Fantasy, Cryptozoology and/or Reality: Interconnected stories of mythological creatures and marine mammals

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Abstract:

Among other monstrosities and myths from the sea and aquatic bodies, the double-tailed mermaid has been profusely described and depicted in early modern literature, bestiaries and natural history treaties as in the iconography and cartography. Usually shown as a female form with one head and upper body and holding its two fish-like tails, it did represent the epitome of beautiful nature creations but also its strangeness and hybridity. With virtues and sins, love and danger within the same body, it could be the reflection of the moral and human acts' (dis)conformities. Besides the symbolic meaning of the mirror, or the twinning, could these mythical beings also be the result of non-understood observations of rare events in the sea? In this paper, more than providing answers, I am proposing some questions regarding early nature apprehension and natural knowledge production by relating the physicality of double-tailed mermaids with the real, yet highly obscure, occurrences of conjoined twins in sea animals. Conjoined or Siamese twins have, in fact, rarely been described in wild (marine) mammals but a couple of cases in cetaceans just came to light in recent years. Even though descriptions of monsters sometimes reveal more about people's minds and perceptions than they do about the animals, the physical similarities between these two types of marine monsters, and the possibility of real observations resulting in imaginary animals will be discussed.

Keywords: Mermaids, Cetaceans, Early modern natural history, Oceans history, Biology

1. Introduction: Mermaids, sea serpents, monsters and others

Since the Antiquity, from the Greek and Roman civilisations to the Middle Ages in Europe, and throughout the early modern period up to the present, sightings and subsequent descriptions, depictions and representations of mermaids have been abundant. Mermaids or siren, mermen or tritons are one of the most persistent legends of the aquatic realm, and they are pervasive in time, geography and cultures. In many other parts of the world, throughout human history, mermaids including the double-tailed mermaid, have been depicted and described and included in numerous myths, stories, rituals and ceremonies. In all oceanic bodies, from offshore to nearshore waters, from islands to inland watery spaces, different aquatic animals may have been the source to all the legends perpetuated through oral stories, group memories and written traditions. The persistence of the mermaid legend and the similarity of so many of the reports from independent origins in different areas suggests that it is based on more than an idle fantasy of the human imagination. It seems inevitable that some real animal or, more likely several different animals lie behind the legend in its various forms (Carrington, 1957). If sometimes mermaids are perceived as the beauties of the sea, most of the times they represent danger; most of the times, they are sea monsters (Ellis, 1994).

These monsters from the ocean, first seen as signs of portents or misfortune, were considered true wonders or prodigies (e.g. Mittman, 2012; Soares, 2012); they were conceived as distortions of the reality or hybrid monstrosities, and they conveyed human errors or sins[1]. Then, they began to converge as real elements of the natural world soon after the European oceanic expansion started in the 15th-century (e.g. Brito, 2016). They are included in the tomes of the Renaissance Natural History such as those from Conrad Gessner[2], Ambroise Paré (Paré, 1982 [1510-1590]), Adriaen Coenen[3] or

1 All monsters are our constructions, even those that can clearly be traced to "real", scientifically known beings; through the process by which we construct and reconstruct them, we categorize, name, and define them, and thereby Grant them anthropocentric meaning that makes them "ours" (Mittman, 2012).

2 See the work by Hendrikx (2018).

3 See the online digital collection of Adrian Coenen's Fish Book (1580) at the Public Domain Review: https://publicdomainreview.org/collections/adriaen-coenens-fish-book-1580/ (last accessed March 12, 2019). The author has also published the Whales Book. In both books large marine fauna are depicted and described, ranging from real sea animals from the North Sea to all kinds of unreal or fantastic beasts from across the world as they reached Europe during the late 16th century. Single mermaids, double-tailed mermaids, pairs of mermaids and tritons, and several sea monsters – including the 16th-

Ulisses Aldrovandi and helped constructing new or different ways of thinking the nature, even though most authors of these exotic natural histories typically relied on the knowledge from the Classical Antiquity, translating them and merely adding some comments. However, from the 16th-century onward the opening of the offshore realms of the (Atlantic and Indian) ocean to Europe, also opened an all-new reign of animals and monstrosities. Giant squids, strange looking sharks and rays, large schools of flying fish, great whales and small dolphins, seals and manatees, many species of coastal and oceanic birds, and even rhinos and hippos, all contributed to the construction of knowledge about the aquatic ecosystems but also to novel or renewed accounts on the mythical sea monks, sea horses, mermaids and tritons. From this moment onward, most monsters merely demonstrated nature's curious mechanisms and were neither portents, signs, nor errors; (sea) monsters evoked curiosity and wonder rather than fear or horror (Davies, 2012; Brito, 2016).

When analysing early modern documental and iconographic sources in-depth, we can easily understand that most of the fabulous descriptions of sea monsters are the result of an attempt to categorise an unknown animal sighting. The misconception of a sea animal sighted - as still happens today - could have happened following the observation of a new or never seen before animal. However, the sighting of a peculiar and rare individual or natural behaviour of a familiar species could also have triggered such fantastic and unreal descriptions. There has always been some confusion between legendary sea beings or animals, and some types of real marine fauna.

Consequently, and similarly to several other sea monsters, double-tailed mermaids may find its origin in real animals from exotic or distant parts of the world, such as Africa, Brazil, or remote regions of the Pacific and Indian Oceans. Marine fauna from sub-tropical and tropical bioregions differs significantly from the fauna from temperate regions, and the difference in the occurrence of new species, in its distribution, relative abundance and local behavioural adaptations to distinct habitats may cause the perception of the new and an exotic novelty. On the other hand, the accounts of fantastic beings may eventually be the result of misidentifications of animals sighted at sea, at different sea and climate conditions. Moreover, they can also find its source in strange and extremely rare natural events occurring anywhere in the world, from the open sea to nearby shores. If rarely seen and/or described, they were for sure not known or understood. For instance, marine animals living in the depths and approaching either the sea surface or coastal areas rarely may open space to the description of monstrosities or eccentricities from the sea. Even more so, if they are large animals, such as large cetaceans or giant squids.

Let us offer a typical example of such situations. There is a long conflicting history about the (real, believed, imagined, fantastic) occurrence of sea serpents (e.g. Ellis, 1994; Dendle, 2006). They are commonly described since ancient times, many sailors in many oceanic basins have reported their existence, the sightings and accounts are numerous and rich, even if varied in format and style. As a scary gigantic sea monster, no real animal does resemble the sea serpent. Alternatively, the same is to say that there are no sea serpents. Recently, many authors have been discussing the possible misidentification of cetaceans as these large and monstrous sea serpents (e.g. Ellis, 1994; Paxton et al., 2005; France, 2016). What is now believed is that, eventually, a part of the back of a giant whale or of a whale shark, or even a pod of dolphins' porpoising - moving in high speed in a straight line –, might resemble the physical aspect of a serpent at the sea surface and might give the visual sense of such strange "animals" (Fig. 1). For instance, Charles Paxton and colleagues (Paxton, 2005) offer a plausible explanation for the 18th-century sighting in the North Sea of the so-called Egede Sea Serpent (Fig. 2). They believe it was not a serpent that was observed but rather a large whale and they support their debate on the local occurrence of a couple of baleen whales, as well as on their anatomy and behaviours. A similar explanation is given for the 1857 Sea Serpent sighted off Cape Town; it might very well have been a cetacean entangled in marine debris (France, 2016).

No giant sea serpents exist, as no mermaids exist, in any ocean. However, their legend does persist and, in some way, make them real. In fact, almost as real as a real animal. Moreover, this is as much a matter of perception as it is of mental conceptions and mind settings. Mermaids are one of the most common legends in the marine environment; they persevere to the current day, being present across different cultures, geographies and periods (Carrington, 1957; Parsons, 2004; Costantine, 2014; Brito, 2018).

As above mentioned, many researchers have been trying to understand historical accounts and descriptions of sea monsters - or sightings of 'unidentified marine objects' - through the lens of science and based on present-day biological knowledge of marine species and its habitats and behaviours (e.g. Paxton et al., 2005; Sent et al., 2013; France, 2016). Following this idea, we argue that some of the historical documental and

century Gândavo sea monster from Brazil (Brito, 2016) – are included in his tomes of natural history.

iconographic descriptions may have been the result of misinterpreted encounters with local (but rare) or exotic/tropical marine mammals, or even misconceptions of observations of real elements and events from the aquatic environments.

Fig. 1: Dolphins porpoising in a line, in a possible visual interpretation of a sea serpent at the surface. Photo and edit by the author.

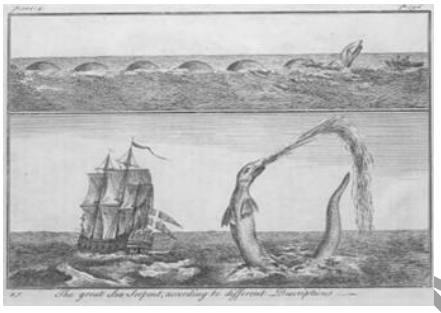

Fig. 2: "Sea Serpent representations based on accounts given to Erik Pontoppidan.

As such, we will try to attach some biological meaning to the written descriptions and visual representations of the double-tailed mermaid considering the occurrence of some rare events of the marine world. This type of mermaid is represented since the Classical Antiquity to the present day, for the most different purposes. Even if double-tailed mermaids are not so frequent as the single-tailed mermaid, they can still be found through the centuries in different types of humanistic and natural history works, in frontispieces of books and allegories, in cartography and different forms of art.

Many of its attributes, many of the values and conceptions around it, are the result of the fact that it is constituted by two parts, or two elements, in the same body. This sea monster - this mermaid with the bifid tail -, more than the 'simple' mermaid, is considered as one of the most bizarre monsters of the sea and is a symbol of the mirroring, twinning and/or hybridity.

2. Conjoined twins in cetaceans

In January 2014, a rare event from the marine world was documented and widely disseminated in the international press. Rare conjoined Gray Whale (*Eschrichtius robustus*) calves were found stranded dead in a case that was considered to be the first ever for this species (Fig. 3 and Fig. 5). Researchers found the aborted twins floating in a lagoon in Baja California, and the event was widely spread in scientific circuits as well as in social media (Lee, 2014; Murphy & Malm, 2014).

Reports of conjoined or Siamese twins in wild mammals are very scarce; most reports are cases known in humans, in domestic animals or laboratory mammals (Kompanje, 2005). The precise incidence in wild mammals is unknown, most likely due to high prenatal and antenatal mortality. Almost all known cases of conjoined twins in wild mammals concern unborn embryos and fetus found during dissection of the dead pregnant female (Kompanje, 2005). Some cases of museum specimens of Siamese twins in terrestrial mammals do exist and are well known and documented, but none - to our knowledge - in the case of marine mammals[4].

In fact, the documented cases of twins in marine mammals are few; at least, the effective ones. Researchers estimate that less than 1% of cetaceans' births are multiple, with even fewer being conjoined – two calves sharing part of their bodies. As an example, Sei Whales (*Balaenoptera borealis*) have the highest rate of multiple births out of all cetaceans, a rate of 1,09% (Norris, 1966). In all the cases, the fetus or neonate – usually non-viable and seen as the grotesque result of development anomalies – were found ashore, were identified, documented and studied (Dabin et al., 2014). It is possible, as this is such a rare event for which the biology of the species is not prepared to that many cases result in the dead of the calves and the mother at the moment of birth or soon after, and for that reason might not be accounted for. They are, because they are uncommon, considered as bizarre and out of the norm; they are truly exotic and strange. Even if documented as a natural event, they are called by science as monsters.

Two other cases of conjoined twins in cetaceans are known in recent years. These are the dolphins found ashore in Turkey in 2014 (Fig. 4) and Denmark in 2017. In the latter, it was a fisherman who caught the two-headed calves of Harbour Porpoise (*Phocoena phocoena*) in his fishing nets. As this is a protected species, the fisherman returned it to the sea but not before taking a picture of it and as a consequence the photograph

4 Marine mammals are a non-taxonomic group or category that includes animals from different taxonomic orders, such as the cetaceans (Order Cetacea), seals and sea lions (Order Carnivora), manatees and dugongs (Order Sirenia) and, according to some authors, also hippos.

was widely spread out through social media and the case well disseminated. This present-day description is not that distant from the one reported by Parsons (2004) of a mermaid caught by a fisherman off the Shetlands in the early 19th-century. According to Parsons (2004), a fishing boat from Cullivoe reportedly caught a mermaid on a hook, and although the fishermen threw the creature back in the sea, they gave a vivid description.

(and in the paper, they go on by giving the description). The awkwardness of such encounters may result in this attitude of returning the 'monster' back to his place of origin.

Fig. 3: Scientists in Mexico's Laguna Ojo de Liebre, discovered the dead grey whale calves in January 2014, believed to have been miscarried as a result of their disability.

Fig. 4: Rare case of conjoined twin dolphins in Turkey (August 5, 2014); a case of polycephaly (two heads) in dolphins.

The same happened with the two-headed Bottlenose Dolphin (*Tursiops truncatus*) calves found off Istanbul, Turkey (August 2014); the event was spread out, and photographs of the strange happening were disseminated. However, on the other contrary to others, this specimen was collected and kept for study.

Yet another specimen was collected and studied some years before in the Mediterranean Sea (June 24, 2001, Corsica). It was called 'double-faced monster' and studied from the viewpoint of teratology – the science that studies abnormal development in all living beings (Dabin et al., 2014). The authors, besides describing this particular occurrence, also refer to several real double monsters (two individuals more or less completely fused) that have been described previously and indicate that a few cases of individuals with one or more anomalies have also been reported (see all descriptions in Dabin et al., 2014).

In the study of nature, particular interest is shown in the scientific approaches to the rare, with long accounts being produced and with a large set of studies from distinct disciplines paying detailed attention to these occurrences. Even so, the accounts of conjoined cetacean twins are very uncommon, which is indicative of its rareness in the natural environment. It is probable that any event in history may have resulted in a description, even if that description – to our modern eyes – do not correspond to a 'real' one in terms of how we now understand biology, ecology and taxonomy.

3. Rare and marvellous events in the sea: Fantasy or reality?

> It must not be doubted that just as one sees several monstrous animals of diverse shapes on the earth, so also are there many strange sorts of them in the sea, some of which are men from the waist up, called Tritons, other [are] women, called Sirens, [or, Mermaids], who are [both] covered with scales. (Paré, 1982 [1510-1590], 107).

Humans have a particular interest, if not a particular attraction, for the rare, for the uncommon, for the different or even strange. Historically, humans tended to categorise the 'out of the norm' as such, so that they can socially and culturally normalise individuals, groups, or specific situations. Similarly to these mental and social constructions regarding humans, they proceed in an equal normative way regarding the productions of nature – the ones easily understood and the ones that fall outside of the systems of categorisation or classification. The fascination for the monstrous is continuous, and it encompasses much of the human anguishes of the unknown and the dark, of the marginal and peripheric, of the distant and the unexplainable (e.g. Dendle, 2006; Soares, 2012).

In this historical quest for the bizarre and the unique, naturalists, historians, cryptozoologists – those who study unconfirmed species (Dendle, 2006) -, and biologists, all have had their say. The documented strandings of cetaceans' conjoined twins have provided a unique chance for scientists to study these occurrences, both anatomically and according to the number of accounts (e.g. Dabin et al., 2014). It also offers an excellent opportunity for scholars in the history of natural history (or even of cryptozoology) to discuss how real events from the marine realm may or not be the source of inspiration for the mythological beast and fantastic beings.

Spanning throughout time, geography and cultures, peoples have believed in shape-shifters, in monsters, in rarely seen animals and all kinds of

fantasies and unexplainable possibilities. These cryptids populated folklore, traditions, popular tales and epic poems, oral accounts and scientific sightings (e.g. Parsons, 2004). However, are they real? We know that there is no such thing as sea serpents, though they have been sighted and described in scientific and popular literature for centuries. Can eventually all of those sightings been based in biased and misinterpreted observation of real marine animals? If an exploration of historic monsters has taught us anything, it's that most were not fabricated out of pure myth. Usually, they proceed from an attempt to categorize an unknown animal sighting (Costantino, 2014).

Linking descriptions of cryptid or fantastic creatures (typically found in myths, local oral stories and folklore) to actual living counterparts may be only conjectural (Parsons, 2004). Assuming that descriptions of these sea creatures are not merely figments of overactive imaginations and are in some key aspects accurate, is supported on the fact that some features of the described animals that are astonishingly similar to extant marine species (Parsons, 2004). Following this principle, several authors and researchers have tried to understand the real source of fantastic marine beings. This is the case of serpents and cetaceans, of the Kraken and giant deep-sea squids, of the 'regular' mermaid and the manatees (e.g. Carrington, 1957; Parsons, 2004; Paxton et al., 2005; Costantino, 2014; France, 2016; Brito, 2016; Brito, 2018). Although descriptions of sea monsters may initially appear fanciful, on closer inspection they can sometimes reveal characteristics and features that may be recognizable by marine biologists as diagnostic of living marine animals. So even the most unusual tales of sea monsters may, in fact, contain, deep within them, a small element of truth (Parsons, 2004).

In the European history of natural history, sea monsters and cetaceans have often been placed side by side in the same category. Real accounts alongside the perspectives or perceptions from literature, tradition and local cultures blur the line between real marine megafauna and fantastic creatures of the shores and open oceans. Along the time, anecdotes about real but little-known species or specimens may give rise to the appearance over and over again of monster-like sightings (Hendrikx, 2018).

This might very well be the case of double-tailed mermaids across history and the rare occurrence of conjoined cetacean twins. So, besides their typical symbolic meanings of the mirror, or the twinning, could these mythical beings also be the result of non-understood observations of nature monstrosities and rare events in the sea? For sure, the double tail in the conjoined calves of the Gray Whale (see Fig. 5) can physically and anatomically resemble the double tail of the mermaids (see Fig. 6 and Fig. 7).

Fig. 5: The dead Gray Whale conjoined twins had two heads and two tails; the latter may resemble the two tails of double mermaids.

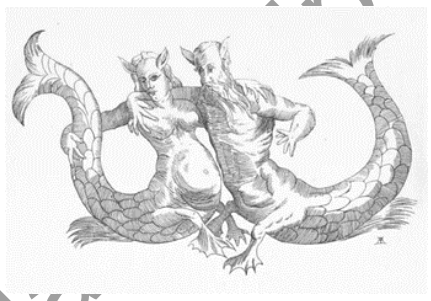

Fig. 6: Tritons, or Nereids, the merpeople of the Greeks and Romans. Ashton, John. Curious Creatures in Zoology. 1890.

Fig. 7: Adriaen Coenen double-tailed mermaid in his Fish Book (1577).

The double-tailed mermaid is portrayed and described in many different works of natural history or similar. We find this hybrid creature in different entrances of the medieval herbaria Hortus Sanitatis described as a Siren. We find it in the Renaissance zoology or monsters' massive tomes of Ulisses Aldrovandi and John Johnston. The latter refers to it as an Antropomorphus. We even find it in the Frontispiece of 1662 Caspar Schott's *Phisica Curiosa*, populating – alongside with other fantastic creatures and real animals – the marine realm. We encounter it again and again in illustrations,

sculptures and paintings; an example of the latter is the late 15th-century double-tailed mermaid by the Italian painter Teodoro Ghisi. And, of course, we find across many European local traditions and folklore, where they are referred to as merpeople or merfolk.

Even if we are not accounting exactly for the past occurrence of such monsters in their natural environment, we are trying to offer a possible biological rationalisation for the prevalence of such fanciful and fantastic descriptions. In the future, it might be interesting to address the global dispersion of such historical illustrations and descriptions, eventually trying to relate it to the global pattern of distribution or occurrence of conjoined cetaceans. Do they occur outside Europe? How do local and indigenous peoples address the marvellous and the unexplainable in natural environments? But marvellous though these creatures may be, they are treated as eminently natural (Ashworth, 1991) and its historical appearance may give a clue to past biological events. Moreover, this study is particularly important for the cultural understanding of sea monsters and why were double-tailed mermaids - or simply mermaids – considered as part of the natural world at a specific moment in time and a particular set of circumstances.

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Fig. 4 - Source: http://todropscience.tumblr.com/post/94173345277/rare-case-of-conjoined-twin-dolphins-in-turkey (last accessed on March 12, 2019).

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