

In a broad band of sand-hillocks which separate the Laguna del Potrero from the shores of the Plata, at the distance of a few miles from Maldonado, I found a group of those vitrified, siliceous tubes which are formed by lightning entering loose sand. These tubes resemble in every particular those from Drigg in Cumberland, described in the *Geological Transactions*.¹ The sand-hillocks of Maldonado, not being protected by vegetation, are constantly changing their position. From this cause the tubes projected above the surface; and numerous fragments lying near showed that they had formerly been buried to a greater depth. Four sets entered the sand perpendicularly: by working with my hands I traced one of them two feet deep; and some fragments which evidently had belonged to the same tube, when added to the other part, measured five feet three inches. The diameter of the whole tube was nearly equal, and therefore we must suppose that originally it extended to a much greater depth. These dimensions are however small, compared to those of the tubes from Drigg, one of which was traced to a depth of not less than thirty feet.

The internal surface is completely vitrified, glossy, and smooth. A small fragment examined under the microscope appeared, from the number of minute entangled air or perhaps steam bubbles, like an assay fused before the blowpipe. The sand is entirely, or in greater part, siliceous; but some points are of a black color, and from their glossy surface possess a metallic lustre. The thickness of the wall of the tube varies from a thirtieth to a twentieth of an inch, and occasionally even equals a tenth. On the outside the grains of sand are rounded, and have a slightly glazed appearance: I could not distinguish any signs of crystallization. In a similar manner to that described in the *Geological Transactions*, the tubes are generally compressed, and have deep

¹ *Geolog. Transact.*, vol. ii. p. 528. In the *Philosoph. Transact.* (1790, p. 294) Dr. Priestley has described some imperfect siliceous tubes and a melted pebble of quartz, found in digging into the ground, under a tree, where a man had been killed by lightning.