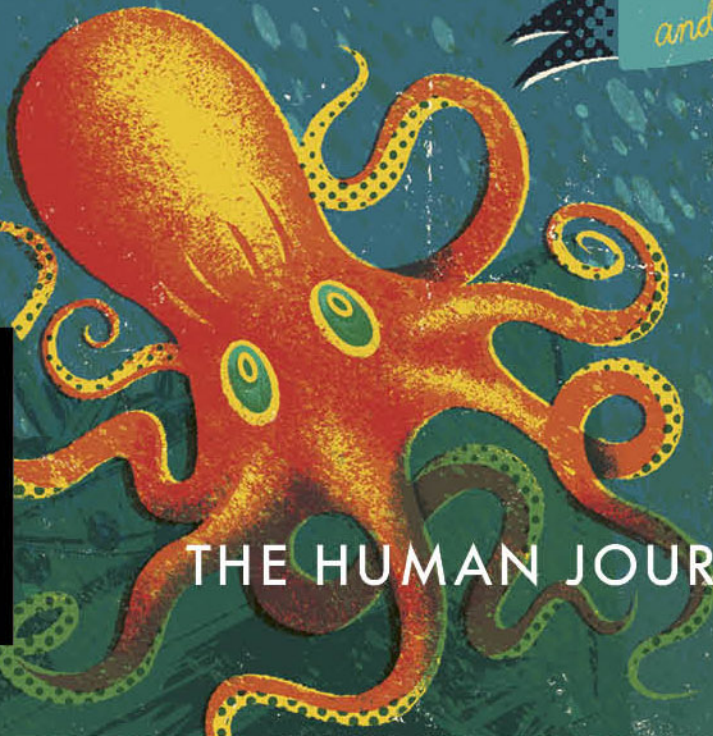




from

SHORE Ocean To Floor

by Gill Arbutnot
and Christopher Nielsen



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THE HUMAN JOURNEY TO THE DEEP

TIMELINE

Around 8000 BC
The Pesse canoe, the oldest known boat, is in use.



Around 2500 BC
A ceremonial solar boat called the Khufu Ship is buried beside the Great Pyramid of Giza in Egypt.



200 BC China begins to develop the junk, a strong, stable sailing ship.



AD 1000 Vikings begin to use the longship.

1500 Italian artist and inventor Leonardo da Vinci sketches a diving suit, but we do not know if it was made at the time.



1545 Henry VIII's warship the Mary Rose sinks in shallow waters.



1620 The first submarine is built by Dutch inventor Cornelis Drebbel. The design is basically a sealed wood-paneled rowing boat.



1872 The Challenger expedition begins. The British naval vessel Challenger is fitted out as a scientific research vessel and finds 4,700 new species of plants and animals.



1870 Jules Verne's ocean-themed novel *20,000 Leagues Under the Sea* is published.



1851 Herman Melville's book *Moby Dick* is published, based on the sinking of the US whaling ship *Essex* by a sperm whale in 1820.

1843 SS *Great Britain* is launched, the first iron-hulled, steam-powered, propeller-driven passenger vessel.



1628 The Swedish warship *Vasa* sinks on its maiden voyage in Stockholm harbour.



1943 Jacques Cousteau and Emile Gagnan develop the aqualung, revolutionising diving.



1926 The first self-contained breathing system is made by French inventors Yves le Prieur and Maurice Fernex.



1939 The crew of the USS *Squalus* rescues 17 from 73 metres below the surface after the engine room floods.



1956 Work published by the oceanographer Maria Tharp proves the sea bed is not flat. She describes the Mid-Atlantic Ridge.



1957 The first nuclear-powered ship, the Russian icebreaker *Lening* is launched.



1960 Jacques Piccard and Don Walsh become the first to touch the bottom of the Mariana Trench.

1977 Scientists discover deep-sea hydrothermal vents.



2012 Canadian filmmaker, James Cameron is the first person to make a solo descent to the bottom of the Challenger Deep.

2019 Victor Vescovo completes the deepest ever dive, reaching 10,928 metres.



2019 A target of protecting 5.0 per cent of the world's ocean by 2030 is set.

2020 Kathy Sullivan becomes the first woman to reach the bottom of the Challenger Deep.



SHORE



Imagine standing on a shore and looking out to sea. Even on the calmest day, the ocean is huge and mysterious. Wade out and feel the pull of the waves, swim further out and imagine what is lurking underneath you. If the sea seems vast and unknowable now, imagine how terrifyingly unpredictable it must have seemed to our ancestors who were brave enough to launch the first boats.

No one knows when humans first used boats, but we know that people reached Australia by sea at least 65,000 years ago. There is no trace of the boats they used, but they may have been bamboo rafts, or dugout canoes made from hollowed-out tree trunks. What is certain is that to cross the open sea in such flimsy vessels took great courage and seacraft.

Ancient boats are pictured in cave paintings in many countries including Australia, Azerbaijan, Chile, Malaysia and Norway. The oldest boats we have evidence of were simple vessels. The 10,000-year-old Pesse canoe from the Netherlands and the 8,000-year-old Dufuna canoe from Nigeria are both dugout canoes. They would have been made by felling a suitable tree, then hollowing it out with stone tools and small fires.

Reed boats were used in Egypt at least 6,000 years ago to travel the river Nile. They are shown in paintings and carvings and have also been found as models in tombs. The first ones were rowed, but later types also had a square sail. These ancient boats were all fairly small, but around 5,000 years ago metal tools were developed and boats could be made larger and more sophisticated. The seas would soon become highways – and battlefields.

MYTHS AND LEGENDS

The oceans were a source of fear and awe to people who lived near them, and they told tales of gods, goddesses and monsters to explain phenomena like storms, whirlpools and tsunamis.

GODS AND GODDESSES



GREEK MYTHOLOGY

The ancient Greeks had many ocean gods including Poseidon and his wife Amphitrite, and in later stories, the Gorgons: Stheno, Euryale and the famous Medusa.



NORSE MYTHOLOGY

In Norse mythology, Aegir and Rán were god and goddess of the sea. Rán collected the drowned in her nets, and her nine daughters were the spirits of the waves.



CHINESE MYTHOLOGY

In Chinese mythology, there are Dragon Kings for each of the four seas (north, south, east and west). Their names are Ao Shun, Ao Qin, Ao Guang and Ao Run.



INUIT MYTHOLOGY

The Inuit have many legends of the sea. Aipaloovik is an evil sea god and Sedna is a goddess whose severed fingers became seals and walrus.

MYTHS AND LEGENDS



SCYLLA AND CHARYBDIS

In Greek mythology, the sea was also full of monsters like Scylla and Charybdis who made the narrow Strait of Messina between Sicily and Italy hazardous. Six-headed Scylla lived in a cove on one side and grabbed sailors from passing ships, while those who sailed on the other side would be pulled into a whirlpool by Charybdis.



KUPE

In Māori mythology, Kupe was a great fisherman and navigator. When Kupe realised the giant octopus Te Wheke-o-Muturangi was eating all the fish, Kupe set off in his canoe with his family and some warriors to hunt Wheke. He chased the octopus across the Pacific Ocean for weeks and finally killed him. The hunt for Wheke had led the first Māori people to Aotearoa (New Zealand).



CAILLEACH

Between the islands of Jura and Scarba, off the west coast of Scotland, lies the ferocious Corryreckan whirlpool. This was said to be the cauldron where the Cailleach, the goddess of winter, washed her white clothes before she spread them on the mountains to dry. We see them as snow.

HOW THE SEA BECAME SALTY

Many legends about the sea explain natural phenomena like whirlpools or storms. This one, from the Norse mythology of Scandinavia explains how the sea became salty...

The Danish King Fróði bought two giants - Fenja and Menja - as slaves to work his magic millstone.



Fróði forced the girls to work day and night.



We've ground a mountain of gold. Can we rest?

No! Now you must grind peace!



Look, now there is so much peace no one is at war. Can we rest now?

No!



He's never going to let us stop.

Then we have to stop HIM!

Fenja and Menja hatched a plan. In secret, they ground themselves an army.



We have as many soldiers as grains of flour in a loaf.

Now we just need a commander...



They recruited Mýsingr, King of the Sea.

A great battle followed... and Fróði was defeated.



But Fenja and Menja's work was not over yet.



You shall have all the salt you will ever need!

Grind me salt!

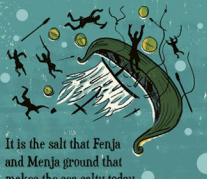
They ground and ground until Mýsingr's ship was graining.



We're giving you what you asked for!

Stop!

Finally, the ship, the salt and everyone on board sank to the bottom of the ocean.



It is the salt that Fenja and Menja ground that makes the sea salty today.



DEPTHS OF THE IMAGINATION

On old maps the oceans were often marked by the Latin words *Hic sunt leones* (Here be lions) or *Hic sunt dracones* (Here be dragons), because no one knew what might really be there. Over time people came up with all sorts of explanations, some of them more plausible than others.

STRANGE CREATURES

When sea creatures like giant octopuses, basking sharks or sperm whales washed up on shore, they had often decomposed so much that they were unrecognisable. Legends of sea monsters like the Kraken (a giant squid or octopus in Scandinavian folklore) therefore developed.



MERMAIDS AND MERMEN

Sailors reported sightings of strange creatures. Legends of mermaids and mermen are told around the world. They weren't all friendly like Hans Christian Andersen's *The Little Mermaid*; the sirens in Greek mythology and the German Lorelei lured sailors to their deaths. In the fifteenth century, explorer Christopher Columbus claimed to have seen three mermaids in the Caribbean, but he had probably seen manatees – large aquatic mammals. If the long seagrass they feed on gets tangled around their heads, it can look like long, green hair.



Fake mermaids have been shown around the world. The most famous one (American showman P.T. Barnum's 'Feejee mermaid'), was thought to be the head and body of a small monkey attached to the tail of a fish, until research showed it was a clay and papier-mâché model with an added fish jaw and tail.



POPULAR CULTURE

Books and films often use the fact that we know so little about what lives under the ocean to unsettle us, famously with the huge whale in *Moby Dick*, by Herman Melville, and the great white shark in the 1975 film, *Jaws*. Though highly fictionalised, *Moby Dick* was based on a real event – the sinking of the US whaling ship *Essex* by a sperm whale in 1820.



In Jules Verne's novel *20,000 Leagues Under the Sea* (published 1870), the heroes pursue a giant narwhal only to find it is a submarine – the *Nautilus* – designed and piloted by the mysterious Captain Nemo. The *Nautilus* has many adventures as it travels beneath the oceans, including a visit to the underwater city Atlantis and an attack by a giant squid.

