

CONNECTED MARGINS AND DISCONNECTED KNOWLEDGE: EXOTIC MARINE MAMMALS IN THE MAKING OF EARLY MODERN EUROPEAN NATURAL HISTORY*

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Resumo: Sereias e manatins, assim como as representações híbridas destes seres marinhos, representam um bom caso de estudo para debater a construção de uma história natural do exótico no período moderno, assim como a evolução do conhecimento produzido e atores envolvidos. Tendo por base fontes escritas e visuais, é aqui discutida a produção e circulação de conhecimento natural sobre as sereias antigas e modernas, em comparação com as novas informações obtidas no Atlântico sobre manatins, e a sua inclusão na história natural Europeia. Este tipo de informação torna ainda possível discutir a relevância e persistência de certos mitos e de vários tipos de monstros marinhos. Assim, é apresentada uma cronologia dos autores que contribuíram para a construção deste tipo de conhecimento do mundo natural, desde humanistas, cartógrafos e naturalistas Europeus passando por missionários, colonizadores e viajantes do Atlântico. Estes últimos observaram em primeira mão uma abundância e novidade que transmitiram na forma de mapas, registos, cartas, manuscritos e livros, quase sempre em línguas vernaculares, os quais não entraram nos circuitos centrais da Europa letrada sobre história natural nos séculos XVI, XVII e nos que se seguiram.

Palavras-chave: História Natural; Mamíferos marinhos; Circulação de conhecimento; Atlântico.

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Abstract: Mermaids, manatees, and hybrid representations of both marine beings, offer a case for debating the construction of an early modern history of exotic natural history, knowledge evolution and key actors involved. Based on written and visual sources, production, circulation and interconnections of well-established knowledge on mermaids as real elements of the old and new natural marine world, in comparison to the slow development of natural knowledge related to manatees in Europe, will be discussed. Also, a discussion on the relevance and persistence of monsters from the sea, during early modern Europe and Atlantic will be conducted. This will allow to establish a chronologic representation and understanding of this natural knowledge created by authors ranging from European writers, naturalists and cartographers to Atlantic travellers, settlers and missionaries. The novelty and abundance these latter witnessed was shared through maps, logbooks, letters, manuscripts and printed publications, mostly in vernacular languages, but did not make its way into central routes of European natural knowledge production and exchange in the 16th and 17th centuries and beyond.

Keywords: History of natural history; Marine mammals; Knowledge circulation; Atlantic.

INTRODUCTION – ROUTES OF KNOWLEDGE CIRCULATION IN EUROPE AND ACROSS THE ATLANTIC

During the Early Modernity, European naturalists and humanists built important networks of contacts to exchange novelties and singularities, from local and remote realms of nature, to enrich their collections and their massive books of natural history. Even though most of them did not move from their locations, or nearby geographies, they had access to wider localities and natural realities both from far away locations within Europe and exotic places overseas². Ulisses Aldrovandi, for instance, followed the work of his predecessors, such as Pierre Belon, Guillaume Rondelet and Konrad Gesner³, who he quotes. He supported much of his writing in the knowledge produced in the Classical Antiquity (he refers profusely to Aristotle and Pliny), but he also relied on correspondence, pamphlets, traded specimens and word of mouth from his own time. This allowed him to reach a near exhaustive list describing all living beings in the known world, including both real and imaginary ones. Aiming to encompass all the natural world, Aldrovandi included in his tomes birds and dragons, whales and sea monsters, rhinos and unicorns, manatees and mermaids.

In fact, from early modern times onwards, mermaids are a strong component in natural history treaties and, moreover, mermaids and manatees became strongly related and interconnected. It would be right to expect mermaids to vanish from natural history treaties and other kinds of publications, from the moment tropical manatees were known and described by Europeans, for instance. This would reflect a similarity with other mythological beings, which were soon replaced by their

² BROCKEY, 2012: 265-285.

³ GUDGER, 1934: 21-40.

real counterparts, after the discovery and consolidation of natural knowledge about exotic terrestrial species. However, this purified objective knowledge of nature is truly an illusion, constantly belied by the incredible hybridity and continued interpenetration of knowledge spheres⁴. Mermaids are one of the most persistent legends in the marine environment; they endure to this day and are present across different cultures, geographies and timescales⁵. As many other monsters of nature, they may find its origin in real animals from local or exotic⁶ and distant parts of the world, such as Africa and Brazil. Still, their source may also be found in strange and quite rare natural events. Mermaids are present in different cultures, traditions, religions and stories since the dawn of human histories. In early modern Europe, they were portrayed in church iconography, in the artwork and architecture of aristocratic homes, commercial wares, handicrafts, signs of heraldry and in cabinets of curiosities. On the other hand, mermaids appeared frequently among the pages of early modern printed texts, were visually represented in illuminated manuscripts and maps and subject of literary, scientific and religious texts⁷. The definition-defying and boundary-crossing mermaid offers a fascinating window into the malleability of early modern concepts such as sex and gender, selfhood and mystery⁸, as well as natural and unnatural. This is similar to the construction of the concept of (early) modern zoology or natural history, where nature and culture were co-players and knowledge production was hybrid and connected.

Mermaids are common in 16th century Portuguese humanist productions⁹, but not that much in the works from the overseas and about tropical environments. Different kinds of sea monsters, nevertheless, abound in the exotic realm of the Portuguese overseas¹⁰. However, most of the early modern accounts on exotic fauna in the Portuguese Atlantic did not enter the European natural history treaties and encyclopaedia. The latter do not include several 15th and 16th centuries new overseas' observations of the natural world – and this is particularly true for exotic marine animals. While some African and Brazilian terrestrial animals and birds are comprised in the works of several European authors¹¹, only two marine mammals are mentioned (and sometimes repeatedly): Gân-

⁴ MACKENZIE, 2014: 329.

⁵ «Mermaids are a good example of the persistence into comparatively modern times of a legend that is nearly as old as the written records of man. There is not an age, and hardly a country in the world, whose folklore does not contain some reference to mermaids or to mermaid-like creatures. They have been alleged to appear in a hundred different places, ranging from the mist-covered shores of Norway and Newfoundland to the palm-studded islands of the tropic seas. Wherever they have been seen, the legends tell us that they have stirred up men's hearts to a strange mixture of emotions – to wonder and fear, ecstasy and irresistible desire. The persistence of the mermaid legend, and the similarity of so many of the reports from independent sources in different areas, suggests that it is based on more than an idle fantasy of the human imagination. It seems certain, that some real animal or, more likely, a number of different animals lie behind the legend in its various forms» (CARRINGTON, 1957).

⁶ Exotic is associated to the idea of an animal, or object, with an exterior provenance, connected with the concept of marvellous, and evokes fantastic and idealized perceptions of the Other and of the unknown Nature. Even though the term «exotic» was only used in the 16th century, the concept is part of a medieval cultural phenomenon. So, the concept indicated where certain objects did not come from rather than a specific origin (SIMÕES, 2014; EGMOND & DUPRÉ, 2016; BRITO, 2016: 120).

⁷ PEDERSEN, 2016.

⁸ COLVILLE, 2016.

⁹ GÓIS, 1554.

¹⁰ BRITO, 2016: 120.

¹¹ For a revision on this topic see the work by PAPAVERO & TEIXEIRA, 2014.

davo's sea monster¹² – the Tupi *igpupiára* – and the manatee – the Tupi *igoarágoa* or the Kikongo *ngulu-maza*. Sea turtles, seals, large fish and cetaceans are sometimes described but in rather generic terms (such as the sheer occurrence of some of them in nearby shores) and not as a new Atlantic species. Authors such as Belon, Rondelet, Ambroise Paré, Gesner, or Aldrovandi did not include Portuguese coeval sources, quotations or authors' references in their works, when referring to marine mammals. For instance, typically they do not mention chroniclers Gomes Eanes de Zurara or Duarte Pacheco, writers Luís Vaz de Camões or Fernão Mendes Pinto, missionaries Father Joseph de Anchieta, Fernão Cardim, or explorers such as Pêro Magalhães de Gândavo or António Galvão, and their detailed descriptions of large and new Atlantic marine fauna. With just a couple of noticeable exceptions, European naturalists relied essentially on Classical authors to describe marine species and, in some cases, made use of contemporary examples from European occurrences to add some originality. Most of these networks of exotic news and natural knowledge circulation, or the lack of contact in some other cases, remain to be understood.

The main objective of this work is to contribute to the discussion of why Portugal did not make the most of its unique geographic and political position by bringing news, illustrations, remains or marine animals from overseas into the European natural history circles¹³. It seems that most of the novelties from the Southern Ocean and tropical shores being found, described and written about (mostly in Portuguese and Castilian) did not contribute to the European knowledge production and cultural exchanges that strongly developed from this period on¹⁴. Moreover, the construction and transfer of the well-established knowledge on mermaids as real elements of the old and new natural marine world in Europe, contrasting with the slow development of natural knowledge concerning manatees (Order *Sirenia*, Family *Trichechidae*, Specie *Trichechus sp*) will be addressed.

It could be assumed a linearity in the description and natural concept of the rare and strange marine animals eventually developing from imaginary to real beings over time, and that a linear evolution of knowledge development and circulation of nature information, aesthetics and ecological representations could be found. Previously other scholars have assumed the existence of an evolution from medieval sea monsters and prodigies to Renaissance wonders and novelties and from there to the Enlightenment naturalised objects¹⁵. Here a different approach will be taken both through analysing the sources and interpreting the chronology, trying to extrapolate from the case-studies an early modern natural history of the aquatic realm¹⁶. Written information and visual representations of mermaids and manatees, based on documental, iconographic, and cartographic sources from European authors and Iberian accounts on the early modern Atlantic are discussed. A total of 55 sources were considered, ranging from European writers, naturalists and cartographers to Atlantic travellers, settlers and missionaries, spanning from the 15th to the 18th centuries. This will allow for establishing

¹² BRITO, 2016: 120.

¹³ COSTA, 2009: 59-82.

¹⁴ BRITO, 2016: 120.

¹⁵ DASTON & PARK, 1998; MACKENZIE, 2014: 329-333.

¹⁶ MACKENZIE, 2014: 334-349.

a long-term chronology of marine knowledge production and circulation, and for comparing it with the persistence and relevance of myths from the sea, during early modern Europe and the Atlantic. Attention is given to some Renaissance authors such as Coenen, Aldrovandi, Cavazzi and Piccardo. Most focused Iberian authors were the Portuguese Pêro Magalhães de Gândavo, Father Cristóvão de Lisboa and Cadornega¹⁷, and the Spanish Fernández de Oviedo and Acosta. As we will come to understand the Italian missionary Cavazzi will also be referred in detail. All of them authors who seem to be central points in this discussion about the construction of hybrid information about mythological and real marine animals, using manatees and mermaids as examples. The main focus of almost all consulted works is natural history, even though the authors' «naturalist» concerns or intents vary from one another. A review of local descriptions of geography, environments and cultures, natural histories, correspondence, large encyclopaedic tomes, cartographic and geographic treaties, for early modern Europe and different Atlantic areas, was conducted. This enabled a characterization of both early modern (pre) conceptions of nature and real descriptions of these beings – mermaids and manatees – and the interconnections between myth and reality.

MERMAIDS IN THE EARLY MODERN EUROPEAN PERSPECTIVE

Across the historiography and mythologies, mermaids or sirens¹⁸ vary from angels to demons, deities to animals, nymphs to monsters and birds to fish. The siren (like the triton) – a half-human half-fish being – can be regarded as one of the links connecting the fish gods and goddesses of pre-Christian mythology and the more recent developments of mermaid's lore throughout European medieval ages¹⁹. Mermaids²⁰ were widely documented through illustrations or written descriptions in medieval herbaries and bestiaries, using its dual character to represent both human qualities and imperfections. In addition to the mermaid's pre-classical and classical history, the figure's presence and development in western religions also illustrates how difficult it is to trace its genealogy and different embodied forms, as mermaids are represented by many diverse shapes²¹. Here, we will be dealing with the mermaid/animal, or the merpeople/marine beings, in all their interrelations with real marine animals.

By the late 15th century, in *Hortus Sanitatis*²², *syrenas* are still considered deadly animals with a female figure and a hideous face (Fig. 1).

¹⁷ Several transcriptions are here presented in a translated format for the first time. Iberian sources for this period represent a very important still much neglected corpus of information to the understanding of early modern concepts regarding nature and the uses of the environment and natural resources.

¹⁸ Typically, Anglo-Saxon traditions make a distinction between the classical siren (half-woman half-bird) and the mermaid (the aquatic form of this hybrid being). In Portuguese the word is the same for both forms (the current word is «sereia»), as it is for the Spanish (currently «sirena»).

¹⁹ CARRINGTON, 1957.

²⁰ By the Renaissance, the term «siren» was arguably interchangeable with the term «mermaid» (PEDERSEN, 2016).

²¹ PEDERSEN, 2016.

²² *Hortus Sanitatis. De herbis et plantis. De animalibus & reptilibus. De fluvibus et volatilibus. De avibus et volatibus. De piscibus et natatilibus. De lapidibus et in terra venis nascentibus...* *Tabula Medicinalis cum Directório Generali per Omnes Tractatus*. Estraburgo: Johannes Pruess, 1491 (M.N.C.N.), p. 121.

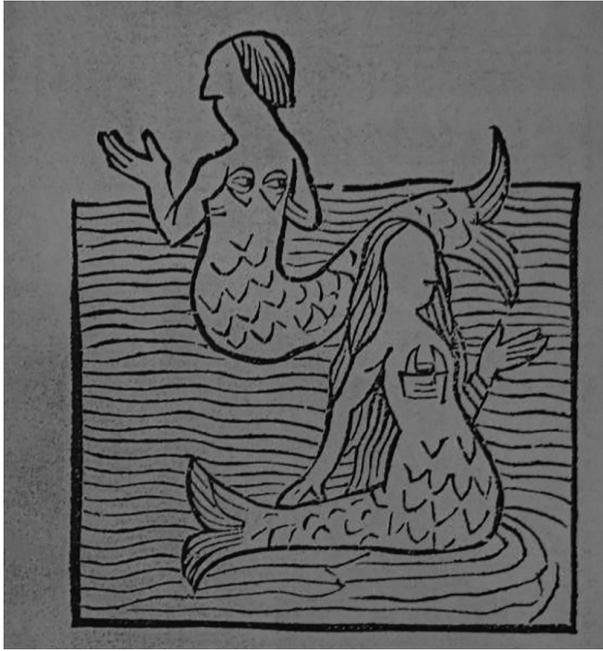


Fig. 1. Mermaids in *Hortus Sanitatis* (1491)

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In his treaty, the author goes on saying they «resemble the *cetibus*, and that females have fetuses and breast-feed their young». Even though first encounters with and descriptions of the exotic manatees are contemporary, as we will see, the preconception of the antique and medieval mermaid will prevail for a long time. For instance, different humanist pieces in Portugal refer to the occurrence of mermaids, tritons, nereids and water nymphs, such as the work of Damião de Góis, where the author describes «a kind of people that the locals started calling marine men because they have the skin surface with scales scattered almost over the entire body [...] such people owed their origin to marine men or tritons [...] The tritons jumped to the shore and, once in a while, they would come to the beach [...]»²³. Similarly, the Portuguese poet Luís Vaz de Camões included sirens («sirenas») in his epic poem *Os Lusíadas* exalting the qualities of their voice and beauty. Antique mermaids were seductive and vindictive, using their beautiful faces and melodic calls to attract mariners into the seas and devour them in the end. In this way, they became the metaphor of the sailing dangers and even the picture of death. However, in early modern expeditions and explorations' chronicles and literature, mermaids, the sea maidens, are used sometimes as a symbol of all the beauty, exoticism and abundance that was awaiting Europeans on the other side of the ocean. Nevertheless, their nature remained contradictory, the essence of good and evil in one being, the reflex of the monster and the beauty in the same body, the presence of water and land in one natural element.

²³ GÓIS, 1554.

Across different European encyclopaedias of natural history, several Renaissance authors²⁴ also found room to include all different kinds of anthropomorphous beings or merpeople such as the *Satyryrus marinus*²⁵, alongside with other specimens of the natural and fantasy world. These encyclopaedic tomes, as some humanist publications, included specific entrances on these beings within their chapters of fish and marine animals, most of them repeating and commenting classical works such as Aristotle's or Pliny's²⁶. One could argue that some of these authors did not have access to all knowledge about the natural world, which was starting to be produced and disseminated, but in fact almost all of them were contemporary to one another and engaged in very active networks of communication and exchange²⁷. This may be clearly understood by the visual representations of these and other animals, copied from one work to the other. Moreover, most of them were well acquainted with local natural novelties and marine coastal ecosystems and their inhabitants, and travelled across Europe offering descriptions (or comments on previous ones) through the eyes of experience. Yet, they did not see most of the exotic novelties with their own eyes and these reached them via correspondence, illustrations, and possibly specimen exchange and trade. First cabinets of curiosities were being established, and so were zoological and botanical gardens, and even though marine animals were not ideal to be preserved, they might have had a presence in such settings. A good example of all the previous and of this paradoxical representation of fictional and real marine animals is very clear in the books by Adriaen Coenen²⁸. He was raised in a fishmonger's family, being very familiar with the local reality of some parts of the North Sea and its marine resources, and in his books he describes, with careful detail, the marine fauna of the region, including patterns of migration of fish and cetaceans, fishing techniques, anatomy and other characteristics of the fish²⁹. He also includes real accounts from the New World, such as the famous Brazilian sea monster described by Pêro Magalhães de Gândavo in the middle 16th century, which indicates his active participation in networks of European traders, collectors and naturalists³⁰. However, he also describes different types of mermaids and tritons (Fig. 2),

²⁴ COENEN, Adriaen – *The Whale Book: Whales and other marine animals as described by Adriaen Coenen in 1585* (1585). Ed. by Florike Egmond and Peter Manson; commentary by Kees Lancaster. London: Reaktion Books, 2003; GESNER, 1558; PARÉ, Ambroise – *On Monsters and Marvels* (1585). Translated with an Introduction and Notes by Janis L. Pallister. London: The University of Chicago Press, 1982; ALDROVANDI, 1613; JONSTON, 1657.

²⁵ RONDELET, 1554.

²⁶ The earliest naturalist to deal with mermaids in any detail was Pliny the Elder, whose famous *Natural History* appeared in the first century A. D. Pliny was a man of forthright character, a cavalry officer and a writer of military history, whom one could never have suspected of undue credibility. Yet he not only believed in mermaids, being convinced that they were real creatures, but cited the most illustrious personages to support his opinion (CARRINGTON, 1957).

²⁷ GUDGER, 1934: 21-40; BRITO, 2016: 120.

²⁸ COENEN, Adriaen – *The Whale Book: Whales and other marine animals as described by Adriaen Coenen in 1585* (1585)...

²⁹ EGMOND, 2007: 245-271; BENNEMA & RIJNSDORP, 2015: 384-399.

³⁰ BRITO, 2016: 120.



Fig. 2. Mermaids in the *Fish Book* by Adriaen Coenen (1557). More information on this book and its content can be found at the Public Domain Review (<https://publicdomainreview.org/collections/adriaen-coenens-fish-book-1580/>)

mostly following former accounts and illustrations, from *Hortus Sanitatis* and Olaus Magnus, for instance. Early modern authors, publishers and audiences might have questioned the finer points of such picturesque descriptions, but the existence of mermaids was firmly established. They were regularly sighted off the European shores and travellers brought back tales of encounters with them from every corner of the seas. There are several examples from this period, reported by seamen of great knowledge and experience whom it would be difficult to accuse of an exaggerated gift for fantasy. One is the stolid, prosaic narrative of the voyages of Henry Hudson, published in London in 1625³¹. Another mermaid report is taken from a description of the colony of Newfoundland by Richard Whitbourne, a sea captain who made numerous voyages to that country and in 1620 published his *Discourse and Discovery of New-found-land* to give a picture of its amenities and encourage new settlers. His mermaid is afterwards depicted in the works by the de Bry family. This pattern of mixing

³¹ CARRINGTON, 1957.

elements of the natural and the imaginary world, with the inclusion of mermaids, runs well into the 18th and 19th centuries. In fact, the 18th century, which prided itself on its worldliness, cynicism and good sense, was nevertheless as passionately addicted to mermaids as the preceding age. One of the main protagonists of their cause was François Valentijn, a Dutch colonial chaplain, who, in his *Natural History of Amboina*, published in 1726, gives numerous accounts of their appearances in the East Indies. The fame of this Amboina mermaid quickly spread into the most exalted circles. The original of her picture was presented to King George III of England, while His Imperial Majesty, Peter the Great, Czar of Russia, saw a copy of it in the office of Louis Renard, a publisher, in Amsterdam. But as the early 18th century wore on, naturalists found it increasingly difficult to maintain even in their own minds a whole-hearted belief in the mermaid's real existence³². Nevertheless, accounts for mermaids, either fanciful or resulting from true encounters with marine beings, occurred in the worlds' oceans across all 18th, 19th and 20th centuries.

MANATEES DISCOVERED IN THE ATLANTIC AND EUROPE

Nonetheless, centuries before, encounters of Europeans with manatees³³ occurring during the Atlantic navigations and explorations of the West coasts of Africa might have caused the rebirth of the mermaid myth during the 15th century. First descriptions of this tropical animal happened soon after the first crossings of the Atlantic. In 1493, while sailing off the coast of Hispaniola, Christopher Columbus reported seeing three «female forms» (*serenas* or sirens) which «rose high out of the sea» and described them matter-of-factly as «not so beautiful as they are painted, though to some extent they have the form of a human face»³⁴. Columbus is a great influence in the creation of monsters of the Latin American imaginary. He was well-acquainted with the variety of monstrous beings he might expect to encounter in his travels, as well as their value as portents of virtue, vice, wealth or divine intention. When he arrived to the Caribbean Sea, Columbus was convinced he was arriving to the mythical East. He was astonished by the beauty, heat and lushness of the landscape and interpreted these as signifiers of possible wealth and divine providence. He had seen similar creatures off what was called the Grain Coast of Guinea; his comparison of the two suggested them to be harbingers of gold³⁵. In the historiography this is stated as the first sighting of the West Indies manatees by Europeans:

On the 9th January, 1493 three mermaids emerged from the sea waters, not so kind as they were thought to be, but «somehow they had a human face» [...] They would often be seen by the Portuguese sailors, and Columbus himself had to point out the fact that he had already seen others in the coast of Guinea. [...] the monsters the admiral described were far from having a touch of distinction or novelty, because these

³² CARRINGTON, 1957.

³³ Manatees are herbivorous fully aquatic mammals that live in Atlantic coastal waters and rivers, ranging from the west shores of Africa to the Caribbean and the shores of South America. Its historical range is presently strongly constricted due to overexploitation and habitat degradation over the centuries and all the current species (West African manatee, *Trichechus senegalensis*, the West Indies manatee, *Trichechus manatus*, and the Amazonian manatee, *Trichechus inunguis*) are considered vulnerable to extinction according to the IUCN.

³⁴ BRAHAM, 2012.

³⁵ BRAHAM, 2012.

*fudges were frequently discussed between the Portuguese sailors. On the other hand, these mermaids do not sing for our souls [...]*³⁶.

António Galvão also wrote about manatees referring to the Antilles in 1497³⁷:

*There is a fish called monatim; it is big and has a cow's head and face, and looks very much like it in the flesh. Its arms are close to its shoulders, which it uses to swim; it eats mostly herbs that spring across the water. It is rather tasty; it has some stones on its head that can be used to calm the pain from kidney stones, and the female has breasts with nipples to feed its children who are born alive [...]*³⁸.

Soon after these two accounts, descriptions of the West Indies and Brazilian manatees abound in the journeys' literature, letters, and natural history and geography treaties describing the New World. Some authors repeated from one another, but strongly reflected the symbolic and material importance of the animal, particularly in the south Atlantic shores.

Father Joseph de Anchieta clearly refers to the animal, and not to the myth, when he writes about the «Província do Brasil»:

*In the torrential rivers that rush into the sea there are sea cows that weight between 20 and 30 arrobas. Inside their brains there is a very medicinal stone for the ones who have kidney stones, and their meat is valuable, it accompanies collard and tastes like cow meat; if spiced, tastes like mutton and also like pork and is easily slaughtered*³⁹.

Later on he refers how manatees were abundant and easily captured:

*sailors cast the net towards the sea, and picked with only one cast, two of these sea oxen. Despite their size, the animals did not break the net, even when only one specimen would be big enough to tear several nets into pieces*⁴⁰.

Descriptions of Brazilian manatees are not only common during the entire 16th century, but also regular and repeated. Pêro Magalhães de Gândavo⁴¹, Gabriel Soares de Sousa, Fernão Cardim, Father Cristóvão de Lisboa⁴² and António Brandão⁴³ also included descriptions of manatees in their works. Several similarities between all descriptions are to be found; they all indicate it is undoubtedly an aquatic

³⁶ See the work about Christopher Columbus, with references to his perceptions of a new nature, GIL, 1989.

³⁷ The author also wrote about the dugong (the Indian Ocean Sirenia): «It was said there were fish in this coast [from the Cape of Good Hope to Sofala, Quiloa and Melinde] that mostly swam upright, most of the time they were along the water and had faces and bodies of women, and the sailors would feel cheered, while eating them; and if they sold them, they would swear an oath they had not slept with them, and, if they had not, they would then be sold. Otherwise, they would be worth nothing» (GALVÃO, António – *Tratado dos Descobrimentos (1573)*. Lisboa: Publicações Alfa, 1989, p. 20. [Biblioteca da Expansão Portuguesa]).

³⁸ GALVÃO, António – *Tratado dos Descobrimentos (1573)*... p. 41-42.

³⁹ ANCHIETA, Joseph de – *A província do Brasil (1585)*. «História», IV série, n.º 2. Rio de Janeiro: Imprensa Nacional, 1946, p. 16, 34. (Coleção Brasileira de Divulgação).

⁴⁰ ANCHIETA, Joseph de – *A província do Brasil (1585)*...

⁴¹ GÂNDAVO, Pêro Magalhães de – *Tratado da terra do Brasil. História da Província Santa Cruz (1550-1557)*. Belo Horizonte: Ed. Itatiaia; São Paulo: Ed. da Universidade de S. Paulo, 1980, cap. 8.

⁴² LISBOA, Cristóvão de – *História dos Animais e Árvores do Maranhão (1647)*. Lisboa: Arquivo Histórico Ultramarino, 1967, p. 60-64.

⁴³ BRANDÃO, 1943: 55.

animal, referring several morphological characteristics such as the big size and weight, and all the details of its hunting and its use as remedy and food. All authors emphasise that it is a special kind of «fish» given it breastfeeds calves and needs to breath out of water. Thus, even though referring to it, and using it, as a fish, its characteristics of an aquatic mammal (reproduction and breathing) were clearly observed and are always mentioned. Sousa, for instance, refers to the manatee with its native name *Goarágoá*⁴⁴.

The intents of appropriation of such exotic and new animals become clear from the excerpts from different authors of that period, when reading the zoological descriptions, as well as the ones on the way people used them (both local and European)⁴⁵.

Gândavo, besides the description of the animal, includes details about its capture and use in culinary:

*Killed with harpoons, they are so fat and big, that some even weight thirty or forty arrobas. It is a very flavourful fish that almost tastes like pork or deer tenderloin. It can be cooked with kale and stewed like meat, nobody would consider it a fish, unless knowing it first*⁴⁶.

Brandão refers several times to the manatees in his work, by the late 16th century or early 17th century:

*a fish they call ox is found in large scale [...] with a strange size and face, lives in groups in those places, as in a vivarium, and there they are easily killed with barbs; because they are easily caught and found while swimming. These manatees are no different (food, whatsoever) from cow meat; they are very similar to meat and several people would eat them as such, and after telling them and affirming it was fish what they ate, they did not believe. These manatees, which exist here in large scale, are food to the dwellers of Maranhão, due to their deficient supply of meat*⁴⁷.

After this quotation, the author inserted in the text an additional note about other authors, who equally refer to this species and the native *goaragoá* or *guaragua*, also translated as *guará-guará*, or as *y-guá-ri-guá*⁴⁸.

The manatee was by then usually referred to as sea-cow or ox-fish in the Portuguese America, besides its native names, or, in the Western African shores, as fish-woman. The term manatee («monati» or «manati») was coined by the Spaniards for the Caribbean. It has been registered for the first time in Castillian in 1526 in the *Sumario de la Natural Historia de las Indias* by Fernández de Oviedo, when the author describes «los pescados y pesquerías»:

⁴⁴ SOUSA, Gabriel Soares de – *Notícia do Brasil: Descrição verdadeira da costa daquele Estado que pertence à Coroa do Reino de Portugal, sítio da Baía de Todos-os-Santos* (1587). Lisboa: Publicações Alfa, 1989, p. 198-199. (Biblioteca da Expansão Portuguesa, 11).

⁴⁵ CARDIM, Fernão – *Tratados da terra e gente do Brasil (1540?-1625)*. Introd. Rodolfo Garcia. Belo Horizonte: Ed. Itatiaia; São Paulo: Ed. da Universidade de S. Paulo, 1980, p. 45-46.

⁴⁶ GÂNDAVO, Pêro Magalhães de – *Tratado da terra do Brasil...* p. 19-20.

⁴⁷ BRANDÃO, 1943: 55.

⁴⁸ The marine mammal, which is described in several narrations is an herbivore and was known in fact as the ox-fish («peixe-boi») among the Portuguese from Brazil. This designation was also common among the Portuguese from Angola, while it would be usually called «peixe boaz» among the Portuguese from Guinea. Also, all across West African shores, it is known since the early modern period to the present time as fish-woman («peixe-mulher»).

they are so different and so many, one cannot refer to all without many words and paper; here I shall only expand on three fish: turtle, shark and manatee. [...] The manatee is a fish of the sea, a big one, and is far larger than a shark in greatness and length, and is very ugly [...] ⁴⁹.

In 1590, Acosta also refers to the manatees in the Antilles:

In the islands of Barlavento, namely Spanish Cuba, Puerto Rico, Jamaica, there is the so-called manati, a strange kind of fish, if one can call fish an animal that has teats, and raises with milk the cubs born alive, and eats herb in the fields; but, indeed, usually lives in the water. Considering the mentioned reasons, they are eaten as fish, but when in the Holy Sunday, when I ate it in a Friday, I almost had scruples, because the colour and flavour seemed like nothing but veal chops or knuckle chops, the slices of this fish: Is big as a cow ⁵⁰.

Acosta was, in fact, the source for the translation made by Clusius ⁵¹, which in turn was the source for the description of the manatee by Ulisses Aldrovandi, which, again, might have been the origin for the «official» description of the species by Linnaeus ⁵². This discussion will follow in the next chapter of this work, but it is important to mention it here in this chronology of manatees' descriptions and knowledge production. It is in the work by Acosta that the animal was early pictured and then copied and republished in several natural histories in the centuries to come. Fernández de Oviedo also provided a visual representation of the manatee, probably the first representation of the animal to be published (Fig. 3),

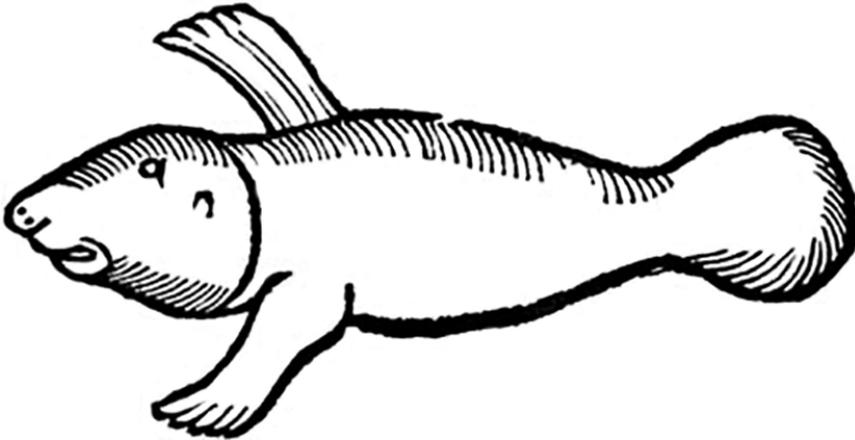


Fig. 3. The earliest illustration of a sirenian to be published: the West Indian manatee, from the 1535 edition of *La Historia General de las Indias* by Gonzalo Fernández de Oviedo. The slightly different woodcut that has been reproduced several times as the earliest figure of the manatee is actually from the 1547 edition

Obtained from the website *Bibliography and Index of the Sirenia and Desmostylia*
Available at <<http://67.59.130.204/biblio/> consulted on 30/11/2016>

⁴⁹ FERNÁNDEZ DE OVIEDO, Gonzalo – *Sumario de la Natural Historia de las Indias*. Ed. de Nicolás del Castillo Mathieu. Santafé de Bogotá: Instituto Caro y Cuervo, 1995, p. 145-149.

⁵⁰ ACOSTA, 1590: 72.

⁵¹ CLUSIUS, 1605.

⁵² LINNAEUS, C. – *Systema Naturae* (1758). 10th ed. London: British Museum, 1939.

but it was a rather simple and incorrect illustration. With regard to the use of new knowledge and the evolution of mermaids and manatees in a natural history of the exotic (in Europe), one should also refer to Father Cristóvão de Lisboa that produced a realistic description of the Brazilian manatee by the middle 17th century:

Guaragua is the sea cow, its length is about ten or twelve palms, it is thick as a cow; it is grizzly grey, the guts and inwards are like the cow's and it breastfeeds the cubs and has the teats underneath the arms; the males' genitals are as big as the horse's and of the same shape; the bottom is all fat, good to make butter to fry and for lamps, and some sizes can reach ten or twelve arrobas and almost ten litres of butter; there is no waste, we can eat everything, even the guts, and the skin is good to make soles [...] one year three hundred or more fish were killed [...] and I want to tell you what I saw being done to this fish: I saw a female being killed and skinned and they put the skin on the shore; and in the next day, when they went to collect water, they found the cub lying on the skin and took it⁵³.

He describes the anatomy of the animal, its habitat, the hunting and uses for local consumption, and some behavioural traits of the species. In his words, we can also read a degree of empathy towards the animal given the close link between mother and calf being described. All the same, his own drawing, from 1647, shows very high scientific quality and is much superior to other visual representations of this animal (both before and after this date). This piece, however, should be accepted as a lost item, as we will see below. The scientific knowledge it contained has only been restored much later on, providing a «simple» interesting piece of the history of natural history, instead of the rather valuable and correct information it could have added to coeval authors and historiography.

From the late 17th century well into the 18th and 19th centuries, several authors kept on writing about manatees across different Atlantic geographies:

The Lamentyn is by some call'd the sea-cow, and by others Manati, the head whereof is much like a pig's, except that its snout is not altogether so long. The largest of them are about twenty foot long, having no fins, but the tail, and two paws: the body is pretty thick or round, till towards the navel; the tail like that of a whale and porpoise, has an horizontal breadth when the animal lies flat on his stomach or belly. Its skin is blackish, with some thin hairs, rough and hard, and so very thick, that the Indians cut it into narrow long flips, which they dry, and become as stiff as a cane; wherewith the Europeans chastise their slaves. Others make of the skin a sort of bucklers, musket-proof [...].
[...] The flesh of this creature is excellent, very wholesome, and tastes much like veal of Europe, when young; for the biggest are not so delicate and agreeable to the palate. Their fat is hard, and very sweet, as that of our hogs; the flesh resembles veal. It dies with very little loss of blood, and is not observ'd to come upon dry land; nor is there any likelihood it should, considering its shape, as in the cut, whence it is concluded not to be amphibious⁵⁴.

⁵³ LISBOA, Cristóvão de – *História dos Animais e Árvores do Maranhão* (1647)... p. 60-64.

⁵⁴ BARBOT, 1732: 592.

This animal kept being considered surprising and interesting, for many different reasons ranging from mere curiosity to its economic importance to several European Kingdoms and their overseas colonies:

*The first place in the aquatic republic should go to the manatee, or, as the Europeans call it, the ox-fish. It is the biggest fish in the Amazonas river, and maybe also the best. Its body is as big as an ox, although it is not called like that due to its size but rather because its lips and mouth are like the ox's, just like the teeth. In the rest of the body it is shaped as a fish, very round, like a barrel, but has no fishbones, unlike the other fish, not even in the spine. [...] There are two species, both with the same colour, and size, the second of them has much more fat, and is thus used to make butter in big quantities [...]*⁵⁵.

As aforementioned, within the same accounts, detailed and correct information on the animals' anatomy and behaviours is provided, alongside with methods of capture and use of meat, fat and derived products. More zoologic descriptions just come along from the the middle 18th century onwards⁵⁶. Also, if the first descriptions do not show any content related to the exploitation of these animals as a finite resource, from the middle 18th century onwards these concerns become more frequent. Thus, different authors start to diverge their discourses from the first descriptions and uses, into questions related to its continuous overtime capture and some concerns regarding its maintenance in the natural environment due to overexploitation. This is clearly present in the work by Alexandre Rodrigues Ferreira about the manatees and its exploitation, dated from 1783, as it is in the works by other authors⁵⁷. Since its discovery by European settlers and explorers, manatees kept themselves in the order of the day throughout the centuries⁵⁸.

OLD MERMAIDS AND NEW MANATEES: CROSSED TRAJECTORIES OF NATURAL HISTORY KNOWLEDGE PRODUCTION AND CIRCULATION

A global compilation of early modern references to mermaids and/or manatees is almost impossible to achieve because these animals have been represented, described, chanted, depicted, classified and categorised by numerous authors from across the scientific, humanities and economic spectrums⁵⁹. Mermaids are discussed in the historiography since the early modern to present days⁶⁰,

⁵⁵ DANIEL, João – *O Máximo Rio Amazonas (1758-1776)*. In *Saragoça* – Edição parcial de *O Independente*. [S.l.: s.n.], 2001.

⁵⁶ BRU DE RAMÓN, 1784-1786.

⁵⁷ SILVA, 1790; CUNHA, 1862.

⁵⁸ BRITO & VIEIRA, 2016: 175-191.

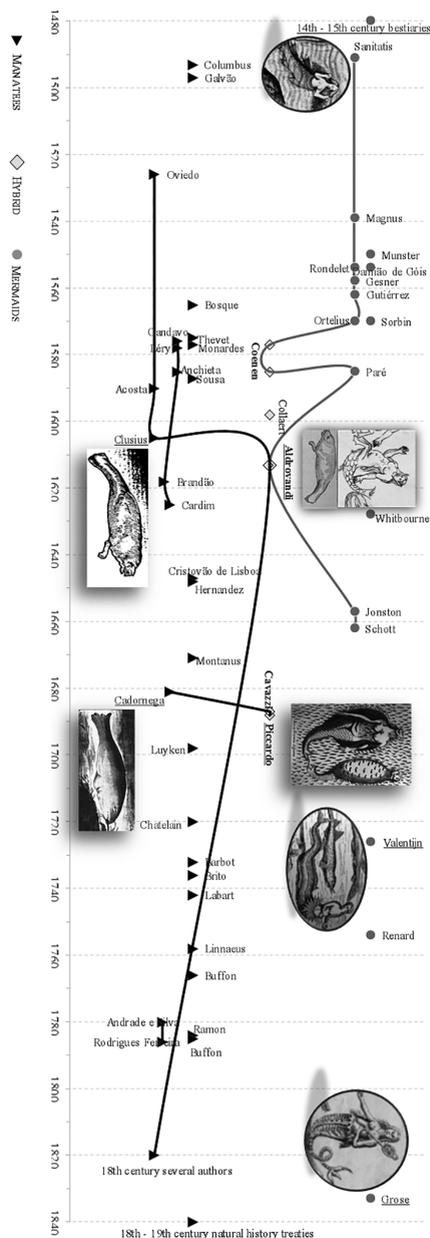
⁵⁹ The most complete compilation of all available sources related to the history of manatees can be found in the website <<http://67.59.130.204/biblio/>>. [Consulted on 30/11/2016].

⁶⁰ WILKIN, 1888; CARRINGTON, 1957; CARRINGTON, 1960; ALMEIDA, 1964; ALMAÇA, 1991; ALMAÇA, 1998; BRITO, 2013; BRITO, 2016; PEDERSEN, 2016.

Fig. 4. A chronological representation of exotic natural history knowledge produced and circulated during the early modern period in Europe: mermaids (grey circles); manatees (black triangles); hybrid views of these marine beings (grey diamond). A total of 55 early modern authors are shown in the graph, ranging from European writers, naturalists and cartographers to Atlantic travellers, settlers and missionaries. Underlined names correspond to the picture presented next to it. Interconnections (i.e. copied written or visual information about mermaid, manatees and «hybrids») identified in the sources are represented through the continuous lines (grey for mermaids; black for manatees). Several authors are linked to one another, but mostly this connection is made within the same line of knowledge production (encyclopaedic versus empirical type); Coenen, Aldrovandi, Cavazzi and Piccardo (grey diamonds) are central points in the construction of hybrid information about mythological and real marine animals

and they were part of and frequently represented in the 16th- and 17th century English culture, as well as in Southern European cultures. However, the genealogy of mermaids and of mermaids' relation with manatees (or other marine animals) is difficult to track and the search and analysis of secondary and primary sources can sometimes take the researcher into difficult paths of interpretation⁶¹.

For the purpose of the current work, we were able to compile and analyse over 50 sources with references to either or both mermaids and manatees in order to get a view of chronological conceptual evolutions on the early modern natural world. These sources, in fact, span from the middle 15th to the 18th century (Fig. 4), including sources for the newly discovered Atlantic Ocean and its marvellous things and products⁶².



⁶¹ See for example, the experience detailed by Vaughn Scribner in two blog posts regarding his investigation and search for the origin of a mermaid illustration for early modern America: «Fabricating History: The Curious Case of John Smith, a Green-Haired Mermaid, and Alexandre Dumas» (16/06/2015) and «Fabricating History PART TWO: The Curious Case Continues» (02/07/2015) in <<https://earlyamericanists.com>>.

⁶² A compilation of, probably all, manatees' historical references is given in the website *Bibliography and Index of the Sirenia and Desmostylia* <<http://67.59.130.204/biblio/>>. [Consulted on 30/11/2016].

They allow an interpretation of the dynamics of knowledge production and circulation about the new (and the old) marine world. Authors that travelled and explored the Atlantic and its shores, have shown an ability to apprehend, perceive and describe the new natural reality, even when it was new and truly exotic. They tend to include all the novelties and give credit to their own experience and even if they were comparing manatees with the siren of the old times, they were sure about its real existence as an animal from the aquatic realm. Humanist authors, or zoologists, from several European regions have, however, dismissed most of the new occurrences of some large marine (and rather exotic) animals in favour of older perceptions of the marine environment and its realities. In their hybrid discourses, mermaids prevailed as contemporary to the discovery of manatees, as it had previously happened in other cultures, such as the Celtic (or classical) mythology, with seals⁶³.

Nevertheless, descriptions and representations of manatees and mermaids, as marine animals or mythological beings, have been frequently shown together. Several authors from the Renaissance gathered references to these two kinds of beings in only one volume or in subsequent editions, sometimes even within the same chapters. This applies to Rondelet and Gesner, as they include the manatee, and other «strange» marine animals, within the chapter of fish. Neither of them, however, provided an illustration of the described specimen. Within the framework of the European natural history, it was Aldrovandi who, in 1613, assembled the description and illustration of the manatee, an exact copy of the illustration previously published by Clusius. All early modern European descriptions of the manatee, even the latest from Jonston, are based on Fernández de Oviedo's and Clusius' knowledge of the Caribbean and on their publications on the subject. For instance, as above mentioned, all the knowledge produced by Father Cristóvão de Lisboa was totally lost for the contemporary authors, as it remained unpublished until the middle 20th century⁶⁴. This author has written extensively about the Brazilian fauna and flora, including an illustration for each species entrance (Fig. 5).

⁶³ PARSONS, 2004: 73-80.

⁶⁴ The same discussion is made considering Father Cristóvão de Lisboa first description of the dolphin of the Amazon river that, as the manatee, was lost for the contemporary natural history editions and knowledge (ROMERO & AGUDO, 1997: 419-426).

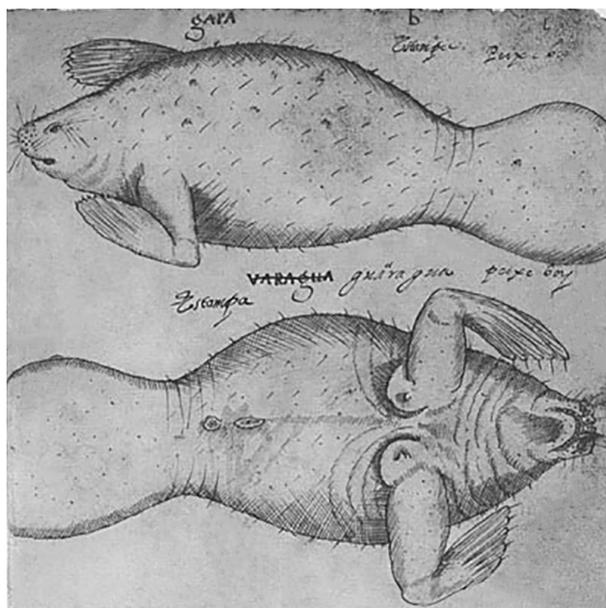


Fig. 5. Father Cristóvão de Lisboa's manatee illustration from the 17th century.

Quality and details of this image allow the identification of the specie of manatee and to infer the attention given by the author to subjects and objects of the new and exotic natural realm. and a detailed description

The same applies to the works produced regarding 16th century's West Africa, such as the ones by Cavazzi and Cadornega⁶⁵, or the piece referring to the Indian Ocean dugong⁶⁶ by Dimas Bosque⁶⁷. Cavazzi, like Dimas Bosque, offered a detailed description of the animal that he had seen with his own eyes, even though he compares it to the mermaid of the Antiquity:

There is one [fish] that Europeans call fish-woman and locals name it Ngulu-maza [literally, Kikongo, water pig], beautiful name, but so horrendous. [...] I think this is the famous triton from fables of mythology, the female may be considered the naiad of the old⁶⁸.

Moreover, as Father Cristóvão de Lisboa or Cadornega, he produced an illustration of the animal. However, this illustration was made when he was back in Europe, not *in situ*, and does not represent the reality of the animal. Even though this illustration is inspired in real observations of African man-

⁶⁵ CADORNEGA, António de Oliveira – *História Geral das Guerras Angolanas* (1681). Lisboa: Agência Geral das Colónias, 1942, Tomo III, p. 115.

⁶⁶ Dugongs (*Dugong dugong*) are herbivorous fully aquatic mammals that only live in Indian Ocean coastal waters; their name derives from a Malayan word that stands for mermaid. They have been hunted for thousands of years for its meat and oil and, similarly to the manatees, traditional hunting still has great cultural significance in several countries in its modern range. The dugong's current distribution is fragmented, and many populations are believed to be close to extinction. The IUCN lists the dugong as a species vulnerable to extinction, while the Convention on International Trade in Endangered Species limits or bans the trade of derived products.

⁶⁷ WALTER, 1963: 261-271.

⁶⁸ CAVAZZI, João António de Montecúccolo – *Descrição histórica dos três reinos do Congo, Matamba e Angola* (1687). Introd. bibliográfica por F. Leite Faria. Lisboa: Junta de Investigação de Ultramar, 1965, vols. I, II.

atees by the author, the representation he provided clearly mixes the morphology of animals with earlier preconceptions of the mythological mermaid. Cavazzi even stressed being «unable to make myself understood about the appearance of this beast to the one who drew his picture, and I forgot to have it painted in those regions. Hopefully this lack will be corrected by the courtesy and common sense of the reader»⁶⁹. The misunderstanding patent in the illustration given by Cavazzi is picked up by Angelo Piccardo. Both authors, writing about West Africa, show some sense of innovation in describing the natural history of the regions were they have been. Yet, signs of past conceptions tend to prevail⁷⁰, even if their intention was to give a panorama of the new fauna and exotic living animals in the new seas. They show a productive tension between scientific and other forms of knowledge.

Aldrovandi was also a focal point interconnecting early descriptions from the Spanish Atlantic (but not the Portuguese) to European traditions of natural history and zoology development, as we are now able to understand through the example here presented. Furthermore, he was quite aware of the fake strange and rare animals he was introducing to his European audience⁷¹. While trying to encompass all known (and real) nature from his time, this encyclopaedia author was also an enthusiast of the marvellous and greatly exotic specimens that he collected in his cabinet. This resulted in a collection of elements from local and distant environments, known and unknown natures, both real and forged. As a consequence, while he offers a true insight into the manatee from the West Indies, he adds different types of mermaids and tritons as a consequence of his (and others) make-believe abilities. He produces his work within an early modern scientific debate, also patent in the ichthyological texts by Belon and Rondelet, which display epistemological tensions. As they grapple with conflicting testimonials about these particularly strange animals, and try to determine what is credible (or interesting), early modern zoologists generate knowledge that is simultaneously purified and hybrid⁷². On the one hand, we have the new manatee, on the other, the old mermaid. And they co-exist peacefully. Early modern authors presenting hybrid theories in the way they understand nature, mixing mermaids and manatees into one animal, description, illustration or category are, actually, sound examples to feed the thesis discussed by Louisa Mackenzie, supported on Bruno Latour's concept of «modernity»⁷³. This preconceived idea of progress towards modernity does not exist in this situation as, probably, in many other cases.

The early modern construction of a natural history of the exotic marine fauna is made through the same regular paths of science development in Europe. Scholarship in the Renaissance was characterised by the activities of humanists – classically trained, bookish scholars concerned with finding the meanings and nuances of ancient Greek and Roman texts on oratory, history and philosophy, using philological and other forms of investigation. Reverence for an ancient past may not look that promising when investigating nature, but these humanist's penchant for describing particular events

⁶⁹ CAVAZZI, João António de Montecúcolo – *Descrição histórica dos três reinos do Congo, Matamba e Angola* (1687)...

⁷⁰ As other authors, such as Rondelet and Belon, when the creatures description stretches the credulity, it is easier to blame the artist for the taking liberties and looking away from nature, embellishing and exaggerating the illustrations.

⁷¹ SENTER *et al.*, 2013: 531-537.

⁷² MACKENZIE, 2014: 329-333.

⁷³ MACKENZIE, 2014: 329-333.

and details and their enthusiasm for classical models of inquiry were important foundations for the study of natural history⁷⁴. Scholars, humanists and naturalists based in Europe, despite of their degree of information on tropical species, their habits and environments, shared the scene of creating state-of-the-art information that would further on be copied or cited in 18th and 19th century zoology compendia, dictionaries and classification systems. Iberian explorers, missionaries, writers and naturalists based in the overseas, observing exotic nature with their own eyes and transferring their observations to the paper, under the form of prints or manuscripts, were not the main agents in constructing a natural history of exotic marine mammals⁷⁵. The exuberance, novelty and abundance they witnessed was shared through maps, logbooks, letters, manuscripts and printed publications in vernacular languages. It circulated across the Atlantic, moved from hand to hand, author to author, and across different types of receptors and spectators, but it did not make its way into central routes of European natural knowledge production and exchange in the 16th and 17th centuries and beyond.

we are not emerging from some obscure past in which natures and cultures were connected, we are not striding towards some future where both will finally and definitively be separated [...] we have never been modern, or, always been early modern.

Bruno Latour

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⁷⁴ KUSUKAWA, 2011: 189-213.

⁷⁵ BRITO, 2016: 120.

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