

may be locally restricted, the impervious stratum must present the form of a dome or roof. The underlying strata may, and generally do, conform in position to the roofing strata. We have here the requisite conditions for accumulation. Some portion of the oil and gas may filter through to the surface, or it may not. Obviously, if the outlet be large, the product must escape as fast as elaborated. If the reservoir be nearly closed, it may hold the products of the slow distillation of thousands of years. When one of these store-houses is exhausted it will be filled again, but perhaps not before the millennium.

I said that the oil and gas would displace the water previously occupying the spaces beneath the roof. It is plain that these substances must be hard pressed by the surrounding waters, re-enforced as they are on all sides by a virtual column reaching to the surface of the earth, which may be a hundred or five hundred feet above. The lateral pressure of a column of water five hundred feet high is enormous. All this the forming oil and gases must resist. No wonder that when given vent from above they sometimes burst forth with tremendous violence. At a well which I visited in Knox County, Ohio, the pressure of the confined gas was 180 pounds to the square inch, in addition to the pressure of a column of water 600 feet high. It escaped from the mouth with a roaring sound which could be heard at the distance of a mile. The supply was sufficient to illuminate a large city, and it continued to escape for several months.* When conducted horizontally through a pipe to the outside of the building and ignited, it formed a ragged and spiteful stream of fire of the diameter of a hog'shead, which roared like a conflagration, and caused an illumination which was seen at the distance of sixteen

* This was in May, 1866. A letter from Peter Neff, Esq., of Gambier, dated June, 1868, states that this well is still "blowing."