

# Was Steenstrup Right? A New Interpretation of the 16th Century Sea Monk of the Øresund

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The mysterious “sea monk” found in the Øresund c. 1550 was commented on by three great Renaissance natural historians, Pierre Belon, Guillaume Rondelet and Conrad Gesner. Three centuries later, Japetus Steenstrup suggested the sea monk of the Øresund was a giant squid (*Architeuthis* sp.). The evaluation of three, previously ignored, early sources allows the date of the discovery of the sea monk to be fixed with reasonable certainty as 1546. Re-interpretation of the available drawings, descriptions and pre-Renaissance sources suggests that the sea monk was unlikely to have been a giant squid. The most likely alternative suspect would be the angelshark *Squatina squatina*.

Keywords: *sømunken*, monkfish, monk of the sea, *moyne marin*, *monachus maris*, *piscis monachi habitu*, *Squatina*.

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## INTRODUCTION

Sometime during the period 1545–1550, the Danish king, Christian III, sent to the Holy Roman Emperor Charles V (then in Spain) drawings of a strange animal that had been caught in the Øresund, the strait between the island of Sjælland (Denmark) and Sweden. Described as a sea monk (literally the monk fish, *piscis monachus* in Belon 1553, or the fish with the habit of a monk *piscis monachi habitu* in Rondelet’s 1554 account, or marine monk, *le moyne marin* in Sluperius 1572), this strange creature aroused the interest of the whole of Europe. Indeed such was its appeal to the Emperor that one chronicler claimed “as a result...King Christian was included in an alliance formed in the year 1550 between the Emperor and the Scots” (Holberg 1732–1735, quoted in Steenstrup 1855).

The animal had “a human head and face, resembling in appearance the men with shorn heads, whom we call monks because of their solitary life; but the appearance of its lower parts, bearing a coating of scales, barely indicated the

torn and severed limbs and joints of the human body. At the order of the king this abominable creature was immediately buried in the ground, in order that it should not, as the new and unusual generally does, provide a fertile subject for offensive talk.” (Krag & Stephanus 1776–1779, quoted in Steenstrup 1855).

Naturally such a find was commented on by two of the finest ichthyologists of the day, Pierre Belon (earliest description 1553) and Guillaume Rondelet (earliest description 1554). Eventually it appeared in the greatest natural history encyclopaedia of the age, Conrad Gesner’s (1558) *Historiae Animalium* [*Accounts of the Animals*], based largely on Rondelet’s and Belon’s descriptions.

The sea monk subsequently attracted the interest of Japetus Steenstrup who discovered some eight distinct, but not independent early accounts of the sea monk. All the following quotes are from Roeleveld & Knudsen’s (1980) translation of the lecture by Steenstrup in 1854 (published in 1855):

1. A brief mention in the contemporary records

(*Den Danske Krønike* [*The Danish Chronicle*]) of Anders Sorensøn Vedel (presumably the edition of 1575) of important events in the life of Christian III and Frederik II (his successor) of “a curious fish in monk-like shape caught in the Øresund, [that] was 4 ells long”. Vedel dated this to 1545.

2. Arild Huitfeldt’s (1595) account in *Danmarkis Rigis Krønike* [*Annals of the Realm of Denmark*], where the event is dated to 1550.

3. Stephan Stephanus’ continuation regarding the year 1550 of Nicolaj Krag’s detailed history of the life of Christian III, *Den stormægtigste Konge Kong Christian den Tredie, Konge til Danmark og Norge* [*The Great King Christian III, King of Denmark and Norway*] (Krag & Stephanus 1776–1779).

4. Ludvig Holberg’s *Dannemarks Riges Historie* [*History of the Realm of Denmark*] (the earliest published edition in the Royal Danish and Norwegian National Libraries is 1732–1735), where the event is dated to December 1549.

5. Pierre Belon’s (1553) account in his work *De Aquatilibus* [*On Water Life*] and also a slightly fuller account given in Belon’s (1555, not 1554 as stated in Steenstrup 1855) French work *La Nature & Diversité des Poissons* [*The Natural History and Variety of Fishes*].

6. Guillaume Rondelet’s account in his *Libri de Piscibus Marinis* [*Book of Marine Fishes*], published in 1554, where he mentions an additional drawing of the monster owned by one Gisbert which differed greatly from Rondelet’s own (see also Rondelet 1558). Rondelet dated the discovery of the sea monk to 1546.

7. Conrad Gesner’s (1558) account mentioned above which is a retelling of Rondelet and Belon with Gesner’s additional corollarium where he mentioned he was sent further drawings by a Georg Fabricius and a Hector Mythobius. Fabricius’ picture apparently agreed with that of Rondelet. Gesner also stated that the sea monk was caught in 1546. He also mentioned a German poem which described the black face of the sea monk.

8. Steenstrup (1855) mentions an unreliable third hand account from the records of Bjørn of Skardsa (Jonsson 1774–1775), presumably his history of Iceland, *Annalar Biørns a Skardsa* from 1774–1775. Why this account is a worse

source than for example Holberg (above) is unclear.

There are three further early sources which merit discussion, all of which contain illustrations:

9. Conrad Lycosthenes (1557) illustrated an aquatic monk three times (Fig. 1i) in his work *Prodigiorum ac Ostentorum Chronicon* [*Of Portents and Shown Times*]. Lycosthenes mentions three sea monks being found in 1530, 1546 and 1549. In fact the first sea monk was not a sea monk at all, having been found in the Rhine. The second one was found near Copenhagen with a black head and the clothes of a monk and the final one was found near Hafnia (Copenhagen), tonsured like a monk.

10. Johannes Sluperius in 1572 also figured the sea monk (looking wholly different to its predecessors, Fig. 1e) in his book *Omnium Fere Gentium Nostraeq Aetatis Nationum Habitus et Effigies* [*On The Costumes of All the Nations of Our Age*]. This picture with accompanying verse in French and Latin could be the mysterious text Steenstrup found referred to in Scheuchzer’s *Bibliotheca Scriptorum Historiae Naturalis* of 1716 but was unable to find. We have been unable to look at the latter work to confirm this.

11. A German woodcut by Stefan Hamer (see Strauss 1975, Fig. 1g here) that gives the date of the sea monk as 1546. Obviously, as the woodcut itself dates to 1546 then the sea monk could have been found no later than that year.

Note that none of the accounts is first hand and it is doubtful that Rondelet, Gesner and Belon had access to actual first hand sketches of the animal. The Belon, Hamer, Lycosthenes and Rondelet pictures are very similar and we are tempted to suggest they are more “closely related” with the Sluperius’ picture as the “out-group”. Sluperius’ artist had illustrated the same features or commentary that caused Rondelet to write “It appeared to have human features, but with a coarse and crude outline.” “Coarse” and “crude” here are the Latin words *rustica* and *agrestis* both of which have connotations of “country bumpkin” or “yokel”!

Belon did not give his precise informants, but Steenstrup (1855) thought that Rondelet and Belon’s sources were distinct, based on separate original accounts of the creature. Their drawings

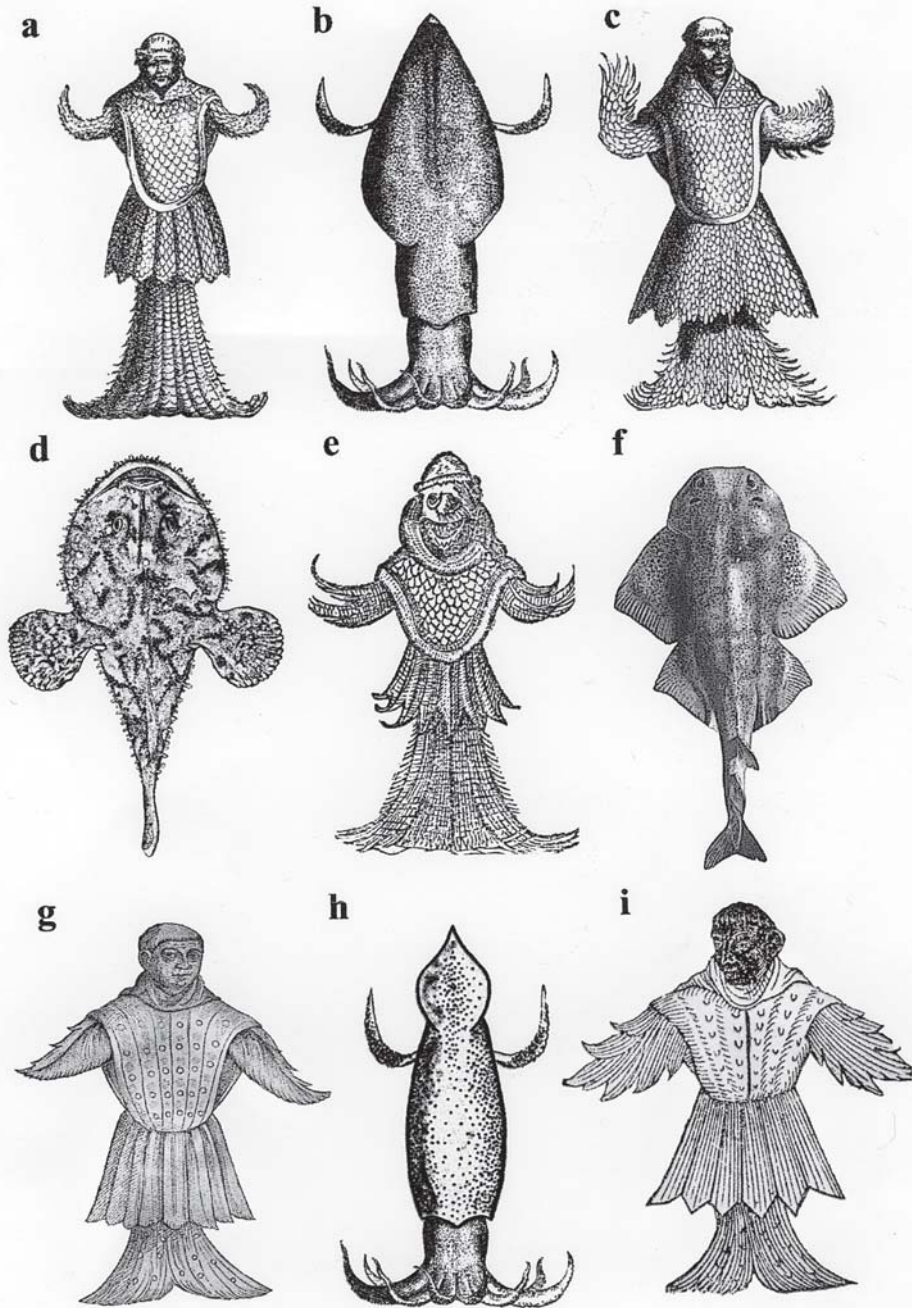


Fig. 1. Various drawings of the sea monk with some possible source animals. a. Rondelet's sea monk. b. A giant *Loligo* squid as the sea monk. c. The sea monk of Belon. d. A dorsal view of *Lophius piscatorius*. e. Sluperius' (1572) sea monk. f. Dorsal view of a female *Squatina squatina* (FAO). g. The sea-monk by Hamer 1546 (1977). h. A reconstruction of an *Architeuthis* in the same posture and style as Steenstrup's *Loligo* (fig. b), but the arms are, in fact, too short. i. The sea monk according to Lycosthenes (1557). Figures a–c are from Steenstrup (1855), as reproduced in Roeleveld & Knudsen (1980). Note that Steenstrup's reconstructions of Belon's and Rondelet's pictures are not wholly the same as the originals we have seen.

were, in Steenstrup's view, very different and he disregarded the etymologically similar corruptions of the location of the monster's discovery. Both authors reported the fish was found near at a place called Diezum (Rondelet) or Diezunt (Belon) near the town of Denelepoch (Rondelet) and Den Elopoch (Belon). Steenstrup (1855) pointed out that these were distortions of the phrase "the sound", obviously a reference to the Øresund and the name Ellenbogen (modern Malmö) by way of German. Bizarrely, Steenstrup did not make the obvious inference, that Rondelet and Belon ultimately had one or more common German sources. This source was not Hamer's woodcut of 1546, as it clearly referred to the locality as "Ellenpogen". Rondelet had obtained his drawings via Queen Margaret of Navarre who purportedly had got them from an anonymous nobleman who had seen the monster himself in Norway (sic) and was the source of the location data. So presumably the origins of the documentation had already become confused or the nobleman was mendacious.

Lycosthenes' freshwater monk found in the Rhine in 1530 was presumably a separate event to the appearance of the sea monk. There remains the possibility that there were two sea monks, one found in 1546 in the Øresund and another in 1549. However, it would seem probable that someone made a transcription error early on. Hafnia adjoins Copenhagen so the accounts could well be the same. We will parsimoniously assume that there was only one sea monk caught in the Sound during the 1540s and that this was caught in 1546.

## RESULTS

### Was It a Giant Squid?

In 1855, Steenstrup (see Roeleveld & Knudsen 1980), who had previously described the stranding of giant squid along the shores of the northern Atlantic, inventively suggested the Øresund sea monk was a giant squid. So convinced was he of his argument, that he gave his unknown squid the binomial name *Architeuthis monachus*. The validity of this species designation is however open to question as a giant squid was never formally

described under this name (Ellis 1998, Pfeffer 1993). Steenstrup's arguments for *Architeuthis* as the sea monk were as follows:

1. The general body form of the sea monk was similar to a squid with the rear of the mantle as the head, the fins representing the chasuble, the entrance to the mantle cavity representing the lower edge of the vestment and with the circle of arms representing the tail fin of the sea monk. The arms of the monk are the tentacles of the squid wrapped underneath the body with just the clubs visible in just the right position to be taken as human arms (Figure 1).

2. The black coloration of the head was caused by the presence of ink sacs underneath the skin.

3. The monkfish had red and black spots as does a squid.

3. The animal was scaleless (although this in fact contradicts at least two of the written accounts and all of the illustrations). The scales were, in Steenstrup's view, misinterpretations of the coloration of the animal. The basis for this argument was Rondelet's (1554) contention that the animal was scaleless. Most squid (including *Architeuthis*) are scaleless although one family Lepidoteuthidae is scaled.

4. The sea monk lived for three days. Steenstrup (1980) felt this was perfectly in keeping with squid which on "a moist beach or in moist air...could well live outside the water for such a period".

5. The monk produced no sounds except deep expirations or sighs.

Thus the sea monk was explained as a giant squid, an explanation that has been generally accepted (e.g. Ellis 1998, Aldrich 1980). That Steenstrup (1855) was right to believe giant squid were the explanation for certain monsters that were washed up on the coast of Europe in the 16th and 17th centuries cannot be doubted, but he may have been a little overenthusiastic in implicating *Architeuthis* as the prime suspect for the sea monk.

### A History of Sea Monks

Sea monks did not, in fact, make their first appearance in middle of the 16th century. The earliest reference to a sea monk that we can find dates back to the end of the twelfth or the beginning of the 13th century. In Alexander Neck-

ham's *De Naturis Rerum* [*On the Nature of Things*], there is found in the chapter *On Strange Fishes* a reference that "other fish resemble monks." A fuller description was given by the great 13th Century polymath Albertus Magnus (see Kitchell & Resnick 1999) in his work *De Animalibus*: "MONACHUS MARIS: Certain people say the sea monk is a fish occasionally seen in the British sea. It is a fish with white skin on the top of its head, around which is a dark circle, like the head of a monk who has been recently tonsured. It has however, the mouth and jaws of a fish. The animal entices those travelling on the sea until it lures them in. It then seeks to the bottom and takes its fill of their flesh."

Magnus' pupil Thomas of Cantimpré also wrote of the sea monk in his *Liber de natura rerum* [*Book on the Nature of Things*] around 1245. So popular was this book that one Flemish reader, Jakob van Maerlant (see Burger 1995), either edited or wrote a lyrical version *Der Naturen Bloeme* around 1260. A translation of this work suggests that Cantimpré's book did not contain any additional information than Magnus', except that the *monachus maris* preferred human flesh the most. None of these earlier sea monks were associated with freshwaters, and so Lycosthenes account of 1530 must, if accurate and genuinely having an origin with a zoological animal, presumably represent a different species. As this paper is about sea monks we shall pursue the freshwater monk of 1530 no further.

### Alternative Suspects

There is every reason to believe that the identity of the Øresund sea monk and the earlier sea monks was not a giant squid. "Monkfish" in British English is used to describe a variety of benthic fishes. Recently the term has most often referred to the anglerfishes *Lophius piscatorius* Linnaeus, 1758 (Fig. 1d) and *L. budegassa* Spinola, 1807. These species have one of the characteristics of Magnus' *monachus maris*: *Lophius* like almost all anglerfishes uses a lure to capture its prey. However the anglerfish does not particularly look like a monk. Alternatively in British English (and also more rarely in Norwegian and Danish as *munk*) the "monkfish" also refers to the angelshark, *Squatina squatina* (Linnaeus, 1758) a dorso-ventrally flattened elasmobranch with a ventral mouth and a shape not unlike that of a cowled but not a bare-headed tonsured monk (Fig. 1f). The two species have been confused since antiquity. Aristotle (translation in Balme 1991) wrote: "Both hake and *batrachos* (either *Lophius* or another anglerfish), *psetta* and angelfish (Greek *rhina* = the modern *Squatina*, not the guitarfishes genus *Rhina*) hide in the sand and, after making themselves invisible, fish with the things in their mouths that the fishermen call little rods". The use of "monkfish" for *Squatina* in English was recorded as early as 1686 (Willughby 1686)

Whilst *Squatina* does look like a monk, *Lophius* does not particularly look like a monk, but it does look a little like *Squatina* and presumably this caused the confusion. It seems reasonable to assume at some stage prior to the end of the 12th Century, someone confounded the *Squatina*/*Lophius* angling tradition with the fact that *Squatina* looked like a *cowled* monk and the enticing, anthropophagous monkfish of the late medieval period was born. That the monkfish is associated with seas adjoining Britain and the first mention of it is by an Englishman suggests the tradition may have been "invented" in the British Isles.

Despite the existence of the monkfish, *Squatina* retained a separate identity as well. It was mentioned by Albertus Magnus around 1260 (see Kitchell & Resnick 1999): "SCUATINA: The *scuatina* is a sea fish which the Germans call the sea puppy [*catulus maris*]. It has a length of five feet and a foot-long tail. Hidden in the mud, this fish kills other fish that are not on their guard. It has a skin so rough that, when dried, it is used to polish wood and ivory. Its hair is short and black and similar to the beards of fuller's grass, and is so tough that it can scarcely be cut with iron or steel."

This additional description of a *scuatina* does not preclude this animal as the *monachus maris* as Magnus was not personally familiar with all the animals he describes and sometimes has multiple entries for the same animal, e.g. the hippopotamus.

So the existence of a monkfish in northern seas, probably based on *Lophius/Squatina* was known amongst scholars prior to the 16th Century. Yet the sea monk caught in the Øresund did

Table 1. Diagnostic features of the sea monk and some suspect large marine animals.

	Sea monk	Giant squid <i>Architeuthis</i> sp.	Angelshark <i>Squatina</i> sp.	Jenny Haniver (generic elasmobranch)	Anglerfish <i>Lophius</i> sp.	Grey seal <i>Halichoerus grypus</i>	Harbour seal <i>Phoca vitulina</i>	Monk seal <i>Monachus monachus</i>	Hooded seal <i>Cystophora cristata</i>	Walrus <i>Odebenus rosmarinus</i>
Size	2.5 m	To 17 m	To 2.5 m	To 80 cm?	To 1.8 m	To 2.3 m	To 1.9 m	To 2.8 m	To 2.6 m	To 3.6 m
Scaled	Yes No according to Rondelet	No	Yes	Yes	Yes	No	No	No	No	No
Head colour	Black, or not stated	Burgundy or white if epidermis lost	Brown	Varies, brown	Brown	Grey/brown/ black	Grey/brown/ black	Grey/brown/ black	Black	Grey/brown/ black
Mouth position	Ventral	Terminal	Ventral	Ventral	Ventral	Terminal	Terminal	Terminal	Terminal	Terminal
Pectoral fins/limbs	Yes?	No but tentacles in Steenstrup reconstruction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mid-body fins/limbs	Yes	No	Yes	Yes	Yes	No	No	No	No	No
Body colour	Not given	Burgundy or white if epidermis lost	Brown	Varies, brown	Brown	Grey/brown	Grey/brown	Brown	Grey with dark blotches	Brown
Tail "fin"	Yes	No but arms in Steenstrup reconstruction	Yes	Yes	Yes	Yes (tail & pelvic flippers considered combined)	Yes (tail & pelvic flippers considered combined)	Yes (tail & pelvic flippers considered combined)	Yes (tail & pelvic flippers considered combined)	Yes (tail & pelvic flippers considered combined)
Known from Baltic	?	No	No	-	Occasional?	Yes	Yes	No	No	No
Known in North Sea	?	Yes	Yes	-	Yes	Yes	Yes	No	Occasional	Occasional

especially attract the attention of Renaissance naturalists and statesmen. Unfortunately we cannot now determine if the *piscis monachi habitus* was different to Magnus' *monachus maris*. *Squatina* is at the edge of its range to the west of the Skagerrak (Muus & Dahlstrøm 1977), so it might not have been recognised. Certainly with one or two caveats, *Squatina* makes a better contender for the Renaissance sea monk than the giant squid, for Steenstrup's (1855) explanation, ingenious though it is, has some fundamental flaws.

The monkfish was four ells long (approximately 2.5 m, if an ell is taken as 62 cm); therefore, any impostor squid would have to have been no *Loligo*, the common North Atlantic genus that grows to a mantle length of approximately 60 cm (Nesis 1987), but, as Steenstrup (1855) realized, a giant squid. But if it was an *Architeuthis* then the body form would have been wholly different from that in his original figure with the smaller fins providing no distinct chasuble for the monk (Fig. 1b). Steenstrup had no perfectly preserved specimens to judge overall body shape and so assumed that *Loligo* was a good model for *Architeuthis*. With a few exceptions squid are osmocomformers (Withers 1992), with a narrow toleration of salinity fluctuations and low salinities (Boyle 1991) and so would rarely occur in the surface waters of the Øresund where salinity can be as low as 10.5 psu (Nielsen 2001).

*Squatina squatina* has a brownish body not unlike that of a monk (Fig. 1f), occasional spots (which can be black or reddish) and scales (although they are not wholly obvious). It also has pelvic and pectoral girdles, to provide the impression of sleeves under a chasuble and the waist level vestments. A ventral view of the animal could even provide a "face", with a mouth and "eyes". Further, as an elasmobranch it could probably remain alive out of water for longer than a squid and even if dead could produce jaw movements that would give the impression of life.

However, the identification of the Danish sea monk as a *Squatina* also has flaws, although they are perhaps not so insurmountable as those associated with the *Architeuthis* explanation:

1. Rondelet, Belon and Gesner all described *Squatina* so perhaps they should have recognised

the monkfish as *Squatina*. However they did not actually see the specimen.

2. The *Squatina* explanation cannot explain the described black face except that the body is dark all over. The ventral surface of *Squatina* is pale.

3. *Squatina* looks like a cowed rather than bare headed, tonsured monk (Fig. 1f).

4. At 2.5 m the fish would be at the very limit of its size range (Compagno 1984).

Another species that should also be considered, because of its superficial similarity to *Squatina* rather than a monk, is the anglerfish/monkfish *Lophius*. However the biggest known *Lophius* are under 2 m long, the mouth is almost terminal on the dorsal surface and the most visible fins are far too far back to be taken as arms, hence its pre-linnean binomial name *Rana piscatrix*, the fishing frog.

A final known living animal contender for a sea monk would be a seal. Indeed, one genus of seals (*Monachus*) has gained its name due to their coats looking like those of monks. The sea monk was unlikely to be a monk seal as the range of the nearest species, *Monachus monachus* (Hermann, 1779), is the Mediterranean and north-west coast of Africa (Jefferson *et al.* 1993). Nonetheless, seals can look very monk-like indeed, and three species (*Phoca vitulina* (Linnaeus, 1758), *Phoca (Pusa) hispida* (Schreber, 1775) and *Halichoerus grypus* (Fabricius, 1791)) occur around the Baltic. More exotically Heuvelmans (1974) suggested the sea monk was a wandering hooded seal *Cystophora cristata* (Fabricius, 1791) or a walrus *Odobenus rosmarus* (Linnaeus, 1758). The objection to a seal explanation is that sea-calves or sea-dogs, as they were called in the 16th century, were well known and presumably would have been recognised as the carcass was obtained. Walruses were not so well known and an errant specimen could have been taken for an unknown monk-like animal with a brown body and seemingly tonsured head by southerners unfamiliar with the *rosmarus/morsus* of the far north. But pinnipeds are not scaly nor do they have flayed skin (if intact) that might be taken for the vestments of a monk. Nonetheless walruses remain a possible explanation for the occurrence of sea monks prior to 1546.

Jenny Hanivers, strange grotesque ornaments made from the cut and dried bodies of sharks and

rays, have been implicated as a source of the sea monk as well as a sea bishop shown to the king of Poland in 1531 (Russell & Russell 1975, Carrington 1957). All of the elasmobranch characters of the *Squatina* could also be found in a Jenny Haniver but if the sea monk was genuinely found alive then it could not have been a Jenny Haniver. No Jenny Haniver of the size of the sea monk is known and normally they were created to look like devils or dragons rather than overtly human figures. The characteristics of Jenny Hanivers and the living suspects for the sea monk are summarised in Table 1.

As the carcass has been lost we will never know the identity of the *piscis monachi habitus*. The sea monk will remain an enigma. Nonetheless, we can say with some measure of certainty that the sea monk was obtained not later than 1546 (and probably in 1546), Belon and

Rondelet's detailed information ultimately came from some as yet unknown German source material, and the 1546 sea monk was probably not a giant squid. Whether Steenstrup was right or wrong about the *sømunken* does not affect the question of the validity of the binomial name *Architeuthis monachus*; either the species or synonym list for *Architeuthis* will retain forever the memory of the mysterious sea animal of the Øresund.

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## REFERENCES

- Aldrich, F. A. 1980. The source of the sea bishop. – Pp. 55–64 in: K. S. Goldstein & N. V. Rosenberg (eds): *Folklore Studies in Honour of Herbert Halpert*. Memorial University of Newfoundland, St. Johns, 395 pp.
- Aristotle. Ca. 350 B.C. *Historia Animalium*. [Translation in Balme 1991]
- Balme, D. M. 1991. *History of Animals*. Books 7–10. Loeb, Cambridge, 344 pp. [Translation of Aristotle's *Historia Animalium*]
- Belon, P. 1553. *De Aquatilibus [On Water Life]*. Carolus Stephanus, Paris, 448 pp.
- Belon, P. 1555. *La Nature & Diversité des Poissons*. Charles Estienne, Paris, 181 pp.
- Boyle, P. R. 1991. *The UFAW Handbook For the Care and Management of Cephalopods in the Laboratory*. University Federation for Animal Welfare, 64 pp.
- Burger, P. (ed). 1995. *Het Boek der Natuur*. Querido Uitgeverij, Amsterdam, 192 pp. [Translation of J. van Maerlant's *Der Naturen Bloeme*]
- Carrington, R. 1957. *Mermaids and Mastodons*. Chatto & Windus, London, 251 pp.
- Compagno, L. J. V. 1984. *FAO species catalogue. Vol. 4. Sharks of the World. An Annotated and Illustrated Catalogue of Shark Species Known to Date. Part 1. Hexanchiformes to Lamniformes*. FAO, Rome, 249 pp.
- Ellis, R. 1998. *The Search for the Giant Squid*. Lyons, New York, 322 pp.
- Gesner, C. 1558. *Historiae Animalium liber IIII. Qui est de Piscium & Aquatiliu Animantium Natura*. Christof Froshauer, Zürich, 1297 pp.
- Hamer, S. 1546. *Ein Warhafftige Contrafactur eines wunderbarlichen und warhafftigen Visches*. [Reproduction and information in Strauss 1975]
- Heuvelmans, B. 1974. *Dans le Sillage des Monstres Marins*. Famot, Geneva, 533 pp.
- Holberg, L. 1732–1735. *Dannemarks Riges Historie*. Johan Jørgen Høpfner, Copenhagen, 2550 pp.
- Huitfeldt, A. 1652. *Danmarckis Rigis Krønnicke*. J. Moltke, Copenhagen, 555 pp. [Earliest edition 1595]
- Jefferson, T. A., S. Leatherwood & M. A. Webber. 1993. *Marine Mammals of the World*. FAO, Rome, 320 pp.
- Jonsson, B. 1774–1775. *Annalar Biørns a Skardsa*. Bjørn Jonsson, Hrapseyæ, 294 pp.
- Joubert, L. 19??. *Histoire Entière des Poissons*. Matthias Bonhome, Lyon, 1497 pp. [Translation of Rondelet 1558]
- Kitchell, K. F. & I. M. Resnick. 1999. *On Animals: A Medieval "Summa Zoologica"*. John Hopkins, London, 1920 pp. [Translation of Magnus' *De Animalibus*]
- Krag, N. & S. Stephanius. 1776–1779. *Den stormægtigste Konge, Kong Christian den Tredie, Konge til Danmark og Norge*. Godiche, Copenhagen, 735 pp.
- Lycosthenes, C. 1557. *Prodigiurum ac Ostentorum Chronicon*. Henrus Petrus, Basil, 670 pp.
- Magnus, A. Ca. 1260. *De Animalibus*. [Translation in Kitchell & Resnick 1999]
- van Maerlant, J. Ca. 1270. *Het Boek der Natuur*. [Translation in Burger 1995]
- Muus, B. J. & P. Dahlström. 1977. *Collins Guide to the Sea Fishes of Britain and North-Western Europe*. Collins, London, 244 pp.
- Neckham, A. Ca. 1200? *De Naturis Rerum*. [Reproduced in Wright 1863]



- Nielsen, M. H. 2001. Evidence for internal hydraulic control in the northern Øresund. – *Journal of Geophysical Research* 106 (C7): 14055–14068.
- Nesis, K. N. 1987. *Cephalopods of the World*. [L. A. Burgess, ed] T.F.H. Jersey, 404 pp. [translated by B. S. Levitov]
- Pfeffer, G. 1993. *The Cephalopoda of the Plankton Expedition*. Smithsonian Institution, Washington, 647 pp.
- Roeleveld, M. & J. Knudsen. 1980. Japetus Streestrup: On the merman (called the sea monk) caught in the Øresund in the time of King Christian III. A translation into English. – *Steenstrupia* 6: 293–332.
- Rondelet, G. 1554. *Libri de Piscibus Marinis*. Matthias Bonhome, Lyon, 825 pp.
- Rondelet, G. 1558. *Histoire Entière des Poissons*. [Translation in Joubert 19??]
- Russell, W. M. S. & F. S. Russell. 1975. The origin of the sea bishop. – *Folklore* 86: 94–98. Scheuchzer, J. J. 1716. *Bibliotheca Scriptorum Historiae Naturalis*. Heidegger, Zurich.
- Sluperius, J. 1572. *Omnium Fere Gentium Nostraeq Aetatis Nationum Habitus et Effigies*. Joannes Bellerus, Antwerp, 135 pp.
- Steenstrup, J. J. S. 1855. Om den i Kong Christian III's tid i Øresundet fanget Havmund (*Sømunken* kaldet). – *Dansk Maanedsskrift* 1: 63–96. [In Danish, translation in Roeleveld & Knudsen 1980]
- Strauss, W. L. (ed) 1975. *The German Single Leaf Woodcut 1550-1600, Volume 1*. I-J. Abaris, New York, 827 pp. [Page 393 with reproduction of and information on Hamer 1546, under the title: The monk fish found at Copenhagen in the sea of Denmark in 1546]
- Vedel, A. S. 1575. *Den Danske Krønike*. Copenhagen, 547 pp.
- Willughby, F. 1686. *De Historia Piscium*. John Ray, Oxford, 343 pp.
- Withers, P. C. 1992. *Comparative Animal Physiology*. Saunders College, London, 900 pp.
- Wright, T. (ed) 1863. *De Naturis Rerum*. Longman, Roberts & Green, London, 521 pp. [Reproduction of Neckham's *De Naturis Rerum*]

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