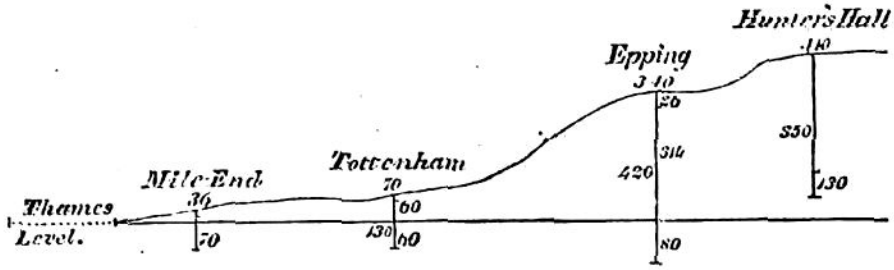
tinued. The sinking was therefore 340 feet above the level of the Thames, and 80 feet below it. The water is limpid and soft.

The summit of the well at Hunter's Hall was found by levelling to be about 70 feet above that of the well at Epping, and therefore 410 feet above the high water mark of the Thames; but the depth of the well was only 350 feet; it therefore did not reach the level of the Thames by 60 feet: and the water stands in it 130 feet above the bottom of the well.

The facts relating to these wells are expressed by the following diagram. (P.)



The depth to which it is necessary to sink in order to procure water beneath any retentive stratum, will of course vary, as the inclination or undulation of the inferior water-bearing stratum brings it nearer to the surface. The only difficulty then is, to explain why water issuing from the same stratum should stand at different levels, since it would appear on the laws of hydrostatics, that the water in every well so sunk, ought to have a common surface, that surface being determined by the lowest level at which the water-bearing stratum appeared exposed to the day along its basset edge; for since such a stratum would necessarily shed its waters from that point, it may seem difficult to understand how it can act as a reservoir to retain them at any higher point in the interior of its area. But a little consideration will shew, that this conclusion supposes a full and instantaneous communication to exist between the various portions of the water-bearing stratum, whereas in nature no such case exists, the porosity of every stratum being imperfect, and greater in some parts than others; hence, when any adjacent valley is excavated so deep as to expose a portion of the water-bearing stratum, it will drain it in that part, and reduce the level of the water in the wells immediately contiguous to that of such drainage. Thus the valley of the Thames, denudating the plastic clay near Deptford, brings down the water of the wells on the east of London to its own level; but the communication between the points so drained, and the more distant parts of the stratum, not being perfect, these will not be drained to the same degree. The water therefore procured from them will rise to a higher level; thus the waters which have been collected on the basset of the sand accompanying the plastic clay against the chalk hills of Essex, &c. percolating gradually through and saturating their mass, will rise to different heights in proportion as the low points of drainage are near or distant. The only general rule that can be deduced is,—that the water of wells can in no case rise to an higher level, than the highest point of the strata collecting them; but the local circumstances of the drainage, effected in the vallies traversing those strata, may compel them to assume various inferior levels in the proximity of such vallies; faults which may cut off portions of the water-bearing strata from their general mass, or dam up their waters in particular directions, will also afford other causes of local variation. (C.)