738a) also referred to Purchas (1613), Van Meteren (1614), Charlton (1677), Leti (1690), and Sibbald (1692); the first of these (Purchas) being also referred to by Artedi (1738) and Ray (1713).

Sibbald, of whose book we only could consult the 1773 edition, on pp. 30-33 gave a description "*De BALAENA Macrocephalâ, quae Binas tantum Pinnae Laterales habet*", which he placed in the group (p. 27) "*De BALAENIS Majoribus, in Inferiore Maxillâ tantum Dentatis*". Artedi's definition of the species thus evidently is a combination of Sibbald's generic and specific diagnoses. Sibbald referred to Clusius (1605), to Thomas Browne (1646) ("*à D. Thoma Bruno*") and to Purchas; the latter author we have been unable to consult. Thomas Browne (1646) reported upon two „Sperma-Ceti Whales” stranded on the Norfolk coast of England, one at Hunstanton in 1626, the other 20 years later near Wells (see Thorburn, 1921: 71; Millais, 1906: 285; Thompson, 1928: 11). Sibbald mentioned specimens "*in mari Germanico conspiciatur, & in diversa insulae Britanniae littora injiciatur*" without further details concerning the exact localities, dates and numbers; however, the animals from "*mari Germanico*" might well refer to the Dutch specimens reported upon by Clusius, and those from the "*insulae Britanniae littora*" to the ones reported by Thomas Browne from the Norfolk coast. Sibbald's description of the species, together with his reference to Clusius, leaves not the least doubt that the Sperm Whale was meant by him. Also his figure on pl. 1 shows distinctly a Sperm Whale (vide Boschma, 1938: 179).

Leti (1690, pl. opposite p. 113) reproduced Matham's engraving of the Sperm Whale stranded at Berkhey, thus of the same specimen that was extensively dealt with by Clusius (1605) (vide Boschma, 1938: 174).

Charlton (1668: 167) mentioned "*Cetus dentatus à Carolo Clusio descriptus*". His account thus also is based on Clusius's description (see Boschma, 1938: 175).

Van Meteren (1614) dealt with several Sperm Whales stranded in The Netherlands, viz., those from Saafingen (1577) (on p. 136 in liber 7), and Berkhey (1598) (on p. 395 in liber 19), already treated by Clusius (1605); in addition to these Van Meteren (1614) mentioned 13 or 14 specimens seen near Ter Heije (= Terheide, south of Scheveningen, province of Zuid-Holland) (on p. 136 in liber 7), and one from near Antwerp (1604) (on p. 508 in liber 25).

All the specimens on which Linnaeus's original (1758) description is based, including those referred to by Artedi (1738, 1738a), Linnaeus (1746, 1756), Ray (1713), Sibbald (1692), Leti (1690), Willughby (1685), Charlton (1668), Van Meteren (1614), Purchas (1613), Clusius (1605), and

Thomas Browne (1646), are syntypes of *Physeter macrocephalus* L., 1758. As most of these authors just cite each other, original records are given by only very few of them, viz., Browne, Clusius and Van Meteren, and possibly also Purchas, Sibbald and Linnaeus (1746). The actual type specimens, therefore, are the following:

- a. A male of 58 feet length stranded at Saaftingen, province of Zeeland, The Netherlands, 2 July 1577 (cf. Van Deinse, 1931: 177, 178).
- b. 13 or 14 specimens, of which 3 males (48, 49 and 55 feet long), stranded near Terheide (south of The Hague, province of Zuid-Holland, The Netherlands), 22 and 23 November 1577 (cf. Van Deinse, 1931: 177, 179, frontispiece; Boschma, 1938: 173).
- c. A male of between 52 and 70 feet length stranded at Berkhey, between Scheveningen and Katwijk, province of Zuid-Holland, The Netherlands, 3 February 1598 (cf. Van Deinse, 1931: 179, 184; Boschma, 1938: 174, fig. 2c, 31; Boschma, 1951: 3, pl. 1).
- d. A male of 60 feet length stranded at Wijk aan Zee near Beverwijk, province of Noord-Holland, The Netherlands, on 19 December 1601 (cf. Van Deinse, 1931: 179, 184; Boschma, 1938: 176, fig. 3m).
- e. A male of 42 feet long stranded in de River Scheldt near Antwerpen, Belgium, on 17 December 1603 (cf. Van Deinse, 1931: 179, 184).
- f. A specimen of about 57 feet stranded at Hunstanton, Norfolk, England, in 1626 (cf. Millais, 1906: 285; Thorburn, 1921: 71; Thompson, 1928: 11).
- g. A specimen of 62 feet long stranded near Wells, Norfolk, England, in 1646 (cf. Millais, 1906: 285; Thompson, 1928: 11).
- h. The material referred to by Purchas, of which nothing is known to us.
- i. The material from Norway, referred to by Linnaeus (1746: 98); Linnaeus gave no indication that he had seen actual specimens from Norway, nor did he provide a reference to someone who had.
- j. Any material referred to or described by the authors cited, directly or indirectly, by Linnaeus in the original description of the species. So it is possible that Sibbald under his statement about specimens from "mari Germanico" and "insulae Britanniae" meant more than just the specimens cited by Clusius and T. Browne.

The specimens under a, c, d and e, were first mentioned by Clusius (1605); those under b by Van Meteren (1614); those under f and g by T. Browne (1646).

So far as we can ascertain all these syntype specimens are true Sperm Whales, but the possibility remains that some of the records that we could

not trace pertain to other species. Therefore, in order to avoid any misunderstanding of the identity of *Physeter macrocephalus* Linnaeus, 1758, we now select as its lectotype the specimen washed ashore near Berkhey in 1598, of which figures have been published by Clusius (1605: 131), Willughby (1685, pl. A fig. 3), and many other authors (see Boschma, 1938: 174-176). All the published figures of this specimen are based on a drawing by H. Goltzius (or by J. Matham: see Boschma, 1938: 174) which has been engraved by J. Matham and by G. van der Gouwen. The original pen and ink drawing is still preserved in the collection of Teyler's Museum at Haarlem and has been reproduced by Boschma (1951, pl. 1); it is given in the present note as pl. 3. The identity of *Physeter macrocephalus*, about which so far no doubt has ever been expressed, is now definitely fixed.

After 1758 the epithet *macrocephalus* has exclusively been used for the Sperm Whale. Not a single author ever used this epithet for a species that he thought different from the Sperm Whale.

Physeter catodon Linnaeus, 1758

Linnaeus (1758: 76) gave the following account of *Physeter catodon*:

P. [hyseter] dorso impenni, fistula in rostro.
 Catodon fistula in rostro. *Art. gen.* 78. *syn.* 108. *Syst. nat.* 39. n. 1.
 Balaena minor in inferiore maxilla tantum dentata, sine penna aut spina in dorso.
Raj. pisc. 15.
Habitat in Oceano septentrionali.

Linnaeus's first reference is to Artedi (1738, *Genera Piscium*: 78), who gave the following account of the species:

CATODON *fistula in rostro.* *Art. Syn.* 108.
Balaena minor, in inferiore maxilla tantum dentata, sine pinna aut spina in dorso. *Sibbaldi.*
Ray p. 15.
 Anno 1693. ad portum Orcadensem Kairston dictum haec species appulit.
 Longitudo maxima 24 pedum. Caput rotundum. [p. 79:]
 Rictus parvus. Fistula nasiformis in rostro.

Linnaeus's second reference is to Artedi (1738a, *Synonymia Nominum Piscium*: 108) where it reads:

CATODON *fistula in rostro.* *Art.*
Balaena minor, in inferiore maxilla tantum dentata sine pinna aut spina in dorso. *Sibbald.*
Raj. p. 15.

The third reference by Linnaeus is to the ninth edition of his own *Systema Naturae* (Linnaeus, 1756: 39):

Catodon fistula in rostro. *Arted. Syn.* 106.

The last of Linnaeus's references is to Ray (1713: 15), who gave the following description:

Balaena minor, in inferiore maxilla tantum dentata, sine pinna aut spina in dorso. Hoc genus ad portum Orcadensem *Kairston* dictum nuper appulit. Ex his maximae 4 orgyas hoc est 24 pedes longae erant. *Caput* iis rotundum, rictus parvus. *Fistulâ* carebant, sed in rostro nares habebant.

Artedi's (1738: 108) reference to Sibbald is to Sibbald's (1693) "Phalainologia nova", of which we have only seen the 1773 reimpression and cite the description from there (1773: 24, 25), this description forming *Caput* II of Sibbald's book:

De BALAENIS Minoribus in Inferiore Maxillâ tantum Dentatis, sine Pinnâ aut Spinâ in Dorso.

Novum Genus Balaenarum a nemine quod sciam descriptum ad portum *Orcadensem Kairston* dictum nuper appulit, erant numero centum & duae, ex his maximae quatuor orgyas, hoc est viginti quatuor pedes longae erant, quaedam tres, aliquae duas cum dimidio, & nonnullae duas tantum; Visae autem sunt per duos dies circa oram maritimam se invicem persequentes. Descriptio harum ad me transmissa ab iis qui illas conspexere sic se habet. Capita earum rotunda erant cum rictu oris parvo, & dentes in inferiore solum maxillâ habebant, in superiore autem maxilla alveolos pro [p. 25:] dentibus inferioris recipiendis; erant autem hi dentes in planum sinientes, & dimidium tantum pollicis unius extra Gingivas extabant; fistula autem carebant, sed in rostro nares habebant, qua nota ab omnibus dentatis distinguuntur, quarum apud Authores mentio fit. Duas habebant pinnas laterales, & asperitatem quandam in dorso, sed pinna aut spina in dorso carebant: a spermaceti in his inveniatur incertum, nihil enim mihi ea de re relatum fuit.

In comparing Ray's (1713) account with that of Sibbald, it becomes clear that the former actually consists of sentences taken from the latter.

All the references given by Linnaeus and the authors cited by him under *Physeter catodon*, thus are solely based on Sibbald's *Balaena Minor*, and Sibbald's material therefore forms the type series of *Physeter catodon* Linnaeus, 1758. The true identity of Sibbald's animals therefore is crucial for establishing the identity of Linnaeus's species.

Sibbald described his specimens as being 2 to 4 fathoms (= 3.7 to 7.3 m) long and mentioned that they occurred in a school of 102 specimens in the Orkney Islands. As a Sperm Whale, when adult, is up to 12 (♀) or 20 (♂) m long and when just born already attains a length of 4 to 5 m, and as schools of more than 100 very young Sperm Whales so far have never been reported, it looks very unlikely that Sibbald's specimens were actually Sperm Whales. It is more likely that the school that he described consisted of Pilot Whales, *Globicephala melaena* (Traill, 1809), the females of which may attain a length of 6.1 m; the males are up to 8.7 m long. Pilot Whales usually occur in large schools, and the species is well known in the Orkney Islands, where it even has a special name: Ca'ing Whale. Sibbald's description that the head is rounded with a small mouth opening also would fit *Globicephala*, although

this might also, be it to a lesser degree, pertain to the Sperm Whale. The rest of Sibbald's description, e.g., the statement that only the lower jaw has teeth, and that there is no dorsal fin but only a rough dorsal area, is characteristic for the Sperm Whale and not for the Pilot Whale, which has teeth both in the lower and upper jaw and has a distinct dorsal fin. Sibbald did not see the specimens himself but obtained the description from other persons, who had supposedly observed the animals of Kairston. It seems most likely that the animals observed near Kairston were Pilot Whales, but that the description sent to Sibbald was mainly, or exclusively, based on a Sperm Whale of unknown origin

It is most likely that Sibbald's *Balaena minor*, and therefore also Linnaeus's *Physeter catodon*, is a composite species, and that its identity can only be fixed by the selection of a lecto- or neotype. As no specimens from among the syntypes evidently are extant anymore (it even is not certain that the Kairston specimens stranded, as Sibbald only stated that 'they were seen during two days near the mouth of the bay where they chased one another in turns'), and as it is essential for stability to fix the identity of the species, we select here a neotype for the species in accordance with the currently accepted interpretation of *Physeter catodon* as a synonym of *Physeter macrocephalus*. Therefore we now indicate as the neotype of *Physeter catodon* Linnaeus, 1758, the smaller ♂ specimen (length 16 m) stranded on 24 February 1937 on the Middenplaat, in the estuary of the Westerschelde, S.W. Netherlands, which specimen was described and figured by Boschma (1938: 154-160, pls. 10, 12), and which at present is preserved in the Rijksmuseum van Natuurlijke Historie, Leiden, under Reg. no. 5828. By this selection *Physeter catodon* Linnaeus, 1758, becomes a subjective synonym of *Physeter macrocephalus* Linnaeus, 1758.

We realize that, all other things being equal, it would have been more logical to choose a specimen of *Globicephala* as the neotype of *Physeter catodon*, as it is very likely that all Kairston specimens belonged to that species. The nomenclatural consequences of such an action, however, would be highly undesirable. In that event, namely, the well known species name *Globicephala melaena* (Traill, 1809) should have to be changed to *G. catodon* (Linnaeus, 1758), a binomen that, so far as is known to us, has never been used before. The neotype selection in the previous paragraph is made by us with the intention to cause the least disturbance in the nomenclature of the Cetacea.

The composite nature of the original description of *Physeter catodon* Linnaeus, 1758, has been the source of much confusion. At first authors followed Linnaeus in considering *P. catodon* a good species different from all other whale species. It is interesting to see that Lacépède (1804: 116, pl. 1 fig. 2),

who renamed the species *Catodon svineval* (probably to avoid tautonymy) considered it to be *Globicephala melaena*, judging by its skull that he figured. O. Fabricius (1780: 50) identified *Physeter catodon* Linnaeus, 1758, with the White Whale, *Delphinapterus leucas* (Pallas, 1776), which he named *Delphinus albicans* (curiously enough he used the epithet *catodon* himself (O. Fabricius, 1780: 44) for the species which Linnaeus named *Physeter tursio*). Later authors, like G. Cuvier (1823: 331, 334) and F. Cuvier (1836: 276), identified *P. catodon* Linnaeus with the White Whale as did O. Fabricius. F. Cuvier stated that the species "n'est plus regardée depuis long-temps que comme un dauphin béluga". Gray (1850: 77; 1866: 307) accepted this view and its nomenclatural consequences, using the name *Beluga catodon* (Linnaeus) for the White Whale.

Other authors considered it more likely that *Physeter catodon* was nothing but a juvenile *P. macrocephalus*. G. Cuvier (1816: 284) in a footnote to the "Cachalot macrocéphale" remarked: "Quant au petit cachalot, *P. catodon* de Linn., on ne cite, outre la taille, d'autre différence que des dents plus aiguës, ce qui peut tenir à l'âge". Also Fischer (1829: 518) who ranged *P. catodon* with a question mark under *P. macrocephalus*, stated: "*Num species, an aetas junior Ph. macrocephali?*"; and Schinz (1845: 517) under *P. catodon* remarked: "Vielleicht nur ein junger Pottfisch".

At the end of the 19th century and in the beginning of the 20th, the specific epithet *catodon* was more or less ignored in cetaceological literature. Elliot (1905) in his fundamental check-list of the North American mammals did not mention the epithet *catodon* at all, even though he listed *Physeter macrocephalus* (p. 21) and *Delphinapterus leucas* (p. 25); also in his other works he ignored *catodon*. Trouessart (1898-1899) in his *Catalogus Mammalium*, on the other hand, cited "*catodon, microps et tursio, L.*" in the synonymy of *Physeter macrocephalus* (p. 1056), but also gave a full reference to *Physeter catodon* L. in the synonymy of *Delphinapterus leucas* (p. 1051), in neither case did he accept the epithet *catodon* as valid for the species concerned.

The name *Physeter catodon* seemed to have been conveniently forgotten by most authors, when Thomas (1911: 157) revived the name and gave it priority over *Physeter macrocephalus*, with which he synonymized it. Since that time several authors have followed Thomas and used the name *P. catodon* for the Sperm Whale. Incorrectly so, as will be shown below.

THE NOMENCLATRUAL STATUS OF THE NAMES PHYSETER MACROCEPHALUS LINNAEUS, 1758, AND PHYSETER CATODON LINNAEUS, 1758

Now that the names *Physeter macrocephalus* and *P. catodon* are established as subjective synonyms published on the same date, their relative priority,

according to Article 24 (a) of the International Code of Zoological Nomenclature, is determined by the action of the first reviser, i.e., by the first author who made it clear that he considered the two names synonyms and chose one as the name of the species. The first author known to us, who fulfilled these requirements is Blasius (1857: 532), who in the synonymy of "Der Cachelot. *Physeter macrocephalus*" cited both *Physeter macrocephalus* L., and *Physeter Catodon* L. As Boschma (1938: 166) already showed, also Murray (1866: 340) selected the epithet *macrocephalus* in preference to *catodon* for the species. Thomas's (1911) action to give *catodon* preference therefore is invalidated by the previous action by Blasius, and according to the International Code the name *Physeter macrocephalus* Linnaeus has to be given priority over *Physeter catodon* Linnaeus.

As the name *P. macrocephalus* has been uninterruptedly used for the species from 1758 to 1911, and since that time has competed more or less successfully with *P. catodon* for the same species, there seems to be no good reason not to apply the Rules strictly here and to adopt the name *P. macrocephalus*. Another good reason to do so is that *P. macrocephalus* has never been used for another species, while *P. catodon* has been applied to several species of Cetacea (see p. 212, 213 above).

It is possible that not Blasius (1857) but E. Desmarest (1855-1856) should be regarded as the first reviser in the selection of the epithet *macrocephalus* over that of *catodon*. On p. 298 of his work, under *Physeter macrocephalus*, E. Desmarest stated: "la synonymie de cette espèce est très-compiquée, puisqu'on réunit en une seule espèce les huit ou neuf espèces admises par De Lacépède et par A. G. Desmarest". On the previous page (p. 297) E. Desmarest listed these eight or nine species recognized by Lacépède and A. G. Desmarest, among which he cited both *Physeter macrocephalus* and *P. catodon*. He furthermore remarked that G. Cuvier's (1823) opinion that all these are but a single species "nous adopterons aussi, quoique nous pensions qu'il existe probablement plusieurs espèces de Cachalots". As Cuvier (1823) did actually not synonymize *P. catodon* with *P. macrocephalus* (he considered the former a synonym of *Delphinapterus leucas*), and as E. Desmarest is not quite definite on either page, we prefer to consider Blasius (1857) the first reviser in the present question. The whole problem is quite academic as the two authors held the same view.

In our opinion, E. Desmarest should be considered the first author to have selected a type-species for the genus *Physeter*. On p. 296, namely, the generic heading "Genre unique. — Cachalot. *Physeter*. Linne, 1748" is immediately followed by "φυσήτηρ, nom grec de l'espèce type", while on p. 298 under *Physeter macrocephalus*, Desmarest remarked: "c'est elle qui, chez les an-

ciens, portait les noms de $\varphi\upsilon\sigma\eta\tau\eta\rho$ et de *Physeter*". Furthermore, on p. 297 (last line), at the end of the text dealing with the genus *Physeter*, and just before that of the species *P. macrocephalus*, E. Desmarest stated: "C'est en décrivant l'espèce type que nous compléterons les détails que nous devons donner sur ce genre".

The generic name *Catodon* Linnaeus, 1761 (Fauna Suecica, (ed. 2): 18) has as its type-species, by monotypy, *Physeter macrocephalus* Linnaeus, 1758, and is thereby a junior objective synonym of *Physeter* Linnaeus, 1758.

LITERATURE

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Plates 1, 2

Pages 131 and 132 of Clusius's (1605) *Exoticorum libri decem*, containing the original account of the Sperm Whale of Berkhey.

Plate 3

Original drawing by H. Goltzius or J. Matham of the Sperm Whale stranded in 1598 near Berkhey. (Courtesy Teyler's Museum, Haarlem).

EXOTICORVM LIB. VI.

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admirabilius visum fuit umquam: erat enim ejus longitudo quadraginta cubitorum : ejus corium in dorso nigrum erat, in ventre album : caudæ verò amplitudo ab extremitate unius pinnae ad alteram quinque cubitorum erat, & ejus latitudo quindecim palmorum. Corporis crassitudo tanta erat, ut duo homines satis grandes in utroque latere collocati vix se conspicerent: uterque oculus unius cubiti erat longitudine: caput in sublime elatum ferebat ad quatuor cubitorum altitudinem. Os in capite non habebat ut alii pisces, sed in ventre: majores illius dentes singuli erant octo cubitorum: in ore præterea sexdecim habebat dentes, & cujuslibet circuitus erat dimidii cubiti, interstitium verò inter singulos erat unius palmi. Cujus figuram hinc addere volui, quæ ab Henrico, qui sempiterno fruitur ævo, allata fuit.

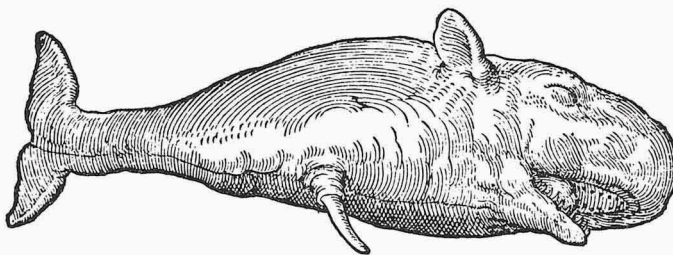
Piscis admirabilis forma.

In hujus piscis fabrica, Divinæ Providentiæ artificium animadvertendum est, qui altum fert caput, ut pisces prospiciat, quibus nutriendus erat: sed cum distantia inter caput & aquam magna esset, ei os in ventre accommodavit, ut vicinius & accommodatius ad piscandum esset, quod oculis jam esset assequutus. Illud quoque audivi, hunc piscem in ventre axungiam ad medendum satis accommodatam & magni pretii habuisse. Hactenus Frater Ludovicus.

Aliud Cete admirabile.

C A P. XVII.

NON sine causâ mihi suspecta esse debet admirabilis illius belluæ marinæ apud F. Ludovicum descriptio: nam quum ea quam exhibet pictura, majores illos dentes, quos octo cubitorum longitudinem habuisse ait, expressos non habeat, per illos dentes mandibulas voluisse dicere verisimile est: nec enim ullius elephantis etiam maximi cornua tantæ magnitudinis umquam conspecta fuisse arbitror: huc accedit, quòd alios dentes sexdecim in ore illi tribuit, ut etiam taceam caput adeò tenue in tanta corporis mole, illudque in sublime elatum. Itaque mihi faciliè persuaserim, non valdè ab similem fuisse ei beluæ marinæ quæ anno à Christi nativitate nonagesimo octavo supra millesimum & quingentesimum, in littus occidentale Hollandiæ tempestatibus ejecta fuit; senes Batavi maris accolæ *Pot-malvisch* appellabant. quæ quum fuerit portentosæ etiam formæ & magnitudinis, abs re me non facturum existimavi, si illius genuinam iconem hinc adponerem, deinde brevem historiam adicerem.



CETERVM, ut ad peculiarem hujus Beluæ descriptionem veniamus, quæ illo quo dixi anno, IV. VCLIII. Non. Februarii, circiter quartam aut quintam pomeridianam in littus fuit ejecta è regione Berchey vici quondam (ut fertur) decem aut duodecim tuguriarum, inter Scevelingam & Catwicum maritimum, cum tantâ tempestate & maris commotione, ut qui istuc aderant se in fugam conicerent, & sese abderent inter colles illos arenosos mari objectos: sedatâ tempestate, decem plus minus horis adhuc spirans fuit conspecta: & mortua istuc jacuit septem aut octo dies; ut ad eam conspiciendam è vicinis urbibus & locis ingens hominum multitudo conflueret, partim pedestri itinere, partim equis, rhedis, aut curru vecta.

Ejus porrò longitudo quinquaginta duorum aut trium pedum fuit; crassitudinis ambitum licet nonnulli dicant triginta pedum & unius, fuisse, alij verò longè majorem faciunt: exacta tamen mensura sumi non potuit, quia volutione & agitatione, ante quàm interiret, corporis pars quædam sabulo erat immersa: superior rostri pars ab extimo ad oculos usque, quindecim pedum reperta est: ipsum in ea parte palatum, quadraginta duobus foraminibus

Monitrosa belua marina.

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CAROLI CLVSI

raminibus sive alveolis præditum erat, hoc est, in utroque latere viginti & uno, ad excipiendos totidem dentes inferiori mandibulæ inhærentes, qui magnitudinem pollicis alicujus viri prægrandis & robusti habebant: in capite versus dorsum erat etiam foramen circiter tres pedes amplum, per quod aquam in altum eiiciebat: inferior mandibula, in quâ illi dentium bini ordines, septem pedum longitudinem non excedebat, & fragmento crassâ & ingentis mali navis conferri poterat: linguæ extrema pars tam magna & crassa erat ac dolium cervisarium: oculorum magnitudo pro tam vasto corpore non erat major, quàm spatium quod pollex & digitus index extensi comprehendere poterant: distabant oculi quatuor pedibus à pinnis: pinnæ verò quatuor pedes & totidem pollices erant longæ, ac pedem ferè densæ: umbilicus à mandibulis sexdecim pedum spatio distabat: ab umbilico ad penem interstitium erat triû pedum: penis verò jam mortuæ sex pedum longitudinem habebat: à pene autem ad podicem trium pedum cum semisse erat distantia: & à podice ad caudam, tredecim cum semisse: ipsa verò cauda valdè crassa, tredecim pedes alta sive lata erat. Post paucos deinde dies fuit illa belua vendita quibusdam mercatoribus, eâ tamen conditione, ut majora ejus ossa Hagam Comitis vehi curarent, & istic in Curia conferrentur propter memoriam. Reperisse autem dicebantur mercatores in beluæ capite plus quàm quartam partem dolii in quo adservantur saliti haleces, plenam ejus liquoris quem vulgò Sperma ceti, Hollandi *Walshot* appellant: è tota autem corporis mole in partes secta & deinde ustulata, circiter quadraginta dolia, prædicto similia, plena pinguedine excepisse, præter magnam quantitatem spontè fluentem ab aliis collectam, & eam quæ in undas marinas effluerat antè quàm mercatores redimerent. Dorsi corium nigrum erat, quemadmodum Delphinorum aut Thynnorum: venter albescebat.

Alia similis
monstruosa
belua.

ANNO porò millesimo sexcentesimo primo sub extremum Decembrem, XIII. videlicet Kal. Jan. anni insequentis, ejecta fuit alia similis portentosa belua in littus Batavicum Beverwicanum, versus meridionalem plagam; cujus longitudo prædicti longitudinem excedebat, nam sexaginta pedum erat, altitudo pedum quatuordecim, corporis ambitus triginta sex pedum mensuram æquabat, cauda pedes quatuordecim erat lata, oris rictus duodecim pedes amplus erat; dentes etiam in inferiore mandibulâ dumtaxat habebat, duplici ordine similiter dispositos, in superiore totidem alveolos, qui dentes, quum rictum clauderet belua, exciperent. Masculini sexus etiam erat, & eodem colore prædita quo superior, ut mihi relatum: an verò quæstum fecerint ex illa, ut è priorè, me latet.

CETERVM memini quum in Cæsaris aula viverem, similes etiam beluas apud Saftingam non procul Antverpia in littus tempestate fuisse ejectas, & unius ex illis typum in ære incisum ab amico fuisse ad me missum, quem porò ad Ill. Virum Joannem Pinellum, qui hujusmodi rebus delectabatur, ob eam quæ mihi cum illo fida & arcta erat amicitia, Patavium ferendum curabam. Corporis autem mensuram oblivioni tradidi.

Manati Phoca genus.

CAPUT XVIII.

A Batavis nautis, qui anno à Christo nato millesimo sexcentesimo Amstelredamum è sua professione redierant, ex Occidentali Oceano advectus erat Cetaceus piscis, ad Phocarum genus haud dubiè referendus, sed longè major; ipsi Vaccam marinam appellabant: utriusque autem sexus occiderant, marem & feminam: maris corium integrum stramine suffarcinatum de trabe suspensum, cujus dorso catulum (quem etiam ceperant & advexerant) imposuerant, eodem anno Amstelredami conspiciebam, & præterea aliquot costas feminæ cum carne adhuc adherente; eâ enim in itinere victitarent tamquam bubulâ. Catulum porò, ut proportio commodiùs observari posset, in adposita tabella exprimendum curabam, ad ejus normam quem Amstelredami videram, qui quæ postea in Academici horti porticu suspensus fuit Lugduni Batavorum.

Manati.

VALDE autem fœdum & turpe animal fuisse videbatur: capite vitulino, sed paullo strictiore, oculis ferè caninis; valdè crassâ & durâ, brevibusque & raris pilis ex cineraceo fusci coloris obstâ cute præditum: exuvii longitudo (nam dimensus sum) pedum decem & sex cum semisse erat, crassitudo autem septem cum semisse; hoc est, septem pedum cum semisse erat corporis ambitus: bina crura ad humeros habebat non longa, latos pedes brevibus unguibus præditos, nullos in posteriore corporis parte, sed caudam quodammodo infor-

