



PART 1
THE HISTORY OF DIVING

WORDS BY **PATRICK VAN HOESERLANDE**

History is a story. Although the content must be based on historical facts, the story itself depends on the narrator. My approach is that of our diving equipment. I focus on the "firsts", the countless small first steps in the development of our contemporary diving equipment, and less on its successive improvements.

COVER PHOTO: Illustration of a Greek freediver in 3,000 BC created using Generative AI by Midjourney – Ivo Madder.

This is certainly not the first text written about the history of diving. Every self-respecting author of a book about diving starts with a brief history of the sport. So why this series? It started with the following question asked during an editorial meeting, "Why not write an article about the origins of our diving equipment, such as the snorkel?" After a little research, I concluded that it was difficult to write about the snorkel without mentioning dive masks, for example. Dive masks are inextricably linked to the first divers who used a tuba. After all, our diving equipment was not developed in isolation, but through a combination of different needs and inventions. Only a complete story does justice to this evolution. An article about the development of one piece of equipment therefore evolved into this new series on the history of diving.

History is a story. Although the content must be based on historical facts, the story itself depends on the narrator. My approach is that of our diving equipment. I focus on the "firsts", the countless small first steps in the development of our contemporary diving equipment, and less on its successive improvements. This does not mean that I am against continuous improvement, but as a subject, it is slightly less interesting to write about. During my research, I came across some anecdotes and facts that I will share with you. Before we begin, I would like to mention that if, despite my many hours of research, you discover an error, you are always welcome to contact me. The history of diving is not set in stone.

At the beginning of this series, I advise you to forget everything you know about diving. To better understand history, it is best to start with a blank slate. After all, you will encounter several ideas that, based on your current knowledge, will make you think, 'What a stupid idea!' When you consider that what you know still had to be invented or discovered, you will appreciate the historical context better. So, just forget everything for a moment and rebuild your knowledge as you read on.

THE FIRST DIVER

No one knows how it started. I begin my story with a scantily clad and hairy ancestor scraping mussels off a rock. He accidentally drops his prehistoric knife into the water. The precious object sinks to the bottom. If he were to jump into the water, he would avoid hours of grinding to get a new stone into the right shape. And so, he dived into the water. At that moment, he, and all of humanity with him, entered a new world and a new era, that of homo aquatica. Whether it was for fishing valuable objects, hunting, gathering food or repairing ships, from that moment on, the desire to dive proved impossible to suppress. Humans wanted to go deeper and longer underwater. This wet pursuit led to the long history of diving that we all know today.

Mesopotamia, the land between the Euphrates and Tigris rivers bordered by the Aegean Sea and the Persian Gulf in an east-westerly direction, is considered the cradle of civilization. Five thousand years ago, the country was in a region that is now part of modern-day Iraq. The history of diving also begins in this cradle. This is where the story of Oannes, the fish god, comes from. Oannes is an amphibian, half human and half fish. At sunrise, Oannes rose from the Persian Gulf to bring people wisdom, science and art, to teach them to write, count, build cities, make laws and much more. At sunset, Oannes returned to the sea to come ashore again the next day.

When people assign a specific function to a god, that function plays an important role in the existence of those people. Archaeological finds from what was once Mesopotamia have shown that free divers collected sponges. In addition, algae were fished for food and pearls, mother-of-pearl and corals were fished for use as currency. The diving equipment was very simple and probably consisted of a heavy stone, sometimes tied to a rope for reuse, to descend quickly and effortlessly, and a basket to collect the harvest.

Historical data shows the practice of free diving in various earlier cultures, such as the sponge divers of Greece, the pearl divers of the Caribbean and the Yahgan Indians of Tierra del Fuego. However, none of these divers appear to have used eye protection. Although successful, these divers paid a price in the form of bloodshot eyes and impaired vision above water.

Homer wrote about Greek sponge fishermen and their technique, the Skandalopetra. In this technique, the diver descends to almost 30 metres to the seabed while attached to a heavy stone, or skandalopetra, along a long rope. The diver uses the skandalopetra to guide the descent. Of course, they knew nothing about the anatomy of equalisation. To compensate somewhat for the increasing pressure on the ears, a diver poured olive oil into his ear canal and took a mouthful of it before the descent. Once at the bottom, he spat out the oil and cut as many sponges from the bottom as his limited lung capacity allowed. The diver pulled on the rope to signal to the surface that he was ready to be pulled up. It was a gruelling and painful way to earn a living.

THE FIRST BREATHING TUBE

The earliest signs of people breathing underwater can be found in this region, namely amongst sponge farmers on the Greek island of Crete. These farmer-divers used a hollow reed as a snorkel when tending and harvesting their sponges.

THE FIRST BELLOW

We may be familiar with bellows from the blacksmith's forge, but this object is important in the development of diving as a precursor to the compressor. Around 1800 BC, Babylonian and



Hittite metalworkers used a pot bellow to smelt copper. In ruins in the Levant, archaeologists have found primitive pot bellows, consisting of a ceramic pot with a loose leather skin attached to the top. The air flow was ensured by moving this flexible top up and down.

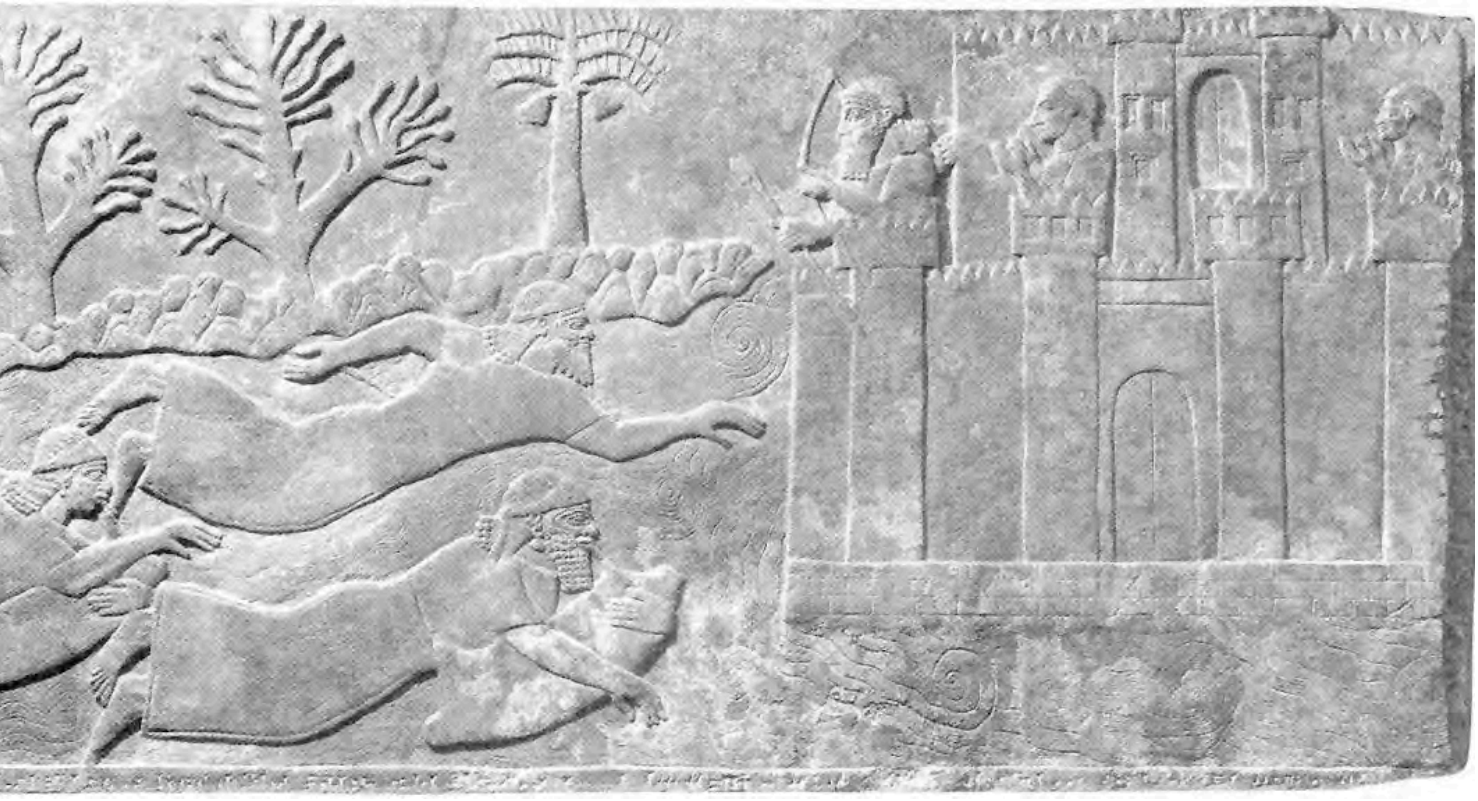
Around 400 BC, the Chinese used bellows made from ox hide. In the early Han dynasty, around 200 BC, they used the more efficient double-acting piston bellows, in which a piston is enclosed in a rectangular box with a handle coming out of one side. These bellows blow air with every movement and are more efficient than pot and single stroke bellows which only blow during the downward movement. Around 1100 AD, blacksmiths in medieval Europe used bellows made from whole sheep skins, carefully removed in one piece without tearing it, so that it held air like a balloon.

FIRST MILITARY DIVERS

The two epics, the Iliad and the Odyssey, attributed to Homer and believed to have been written around the 7th century BC, describing, amongst other things, the Trojan War (1194-1284 BC). According to the stories, freedivers were used to sabotage enemy warships. Whether the Trojan War was a mythological war or actually happened is still undecided, but the fact that Homer wrote about these divers proves that they were used during conflicts. We can therefore assume that the use of military divers against ships was a common tactic.

THE OLDEST IMAGE FOUND OF COMBAT SWIMMERS

To protect their unfavourable country, the

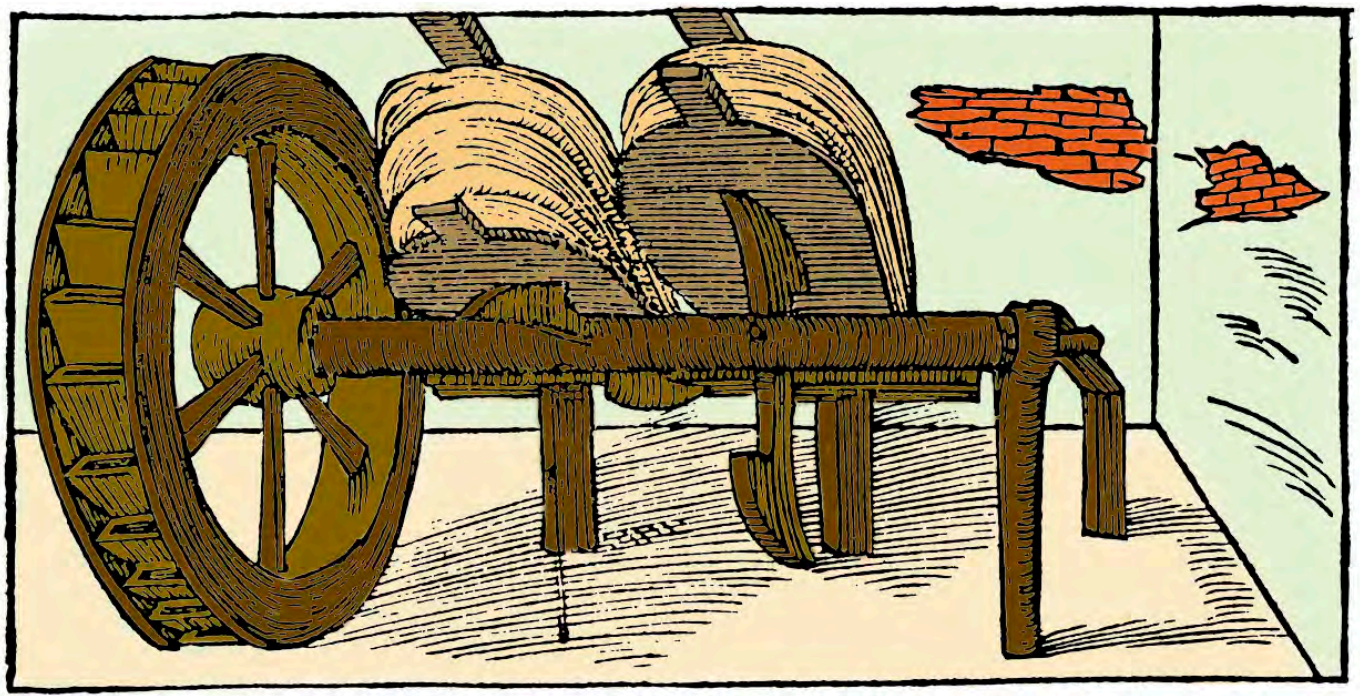


ABOVE: A stone carving of Assyrian enemy archers attacking freedivers. **BELOW:** Bellows operated by a camshaft, driven by a water wheel (1540).

Assyrians built up a large army, equipped with modern and superior iron weapons. Under King Sargon II (722-705 BC), this army conquered neighbouring countries, using combat swimmers to attack fortified cities. An Assyrian woodcut depicts these soldiers on an air-filled animal skin. Was this bag an air supply or a means of floatation? If was used as an air supply, it was probably exhaled into the water. Blowing the air back into the animal skin would have led to headaches, which the early divers would have quickly experienced. This is unfortunate, because otherwise we would have discovered the first application of a "Closed Circuit Rebreather" (CCR). Assuming that the bag was an air supply, the diver's buoyancy would decrease the longer he remained underwater. We can therefore assume that this air bag served as buoyancy to compensate for the weight of the weaponry.

THE FIRST FAMOUS MALE AND FEMALE DIVERS

Herodotus (484-425 BC) wrote about the most famous diver of antiquity: the Greek Scyllias of Scione. However, he was not alone, as his daughter Hydna (also known as Hydne or Cyana) was also a diver. Around 460 BC, the Persian King Xerxes commissioned them to recover treasures during one of the many wars between the Persians and the Greeks. Xerxes did not want to lose this valued diving duo and refused to let them return home after their mission was completed. Disagreeing with this decision, they slipped into the water in the dark of the night and escaped, using reeds as breathing tubes to avoid detection. Years later, they destroyed one of Xerxes' fleets by diving into a stormy sea and cutting the mooring ropes





ABOVE: Illustration of a breath-hold diver from Mesopotamia 5,000 years ago created using Generative AI by Midjourney – Ivo Madder.

of the anchored ships. For their bravery, statues of Scyllias and Cyana were erected in the Greek city of Delphi. A writer of that time wrote that Cyana's diving experience proved that "young women can dive into the sea without fear of losing their virginity". Until then, it was believed that the water pressure that could so easily rupture eardrums, would similarly compromise the virtue of young virgins.

Although heroic tales take liberties with reality, there is evidence that Greeks used hollow reeds to remain incognito underwater and avoid detection by their enemies. One Greek soldier was even able to swim between the Persian fleet and cut their moorings to prevent an attack. This ancient snorkeller then swam more than 14km underwater to rejoin the Greek army near Artemisium.

THE FATHER OF PNEUMATICS

Ktesibios, or Ctesibius in Latin, (285-222 BC) was a Greek scientist, technician, inventor, and mathematician in Alexandria, Egypt. He wrote the first treatise on the science of compressed air, pneumatics, and is considered the discoverer of the elasticity of air. He invented various devices that use compressed air, including power pumps and an air catapult. However, his most famous invention was an improvement on the clepsydra or water clock, in which water dripping at a constant rate lifted a float that held a pointer to indicate the passing of the hours. Another important idea of his was the piston pump, which could be used to pump water. This invention was widely used by the early Greeks and Romans, among others, employing a device called the Ctesibius pump to create a water flow. Its description can be found in the reports of Vitruvius and Heron, and the pump is therefore also known as Heron's pump. The ingenuity of the invention is evident from the fact that it was not only used in Antiquity and the Middle Ages, but fire pumps continued to work on the same principle until the 19th century. Moreover, piston pumps and compressors are still in use today. Ironically, the idea was lost in the burning of Alexandria. As a result, none of his written work has survived.

It was not until the 18th century that the principle behind the Ctesibius pump was rediscovered, and hand-operated fire engines began to appear. Until then, city dwellers had relied on the bucket brigade: two rows of people connecting the water source and the



ABOVE: Illustration of Cyana and Scyllias in 480 BC.

fire, with one passing on full buckets and the other returning empty ones. Wet blankets protected endangered buildings.

THE FIRST STRUCTURAL DEPLOYMENT OF COMBAT SWIMMERS

The Greek general Thucydides (450-400 BC) is considered the father of "scientific history" because he was the first to apply strict standards of impartiality, evidence gathering, and cause-and-effect analysis, without reference to divine intervention. His "History of the Peloponnesian War" recounts the conflict between Sparta and Athens in the 5th century BC. Until then, divers had been deployed individually to sabotage ships, but during this conflict they were deployed more systematically, and in groups. Thucydides wrote about Greek divers who, during the siege of Syracuse, swam underwater to remove underwater obstacles from the harbour and thus ensure the safety of the ships.

THE FIRST STUDY OF A SNORKEL AND A DIVING BELL

The Greek philosopher Aristotle (384-322 BC) was the first to study snorkelling, although the word was not yet known at that time. He observed how an elephant swims underwater and uses its trunk to breathe. This story cannot be confirmed, but it is one of the first written accounts in history to explore the concept of snorkelling. In his "Problemata physica" (Aristotle's Problems – 415 questions about melancholy, wine, music, love…), Aristotle mentions the use of a kind of diving bell with an air supply: "… to provide these sponge fishermen with a means of breathing, a kettle is lowered, filled not with water but with air, near the submerged man; the kettle is deliberately kept upright during the descent to prevent the air from escaping and the water from flowing in…". Divers in the Aegean Sea used these diving bells to reach deeper waters where the sponges were of better quality and to stay underwater longer.

Some claim that Aristotle himself tried diving with both reed tubes and diving bells. Later, he must have taught Alexander the Great how to use a diving bell. Something the latter used, among other things, during the siege of Tyros. The second part of this series will begin in this city.

To be continued…