polis, and at Arcola, where they contain hippurites and other characteristic fossils. The depth to which they have sunk Artesian wells through them in many places (between 500 and 1000 feet), is astonishing. One boring through blue marl and limestone at Erie, in Greene County, was 469 feet deep, and the well yielded 350 gallons of water per minute at the surface. The water rises forty feet above the surface, and can be made to reach fifty feet, though in diminished quantity. Here, as in Europe, the temperature of the earth's crust is found to increase as we descend, the water being sensibly warmer than that of the air, so much so that in cold weather it sends forth steam. Each new excavation at Erie robs the wells previously bored of part of their supply. The auger with which they perforate the soil is four inches in diameter, and the average cost of excavation sixty-two cents, or about 2*s.* 6*d.* per foot, for the whole depth of 469 feet. No solid rock has been pierced here, the strata consisting throughout of soft, horizontally stratified blue limestone. They have also pierced these same rocks, at a distance of three miles from Demopolis (a town situated at the junction of the Tombeckbee and Black Warrior rivers), to the depth of 930 feet without gaining the water, yet they do not despair of success, as sand has just been reached.

At Arcola, the proprietor presented me with several cretaceous fossils, and some irregular tubular bodies, the origin of which he wished to have explained. I immediately recognized them as identical with the vitreous tubes found at Drigg, in Cumberland, in hills of shifting sand, which have been described and figured in the Transactions of the Geological Society of London.* They have a glazed and vitrified interior, and bodies of similar form and structure were first supposed by Saussure to have been due to the passage of lightning through sand, a theory now generally adopted.

If any geologist retains to this day the doctrine once so popular, that at remote periods marine deposits of contemporaneous origin were formed every where throughout the globe with the same mineral characters, he would do well to compare the suc-

* Vol. ii. p. 528, and vol. v. p. 617, 1st series.