

POOR DOCUMENT

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First Submarine Away Back in 1620

It Was the Device of a Dutch
Physician

King James I of England Said To
Have Made Trips—Diving Bells
and Plungers

The submarine is much older than the German empire, and the credit of being the first sovereign to make a trip in one is given to James I of England, a monarch who has generally been represented as a man of more than ordinary timidity. Doubt has been cast on the story, but whether it is true or not that James actually made a trip in a submarine, it is interesting to recall that one of James' friends did undoubtedly construct the first practical submersible boat recorded in history.

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At Siege of Tyre Alexander the Great is said to have employed diving bells at the siege of Tyre, 333 B.C. An Arabian historian named Bohaddin, who lived about 1150 A.D., relates that a diver entered Jerusalem during a siege by means of a submarine apparatus. An invention for descending into the sea was heard of at Toledo in 1580, and Charles V. is said to have interested himself in it. Forty-two years later an Englishman, William Boone, was credited with inventing "a plunging apparatus" similar to a device produced nearly 200 years later by one Symons, which was gully shaped, with a dome-like roof but differing in the manner of submersion. Boone's plunger was submersed by contraction of the hull through the instrumentality of hand vices, which reduced its volume, while Symons made use of leather bottles, which he filled with water. Magnus Pegelius in 1605 made a similar device, which was regarded as a marvel of its time.

Van Drebel's Device According to Allan H. Burgoyne, F. R. G. S., "the honor of having constructed the first submarine boat undoubtedly belongs to Cornelius van Drebel, a Dutch physician. His first submarine was made in 1620, when he built and launched a navigable submersible boat, and so successful did it prove that he had two others constructed on the same plan, in the larger of which James I., of whom Van Drebel was an intimate friend, made a lengthy trip. These early craft were built of wood and rendered watertight by stretching greased leather all over the hull. The following is from a description of the largest, she carried twelve rowers, besides passengers, and made a journey of several hours at a depth of from twelve to fifteen feet. The holes for the oars were made to hold water by leather joints. Van Drebel accounted his chief secret to be the composition of a liquid that would speedily restore to the troubled air such a proportion of vital parts as would make it again for a good while fit for respiration. The composition of this liquid for enabling air to be used again was never made public. Van Drebel died in 1634 without having completed his experiments, leaving no document relative to his work on the subject.

The Pure-Air Problem According to the Abbe de Haute-fueille, who some years later published a pamphlet on the art of breathing under water, there was no liquid employed. "The secret of Drebel," he says, "was in an apparatus which consisted of bellows, with two valves, and two pipes coming on to the surface of the water, one bringing pure air down and the other conveying the foul air away." Van Drebel constructed his boats with two bottoms and submerged them by filling the space between the two with water. He conducted his experiments on the Thames and is said to have made a trip under water from Westminster to Greenwich, a distance of about ten miles.

Commander Murray F. Suter of the Royal Navy, who has written of work on submarines, while giving full credit to Van Drebel for his submersible, is inclined to doubt that it was practically navigable under water. As to James' trip, after referring to the king's reputation for timidity, he says: "This is extremely doubtful, as even with submarines of the present time people who are timid would scarcely be keen for facing this somewhat unusual experience. There can be little doubt, however, that James inspected and watched with great interest a craft rowed with the top of the hull on the water, or just under, occasionally, as with the modern devices then available an even depth line would not have been maintained."

Its Utility Forecasted In a work entitled "Mathematical Magic" published by John Wilkins, a brother-in-law of Cromwell, in 1646, there is a reference to Van Drebel's submarine, which he calls the "Ark," with the following curious exposition of its possibilities: "It is not easy to recite the many advantages of the Ark to the nation. First and foremost, it is private. A man may go to any part of the world invisible, without being discovered or prevented in his journey. Motion will be safe from the violence of tempests, which never moves the sea more than five or six paces deep. They are safe from pirates and robbers, from ice and great frosts, which are such deadly

foes to us in our passages toward the Poles. One is also free from the uncertainty of the tides. It may be of great advantage against a navy, enemies who by this means may be undermined and blown up. So too it may be of great use for the relief of places besieged by water, to convey into them supplies, and also for the capture of a place that is accessible by water.

Submarine Exploration "It may be of unspeakable benefit for submarine experiments and discoveries. We can compare the swiftness of ascent of bladders and corks with the rapidity of descent of stones or lead. We may explore subterranean passages and caverns. We may study the nature of fish, and we may catch them by luring them with lights or by shooting them with guns put out of the ship by bags. And fish are important, for they give the occupants of the ark the oil they require for dressing meat by lamps. Fresh water for the occupants may be got from the pure springs at

the bottom of the ocean. But, above all, the discovery of submarine treasure is more desirable not only in regard to the several precious things that grow there, as pearl and coral mines. Some colonies of people may inhabit the vessels, having their children borne brought up without knowledge of land who could not choose but by arms with strange contrasts upon the recovery of the upper world."



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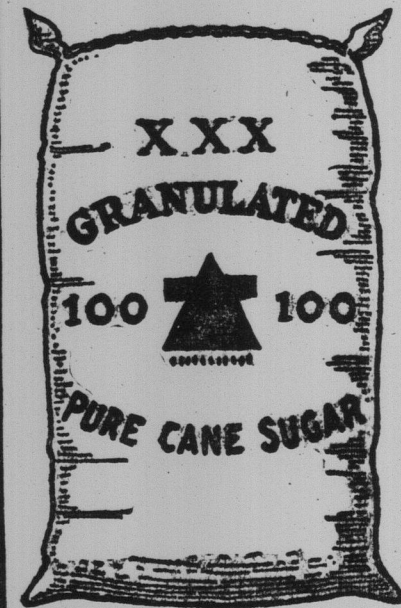
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