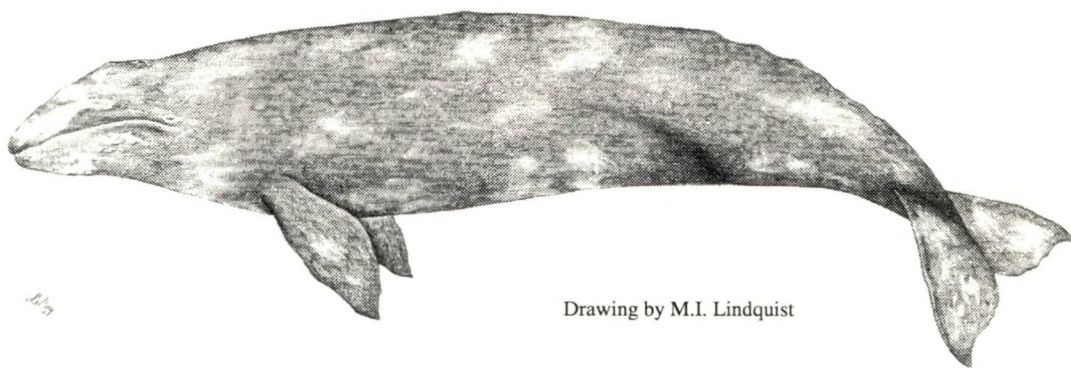


**The North Atlantic gray whale
(*Escherichtius robustus*):
An historical outline based on Icelandic,
Danish-Icelandic, English and Swedish sources
dating from ca 1000 AD to 1792**

Ole Lindquist, PhD



Drawing by M.I. Lindquist

Occasional papers 1

Universities of St Andrews and Stirling, Scotland

March 2000

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– [Icelandic:] *sandlægja*, *sandæta*, *hrannlægja*, *snefja* – [Old English:] *hran* – 'Royal mirror'.

The North Atlantic gray whale (*Escherichtius robustus*): An historical outline based on Icelandic, Danish-Icelandic, English and Swedish sources dating from ca 1000 AD to 1792

By Ole Lindquist, PhD^{*)}

Abstract

Osteological material reveals that the gray whale (*Escherichtius robustus*) existed on both sides of the North Atlantic, at least into the 17th century. Furthermore, previous research has considered that three written accounts deal with the species, viz: an English-Basque source about the *otta sotta* (1611); an Icelandic one about the *sandlægja* (including a drawing; 1640-1644); and a source from New England about the *scrag whale* (1725). Because these brief accounts offer no certain identification and no proper context to work from they have often been questioned. Similarly, very little can be learned from them about the North Atlantic gray whale population, or populations, the hunting of the species and its extermination.

More information about the North Atlantic gray whale is now available from 13th and 17th-18th century AD Icelandic sources and 17th century Danish sources stemming from Iceland. An Old English (1005 AD) and a Swedish (1555) source seem also relevant.

Explicit descriptions of the gray whale's unique bottom-feeding habits make it possible to identify it positively under the Icelandic names of *sandlægja*, *sandæta*, *hrannlægja* and *snefja*, all of which refer to the whale's feeding as well as resting habits. The Old English *hran* may also be the gray whale rather than simply 'a whale'. Between 1639-1644 and 1792, eight Icelandic and Danish-Icelandic sources offer eleven exact maximum size measures of the gray whale according to various principles. The descriptions of the whale's resting habits in the shallows and in the sand correspond with the habits that apparently existed with Pacific gray whales in their summering grounds at the western shores of the Bering Sea and Bering Strait. Icelandic peasant

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fishermen caught adult gray whales as well as juveniles in shallows and on sand bars by spearing and lancing, possibly after entangling them in ropes by the tail, ate the meat and rendered the blubber into oil.

It is suggested (a) that the eastern North Atlantic population of gray whales wintered in Northwest African waters and migrated to Iceland along a route off Galicia and western Ireland, with a part of the population visiting the English Channel and the southern North Sea during summer, with some whales straying into the Baltic Sea; (b) that the western North Atlantic population wintered along the coast of Florida and South Carolina and migrated to Iceland whereby some whales perhaps stopped off in the Bay of Fundy; and (c) that both populations converged and mixed around Iceland and, thus, formed parts of an aggregate North Atlantic population.

Moreover, the hypothesis is advanced, firstly, that the North Atlantic gray whale was hunted primarily by the coastal inhabitants in three regions, namely, (a) around the southern North Sea and the English Channel, from prehistoric times at least into the high Middle Ages; (b) in Iceland, from about 900 AD until about 1730; and (c) in New England by European settlers from the mid 17th century until about the same time, possibly also by Indians there; and, secondly, that it was casually caught by the Basques in the latter half of the 16th century and in the early 17th century – without being able to suggest where that hunting occurred.

Three Icelandic gray whale names are recorded about 1200 AD but the gray whale did not become part of the common old Norse/Icelandic whale lore embodied in the '*Royal mirror*' ('*Komungsskuggsjá*'), written in Norway in the mid 13th century AD. This is surprising because the '*Royal mirror*' is otherwise practically exhaustive about real cetacean species in the North Atlantic and include detailed descriptions which apparently originate in Iceland and Norse Greenland of the bowhead, white whale, narwhal and the walrus. The '*Royal mirror*' also describes imaginary marine beings, including 'evil' whales. When Jón Guðmundsson *lærði*, about 1639-1644, offers the first description of the gray whale it quickly became part of Icelandic whale lore. He also offered a good drawing of the *sandlægja* (cf figure 2) which was also copied (cf figure 3). It seems that an expanded version of Jón Guðmundsson *lærði*'s whale lore was used for Latin descriptions, mainly by Danish scholars 1657-1688. In 1737, Jón Ólafsson *úr Grunnavík* presents information about the gray whale that reflects the experience of Icelandic peasant fishermen from about 1690-1710. Presumably the last description and drawing (cf figure 4) of the North Atlantic gray whale is found with Snorri Björnsson and dates from 1792. The drawings show several knobs on the lower back of the whale which are a characteristic of the gray whale.

Wrong identifications of the Icelandic vernacular gray whale names occur as from the 1740s, suggesting that knowledge of the species was then fading away. The inclusion of imaginary traits in Snorri Björnsson's (1792) description points in the same direction.

Sandlægja, *sandæta*, *hrannlægja* and *snefja*¹ seem to have been (permitted) noa names, as were probably most Old Norse and Icelandic whale names, intended to accommodate man in the different land and marine worlds and to avert harm from 'evil whales' while out at sea. It is conjectured that into the late Middle Ages the gray whale was subject to a strict taboo by Icelandic peasant fishermen, presumably related to heathen practices, which went far beyond the usual name taboos, and that this could be the reason for the absence of the gray whale from the otherwise comprehensive '*Royal mirror*'.

Further research into Icelandic, Danish, Basque and Old English written sources and Icelandic archaeological material is likely to reveal more about the history of the North Atlantic gray whale.

1 It is necessary to draw attention to the spelling and graphic presentation of the first three names. H. Hermannsson's (1924) edition of Jón Guðmundsson *lærði's* natural history uses the correct digraph 'æ' ('æ') on pages 9 and 28 but in figure 5 of plate III the name is unfortunately spelled with the digraph 'œ' ('œ'); moreover, in italicised Times-like types the digraphs 'æ' and 'œ' appear practically indistinguishable (æ and œ, respectively) and are predisposed to misreading as, for example, in Hermannsson's text on page 36. Fraser (1970) throughout erroneously spells the name *sandlægja*, a mistake which, for example, Gaskin (1982: 270), Mead and Mitchell (1984: 37, 50), R. Ellis (1992: 44), and P.J. Bryant (1995: 859) have upheld as *sandloegja*.

The modern Icelandic pronunciation is: *sandlægja* [sandr̥lajja], *sandæta* [sandr̥dai:ða; sandai:tʰa], *hrannlægja* [r̥an:laija] and *snefja* [sɲnɛvja].

1 Introduction: Previous studies of the history of the North Atlantic gray whale

The history of the gray whale (*Eschrichtius robustus*) in the North Atlantic Ocean has been discussed by scholars such as F.C. Fraser (1970), D.W. Rice and A.A. Wolman (1971), D.K. Odell (1983), J.G. Mead and E.D. Mitchell (1984), A. Aguilar (1986), and P.J. Bryant (1995). The author in 1994 also presented new historical evidence and hypotheses about the North Atlantic gray whale.² Now the time has come to follow various new leads, present the historical sources in chronological order, analyse them and sum up the research.

Scientists agree that positively identified osteological material shows that the gray whale was present in the North Atlantic in earlier times but opinions diverge widely as to (a) whether the finds represent stray animals or, for example, two smaller (possibly mixing) populations, in the western and an eastern North Atlantic, respectively; and (b) whether, and to what degree, the few historical sources hitherto brought into the discussion actually deal with the gray whale at all.

The North Atlantic gray whale was conspecific with that in the North Pacific Ocean. It is now known from seven northwest European specimens and ten from the eastern seaboard of the United States.^{3, 4} The seven European samples date quite evenly from approximately 8300 years ago (8330 BP \pm 85)⁵ to 1610 AD (340 BP \pm 260), with the Gräsö (type) specimen from the southern Gulf of Bothnia/Baltic Sea coast of Uppland, Sweden, being from 4395 BP (\pm 155).⁶ Of the seven dated east American specimens the oldest is about 10,000 years old (10,140 BP \pm 125) while the two youngest have been dated to around 1495 AD (455 BP \pm 90) and 1675 AD (275 BP \pm 35), respectively.⁷

Until 1970, some scholars considered that P. Dudley's description from 1725 about the *scrag whale* in New England referred to the gray whale while others questioned it, *inter alia*, "for the fact that no other account of early whaling gives any indication of the occurrence of *Eschrichtius*

2 Cf Lindquist 1994: 221-227, 491, 873, 946; see also 117-121, 153f, 175f, 179, 199f, 254f, 531, 665-668, 928f.

3 Cf Mead and Mitchell 1984: 42; Odell 1983.

4 D. Yalden (1999: 170) mentions a specimen from "Jupiter Island, Florida 27°03' N, 80°06' W" which is actually not covered by the sources he refers to and seems to be incorrect. Odell (1983: 72) reported the find concerned at "the beach in Hobe Sound National Wildlife Refuge 6.5 mi S of St. Lucie Inlet (Martin County, Florida, 27°04'40"N, 80°07'45"W)".

5 For 'BP \pm ', cf Abbreviations.

6 Cf Bryant 1995: 859.

7 Cf Mead and Mitchell 1984: 42, 44, 47f, 50. See also Rice and Wolman 1971: 6, 20.

in the North Atlantic”.⁸ Similarly, it was believed that “There are no historical records of gray whales in the eastern North Atlantic.”⁹ Then Fraser (1970) strongly argued that, in addition to Dudley’s description, an account with a drawing by Jón Guðmundsson *lærði* (ie, ‘the Learned’) about the Icelandic *sandlægja*, from 1640-1644, also dealt with the North Atlantic gray whale.¹⁰ Later, Mead and Mitchell (1984: 35, 50f) also identified the *otta sotta* in the Muscovy Company commission (of Basque origin) for the English whaling master Thomas Edge, from 1611, as being the gray whale. They therefore considered that “There are three accounts in the literature that we interpret to be reliable records of gray whales in the North Atlantic”. “The conclusion is that a population of *Eschrichtius robustus* existed on both sides of the Atlantic and was present on the coasts of North America up to the seventeenth century AD.”¹¹ The gray whale was, “at some time, common in American waters”¹² but

“Evidently, a moderately large population was exterminated by human activity by the late 17th or early 18th century. Whatever its population size prior to this time (certainly a few thousand, not 100,000 as estimated by author Farley Mowat [...]), long-term and intensive hunting accounted for the last few animals.”¹³

Commenting on the find of remains of a juvenile gray whale on the central east coast of Florida, Odell (1983: 73) suggested “that Atlantic gray whales may have bred/calved in the extensive shallow lagoons and bays on the east central and southeast coast of Florida.” Rice and Wolman (1971: 20) were of the opinion that

“The summer grounds of the eastern Atlantic gray whales probably were in the Baltic Sea where *Ampelisca macrocephala* (the predominant food of the California stock in the Bering Sea) is abundant [...]. Their winter grounds were perhaps along the Atlantic or Mediterranean coasts of southwestern Europe or northwestern Africa.”

De Smet (1981: 307) also suggested that the gray whale annually visited shallows and estuaries along the coast of the North Sea and the English Channel where it would have found “excellent calving grounds, comparable to those frequented by this species in Baja California.”

8 Cf Rice and Wolman 1971: 5f.

9 Cf Rice and Wolman 1971: 20.

10 Meanwhile many aspects of Fraser’s study are outdated.

11 Cf Mead and Mitchell 1984: 35, 50f.

12 Cf Mead and Mitchell 1984: 50.

13 Cf Mitchell 1973: 12-14.

2 Zoogeography of the gray whale

Most baleen whales are highly migratory species but the eastern North Pacific gray whale is credited with the longest annual migrations of any mammal, between its subtropical/warm temperate (winter) breeding grounds at Baja California and subarctic/arctic (summer) feeding grounds in the Bering and Chukchi Seas. Some eastern North Pacific gray whales do not participate in the complete migration north but feed in the summer along the Pacific coast from California to British Columbia. The western North Pacific stock has a shorter range but moves nevertheless between subtropical/warm temperate waters off southern Korea and the subarctic marine environment in the Sea of Okhotsk. On both sides of the Pacific the migrations take place almost at the same time. Earlier the range of the western and eastern stocks may have overlapped in the Bering Sea.¹⁴

The oldest fossils of the gray whale, found in California, are only a little more than 100,000 years old (late Pleistocene) and are indistinguishable from the living animal. The evolutionary history of the Eschrichtiidae, including their 'centre of origin', is therefore unknown. The anatomy and least specialised character of the gray whale amongst the extant greater cetaceans indicate that the Eschrichtiidae could have developed in the early Miocene (*ie*, after ca 26,000,000 BP).¹⁵ If the gray whale originated in the western South Pacific area, as is suggested for many cetacean species, it is unknown how and when it established itself in the North Atlantic.¹⁶ The North Atlantic gray whale must have been isolated from its North Pacific relatives for at least 900,000 years, possibly more than 3,000,000 years.¹⁷ Whether the gray whales moved through the Panamic Passageway, across the Arctic, or both,¹⁸ they were clearly able to establish themselves on both sides of the North Atlantic because their seasonal life cycle was not upset and because they found

14 Cf Carwardine 1995: 50f; Corkeron 1988: 84, 98; Couper 1983: 63; Ellis 1982: 17, 24; 1992: 16f; Evans 1987: 103; Jenkins 1921: 30; Murison *et al* 1984: 453; Nerini 1984: 434; Stonehouse 1985: 136; Watson 1985: 80; Yablokov and Bogoslovskaya 1984: 467-469, 481. Evans (1987: 214f) offers a map of current distribution and migration routes which is reproduced by Corkeron (1988: 98).

15 Cf Evans 1987: 29, 31; Fordyce 1988: 18, 20; Papp 1981: 1080.

16 Cf Evans 1987: 22; Gaskin 1982: 210, 216, 221, 242.

17 The Panamic Passageway closed slowly between the end of the Miocene (ca 7,000,000 BP) and the end of the Pliocene (ca 2,500,000 BP). There was no waterway through the Bering Strait region to the Arctic before near the end of the Miocene when it opened for a short time and then closed again until near the end of the Pliocene. (Cf Durham 1981: 155; Papp 1981: 1080f). From the late Pliocene to the middle Pleistocene, about 2,800,000-900,000 BP, the climate in the Arctic was comparatively mild and the Arctic Ocean seems to have been seasonally ice-free. Thereafter it has been largely ice-covered. (Cf Lamb 1977: 320; Mangerud, Jansen and Landvik 1996: 19-21).

18 With the increasingly powerful biochemical and genetic analyses it might be possible to determine the relationship between the Pacific and Atlantic gray whales and the time of their biological separation.

conditions (*ie*, breeding and feeding grounds) similar to those in the North Pacific.

3 Gray whale characteristics

In order to evaluate the historical sources about the gray whale we must acquaint ourselves with its characteristics.

The North Pacific gray whale grows to a maximum length of ca 15 m¹⁹ and weighs up to about 34 tonnes. It has no dorsal fin but rather a low long hump on the lower back (positioned approximately over the anus), followed by a series of (smaller) knobs ('knuckles'), usually 7-10, sometimes as many as 15. The body colour is medium to dark grey mottled, with white, yellow or orange patches of barnacles and associated parasites (amphipod crustaceans; so-called 'whale lice'), particularly on top on the head, around the blowhole and on the anterior part of the back. On the throat are 2-5 longitudinal deep grooves about 2 m long. The gray whale is the only large cetacean in which the upper jaw extends beyond the lower one. The head is bowed, rather short, with small eyes. The mouth is slightly curved and, when seen from the side, divides the head equally. Its baleen plates are stiff, yellowish white (cream) and grow to a length of 5-25 cm.²⁰

The gray whale is the only cetacean which is specifically adapted for bottom feeding although it is also capable of feeding on pelagic prey by surface skimming. During the summer months it feeds primarily on the rich benthic amphipod communities which live in the upper 2 cm of the bottom sediments on the continental shelf of the subarctic and arctic seas. Its sharp rostrum and short, stiff, baleen plates are suited for ploughing along the bottom and stirring up sediments which contain the relatively large-bodied prey organisms (13-27 mm in length). They are sucked up by the depression of the muscular tongue (weighing up to 1400 kg) and through its expansion filtered out of the turbid water by means of the baleen plates. Feeding gray whales are surrounded by clouds of muddy water which are expelled from the baleen, and they can be seen surfacing with mud on their snouts. Nineteenth century commercial whalers partly named the gray whale according to its feeding habits which were new to them: *mussel digger*, *mud digger* and *digger*.

19 Scammon (1968: 20) writes that a gray whale 44 feet (= 13.41 m) long "would be regarded as large, although some individuals have been taken that were much larger". According to Evans (1987: 70) adult gray whales grow to a length of 11.1-14.3 m and 11.7-15.2 m in males and females, respectively.

20 Cf Carwardine 1995: 50, 52; Ellis 1982: 15f, 23; 1992: 15; Evans 1987: 70f, 122, 224; Fraser 1980: 18; Scammon 1968: 20f; Stonehouse 1985: 136; Watson 1985: 59f, 62f, 76-79; Yablokov and Bogoslovskaya 1984: 471.

The consistently greater wear of baleen plates on the right and the almost total absence of barnacles along this jaw line suggest that the whales normally swim on their right side when feeding on the bottom. Migrating gray whales have also been seen feeding on bottom fauna mostly in estuaries where sediments appear to be relatively richer in benthic communities than is the case in other inshore areas. On migration it also feeds at the surface on both small fish and shrimp-like mysids which live in the kelp beds.²¹ The flexible feeding behaviour allows the gray whale to utilise the entire variety of coastal resources, from subtropical to polar regions.²²

The gray whale is inoffensive, except that cows are fiercely protective of their offspring, probably more than any other cetacean species. Their reputation for being vicious fighters when wounded earned them the names *hard head* and *devil fish* among Yankee whalers. The Japanese apparently also called them by a name meaning *devil fish*.²³ Similarly, native whalers of Chukotka considered adult gray whales too fast and too dangerous to hunt from open boats (even when using firearms) and therefore pursued only calves and juveniles.²⁴

When approached by a boat, gray whales may rise vertically with head and eyes clear of the water for up to half a minute, often turning a full circle (so-called 'spy hopping'). They breach regularly, throwing their body three-quarters out of the water and landing on their backs.²⁵

At the coast of Baja California where the Pacific gray whales winter in the shallow lagoons the sun is so hot that the whales rest on the bottom and rise to the surface every 10 minutes to breathe.²⁶

A. V. Yablokov and L. S. Bogoslovskaya (1984: 478f) summarise older Russian descriptions of gray whale behaviour which mention

“a specific migration of [gray] whales with heavy infestations of skin parasites into the freshwater lagoons and shallow waters off the Koryak coast. The whales entered the lagoons, and dozens of them filled the shallow lakes connected with the sea. Some whales were just lying on the sand bars; with the tide they would move out to sea, and begin to feed as if nothing had happened. Some whales would lie immobile at the surface not paying attention to the approaching boats or even prods of the oars, as if they were

21 Cf Barnes and Creagh 1988: 26; Carwardine 1995: 50, 52; Ellis 1982: 16, 20f [incl ill]; 1992: 17; Evans 1987: 122, 135; 145f [incl ill]; Murison *et al* 1984: 461; Nerini 1984: 423-429 [incl ills], 434f, 440, 446; Watson 1985: 79f; Yablokov and Bogoslovskaya 1984: 473.

22 Cf Yablokov and Bogoslovskaya 1984: 479.

23 Cf Bockstoce 1986: 73; Carwardine 1995: 52; Ellis 1982: 16; 1992: 16; Henderson 1984: 163; Scammon 1968: 24f; Yablokov and Bogoslovskaya 1984: 478.

24 Cf Krupnik 1987: 22, 26.

25 Cf Carwardine 1995: 53; Ellis 1982: 23; 1992: 16; Stonehouse 1985: 136; Watson 1985: 78-80.

26 Cf Scammon 1968: 25; Watson 1985: 78.

sleeping [...].²⁷ According to the observations of the Eskimos of Naukan the gray whale is capable of getting off the sand bars if next to a deep channel. He then arches, pushing with the rostrum and tail into the ground, which is possible because of the free neck vertebrae [...].”

This behaviour of North Pacific gray whales seems not otherwise mentioned in the scientific literature but appears, on the present evidence, to have existed with the whales in their summering grounds at the western shores of the Bering Sea and Bering Strait.²⁸

4 Historical sources about the North Atlantic gray whale

4.1 West Nordic natural history of whales

Norwegian and Icelandic descriptions of marine creatures provide us with comprehensive information about cetaceans in mediaeval and early modern times in the Northeast Atlantic. These sources share many traits because of their common Norse cultural background but they also differ because of particular regional circumstances and developments.

The section on North Atlantic marine beings in the Norwegian treatise *‘Royal mirror’* (*‘Konungsskuggsjá’*) from the mid 13th century AD established a West Nordic learned written tradition which basically lasted through the 18th century in Iceland. About 1639-1644 the Icelander Jón Guðmundsson *lærði* merged material from the *‘Royal mirror’* with additional information about whales. The whale lore of his *‘Natural history’* also became popular in Iceland. Both whale sections circulated widely in the country as manuscripts that were read out and memorised. Jón Guðmundsson’s whale lore was forwarded to scholars in Denmark who in turn disseminated the information in their printed works in Latin. The whale lore of Jón Guðmundsson *lærði* thus established a second learned (book) tradition.

These two (written) whale lore traditions were considered to be authoritative by most Icelanders and scholars abroad while, on the other hand, the daily practice of Icelandic peasant fishermen resulted in additional, and partly differing, information. This apparently caused Icelandic peasant fishermen no problems; however, with scholars in Iceland and abroad the

27 A.V. Yablokov and L.S. Bogoslovskaya (1984: 479) suggest that gray whales enter the brackish water of coastal lagoons and river mouths to get rid of their parasites and that this cleansing procedure is apparently very successful.

28 The apparent singularity of the description cannot be an argument for dismissing it. Translations and interpretations (presumably from Koryak and Naukanski, respectively, via Russian to English) may have resulted in some inaccuracies so it would be desirable to revisit the sources concerned as well as addressing the phenomenon itself, for instance, in field studies.

confusion was often considerable, especially regarding the whale measurements, whale names and actual identifications.

We shall now consider the potential sources about the North Atlantic gray whale in detail.

4.2 'Hvalapulur' (late 12th-early 13th century AD). The '*Prose edda*' (also called '*Younger edda*' and '*Snorra edda*') was written by the Icelandic chieftain, poet and historian Snorri Sturluson (1179-1241 AD), around 1220-1223 AD. It was a textbook on poetics intended to instruct young poets in the difficult metres of the early Icelandic skalds (poets), and to facilitate the understanding of the mythological subjects treated in, or alluded to, in pre-Christian poetry. The codices of the '*Prose edda*' contain enumerations of names (*nafnapulur*) as supplements to the section about *heiti*, that is, immediate synonyms or simple names (in contradistinction to the periphrastic kennings).²⁹ It is generally believed that Snorri Sturluson did not compose these enumerations which are thus considered additions to, rather than part of, the '*Prose edda*' proper. The enumerations were probably the work of literate and learned systematists in the late 12th century AD, or a little later.³⁰ Many of the bird and animal names have been used in everyday Icelandic and as Icelandic dialectal words into recent times.³¹ The parts containing 'fish names' and 'whale names' are usually called '*Fiskapula*' and '*Hvalapula*' (sg), respectively. The latter is actually preserved in several manuscript variants for which reason we shall generally speak of '*Hvalapulur*' (pl).³²

The Icelandic enumerations basically include the whale names mentioned in the Norwegian '*Royal mirror*' ('*Konungsskuggsjá*'; cf item 4.3).³³ On the other hand, a number of '*Hvalapulur*' names are not found in the '*Royal mirror*', including the three we shall now discuss. In fact, nothing in the '*Royal mirror*' can be associated with the gray whale.

Usually words in the Old Norse and Icelandic languages are descriptive; this also applies to whale names and facilitates the interpretation of them. In one '*Hvalapula*' a term, *sandæta*, is

29 Cf Enc Br., Mic 3, 1981: 784; 9, 1981: 250f, 301; Holtsmark 1980.

30 Cf Halvorsen 1982: 404f; Jónsson 1, 1988: 19.

31 Cf Halvorsen 1982: 404.

32 Lindquist (1994: 666-668) presents the '*Hvalapulur*' names including variants and lists them alphabetically in normalised Old Norse spelling, with a comparison of names of presumed cetaceans, pinnipeds, sea monsters and other extraordinary natural phenomena in the '*Hvalapulur*' and the roughly contemporary Norwegian '*Konungsskuggsjá*' ('*Royal mirror*').

33 The absence in the '*Hvalapulur*' of *hvitingr* (white whale) and *svínhvalr* (northern bottlenose whale) cannot be considered significant because these names are well known from other, albeit, later Icelandic sources. (Cf Lindquist 1994: 169-176; 178f).

mentioned without a variant or synonym while *sandlægja* and *hrannlægja* are listed synonymously in another '*Hvalapula*'. All three words seem formally related through having variously the prefix (*sand-*) or the suffix (*-lægja*) in common. *Sandlægja* means 'one lying in the sand' and 'sand-lier',³⁴ while *sandæta* means 'sand-eater'.³⁵ The etymology of *hrannlægja* is more complicated but its meaning is probably 'one lying on the ridge/reef', 'ridge-lier'/'reef-lier'.³⁶

In item 4.7 we shall see how T. Bartholin (1657) in his section about the *sandlægja* gives the first indisputable description of the gray whale's feeding habits. Furthermore, P. Hansen Resen (1688; cf item 4.9) offers a similar description for the whale which he calls by the immediate synonyms of *sandæta* and *sandlægja*; and T. Thorlacius (1666; cf item 4.8) explains the *sandæta* ('sand-eater') name by way of the 'sand-lier' description.

The etymology of the Old Icelandic '*Hvalapulur*' names *sandæta* and *sandlægja* as such is clearly supported by the 4-500 years younger Icelandic descriptions. The 'sand-eater' aspect also agrees with the well known unique sediment-skimming and bottom-feeding of the Pacific gray whale, while the 'sand-lier' aspect corresponds to the reported habit of gray whales of resting quietly in shallows and on sand bars at the western shores of the Bering Sea and Bering Strait.³⁷ Whatever the exact etymology of *hrannlægja*, '*Hvalapulur*' define the whale as the *sandlægja* and, by implication, the *sandæta*, both clearly being the North Atlantic gray whale.

The '*Hvalapulur*' were compiled and committed to parchment about 1200 AD, so there is every reason to conclude that the Icelanders had intimate knowledge of the gray whale in the 12th century AD. Actually, they must have become acquainted with it already during the Settlement Period (traditionally dated to about 870-930 AD) and named it then. Whether one or more of the extant names were used we cannot say. As periphrastic expressions *sandæta*, *sandlægja* and *hrannlægja* may have been (permitted) noa names (which could be used at sea and during catching when the whale's proper name was tabooed) and skaldic synonyms (*heiti*).³⁸

Old Norse and Icelandic whale names generally refer to the outer appearance or behaviour of the animals.³⁹ The whale name *skeljung(u)r* ('one with shells') seems to have been first mentioned in the '*Hvalapulur*' and first described in the Norwegian '*Royal mirror*' (mid 13th century AD).

34 Cf Fraser 1970: 17; Magnússon 1989: 562; 592.

35 Cf Erichsen 1768: 123; Magnússon 1989: 1217.

36 Cf Lindquist 1994: 226.

37 Cf chapter 3, above.

38 For skaldic '*hrann-*' and '*sand-*' synonyms, cf Jónsson 1931: 277, 480.

39 Cf Lindquist 1994: 218, 226.

Its etymology suits the barnacle phenomenon perfectly and it so happens that in cold waters humpbacks are heavily infested with barnacles which drop off as the whales move into warmer waters.⁴⁰ The mention in the *Royal mirror* of the *skeljungr*'s big flippers identifies it as the humpback whale (*Megaptera novaeangliae*) which is also confirmed by later sources. On the present evidence the *skeljung(u)r* name can only be associated with the humpback whale.⁴¹ Barnacles and 'whale lice' are absent from all Icelandic descriptions proper of gray whales⁴² which indicates that Icelanders in mediaeval to early modern times considered barnacles to be more characteristic of humpbacks than gray whales. The original drawing by JG1 (1640-1644; cf figure 2) might indicate patches of barnacles and 'whale lice' on the whales' forehead but this will be discussed below (4.13). A tentative conclusion is that the North Atlantic gray whale was not much infested with barnacles and 'whale lice'.

4.3 'Ælfric's colloquy' (ca 1005 AD) and Bede (ca 731/732 AD). The Old English terms *hwæl* and *hran* have hitherto generally been rendered 'whale' in a generic sense⁴³ but there are sources which indicate that the *hran* was a middle-sized whale, smaller than the *hwæl*.⁴⁴ Whatever the exact etymology of the *hrann-* prefix in the Old Icelandic *hrannlægja* name, the meaning probably is 'ridge-lier'/'reef-lier'. Old English *hran* could somehow be related to *hrann-lægja*.

'Ælfric's colloquy' is an Old English source from circa 1005 AD which describes how English

40 Cf Evans 1987: 72; Watson 1985: 60, 95-97.

41 Cf Lindquist 1994: 215f, 875f, 990, 996.

42 It is interesting that Dudley (1725) does not mention barnacles and 'whale lice' in his description either.

43 Cf Bessinger 1967: 34, 36; Bosworth 1838: 37t, 38q-38t; Garmonsway 1939: 58; Hall 1975: 191, 197; Holthausen 1934: 172, 179.

44 T.N. Toller (1921: 563) mentions, *inter alia*,

(a) (from A.S. Napier, *Old English glosses*, Oxford 1900: 54, §1) that "[...] vii fiscas sélaes fyllu, sifu sélas hronaes fyllu, sifu hronas hualaes fyllu" ('7 fishes satisfy a seal, seven seals satisfy a *hron* [= *hran*], seven *hronas* satisfy a *hual* [= *hwæl*]); glossed as "Manducat unumquodque animal in mari alterum. Et dictunt quod vii minoribus saturantur maiores, ut [...]" ('It eats any other animal in the sea, and they say that the larger satisfy [their hunger] with 7 smaller [ones]');

(b) (from *Adelung* 10, 26): *ran* [= *hran*] glossed as "balenam .i. diabolum (crudelissimam superbiae balenam virtutum devoratricem [...])", 'whale *idem* devil (a whale very cruel in its pride, a devourer of virtues)'; furthermore,

(c) (from A.S. Napier, *Old English glosses*, Oxford 1900: 23, §48): "[...] sæfisce & hrane", with the latter word glossed as "ballenâ (grandior)", 'the more mature whale'.

Although the ratios in items (a) and (b) appear to reflect the mediaval Christian predilection for series of seven, the conclusion might be that the *hran* was smaller than the *hwæl*. Also with a view to the discussion below it may be mentioned that the black right whale (*Balaena glacialis*) weighs two to three times as much as the (Pacific) gray whale (cf Carwardine 1995: 45, 53; Evans 1987: 69, 224).

Toller also mentions an Old English poem about the whale (*hran*?) but it is not possible to pursue these Old English sources more in this context.

fishermen occasionally went down the river to the sea (estuary?) for fishing and catching of *merswine* (presumably porpoises and/or dolphins), *hwælas* and *hranas*. The internal logic of the dialogue in 'Ælfric's colloquy' also permits *hran(as)* to be a specific (species) name. The part of the dialogue that interests us would then read as follows, with the Old English key passages and Latin glosses added:⁴⁵

- Ælfric: What do you catch in the sea?
Fisherman: Herrings & salmons, porpoises/dolphins & sturgeons, oysters & crabs, mussels & periwinkles, cockles, flatfishes & soles & lobsters & the like [Hæyrincgas ⁊ leaxas, mereswyn (delfinos) ⁊ ...]
Ælfric: Would you [like to] catch some whale [Wylt þu fon sumne hwæl (cetum)]?
Fisherman: No.
Ælfric: Why [not]?
Fisherman: Because it is a dangerous thing to catch a whale. It is safer for me to go to the river with my ship [boat] than to go with many ships [boats] on gray whale hunting [Forþam plyhtlic þingc hit ys gefon hwæl (cetum). Gebeorhlicre ys me faran to ea mid scype mynan, þænne faran mid manegum scypum on huntunge hranes (ballene)].
Ælfric: Why so?
Fisherman: Because I prefer to catch a fish that I can slay [rather] than a fish which with one blow can sink or kill not only me but in addition my companions.
Ælfric: & [ie, yet] there are many who catch whales [⁊ þeah mænige gefoþ hwælas (cetos)], & escape the dangers & get/acquire great profit [from] thence.
Fisherman: So you say [ie, correctly], but I dare not for my mood [ie, heart] is timid.

The fact that *hran(as)* was glossed *ballene*, presumably emphasising that it was a baleen whale, in contradistinction to the generic terms *cetus* and *whæl*, strengthens this interpretation. Pliny the Elder used *balæna* in book 9 of his 'Natural history' ('*Historia naturalis*', finished in 77 AD) to distinguish 'the' baleen whale – actually our *Balaena glacialis* (ie, the black, or Biscayan, right whale) – from Aristotle's *physeter*, the sperm whale.⁴⁶ 'Ælfric's colloquy' suggests *hran(as)* to be a baleen whale that approaches inshore shallows, possibly estuaries. With a view to the Old Icelandic *hrannlægja* it is therefore suggested that the Old English *hran* is actually the gray whale.

The Northumbrian monk **Bede** completed his '*Ecclesiastical history of the English people*' ('*Historia ecclesiastica gentis Anglorum*') in 731 or 732 AD. It is acknowledged that Bede paid much attention to details and that his accounts are extraordinary accurate.⁴⁷ In the introduction to the geography, nature and early inhabitants of the British Isles (book 1, chapter 1) he writes,

45 Garmonsway (1939: 26-30) presents both the Old English text and the Latin glosses. Other translations are found in Benham (1916: 28f) and Gem (1912: 186-188). See also Lindquist 1994: 225f, 928f

46 Cf Pliny 1940: 169, 171; Watson 1985: 68.

47 Cf Leo Sherley-Price's introduction to Bede (1984: 27f).

among other things, that “Capiuntur autem saepissime et vituli marini, et delphines, necnon et ballenae [...]” (‘And there be many times taken seals, dolphins as well as whales [...]').⁴⁸ The information about natural history in this chapter seems down-to-earth and devoid of Plinian influence.⁴⁹ Therefore, when Bede writes *ballenae* in Latin, his Old English sources may well have had *hran(as)* in the vernacular.

A directed search in, and study of, Old English sources from the period ca 700-1050 AD might result in interesting information about the *hran(as)* and, presumably, the North Atlantic gray whale.⁵⁰

In the early to high Middle Ages ‘fishes’ 50 feet (ca 15 m) long were taken in the mouth of the Seine by order of the nearby Abbey of Jumièges. De Smet’s (1981: 305, 307) assumption that this involved the gray whale is reasonable but needs corroboration.

4.4 ‘Royal mirror’ (mid 13th century AD). The Norwegian work ‘*Komungsskuggsjá*’ (‘*Speculum regale*’; ‘*Royal mirror*’), dating from the period 1240-1263 AD, gives a comprehensive description of the natural phenomena of the Northeast Atlantic Ocean and adjacent lands, including real and imaginary (legendary and mythical) beings found there.⁵¹ An analysis of its detailed species descriptions reveals that the gray whale is not among them while all other relevant (major) cetacean species in principle are.⁵²

The bowhead, or Greenland right, whale (*norðhvalr*, ON) was not endemic to mediaeval Norway and would only occasionally have visited the Varangerfjord, East Finnmark, which was far beyond the high mediaeval Norwegian settlement in north Scandinavia. The same applies to the white whale, or beluga (*hvítungr*, ON), the narwhal (*náhvallr*, ON) and the walrus (*rostungr*, ON). Nonetheless detailed descriptions which apparently derived from Iceland and Norse Greenland found their way into the ‘*Royal mirror*’.⁵³ It is therefore surprising that information about the gray whale was not treated in the same way and included in the account of the ‘marvels’ in the ‘Icelandic seas’ and of Iceland.

48 Cf Baedae 1962: 12f. See also Bede 1984: 37.

49 This conforms well with Bede’s own words that he is writing things ‘gathered by common report’ (cf Baedae 1962: 10f; see also Bede 1984: 35).

50 Cf Lindquist 1994: 226, 491.

51 Cf Lindquist 1994: 140-143, 988-1001.

52 Cf Lindquist 1994: 155-228; 1997: 20.

53 Cf Lindquist 1994: 178f, 214-217, 220f, 989-993.

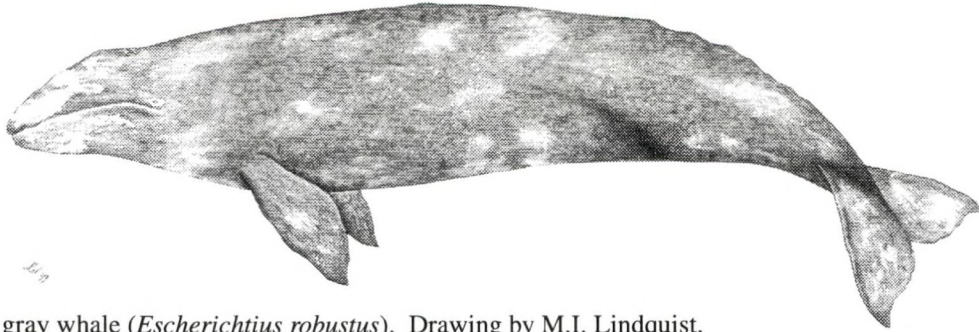


Fig 1. The grey whale (*Escherichtius robustus*). Drawing by M.I. Lindquist.

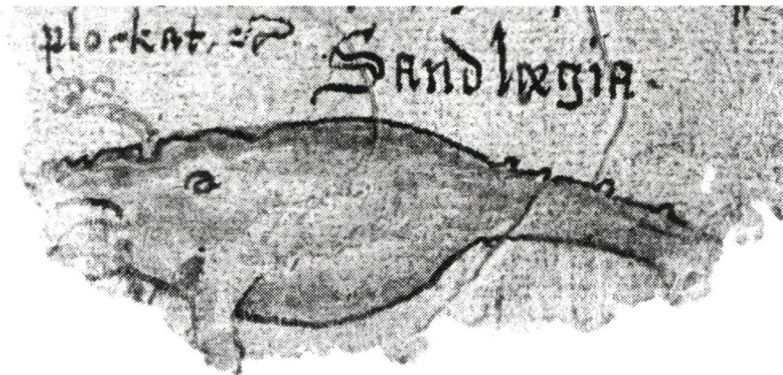


Fig 2. *Sandlægja*, drawing by Jón Guðmundsson lærði, in LBS-JS 401, 4°, from about 1640-1644; 6.9 cm across. In Hermannsson's illustration (1924, plate III, fig 5) of the same leaf the whole rostrum, which is rugged like the top of the rostrum, is clearly visible.

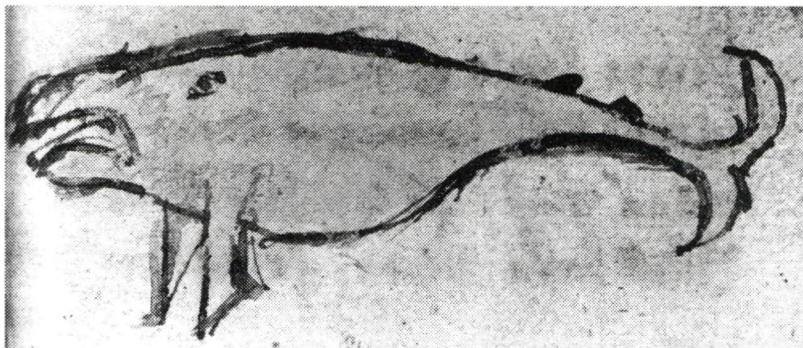


Fig 3. *Sandlægja*, drawing in a copy of Jón Guðmundsson's 'Natural history of Iceland', LBS-JS 76,8°: [27], presumably from the late 1640s or early 1650s; 7.9 cm across. The whale's spout is drawn in dimmed ink and does not appear in this reproduction.



Fig 4. *Sandlægja*, drawing by Snorri Björnsson, in LBS-JS 246: [107], from 1792; 9.5 cm across. This drawing is clearly not in the tradition of Jón Guðmundsson lærði.

4.5 Commission of Thomas Edge (1611). During the early Middle Ages the Basques developed their unique hand harpoon tow whaling technique for catching the black right whale (*Balaena glacialis*) in the Bay of Biscay. In the late 14th and 15th century they presumably also whaled in the English Channel and Irish waters, and from 1530 they were very active in the Strait of Belle Isle and the Gulf of St Lawrence where they also caught the other right whale species, the (subpolar) bowhead whale (*Balaena mysticetus*).^{54, 55}

When the men of the Muscovy Company in London had gained some Arctic experience and the Company decided to begin whaling off Spitsbergen, this required help and direction from Basque whalers which the English actually relied on for many years to come (as did the northern French, Dutch and Danes).⁵⁶ On 31 March 1611, the directors of the Muscovy Company issued a commission to Thomas Edge as factor on the two vessels in the Company's first real whaling expedition to Spitsbergen that summer. The commission is a blend of practical biological, production and trading particulars obtained from Basque sources which were clearly new to the English ship master Edge and the expedition members. When Edge, around 1622/23, writes his own account of the English whaling activities in Spitsbergen in the period 1611-1622, including the ten expeditions he himself took part in, he closely follows the whale names and descriptions from 1611. The Basque-English list mentions the species that were most relevant from the point of view of an early 17th century whaler merchant, in order of priority according to (stated) oil yield, viz: (1) bowhead ("the best of all"), (2) black right, (3) sperm (*trumpa*), (4) *otta sotta*, (5)

54 Cf Aguilar 1986: 192, 195f; Proulx 1993: 15f, 19, 21. Thomas Edge (1906: 30), who had an intimate knowledge of 16th-early 17th century Basque whaling, wrote in 1622 that the bowhead has "beene first killed" in the Grand Bay, *ie*, the Gulf of St Lawrence.

55 Aguilar (1986: 192) writes that "the North Atlantic [black] right whale dominated the [Basque] catch, at least at the time of heaviest exploitation." However, "other species such as the sperm whale [...] are known to have been caught". "Furthermore, the discovery of subfossil remains from gray whales [...] in the North Sea, some of them being only about fifteen hundred years old, puts forward the possibility that this species was also hunted by the ancient whalers [...]" Accordingly, Aguilar in his Table 1 (p 192) entered the black right whale as the main target species of the Basques in the Bay of Biscay and the English Channel, with the "Sperm and gray whale?" as possible secondary target species there in 11th-18th century.

The author has strong reservations about this reasoning as the osteological material only shows the presence of the whale, not that it has been caught, let alone by whom. Unfortunately, Bryant (1995: 860) takes this speculation even further when he, on very weak grounds (secondary and tertiary literature), reinterprets the mediaeval European whaling history and suggests the following: "If the eastern North Atlantic gray whales inhabited nearshore waters the way Pacific Ocean animals do, they would have been a likely target for Basque whalers, perhaps an even likelier target than right whales. Consequently, the population could have been eliminated quickly, leaving little historical or archaeological evidence."

Edge's commission, 1611, and the *otta sotta* there, are the relevant points of departure for considering the Basque involvement with the gray whale in Europe and North America and require extensive studies of Basque archival sources.

56 Cf Conway 1906: 42f.; Lindquist 1997: 39.

fin, (6) blue, (7) humpback, and (8) white whales.⁵⁷ Behind each description lies great experience with these whales. The description which Mead and Mitchell (1984: 35, 50f) consider fitting the Atlantic gray whale – an identification the author agrees with – reads as follows:

“The fourth sort of Whale is called Otta Sotta, and is of the same colour of the Trumpa, having finnes [*ie*, baleen] in his mouth all white, but not above halfe a yard long, being thicker then the Trumpa, but not so long: he yeelds the best Oyle, but not above thirtie hogsheads.”⁵⁸

The body colour, the colour and size of the baleen, the limited amount of oil from the whale⁵⁹ certainly imply the gray whale, and its place in the listing appears plausible.

The inclusion of the gray whale in Edge’s commission suggests, firstly, that the gray whale had been caught ‘regularly’ as a secondary species by the Basques during the preceding one to two generations (at least) and, secondly, that it was considered possible that the Muscovy Company expedition 1611 would come across it. With a view to the widespread Basque whaling activities in the 15th-16th century the *otta sotta* information could derive from gray whale hunting in western Europe, eastern North America or both regions.

4.6 Jón Guðmundsson lærdi (ca 1639-1644). Jón Guðmundsson *lærdi* (‘the Learned’; JGJ; 1574-1658) was a gifted Icelander of no formal education, curious about everything and very well read. He shared the superstitions of the time and was not disinclined towards Catholicism. JGJ had good contacts with those Basques who whaled inshore in Northwest Iceland during the summer seasons 1613-1615.⁶⁰ In 1631, JGJ was convicted of blasphemy and witchcraft and deported to Copenhagen for imprisonment but was later returned to Iceland where his sentence was actually confirmed in 1637. However, the Danish scholar Ole Worm (1588-1654) appreciated JGJ’s knowledge, *eg.* about runes. JGJ was given a place of retreat in East Iceland and remained safe there until his death in 1658, thanks to the sympathy and friendliness of Brynjólfur Sveinsson (1605-1675) who was bishop of Skálholt, 1639-1674. JGJ wrote his works between 1638 and, it seems, 1649.⁶¹ Bishop Sveinsson was one of Worm’s main contacts in Iceland.

About 1639-1644, JGJ wrote a summary entitled ‘*Um hvalfiskakyn í Íslandshöfum*’ (‘On

57 Cf Lindquist 1994: 117-122, 958-961.

58 Cf Edge 1906: 31.

59 *I.e.*, one quarter to one third of what the bowhead yielded.

60 Cf Lindquist 1994: 145-147, 429; 1997: 46.

61 Cf Hermannsson 1924: x-xiii, 38.

whales in the Icelandic seas')⁶² and, slightly later, approximately 1640-1644, '*Ein stutt undirrietting um Íslands adskilianlegar náttúrur*' ('*A short natural history of Iceland*')⁶³ in which whale lore is also prominent. JG1's descriptions of the *sandlægja* read as follows in translation:

'*Sandlægja*. Well edible. It has white baleen plates which project from the upper jaw, instead of teeth,⁶⁴ as in other baleen whales [...]. It is very tenacious of life and is able to lie on land as a seal [does] for a whole day. But in sand it never fails.'⁶⁵ – '*Sandlægja*, reaches 30 ells, has baleen and is well edible.'^{66, 67}

While '*Ælfric's colloquy*' and Thomas Edge's commission only imply that the *hran* and the *otta sotta* were of middle size, JG1 in '*On whales in the Icelandic seas*' offers the maximum size of the *sandlægja*.⁶⁸ In fact, it is the first in a series of eleven Icelandic measurements from the period 1639-1644 to 1792 so far discovered. Because these size figures (which are not necessarily length measures) must be interpreted with great caution we shall return to them as a whole in chapter 5.

The original of '*A short natural history of Iceland*' (LBS-JS 401, 4°) by JG1 is only extant in fragments which contain drawings of eleven whale species and the walrus,⁶⁹ including the *sandlægja*. It is noteworthy that the *sandlægja* drawing as reproduced by Hermannsson (1924, plate III, figure 5) shows more of the whale's rostrum than is now visible in the restored leaf in LBS-JS 401, 4°, cf figure 2.⁷⁰ A manuscript, LBS-JS 76, 8°, which includes drawings of all twenty-four cetaceans and the walrus, appears to be a complete copy of LBS-JS 401, 4°.⁷¹ Its drawings resemble closely the originals but show a tendency to generalisation.⁷² Whilst the rostrum is not critical for the identification of the *sandlægja*, Hermannsson's (1924) illustration

62 Cf Hermannsson 1924: xix-xx.

63 Cf Hermannsson 1924: xxiii.

64 This is a parenthetical remark.

65 Cf Guðmundsson 1924a: 9 (*A short natural history of Iceland*).

66 Cf Guðmundsson 1924b: 28 (*On the whales in the Icelandic seas*).

67 "Sandlægja. Vel æt. Hún er með huijtum tálknskijdum, er standa úr efra góme j stadin tanna, so sem á öllum öðrum skjidhuölum, [...]. Hún er miög lijfsterck og kann á landi ad liggia sem selur eirn heilan dag. Enn j sandi bilar hún aldri." (Guðmundsson [1640/44] 1924a: 9). – "Sandlægja, verdur þriátigi álna, hefur tálkn og er velæt." (Guðmundsson [1639/44] 1924b: 28).

68 Fraser (1970) did not use this information.

69 Cf Pétursson 1998: 128.

70 See also the good colour reproduction in Jónsson (1, 1988: 25).

71 It has been suggested that the handwriting of this manuscript be similar to that of bishop Sveinsson and that the manuscript dates from the late 1640s or early 1650s (cf Ólason 1927: 634) but this needs verification.

72 In the course of time the copying of JG1's work resulted in the whale illustrations becoming either highly primitive imitations (cf, eg, LBS-JS 86, 8°) or very fanciful (cf, eg, LBS-ÍB 171, 4°).

has much source value because it shows the whole rostrum, the front of which, in fact, is rugged like the top of the rostrum. As expected in a somewhat generalised copy, the *sandlægja* drawing in LBS-JS 76, 8° (cf figure 3) shows the rostrum without such details.

After 1530, the Basques began taking bowheads in the Strait of Belle Isle and the Gulf of St Lawrence in addition to the black right whale. Basque vessels are first documented whaling inshore in Icelandic waters in 1608.⁷³ About 1640-1644, JGI writes that the Basques only pursue the two right whale species and that black right whales existed in great number around Iceland but are rapidly being depleted by ‘the foreign whalers’.⁷⁴ In such a situation of rapid expansion of whaling on the best species, one would expect the Basques to usually ignore the secondary species mentioned in Edge’s commission, including the *otta sotta*. In fact, there is no indication of any foreign involvement with gray whales in Iceland.

4.7 Thomas Bartholin (1657). Thomas Bartholin (1616-1680), professor at the University of Copenhagen, in 1657 published the work ‘*Historiarum anatomicarum rariorum. Centuria III. & IV. Ejusdem cura acceßere observationes anatomicæ*’ (‘*A collection of anatomical records of rarities. Parts 3 and 4. With anatomical observations added by the same author*’) which contains a section on cetaceans (pp 272-285). He undertook to improve on contemporary scholarship by offering a ‘more accurate list of cetaceans which within living memory have either been captured or seen at the headlands and in the bays of Iceland.’ In order to keep the work reasonably short he ‘omitted the drawings of individual creatures, assiduously done in a manuscript “*Record of the fishes of Iceland*” which an inquiring Icelandic pastor sent not long ago to our great Worm who is now deceased.’⁷⁵

The last relative clause indicates that Bartholin was not fully aware of the origin of the material he used nor how it had reached Worm but we have some leads. In the summer of 1647, bishop Sveinsson responded to an inquiry from the royal secretary Otte Krag about certain Icelandic matters by submitting an account in Latin, except regarding whales where he forwarded

73 Cf Lindquist 1994: 121, 429, 785. It is a widespread misunderstanding (*inter alia*, by A. Aguilar 1986: 192, 196; and J.-P. Proulx 1993: 14) that the Basques commenced whaling around Iceland in 1412; actually, it were the English who about this time began fishing there (cf Lindquist 1994: 121; 1997: 39, 46).

74 “Sliettbakur, höddunefur. [---]. Þeirra huala er mikill fiöldi, enn þeir útlensku hvalfangsmenn fæcka þá eirna mest; þeir veida ecki utan sliettbakakynen, því at þeirra spik verður brædt enn ecki reingishuala edur reidarkyna.” (Cf Guðmundsson [1640/44] 1924a: 9; see also 10).

75 Cf Bartholin 1657: 272; see also 274. This and the following Latin texts were translated by Dr P.G. Maxwell-Stuart, St Andrews, but the author has modified slightly a few things in them in order better to capture the apparently intended meaning with a view to other sources.

a series of whale drawings (*'tabulam piscium'*, 'table with fishes') with descriptions in Icelandic. He offered to have the text translated if the recipient wished so⁷⁶ but we have no indication that he organised such a translation. In a letter, dated 31 January 1649, the royal historiographer Stephan Stephanius (1599-1650), professor at Sorø Academy, asked Worm to borrow for him those drawings of Icelandic whales which bishop Sveinsson had sent Krag. On 3 March 1649, Worm replied that he had not yet been able to reach Krag who was away from Copenhagen but he would continue his efforts.⁷⁷ The whale drawings and descriptions from Worm's library which Bartholin used could, theoretically, have been Krag's original, which for some reason had not been returned, or a copy of it made for Worm while he had access to the original.⁷⁸ The manuscript was apparently similar to the whale section, including illustrations, in the extant full copy of JGI's *'Natural history of Iceland'* (LBS-JS 76, 8°), or rather, as shall be argued below, an expanded version thereof which came to be used by various Danish scholars.

Bartholin has the following description in his work (1657):

'The fifteenth type [is] the *sandlæ[g]ja*. [It is] twenty or nearly thirty ells long and lies quietly in the sand. It takes the greatest possible pleasure in sand and greedily seeks out the tiny little fish which are abundant there. It is equipped with horny plates, and although it is eaten by humans, it does not have a pleasant taste, nor is it particularly fat. It is difficult to kill and dies slowly, as seals do. It is happy to rest on land. If one comes upon it in the sand, one cannot get near it because it throws up the surrounding sand and moves vigorously in an extraordinary way.⁷⁹ But once the force of the waves has driven it into the shallows [or: the narrow parts of bays] and it has been run through in several places by spears, it lies dead.'^{80, 81}

A comparison of size data of some twenty cetacean species shows that Bartholin's *'Anatomical history'* (1657), JGI's *'Whales in the Icelandic seas'* (1639-1644) and *'Natural history of Iceland'*

76 Dr Einar G. Pétursson (1999, pers comm) has been kind enough to clarify this last aspect.

77 Cf Benediktsson 1943: xxvii, 30; Pétursson 1998: 128f; Schepelern 1971: 198; Worm 1968: 355.

78 Ole Worm did not use information from the manuscript for *'Museum Wormianum'* (1655), the printing of which began 1654. In chapter 13 of book 3 (pp 279f) he mentions twenty whale species from the *'Royal mirror'* some of which he considers to be no proper whales; otherwise he only deals with marine mammals which were represented in his collection. (Cf Schepelern 1971: 206, 277-280, 376, 379; Worm 1655: 279-290).

79 This calls to mind the observations by the Naukan Inuit, mentioned in chapter 3, that "[...] the gray whale is capable of getting off the sand bars if next to a deep channel. He then arches, pushing with the rostrum and tail into the ground [...]" (Cf Yablokov and Bogoslovskaya 1984: 479).

80 Cf Bartholin 1657: 280f.

81 "Decimum qvintum [genus], *Sandlæja* [sic], qvod in arenis qviescat, viginti auth fere triginta cubitorum longitudine, arenis impensè gaudet, minnutissimos enim pisciculos, qvi eos pervadunt, avidè qværit. Laminis corneis instructa est, & qvanqvam ab hominibus comedatur, nec grati est saporis, nec admodum pinguis. Vita difficulter spoliatur, lenta enim morte instar Phocæ perit. In terra libenter qviescit. Si in arenis deprehendatur, inaccessa manet, arenas enim undeqvaq', turbando, mirum in modum commovet. In angustias vero sinuum vi fluchtuum, pulsa, spiculis non raro transfossa occubuit." (Bartholin 1657: 280f).

(1640-1644) are comparatively independent of the *'Royal mirror'*.⁸² Bartholin conforms most closely to JGI's *'Natural history of Iceland'*, except for the *hafreyður* and *sandlægja* whales where JGI only mentions the size of the former. On the other hand, Bartholin's *hafreyður* and *sandlægja* size data conform closely to JGI's *'Whales in the Icelandic seas'*.⁸³ The close resemblance of the Krag-Worm manuscript with the whale lore in JGI's *'Natural history of Iceland'* seems confirmed by Bartholin's (1657: 274) (misunderstood) mention of 40 *vognuhvalur* in *Biarnoensia* which also occurs in JGI's *'Natural history of Iceland'*.⁸⁴ To judge from Bartholin's text, the Krag-Worm manuscript went beyond the descriptions of the *sandlægja* given in the two known works by JGI and must therefore have been an expanded version of JGI's whale lore as we hitherto have know it. Bartholin probably did not exhaust the expanded *sandlægja* description because, as we shall see below, P. Hansen Resen (1688) and T. Torfæus' (1706) had additional information which seems to originate in the same text.

4.8 Theodor Thorlacius (1666). The Icelander Theodor Thorlacius (Þórður Þorláksson; 1637-1697) studied widely on the continent and was highly educated. He became bishop at Skálholt in 1674. During a stay in Wittenberg in Germany he wrote the *'Dissertatio chorographico-historica de Islandia'* which was printed there in 1666.⁸⁵ Although Thorlacius may have brought notes with him from Iceland the *'Chorographic-historical dissertation'* shows signs of being written in Central Europe away from most reference works and informants.⁸⁶ Of 'bigger fishes' in Iceland he mentions only blue and black right whales and the

'Sandæta, generally 30 ells. It takes its name from the sand in which it loves to lie, because it is usually seen on the shore. All these have gills [*ie*, baleen] but lack teeth. Its flesh is very beneficial to health and perfectly suitable for eating.'⁸⁷

Conversely, there were also toothed and partly wicked whales 'the meat of which nobody eats' ("qvarum carne nemo vescitur").

The only earlier source known to us mentioning the *sandæta* name is a *'Hvalaþula'*, from

82 Cf Lindquist 1994: 857, 860-862.

83 For the underlying principles and interpretations, cf chapter 5.

84 Cf Guðmundsson [1640/44] 1924a: 6f.

85 Cf Thorlacius 1982.

86 Cf Sigurðsson 1982: xv, xviii, xx.

87 Cf Thorlacius [1666] 1982: D4v: "*Sandæta* 30. plerumq': ulnarum, nomen habet ab arena, cui incombere amat, in ipso enim litore, ut plurimum conspicitur. Et hi quidem omnes branchias habet, & dentibus carent. carnemq' ve habet saluberrimam & esui accommodatissimam."

about 1200 AD, where it occurs in isolation. We notice that Thorlacius actually offers the ‘sand-lier’ description with the ‘sand-eater’ name which further supports the synonymy of *sandlægja* and *sandæta*. His exact measure will be discussed in chapter 5.

4.9 Peder Hansen Resen (1688). The Latin short version of ‘*Atlas Danicus*’ by the Danish professor Peder Hansen Resen (1625-1688), which Johan Brunsmann prepared, was ready in 1688 but was never published. The ‘*Description of the Faeroe Islands, Iceland and Greenland*’ is preserved in Brunsmann’s draft (KBK-NKS 1087, 2°) and a fair-copy (KBK-NKS 1088a, 2°).⁸⁸

Resen’s information in the ‘*Description of Iceland*’ about marine creatures came directly or indirectly from Icelandic sources. The first seventeen cetacean species, the merman, mermaid and the *hafgufa* monster seem to originate in bishop Oddur Einarsson’s ‘*Qualiscunque descriptio Islandiae*’, from 1588/89, which in turn often reflects the ‘*Royal mirror*’, while, according to J. Benediktsson (1991: 31, 162), the species number 18-25 derive from Bartholin’s descriptions in ‘*Historiarum anatomicarum rariorum*’ (1657).⁸⁹

Keeping in mind variants in KBK-NKS 1087, manuscript KBK-NKS 1088a reads in translation like this:

‘The eighteenth [type] is *sandæta* or *sandlæ[gj]a*, so called from *sand* (that is the sand on which he loves to lie), the reason for that being that one usually catches sight of him on the shore as he searches for the tiny little fish which abound in the sand. Presumably he finds them very pleasant to eat. He has gills [*ie*, baleen] but not teeth. The flesh is eaten by human beings. He is difficult to kill. He dies slowly, as do seals. When he is caught on the sand, he puts up a great fight with the result that it is not safe to approach him unless he is exhausted or half-dead.’⁹⁰

Thorlacius’ description can hardly be Resen’s source for the *sandæta* name. The way Resen applies the *sandæta* name to the *sandlægja* is logical and seems to require explicit information about the vernacular usage in Iceland. While Resen may have shaped his account according to Bartholin’s description, the *sandæta* synonym most likely originates in a primary source. JGI

88 The description of the Faeroe Islands has been published in Latin and Danish by Rischel and Skårup (1972) and the Icelandic description in an Icelandic translation by J. Benediktsson (1991).

89 Cf Lindquist 1994: 147f. See also p 224 where the author noted that he was not convinced that Bartholin was Resen’s only source with regard to the *sandlægja*.

90 Cf KBK-NKS 1088a, p 131, with variants in KBK-NKS 1087, p 96, added in parentheses: “Duodevigesimum sit *Sandæta* vel *Sandlæia* [sic] (dictum), a *sand* id est arena nomen sortiens qvippe cui incumbere amat, ut ideo penes littus conspiciatur plerumq minutos illos qværens pisciculos qvi arenam pervadunt, ii nempe gratissima ejus esca. Branchias habet sed dentes nullos caro (. Caro) ab hominibus comeditur. Vita difficulter animans spoliatur. Lenta enim morte instar Phocæ perit. Arenis prehensa admodum tumultuatur, ut intutum sit eam accedere (. nisi) ni, si jam delassatam aut semianimem.”

would certainly have known it and presumably entered it in the postulated expanded version of his whale lore. Resen's library, which burned in 1728, contained a manuscript which was either a copy of the Krag-Worm manuscript (*ie*, the text, with or without the drawings) or perhaps the original (including drawings).⁹¹

In the context of '*Hvalapulur*' we identified the gray whale from the circumstantial evidence of etymology but the descriptions by Bartholin and Resen of the feeding habits of the *sandlægja* ('sand-lier')/*sandæta* ('sand-eater') prove beyond doubt that the species indeed is the gray whale. In retrospect it also implies the *hrannlægja* of the '*Hvalapulur*'.

4.10 Thormod Torfæus (1706). The Icelander Thormod Torfæus (Þormóður Torfason; 1636-1719) was historiographer royal in Norway. Most of his works seem to have been written while he lived in southern West Norway. The descriptions of marine creatures and phenomena in his '*Gronlandia antiqva*' from 1706 (including his own translation of it into Danish) basically present the text of the '*Royal mirror*', albeit with various interpretations and additions, one of them concerning the *sandlægja*:

'XII. The *sandlæg[j]ja*, which never grows longer than thirty ells, is safe from harm as long as he lies on dry sand, because it is difficult to wear him out. He is rich in lard (as one may call the fatty flesh because this is what it resembles most). He is equipped with gills [*ie*, baleen] and is also suitable for eating. None of those with a flat back has lean meat, but they are blessed with longer gills than those which are lean.⁹² They have a large tongue and taste good, something they have in common with all those endowed with gills. Their fat is more easily melted than that of the lean [ones].'^{93, 94}

Torfæus discussion of the fat and lean whales and the length of their baleen is of less interest to us than his remark about the *sandlægja* having 'a large tongue'. This is a detail which must be

91 Cf Pétursson 1998: 129.

92 This appears to be a parenthetic sentence, referring to the two right whale species. The 'lean' whales must be the rorquals (blue, fin, sei, minke and humpback whales) and the gray whale.

93 Cf Torfæus 1706: 92f; see also 1927: 66.

94 "XII. Sandlægja, qvæ nunqvam triginta ulnas excedit, nec ei nocet, qvod in arida arena jaceat, tarde enim defatigatur, abundatqve lardo (ita liceat pingves ejus carnes appellare, qvod hanc speciem potissimum referant) branchiis instructa ad manducandum qvoqve idonea est. Omnes, qvi planum habent dorsum, macris carnibus destituuntur, longioribus qvoqve branchiis, qvam macri isti gaudent, lingua illis magna, & saporis boni, qvod omnibus branchiis præditis commune est, faciliusqve pingvedo illorum, qvam macrorum liqvatur." (Torfæus 1706: 92f).

"12. Sand-lægja, som aldrig er over 30 al: lang; hende skader iche om hun end ligger paa den tørre Sand, og bliver iche trætt; hun har ofverflødig flesk (saa kand mand kalde dens feede Kiød, fordi det er ligest til flesk).[.] Den har giælder, og er ædelig: Alle de som ere flade paa Ryggen, de har indtet mavert Kiød; de har og lengere Giældere end de mavre: De har stor tunge, og smager vel: hvilchet er og hos alle de andre som haver giældere; saa smeltes og deris Spæck lettere end de mavres." (Torfæus 1927: 66).

attributed some significance because, firstly, old Norse and Icelandic whale descriptions normally do not mention the tongue in whales; secondly, the gray whale has actually a particular big, muscular tongue (weighing up to 1400 kg) because of its feeding habits⁹⁵ and, thirdly, Torfæus mentions the tongue in connection with the *sandlægja* ('sand-lier') which allows us to infer that the 'sand-eater' (*sandæta*) would also have had such 'a large tongue'. It is submitted that Torfæus for his *sandlægja* description used the same text as Resen and Bartholin did but chose to present other details from it, details which are of such a kind that they could hardly derive from anyone else than JGI.

It is submitted that the gray whale descriptions by JGI in '*On whales in the Icelandic seas*' (1639-1644) and '*A short natural history of Iceland*' (1640-1644), by Bartholin in 1657, Resen in 1688, and Torfæus in 1706, taken together, reflect the Icelanders' knowledge of the Atlantic gray whale as it was about 1650.⁹⁶

4.11 Paul Dudley (1725). The account by P. Dudley (1725: 258), already mentioned, reads as follows:

"The Scrag Whale is near a kin to the Fin-back, but, instead of a Fin upon his Back, the Ridge of the Afterpart of his Back is scragged with half a Dozen Knobs or Nuckles; he is nearest the right Whale in Figure and for Quantity of Oil, his Bone is white but won't split."

Dudley here certainly describes the gray whale. Conversely, when tradition stated that the first whale caught by the European settlers on Nantucket Island shortly before 1672 was "A whale, of the kind called *scragg*"⁹⁷ we cannot be equally confident about the identification. However, it is quite likely that it was also the gray whale and that this species was among the "whales being at that time numerous in the vicinity of the shores" of the island.⁹⁸

4.12 Jón Ólafsson úr Grunnavík (1737) ('from Grunnavík'; JÓÚG; 1705-1779) was one of the best informed Icelanders of his time. He was secretary to the Icelandic scholar Árni Magnússon in Copenhagen from 1726 and catalogued Magnússon's manuscripts after his death in 1730. JÓÚG lived in Iceland 1743-1751 after which he resettled in Copenhagen where he

95 Cf chapter 3.

96 This conclusion involves a revision of the present author's (cf Lindquist 1994: 224) earlier statement that Bartholin's (1657: 280f) description of the *sandlægja* was "entirely independent" of JGI's accounts.

97 Cf Macy 1835: 27f.

98 Cf Macy 1835: 28.

worked as a scholar and as a secretary for various persons and institutions.

The most prominent and complete of JÓÚG's treatises on natural history is *'Ichthyographia Islandica eður tilraun um lýsingu á sjóar- og vatnadýrum á Íslandi'* ('*Icelandic fish lore*') which he wrote in Copenhagen in 1737. Until 1743 JÓÚG rewrote it five times before he was satisfied with it. The final Icelandic version only survives in copies.⁹⁹ He also made a translation into Danish of the '*Icelandic fish lore*' in 1737 which is preserved in his own hand.¹⁰⁰ The Danish text contains a special *Introduction* in which we learn about JÓÚG's sources and scholarly intentions. JÓÚG did not grow up at the seaside so his own experience with fish and marine mammals was limited. He inquired of his fellow countrymen in Copenhagen, particularly those who had lived at the seaside and gone fishing in their younger days, and merged their accounts into a comprehensive description. The work shows that JÓÚG's informants came from different parts of the country. Most of the material was obtained from other sources than JGI's '*Natural history of Iceland*' and contemporary printed works containing West Nordic whale lore. The arrangement JÓÚG had also to find out by himself.¹⁰¹ '*Ichthyographia Islandica*', thus, deserves to be considered a natural history work in its own right. It must be mentioned that JÓÚG attributed teeth to the rorquals in general, and the blue whale (*steypireyður*) in particular, and grouped the toothed northern bottlenose whale (*andarnefja*) with the baleen whales.¹⁰²

In the chapter on *Rorqual species* (2. *um Reiðar-kynin* / 3. *Om Reider Artene*) JÓÚG described the *sandæta*, *sandlægja*, also called *snefja*. Significantly, the following chapter was titled *On other edible whales* (3. *um aðra æta hvali* / 4. *Om andre Hval-fiske, som blive spiise*),¹⁰³ implying their being non-wicked.¹⁰⁴

The Dano-Icelandic text,¹⁰⁵ which is a little more complete than the Icelandic one,¹⁰⁶ reads in

99 A good copy is LBS-JS 247, 4° which was made in the early 19th century.

100 Cf KBK-Rostgaard 111, 2°.

101 Cf Helgason 1926: 173f.

102 For further details about the work and the transcriptions of relevant parts of JBS-JS 247 and KBK-Rostgaard 111, cf Lindquist 1994: 149-153, 1033-1057 (A.19). What caused the baleen *versus* teeth confusion is difficult to say, especially as JÓÚG to a great extent used informants rather than written sources, but it shows that even the most serious scholars had problems with this aspect.

103 Cf LBS-JS 247: 36-37; KBK-Rostgaard 111: 30r-31r.

104 JÓÚG treated the gray whale as a rorqual which is very logical on grounds of its throat grooves. It was only modern taxonomy that in the mid 19th century placed it in a family of its own.

105 "3. Snefja og Sand-æta (Snevir og Sand-ædere), eller som andre kalde Sand-lægja (Sand-liggere), holde somme for en og den samme fisk. Er omtrent 14. til 16 allen lang. Andre sige, at hun kand blive 80. allen. Den er graae-soort, og har et lidet stumpet og bag-krum[m]et Horn midt paa Ryggen. Som[m]e meene hun er krum bag til. Puster litt og hastig. Ligger altiid ved Sand og Leer, og ligger oven paa Vandet. Det kaldes, at Hvalen mookar

translation like this:

‘3rd. *Snefja* and *sand-æta* (*snevir* and *sand-ædere*), or which others call *sand-lægja* (*sand-liggere*), some consider to be one and the same fish. It is approximately 14 to 16 ells long. Others say that it can reach 80 ells. [The Icelandic text: Is ca 16 ells long. Others say it is eighty.] It is gray-black, and has a small truncated and backward-bent horn in the middle of the back. Some consider that it [*ie*, the whale] is curved on the lower back. Blows little but rapidly. Lies always at sand and clay, and lies on the water. Than it is said that the whale drowns (*mookar*).¹⁰⁷ It raises itself from the water to the rump opening and sometimes a little more, as with [the] *Detter*¹⁰⁸ [...].’

The first detail we notice in this account is the whale name *snefja*. The substantive *snefja* probably derives from the verb *snefja*, known in Icelandic since about 1700: it means ‘to snoop’, ‘to nose out’, ‘to find out’ (cf Faeroese *snevja*).¹⁰⁹ According to A. Jóhannesson (1956: 222) *snefja* is “‘eine art walfisch’ (der den kopf in den sand steckt, vgl. die synonym. sandæta, sandlægja)”. The reference to the gray whale’s feeding habits is obvious. It is tempting to consider *snefja* a noa name which around 1700 was new and only known by one or some of JÓÚG’s informants but not others.

JÓÚG is the first to tell us that the *sandlægja* breaches and to what extent, *ie*, ‘to the rump opening’ or a little more. This corresponds closely to the behaviour of the Pacific gray whale that typically throw their body three-quarters out of the water (cf chapter 3).

From about 1736 and into his old age JÓÚG drafted an Icelandic dictionary of encyclopaedic quality with explanations in Latin. This ‘*Lexicon Islandico/Latinum*’ consists of nine volumes now held at the Árni Magnússon Institute in Iceland, Reykjavik (AM 433, 2°). Because of numerous additions, and nonsense stemming from modifications which JÓÚG made after he became senile, it is difficult to use directly. Fortunately, the Dictionary of the University of Iceland in Reykjavik (*Orðabók Háskólans*) holds a register which Dr J. Benediktsson compiled and which greatly facilitates the search in JÓÚG’s dictionary. So far two relevant entries have been found,

(moeger). Hun löfter sig fra Söen til Rumpehullet, og kand skee litt mere, lige som *Detter* [...]” (KBK-Rostgaard 111: 31r).

106 “3. *Snefia*. (*Sandæta*) sumir kalla Sandlægja. meina margir sé einn og sá sami fiskur; er hérum bil til 16 ál[.] lánur. Aðrir segja hún sé átræð, grásvört á lit; hefur snubb-aptur bogað horn á miðju baki, blæs snögg og lítið, liggur altíð við sand og leir og flýtur opt uppi. Hún léttar sér frá sjónum alt að gotrauf og stundum meir.” (LBS-JS 247: 37).

107 *Ie*, *móka* (verb) in normalised Icelandic (cf Blöndal 2, 1980: 555; Halldórsson 1992: 330).

108 Cf KBK-Rostgaard 111: 31r. *Detfir* (I)/*Detfir* (D/I), which means ‘one that falls’, is later in JÓÚG’s accounts associated with the *stökkull* (I)/*Stöckelen* (D/I), meaning ‘one that jumps’. The *detfir* was thought to be an old, big, heavy and less nimble *stökkull* that could no longer leap free of the water. Leaping humpbacks were probably subsumed under these manes. (Cf KBK-Rostgaard 247: 40-41; LBS-JS 111: 33-34).

109 Cf Jacobsen and Matras 1961: 395; Magnússon 1989: 913.

namely: ‘From my *Ichthyographia* [...]. *Snefja* or *sand-æta*, that is keen-scented tracker or devourer of sand. This grows [to] 14 or 16 ells or even up to 80’,¹¹⁰ and ‘*Sand-lægja*, f[eminine], a species of whale which often lies close to the sands of sea-shores.’¹¹¹ Other details in JÓÚG’s accounts will be discussed below.

4.13 Snorri Björnsson (1792). Snorri Björnsson (1710-1803) was a vicar at Staður in Aðalvík, Northwest Iceland, 1741-1757, and at Húsafell in the upper Borgarfjörður, West Iceland, 1757-1796. In 1792, he wrote an Icelandic natural history,¹¹² among other things modifying the whale lore in JGI’s ‘*Natural history of Iceland*’ (1640-1644). His whale lore was separately entitled ‘*Um þau alkienda hvalakin i kringumm Island; og naf[n]-kunnugstu sjödyr*’¹¹³ (‘*On the commonly known whale species around Iceland and the most famous sea animals*’) and has thirty-eight illustrations of varying quality. Björnsson’s whale lore in many respects conforms with JGI’s¹¹⁴ but it also contains a dozen synonyms which are described and illustrated as particular ‘species’, together with other fanciful additions. Baleen *versus* teeth was a problem for Björnsson, too, but it should be recalled that even a meticulous scholar like JÓÚG was unable to treat the subject to our modern-day satisfaction. Björnsson mentions three porpoise (*hnysur*) species to which he attributes variously baleen, teeth and (!) small baleen, or teeth only. Instead of JGI’s single white whale species Björnsson describes two, *ie*, one with baleen and another with small, hollow teeth. In the absence of explicit information in JGI’s ‘*Natural history of Iceland*’ Björnsson apparently made ‘symmetric’ interpolations. He also writes:

‘*Sandlæg[j]a* so is a kind of whale called; this fish lets [the sea] ebb [away from] underneath itself and lies on the dry like seals; it has *ægishjálmur i augum*¹¹⁵ so people cannot approach it from in front; has small baleen, and small teeth the longest. [Rather]

110 Cf AM 433, vol 5, p 201: “Ex *Ichthyographia* mea [...]. *Snefja*, seu *Sand-æta*, id est indagator sagax, seu arenam devorans. Hæc fit 14. vel 16. ulnis vel usque ad 80.”

111 Cf AM 433, vol 7, p 80: “*Sand-lægja*. f. balenæ species, juxta arenas littorum frequenter cubans.”

112 Cf LBS-JS 246, 4°; Valdimarsdóttir 1989: 307, 378.

113 Cf LBS-JS 246: [pp 104-119]. Þ. Valdimarsdóttir (1989: 313-322, 379) offered a valuable pioneer analysis of this treatise.

114 Björnsson’s whale lore from 1792 as a whole seems to mark the end of both the ‘*Royal mirror*’ and JGI whale lore traditions.

115 So in normalised Icelandic. The expression means ‘having an evil gaze’, with the connotation of magic (cf Blöndal 2, 1980: 996; Halldórsson [1785/1814] 1992: 553; Matthiessen 1981: 128; Simek 1993: 286).

Inedible: 40 ells long.^{116, 117}

This is a unique description of what we by now must acknowledge to be the gray whale. Only the sentences ‘*Sandlægja* so is a kind of whale called’ and ‘this fish ... lies on the dry like seals’ fall clearly within the JGÍ tradition. The remark that ‘this fish lets [the sea] ebb [away from] underneath itself’ seems more precise than the corresponding text with JGÍ, so it could stem from another source.

As JGÍ states that the gray whale has baleen, Björnsson could simply have repeated this characteristic. Instead he describes it as having baleen as well as teeth. This does not look like a stereotypic interpolation as in the case of other species. It is indeed appropriate to characterise the about 25 cm long baleen on the gray whale’s one (left) side as short (*ie*, compared to those of other species), and understandable that the worn down baleen on the other (right) side were considered to be teeth. It therefore appears that Björnsson had good information on the actual state of baleen in adult gray whales which went beyond what we have seen earlier. In the drawing (cf figure 4) accompanying his description the ‘teeth’ are shown in the front (however, protruding from the lower jaw) and the baleen farther back in the mouth.

Björnsson’s *sandlægja* drawing is amongst the best and most realistic of his whale drawings in general, some of which are quite fanciful. The *sandlægja* drawing resembles that of his *skeljungur* whale *alias tigrishvalur*¹¹⁸ (‘one with shells’/‘tiger whale’) which, however, has an entirely smooth back, a mouth without baleen or teeth, the eye positioned near the top of the head, ventral grooves from the throat to the abdomen, and many small circles over most of the body (which in this case are not decorative); its flippers are only marginally longer than those of the *sandlægja*. The description identifies the *skeljungur/tigrishvalur* as the humpback whale.¹¹⁹ Otherwise the three historical *sandlægja* drawings we consider to be of some merit may most usefully be studied by comparing various features in them.

The apparent stoutness of the whales by JGÍ and in LBS-JS 76,8° (cf figures 2 and 3) *versus* the leanness of Björnsson’s whale (figure 4) can hardly be attributed significance because it may reflect the physical condition of gray whales in the autumn and the spring, respectively.

116 Cf LBS-JS 246: [107].

117 “Sandlægja [sic] so kallas ein slags hvalalkin; þ[ess]i fiskr lætr fiara und[a]n sier og liggr á þúru sem selar [sic]; h[an]n hefir Ægishiálm i augum[m] so m[en]n kun[n]a ecki gáanga framan ad honum[m]; hefr lytil skydi, og smáaar ten[n]r s[e]m leingst. illa ætr: 40 alna ä leingd.” (LBS-JS 246: [107]).

118 In normalised spelling.

119 Cf LBS-JS 246: 109 [last drawing]; see also Valdimarsdóttir 1989: 314 [third illustration]).

The (Pacific) gray whale has a low long hump on the lower back, followed by a number of (smaller) knuckles (cf figure 1). JGI shows four knuckles, of equal size, on the whale's lower back and tail stock.¹²⁰ LBS-JS 76, 8° has only two, somewhat bigger, knuckles the foremost of which is shaped like a small rounded dorsal fin. Björnsson illustrates the *sandlægja* with a small pointed 'fin' on the lower back followed by a small rounded knuckle; the dorsal side of the tail stock is waved, which presumably indicates the presence of further knuckles there because the outline of the whale is otherwise drawn in a clear plain line. Both JGI and LBS-JS 76, 8° indicate the correct position of the blowhole in front of the eyes¹²¹ but they show no throat grooves. In Björnsson's illustration the blowhole is incorrectly indicated farther back but he shows three to four ventral grooves on the whale's left side (*ie*, making six-eight in all, if we assume 'perspective' in the drawing); actually, the grooves of the gray whale are in the throat region. Björnsson's drawing appears to outline the head and mouth better and position the eye more correctly than do those by JGI and in LBS-JS 76, 8°. In JGI's whale the upper forehead is very uneven which possibly indicates patches of barnacles and whale lice. LBS-JS 76, 8° does not reproduce this feature which conforms with the straightening of the line on the whale's lower back. Presumably the copyist did not understand the significance of JGI's knotty and waved lines on the lower back and the head, respectively. The dark part along the upper forehead in Björnsson's drawing could equally signify patches of barnacles and lice. Björnsson's *sandlægja* illustration is so different from those of JGI and LBS-JS 76, 8° that it cannot be considered to be within that tradition.

Other scholars were clearly aware of the gray whale being a fighter but Björnsson appears to have been the first to characterise it as having a magic eyesight that horrified people, and being more or less inedible. It was a traditional Icelandic belief that wicked whales – because of their association with the evil of the world, the slaying of people at sea, and death – were inedible.¹²² Both the evil gaze and the inedibility implies that the gray whale was considered to be downright evil by nature. Björnsson's size of '40 ells' for the *sandlægja* is also singular. It is a misunderstanding but not arbitrary as we shall soon see.

120 That they should be "at least six" as Fraser (1970: 18) states, and Bryant (1995: 859) repeats, the author considers to be based on an erroneous interpretation of Hermannsson's (1924) photograph in figure 5 of plate III, as reflected in Fraser's tracing (p 14): Fraser's two right-most zigzags do not belong to the tail stock of the whale. They are clearly outside of the coloured part of the drawing, are pointed rather than rounded, and positioned too far down, in fact, where the tail flukes should be.

121 The illustration in LBS-JS 76, 8° shows the spout in dimmed ink which is lost in the black and white photograph reproduced in figure 3.

122 Cf Lindquist 1994: 132, 206.

4.14 Miscellaneous sources. Other sources presumably also refer to the gray whale, but because they contain no description of its feeding habits they at best offer circumstantial evidence.¹²³

The long-serving mayor of Hamburg, **J. Anderson** (d 1743),¹²⁴ wrote a book entitled '*Nachrichten von Island, Grönland und der Strasse Davis*', published posthumously. His informants were captains and merchants bringing goods to Hamburg and nearby cities.¹²⁵ Anderson (1747: 104, 212) twice mentions that the bowhead whale, which he (in older Icelandic spelling) correctly names *slettbakr*, was also called *sandhval/sand-hval* (D; 'sand whale'). In his '*Royal mirror*' edition, 1768, the Icelandic senior government servant **J. Eiriksson** (Erichsen 1768: 128) was in no doubt that Anderson's *sandhval*¹²⁶ name actually referred to the *sandlægja* and *sandæta*. On the other hand, this well informed and meticulous scholar on the same occasion offered the first Icelandic misidentification of the *sandæta* – and, by implication, of the *sandlægja* – as being the northern bottlenose whale.¹²⁷

After having travelled in Iceland during the years 1749-1751 to study the country's natural history and economy, **N. Horrebow** wrote the book '*Tilforladelige efterretninger om Island*' ('*Reliable information concerning Iceland*'). The presentation of the whale and whaling issues is pretentious and sometimes lacks in clarity. Horrebow (1752: 222) mentions that the bowhead whale was well known to the Icelanders who called it *sletbakur* (D/I) because of its smooth back

'but *sand-hval*, which has been told the author [*ie*, Anderson] that it is also is called, is a completely different whale fish. Of both these kinds, and other big whale fishes, there

123 A very different thing is the misidentifications as well as parallel and secondary applications of the terms *sandlægja*, *sandæta*, *snefja* and *sandhval* which have occurred since the mid 18th century, for example, with J. Erichsen 1768: 123 (*sandæta* = northern bottlenose whale, *Hyperoodon ampullatus*); Ó. Davíðsson 1891: 50 (*sandlægja* = turbot [*sandhverfa*] and dab [*sandkoli*]); K. Þorkelsson 1908: 70 (*sandlægja* = *hólmafiskur* = sperm whale, *Physeter macrocephalus*); S. Blöndal [1920-1924] 2, 1980: 677, 765 (*sandlægja* = *sandæta* = *snefja* = sei whale, *Balaenoptera borealis*); H. Hermannsson 1924: 36 (*sandlægja* = *sandreyður* = sei whale); A.B. Magnússon 1989: 913 (*sandlægja* = *snefja* = *sandreyður* = sei whale); Á. Jakobsson 18, 1975: 316 (*sand-hval*, as mentioned by N. Horrebow 1752: 222 = sei whale). The widespread misidentification with the sei whale, *sandreyður*, presumably stems from a superficial association of the prefixes. The word *sandreyður* is recorded as first used by Þ. Thoroddsen (1911: 489) for the sei whale, as has since been customary; whether it is older in Icelandic one cannot say (cf Guðjónsdóttir 1992, pers comm). Other identifications suggested by B. Muus, F. Salmonsén and C. Vibe (1982: 452) and I. Whitaker (1986: 8) were discussed by Lindquist (1994: 175f, 222f) and rejected.

124 Cf Anderson 1747: 26.

125 Cf Anderson 1747: 3f.

126 *Sandhvalur* is not recorded in Icelandic (cf Guðjónsdóttir 1992, pers comm).

127 "Andhvalen kaldes ellers Andurhveli, Andarnefia, af Snudens Lighed med et Ande-Næbb, den findes og kaldt Sandæta, af at æde Sandet, og hører vist til Næbb Hvalene [...] af hvilke een beskrives i [E.] Pontopp[idans] N[orges] N[aturlige] H[istorie, 1752-1753] [...]". (Erichsen 1768: 123).

is a multitude around Iceland, indeed even often in the inlets and the big fiords [...].¹²⁸

While the first two passages are correct, the last sentence sounds generalising and should therefore be interpreted with care regarding the gray whale. However, it seems that about 1750 the Icelanders were still familiar with the gray whale.

In the late 19th century a **legend** existed in Iceland about a very perilous and dangerous whale called *klakkur* (*klakkhvalur*, *klakkfiskur*) ‘which at some places is called *sandlægja* because it seems [...] mostly to stay at the bottom of the sea’ at sites of wrecked vessels.¹²⁹ Etymologically *klakkhvalur* (short *klakkur*, etc) means ‘whale of the shallow’. It is reasonable to conclude that *klakkhvalur*, *klakkur* and *klakkfiskur* were old noa names for the gray whale in Iceland.¹³⁰

Olaus Magnus, Swedish Catholic churchman and scholar (1490-1557), in book 21, chapter 9, of his ‘*Historia de gentibus septentrionalibus*’ (‘*History of the northern peoples*’), from 1555, refers to a whale, clearly distinguishable from the walrus, which comes onto the beach in sunshine where it sleeps soundly like the seal does and which people frequently manage to capture by tying it with ropes.¹³¹ The only cetacean that has a habit like this is the gray whale and the only ‘northern people’ to hunt the gray whale would be the Icelanders. Viewed in the context of all of the above it seems possible that gray whales lying on sand bars were approached from behind and entangled in ropes by the tail, and thus impeded, before being directly attacked (with spears and lances, it seems), wounded and killed.

4.15 Interesting information that could involve the North Atlantic gray whale will finally be mentioned here but the need for its corroboration is strongly emphasised, *viz*:

H. Hallgrímsson (1982) has made the helpful suggestion that lagoons on the coast of Iceland called *Hvalvatn*¹³² (*ie*, ‘Whale Lake’) perhaps got their names from gray whales seen there. Indeed several kinds of *Hval-* **place names** at the coast (*Hvalhylur*, *Hvallátur*, *Hvalsíki*, *Hvalvatn*, etc) deserve to be studied historically, with a view to changed topography and whale presence.

128 “[...] men Sand-Hval. som man har berettet Autor [*ie*, Anderson], at den ligeledes kaldes er en gandske anden Hvalfisk. Af begge disse Slags, og andre store Hvalfiske, findes Mængden omkring Island, ja endog ofte i Vigerne og de store Fiorde [...]”. (Horrebow 1752: 222).

129 So according to the edited version by S. Sigfússon (6, 1945: 25). The earliest version as published by Sigfússon (4, 1982: 184f; see also 1: xviii) does not have the reference to *sandlægja*. On what basis it was entered in the 1945 version is not clear.

130 Cf Lindquist 1994: 225.

131 Cf Granlund 4, 1976: 221f.

132 For example, in Hvalvatnsfjörður, South Þingeyjarsýsla, northeast Iceland.

However, in many cases it will be difficult to get beyond folkloristic explanations.

'*Eiríks saga rauða*' ('*Eiríkr the Red's saga*'), which was written 1263 AD or shortly later,¹³³ describes, among other things, the expedition of three ships and crews from Norse Greenland to *Vinland* in North America, under the leadership of the Icelander Þorfinnr *karlsefni* Þórðarson, and their stay there for three years, sometime in the period 1008-1030 AD.¹³⁴ The expedition wintered the first year at *Straumfjörður* ('Firth of Current') which could be the Bay of Fundy.¹³⁵ In late winter they ran short of food but

'A little later a whale came [ashore] there, and they went to cut it [up], and nobody recognised what kind of whale it was; Karlsefni knew much about whales and he nevertheless did not know [it]; and when the cooks boiled [the meat], they ate, and everybody became ill from it.'¹³⁶

The episode is presented as part of a Christian allegory in which the unknown whale appears as a wicked one (*illhveli*) because it was a gift from the old Norse god Thor, brought about by a 'barely Christian' crew member, Þórhallr *veiðimaðr* ('the Hunter'). The author cannot resist the notion that behind the story lies experience by the Norse of the Atlantic gray whale, perhaps in the Bay of Fundy. Norse seafarers were generally well informed about whales in the North Atlantic, and ship masters – like Þorfinnr *karlsefni* – particularly so.¹³⁷ As a young man in Skagafjörður, western North Iceland, Þorfinnr *karlsefni* may not have seen the gray whale and after 'he became a sea-going merchant and trader of eminence'¹³⁸ his knowledge of whales may have been more like that in the '*Royal mirror*'.

5 Stated size of the Atlantic gray whale

Between 1639/44 and 1792, Icelandic sources and Danish sources using information from Iceland mention the size of gray whales as follows:

133 Cf Guðmundsson 1997: 63; Halldórsson 1978: 398.

134 Cf Bergþórsson 1997: 96; Halldórsson 1985: 399.

135 Cf Bergþórsson 1997: 66-74, 92f.

136 "Litlu síðar kom þar hvalr, ok fóru þeir til ok skáru, ok kenndi engi maðr, hvat hvala var; [Karlsefni kunni mikil skyn á hvölum ok kenndi hann þó eigi;] ok er matsveinar suðu, þá átu þeir, ok varð öllum illt af." (Cf Sveinsson and Þórðarson 1965: 224; see also Halldórsson 1985: 425f).

137 Whale occurrence and whale migration were used as a navigational aid.

138 Cf Halldórsson 1985: 420; Sveinsson and Þórðarson 1965: 218.

JGI	1639/44:	30 ells;
Bartholin	1657:	20-30 ells;
Thorlacius	1666:	30 ells;
Torfæus	1706:	≤30 ells;
JÓúG/D	1737:	ca 14-16 ells <i>and</i> 80 ells, variously;
JÓúG/I	1737/42:	ca 16 ells <i>and</i> 80 ells, variously;
JÓúG/L	after 1737:	14-16 ells <i>to</i> 80 ells;
Björnsson	1792:	40 ells.

At first sight these measures appear confusing and partly unsound. They can, however, be explained on the basis of the old Norse whale appraisalment principles and the associated scale which the author has recently reconstructed.¹³⁹ The underlying linear measure ‘ell’ (*alin*, sg; *álnir*, pl; ON; *ulnas*, *cubitus*, L) is the old Norse standard ell of approximately 50 cm. Size measures of cetaceans may theoretically reflect (a) the whale’s overall body length; (b) its trunk, measured between (in principle) the eye and the genital slit, being about half of the overall length in many species taken by West Nordic peasant fishermen; and (c) an appraisalment sum applying a unit called ‘whale ell’ (**hvalsalin*, sg; **hvalsálnir*, pl; ON), ‘ell’ (*alin*, *álnir*) for short, in which each ell in the distance between the whale’s eye and the genital slit equates five ‘whale ells’ (**hvalsálnir*) in appraisalment.

In JÓúG’s Icelandic version of *‘Ichthyographia Islandica’* (1737/42) is said that the *snefjal sandæta* ‘Is ca 16 ells long. Others say it is eighty’. The 16 ells refer to the eye-genital slit distance which correspond exactly to 80 ‘whale ells’ (= 16 x 5) in appraisalment and (ca) 16 m (= ca 16 x 0.5 m x 2) in overall length, *ie*, about one metre more than the recorded maximum length in Pacific gray whales. This is likely to explain why we also find a slightly different trunk measure in JÓúG’s Danish version of *‘Ichthyographia’* (1737) and repeated in his *‘Lexicon’* (after 1737), namely ca 14-16 ells (*versus* 80 ‘whale ells’; actually 70-80 ‘whale ells’ would have been more correct). The average 15 ells eye-genital slit distance corresponds to an overall body length of approximately 30 ells, *ie*, the measure mentioned by JGI, Thorlacius and Torfæus. Bartholin offers the range of 20-30 ells which as a measure of overall length implies that the Krag-Worm manuscript referred to gray whales 10-15 m long. Two years old (Pacific) gray whales are 9.5-10.7 m long¹⁴⁰ so it looks like the Icelanders about 1650 were well acquainted with both juvenile and adult gray whales.

139 Cf Lindquist 1994: 229-274, 295f, 491f, including *Scale d* in figure 10 on p 245; and 1997: 20-22, including *Scale a* in figure 5 there.

140 Cf Yablokov and Bogoslovskaya 1984: 474; see also the size figures for adult gray whales in chapter 3, footnote 19.

Björnsson's (1792) size measure of 40 ells is more obscure: It does not come directly from JGI, who has 30 ells in the sources we know; it cannot signify overall length; and if it were an appraisal sum the whale referred to would be only about 8 m long, or a one year old calf,¹⁴¹ which is highly unlikely.¹⁴² One could imagine that the 1:2 ratio contained in the eye-genital slit distance *versus* overall body length as part of the 'whale ell' assessments could have caused Björnsson or his source to double 20 ells (like the lower size figure mentioned by Bartholin) to convert an assumed trunk measure to overall length. However, it appears more likely that Björnsson's 40 ells result from halving 80 ells (as with JÓÚG and his informants from about 1690-1710). Similar confusion has been widespread since circa 1600 and has beset scholarship until recently.

6 Conclusions

Skeletal remains of Atlantic gray whales have been found evenly along the coast of the United States between central Florida and Long Island (New York State) while the European finds seem to concentrate around the English Channel and the southern North Sea, with one find at the remote southern end of the Gulf of Bothnia in the Baltic Sea. The youngest American and European finds are radiocarbon dated to about 1675 and 1610, respectively¹⁴³ which corresponds well with the written sources discussed here.

The only substantial historical source we have so far about the western North Atlantic population of gray whales is Dudley's description from 1725. Other sources are European but the Basque-English information in Edge's commission, 1611, could derive from the western as well as the eastern North Atlantic population. Similarly, the Icelandic information should not *a priori* be taken to refer only to the eastern North Atlantic population of gray whales. Both the eastern and western North Atlantic populations may have enjoyed common feeding grounds around Iceland, similar to the possible mixing in the past of the eastern and western populations in their North Pacific feeding grounds, and similar to what is known about other baleen whales frequenting Icelandic waters.¹⁴⁴ The diet of North Pacific gray whales consists of amphipods (*ie*, beach

141 Cf Yablokov and Bogoslovskaya 1984: 474.

142 While a size figure for the adult whale may be mentioned without reference to the juvenile animal, the inverse is rather unlikely as our sources also show.

143 Cf Asselberg 1981: 5; Bryant 1995: 859; Mead and Mitchell 1984: 42, 43 [map], 45 [map].

144 Cf Evans 1987: 213, 214f (reproduced in Corkeron 1988: 98); Yablokov and Bogoslovskaya 1984: 468f.

hoppers, scuds, well shrimps), decapods (*ie*, shrimps, lobsters, crabs), polychaetes (*ie*, bristle worms), clupeid fish (*ie*, herring species), mysids (*ie*, opossum shrimps), kelp and other algae.¹⁴⁵ Varying with bottom conditions, amphipods, decapods, polychaetes, kelp and other algae appear to be common locally in Icelandic shallows; herring were plentiful before overexploitation in the mid 20th century; mysids are scanty but krill (Euphausiacea) and minute crustaceans of the order Calanoida are abundant.¹⁴⁶ These conditions seem to fit the gray whale well.

The historical sources indicate that the gray whale was caught in shallows and estuaries on both sides of the southern North Sea and the English Channel from the 10th century AD into the high Middle Ages. Because equipment, skills and organisation in this hunt would hardly have changed between the middle Iron Age and the high Middle Ages, its history could very well reach back into prehistoric times.

The first evidence about the gray whale in Iceland appears in sources from about 1200 AD where it is named both after its feeding and resting habits. The whale cannot have been a newcomer to Iceland so the peasant fishermen there must have known it since the early Settlement Period (about 900 AD). The Icelandic and Danish-Icelandic descriptions from the 17th-18th century describe the gray whale's behaviour in detail and offer good illustrations of it, *inter alia*, under the old names. Furthermore, they mention exact maximum size of the whale in various measures, *ie*, the trunk size, the overall body length and the appraisalment in old Norse 'whale ells' (**hvalsálnir*). All this demonstrates a longstanding practice on part of the Icelanders in dealing with the gray whale. The younger sources also tell us that the Icelanders actively caught gray whales in the shallows and on sand bars by spearing and lancing, possibly after preventing their escape by entangling them in ropes by the tail, ate the meat (surely including the tongue) and rendered the blubber into oil. The measures, including the appraisalments, refer mostly to fully grown animals, but also juveniles, so the Icelanders did not avoid taking adults but apparently caught gray whales of all sizes.

JÓÚG's information from 1737 must reflect experiences of his informants from about 1690-1710. Circa 1750, Icelanders were still familiar with the gray whale, as Horrebow's account shows, and presumably believed that it still frequented the coasts of the island. However, this may only mean that the gray whale had been seen regularly within living memory, say 40-60 years back. On the other hand, the first wrong identifications of the Icelandic vernacular gray whale names

145 Cf Evans 1987: 134f.

146 Cf Ingólfsson 1976; Ingólfsson *et al* 1986; Jónsson 2, 1990: 370, 373-376; Ólafsson 1995.

occur with Anderson sometime before 1743 and with Eiríksson in 1768. Therefore, it appears that from about 1740 first and second hand knowledge in Iceland of the gray whale faded away. One result was confusion about the meaning of the *sandlægja* and *sandæta* names.

At first glance it appears difficult to reconcile this conclusion with Björnsson's description and reasonably correct drawing from 1792. The quality of Björnsson's drawing suggests that it is a copy of a very good depiction. On the other hand, the ambivalent description, including the size measure, suggests that experience and living memory no longer imposed restraints on tradition and people's imagination. The notion of the gray whale having such a horrifying magical eyesight that people could not approach it from in front has possibly two aspects: Firstly, it may be connected with a hunting method that required approaching the whale from behind and roping it by the tail, as Olaus Magnus may hint at. Secondly, it looks like people had begun viewing the gray whale as a mythical creature,¹⁴⁷ possibly picking up some old taboo aspects.

The notion of the *sandlægja* having *ægishjálmur í augum* (1792) indirectly refers to approaching the whale in the shallows and sand bars. On the other hand, the legend recorded in the late 19th century about the highly perilous and dangerous whale *klakkur* (*klakkhvalur*, *klakkfiskur*) seems an echo of traditional taboos concerning encounters of fishing boats with gray whales in deeper (albeit inshore) waters. It may be recalled that *sandlægja*, *sandæta* and *snefja* were probably also noa names.

The conclusion is therefore that around the year 1700 gray whales were still regularly seen, caught and appraised at various places along the coast of Iceland while their number decreased drastically in the following years, presumably disappearing at one coastal site after the other, with the North Atlantic gray whale being eradicated about 1730.

The Pacific gray whale has breeding grounds in warm and calm inshore waters so it appears that all west European waters were too inhospitable during winter to offer suitable breeding grounds for its North Atlantic relative. Warm temperate to subtropical waters are only found between southern Portugal and Northwest Africa. It is therefore submitted that the eastern North Atlantic population of gray whales ranged between Northwest Africa and Iceland,¹⁴⁸ with a part

147 The extermination of the gray whale in Iceland could have been accompanied by socio-linguistic processes similar to those which followed the partial extermination of the walrus in the North Atlantic: O. Nordgaard (1902: 788-792) convincingly argued that the termination of walrus hunting in northern Norway in the early Middle Ages resulted in the walrus' Old Norse names of *hrosshvalr* and *rauðkemingr* becoming associated with fabulous sea monsters while the real walrus was referred to as *rosmhvalr* and *rostungr* in Iceland and Greenland where the hunt continued. (See also Lindquist 1994: 205f).

148 I. Krupnik (1993: 213) implies that the gray whale was present in the Barents and Kara Seas at least into the 17th century. However, Dr Krupnik (1996, pers comm) informs the author that it was an erroneous statement

of it visiting the English Channel and the southern North Sea, either stopping off or staying there for the duration of the feeding season, whence some strayed into the Baltic Sea. If the total absence of the gray whale from the Norwegian sources is considered to be indicative of the Norwegians not knowing the species, the eastern North Atlantic gray whales hardly migrated to and from Iceland through the North or the Irish Seas but rather travelled by a straight and narrow route west of Ireland. It is also submitted that the western North Atlantic population wintered along the coast of Florida and South Carolina and migrated to Iceland, with some whales perhaps stopping off in the Bay of Fundy. This scenario implies that both populations converged and mixed around Iceland and, thus, formed parts of an aggregate North Atlantic population. These premises are important for the historical interpretation, as we shall soon see.

With a main migration route of the eastern North Atlantic gray whales in the proximity of Galicia and western Ireland they could theoretically have been intercepted there. Whether the local inhabitants there and/or the Basques actually did so can only be determined through the study of primary sources, including archaeological evidence. The same applies to possible gray whale hunting by the Indians, European settlers and Basques in eastern North America.¹⁴⁹

Based on the sources and discussion above we advance the hypothesis, firstly, that the North Atlantic gray whale was hunted primarily by the coastal inhabitants (a) around the southern North Sea and the English Channel, from prehistoric times at least into the high Middle Ages; (b) in Iceland, from about 900 AD until about 1730; and (c) in New England by European settlers from the mid 17th century until about the same time, possibly also by Indians there; secondly, that it was casually caught by the Basques in the latter half of the 16th century and in the early 17th century.

So far we are not aware of gray whale hunting in western Europe after the 12th century AD or gray whale presence there after the 16th-early 17th century. Assuming that only the eastern North Atlantic population migrated to Iceland it follows that it must have existed until approximately 1730. On the other hand, if both the western and eastern populations converged in Iceland, as we tend to believe, it is possible that the eastern stock was eradicated about 1600 while the western North Atlantic population existed until about 1730. In any case, catching by

which somehow had crept into the English version of *'Arctic adaptations'*; moreover, old descriptions mention natives catching belugas (white whales) and some 'large whales' (presumably bowheads), using lances and spears from boats, but "I never came across any reference to the very presence of the gray whale in the Barents and Kara Sea[s] which corresponds nicely with your comment on its historical range."

149 It is indeed striking, as Dr Margaret Klinowska (1992, pers comm) notes, that "there seems to be no archaeological evidence whatsoever for Atlantic gray whale hunting" in contrast to the abundant archaeological material from the Pacific. We should, however, be aware that preconception could have resulted in gray whale material being overlooked and misinterpreted.

Icelandic peasant fishermen appears to have contributed significantly to the eradicating the North Atlantic gray whale but the roles of Basque whalers and coastal whalers in New England still need to be studied.

The absence of the gray whale from the *'Royal mirror'*, written in Norway in the mid 13th century AD, is puzzling when four things are considered together, viz: (a) the actually existing knowledge in the early 13th century AD among Icelandic peasant fishermen about the *sandlægja*, *sandæta*, *hrannlægja*; (b) the character of the *'Royal mirror'* as an educational work of high quality for young Norwegian princes;¹⁵⁰ (c) its generally comprehensive accounts of actually existing marine and littoral creatures in the North Atlantic, including such ones that did not live in Norwegian waters and about which detailed information was obtained from Norse Greenland and Iceland; and (d) its unconstrained descriptions of imaginary, mostly malignant, beings, including 'evil whales'.¹⁵¹ These circumstances arouse suspicion, firstly, that information about the gray whale was not generally available and, secondly, that such information did not reach the surroundings of the royal court in Norway and the author of the *'Royal mirror'* who presumably would have been most happy to include it, one way or the other, in this ambitious work. When looking for an overriding factor causing such reticence the author can only think of the *sandlægja*, *sandæta* and *hrannlægja* having been strictly tabooed among Icelandic peasant fishermen. The establishing of such a taboo would have to lie in the Settlement Period (about 870-930 AD) when the Icelanders experienced the gray whale for the first time because otherwise the gray whale would have become part of the wider mediaeval Norse lore about whales and other marine beings. To take this conjecture a step further, the allegory about Þórhallr *veiðimaðr*'s whale in *'Eiríkr the Red's saga'* could be a condemnation by mid 13th century Icelandic clergy of heathen practices associated with the gray whales, both past and contemporary. The notion of the *sandlægja* having *ægishjálmur i augum*, reported in 1792, might be a late reflection of the old taboo while also showing that a long time had passed since the gray whale had been seen at the shores of Iceland. On the other hand, the postulated taboo proper cannot have existed into modern times because Olaus Magnus in 1555 apparently referred to gray whale hunting in Iceland and Jón Guðmundsson *lærði*, about 1639-1644, described the gray whale without alluding to a taboo and neither did those scholars who build immediately upon his information.

150 Cf Holm-Olsen 1983: xi.

151 For instance, the *hrosshvalr*, *rauðkemingr* and *náhvalr* (cf Lindquist 1994: 129-133, 205-214). *Illhveli* ('evil whales') and *góðhveli* ('good whales') were basic opponents in the mediaeval Old Norse and early modern Icelandic marine world.

The details, outline and hypotheses presented in this paper hopefully facilitate further research into the history of the North Atlantic gray whale. Icelandic, Basque and Old English archival sources and Icelandic archaeological material should thereby have priority.

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Abbreviations

*	In front of a word indicates that this word or form has not been recorded and that it is inferred.
AM 433, 2°	cf Ólafsson ca 1736ff.
BP ±	'Before present', <i>ie</i> , before 1950, with a standard deviation, denotes that the true age of the sample is likely (with 67 per cent statistical probability) to be within the range specified and most likely (with 95 per cent probability) lies within twice the stated range.
D/I:	Dano-Icelandic.
Enc Br, Mic	cf Anon 1981a.
Enc Br, Mac	cf Anon 1981a.
I	Icelandic.
JGI	Jón Guðmundsson <i>lærði</i> .
JÓÚG	Jón Ólafsson <i>úr Grunnavík</i> .
KBK-NKS	<i>Ny kongelig Samling</i> , Royal Library, Copenhagen.
KBK-NKS 1087, 2°	cf Resen 1688a.
KBK-NKS 1088a, 2°	cf Resen 1688b.
KBK-Rostgaard	Rostgaard Collection, Manuscript Department, Royal Library, Copenhagen.
KBK-Rostgaard 111, 2°	cf Ólafsson 1737.
KLNM	cf Anon 1980-1982.
L	Latin.
LSB-ÍB	Collection of the Icelandic Literature Society (<i>Hið íslenska bókmenntafélag</i>), Manuscript Department, National and University Library, Reykjavík.
LBS-ÍB 171, 4°	cf Guðmundsson ca 1750.
LBS-JS	Jón Sigurðsson's Collection of Manuscripts, Manuscript Department, National and University Library, Reykjavík.
LBS-JS 76, 8°	cf Guðmundsson ca 1640-1644b.
LBS-JS 86, 8°	cf Guðmundsson ca 1740.
LBS-JS 246, 4°	cf Björnsson 1792.
LBS-JS 247, 4°	cf Ólafsson 1737-1742.
LBS-JS 401, 4°	cf Guðmundsson ca 1640-1644a.
OE	Old English, Anglo-Saxon.
ON	Old Norse.

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