

GEOLOGISTS AND ATLANTIS

CYRIEL ODHNER SIGSTEDT

More and more knowledge of the ocean bottom has led to more and more speculation as to its original formation. From earliest times there has been a belief that a sunken continent lay outside the Pillars of Hercules, and up to the fifteenth century geographers indicated it on their maps as the island of Atlantis described by Plato from information derived from Egyptian priests.

Swedenborg referred to Atlantis in 1719 in his geological treatise on the *Height of Water in Ancient Times*, citing the belief of the late Olof Rudbeck that the lost continent, the Happy Isles, may have been Sweden itself; the Ultima Thule once submerged and subsequently elevated as the present Scandinavian peninsula. Swedenborg's conviction that this land was rising is now a well established fact. Struck by the observation of the large Swedish shell banks and other phenomena, he based many arguments as proofs that Sweden, in former times, was almost entirely covered by water.

The present generation of biologists contributes facts to the solution of the 2,500-year-old puzzle of Atlantis, about which, in the course of years, thousands of books have been written. The first knowledge of the ocean bottom was obtained from direct soundings, later replaced by the modern echo-soundings. This method was followed by the taking up of sample cores of sediment that bore witness to what had taken place thousands of years ago. Coring was done by the American geologist C. S. Piggot in 1936 and by Prof. Hans Petterson of the Swedish "Albatross Expedition" in 1947-1948. On the Mid-Atlantic Ridge off the coast of West Africa, at a depth of 3,577 meters, the expedition took a specimen of the ocean bottom in the form of a core 13.5 meters long, which, when analyzed, was found to contain diatoms and microscopic algae, most of them species that occur in salt water, as was to be expected. However, in the lower part of the core these diatoms consisted exclusively of forms that occur only in fresh water!

To scientists of the Swedish State Museum this fact proved that the sediment had once been part of a lake, and the eighteen species of lacustrine algae showed them that the median part of

the Mid-Atlantic Ridge—an enormous mountain ridge running north and south under the central Atlantic, of which Iceland and the Azores are remaining portions—once lay above the surface of the ocean.

This is the thesis of a book called "Atlantis, a Geological Reality" (*Atlantis, en geologisk verklighet*, Stockholm, 1951), by Dr. René Malaise, described in the Swedish press as "epoch-making," the result of cooperation with Professor Nils Odhner, his colleague in the invertebrate department of the Swedish Riksmuseum. This work presents the solution, by a new and tenable theory, of the origin of sunken continents which is beginning to receive recognition and approval from the learned press here and elsewhere. (See *New York Times*, September 30, 1956.)

Dr. Nils Odhner—a nephew of the late Rev. C. Th. Odhner, one of the founders of the Swedenborg Scientific Association—is the originator of the so-called "Constriction Theory" which explains the changes in the ocean bottom as having occurred in relatively late geologic time as a consequence of thermal changes during and after the glacial period, conclusions first published in 1923 and based on bio-geographical facts. Up to now almost all geologists have supported the theory that a load or weight-pressure would depress the plastic sub-strata under the earth's crust, and that a pressure of this kind was exerted by the huge ice caps covering the polar regions—for instance Greenland, Scandinavia, North America—causing a shrinkage of the continent below them during the glacial epoch. In the opinion of Dr. Odhner (and others) this is impossible, as the solid matter of the earth's crust could easily absorb such an amount of pressure without being structurally affected by it.

The constriction principle postulates another factor—that of thermal changes in the crust. The point of this principle is that just as the continents, like any other solid matter, react to changes in temperature, so also do the ocean bottoms. The crust forming the ocean bottom dilates on being heated and constricts on being cooled; as do the cables of a suspension bridge, which increase in length during summer when they are warmed up, and decrease in winter when they are chilled. Thus the depth of the ocean basin increases during a warm period by reason of its being expanded. Such was the case in the late tertiary epoch, causing deepening of

the ocean bottoms together with the upheaval of continents. Both changes continued into the glacial period.

Glaciation caused, by cooling, a constriction and sinking of the highlands. Subsequently, when the ice-sheets melted, the cooling of the ocean basin by the melting water had the effect of constricting them, thus raising their bottoms and the water level all over the world. This also caused a chilling and submergence of the Mid-Atlantic continent analogous to the sinking of the glaciated Scandinavian peninsula.

The above is an extremely brief outline of the basic principle, which puts an entirely new face on geologic history. It has consequences of far-reaching import, too complicated for reference here. Many hitherto unexplainable phenomena are clarified by the constriction hypothesis, among them the existence of deep canyons in the ocean bottom, which it explains by their having been eroded out by supra-marine rivers in the early glacial period when the mentioned upheaval of highlands occurred and the over-deepening of oceans caused the water to withdraw from the continental coasts.

Traditions common to people all over the world point to a time when a catastrophic flood overtook mankind, sometimes identified with the Flood described in Genesis. This used to puzzle Swedenborg, who modified his earlier opinions by considering the short duration of the Noachic flood, if it is accepted as literally true. Swedenborg's contributions to geology were, however, of such a penetrating nature that they alone would have secured him a respected name in science. The fact that his attention moved from the fields of physical science to those of anatomy and theology prevented this recognition during his life. But in this field too, he was before his time. (See the introduction to Vol. I, *Emanuel Swedenborg Opera Quaedam* by Dr. Alfred Nathorst, the Swedish geologist.)

It is beautiful when the natural sciences meet to corroborate the assertions of history and the claims of religion! In this case the science of biology—where microscopic algae seem to have the last word—and geology with its new constriction theory. It is like parallaxes in logic meeting to present truth. History has long been asserting the existence of a continent now sunk beneath the ocean, biology has searched for means to explain the existence of simi-

larities in flora and fauna on both sides of the Atlantic. Anthropology has insisted on ethnical problems that could only be explained by land bridges, and even philology has added its word of suggestion. All these, we assume, are proofs that the memories of old Greeks and Egyptian priests were based on facts when they claimed that the Mediterranean lands had once been in touch with an Atlantic race. The Biblical narrative of a Flood in ancient times was possibly also based in its literal narrative, taken from the Ancient Word, upon a racial memory not inconsistent with its internal sense.

DR. C. E. DOERING: AN APPRECIATION

EDWARD F. ALLEN

On the twenty-second of May in 1907, the Rev. Frank Sewall, President of the Swedenborg Scientific Association, received a letter reporting the activities of the committee of five appointed by the Board of Directors to take the proper legal steps to incorporate the Swedenborg Scientific Association in the State of Pennsylvania. The letter states:

“These gentlemen had the charter drawn up in proper form and the matter was taken up with the courts of Philadelphia, who on the 20th day of October granted a charter to the five gentlemen whose names were subscribed thereto.

“The charter and By-Laws adopted by the incorporators are submitted herewith as a part of this report.”

The letter was signed “C. E. Doering.” The five signers of the charter are Frank Sewall, Reginald W. Brown, Felix A. Boericke, George M. Cooper, and Charles E. Doering.

The recent passing of Dr. C. E. Doering, on February 1st, removed from our midst the last of these five men. In fact, he outlived the next to last one, Dr. Reginald W. Brown, by about twenty years.

Although Dr. Doering did not attend the meeting held May 27–28, 1898, to organize the Swedenborg Scientific Association, his name occurs as a member of a committee during its first year of activity, and he did attend the second annual meeting in New York