
DISBROW'S

EXPOSE OF

Water Boring.

Practice versus Theory.

I am a plain mechanic, and have spent the best part of my life in practically examining the earth in all its different formations of rocks, sand, clay, gravel, and what not, with a view to ascertain how water could be obtained from either or all of them, of a quality and quantity sufficient to answer all the best purposes of life. And in boring the earth for water I have succeeded in obtaining abundant supplies of the best water in places where it was not otherwise to be had.— This success was the result of my own opinions, long before I had put them in practice.

If a plain practical man is to be listened to, one who practices what he preaches, and proves his preaching by his practice, although at the risk of incurring the learned displeasure of the President, Directors, & Co. of the Lyceum of Natural History, then he is not backward in declaring his opinion that all the science they can bring to bear on this subject will throw but very little light upon it; for after reading a great deal on this subject to very little purpose, I rest solely on experiment for the truth of my statements.

I am sometimes almost tempted to believe that there is such a thing as learned ignorance in the world. Whether theory without practice comes

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under this head, I leave to those who pretend to more knowledge than I do to determine, not doubting but plain practical experiment will, in time, work out its own salvation.

The President of the Lycium has been called on by letter from the corporation, filled with fine hard words, signed P. S. Townsend, asking to be informed if the water on this Island was bad, and if bad, why it was bad? and among other very intelligible questions desires to know the deteriorating qualities of the geological stratifications. Less than a learned answer to such learned questions was not to be expected; and Messrs. Delafield, Dekay, Turnay, Chilton, Dewey and Van Renssellaer, wrote a long letter of eleven closely printed pages, establishing it as their unanimous opinions that no adequate supply of good and wholesome water can be obtained on this Island for the wants of a rapidly increasing city like New-York.

To reach all this they try to establish two points. First, that the only source of water on this Island is what falls in the form of rain, hail, &c. Second, that water cannot be had from the rock which underlies this Island. Neither of these assertions are at all true. Rain is not the only, nor perhaps more than the minor source of water to be had from any well of importance which goes no further than the face of the rock. Every observer in our country knows that all the important springs issue from the fissures or chasms of rocks. Springs of this description possess

and maintain two notorious qualities. First, an equal delivery of water during all seasons of the year. Secondly, that their temperature is immoveable in all weather. Wherever there is rock, there inevitably is water. And when the rock is covered with a depth of sand or clay, the next layer to the face of the rock is generally a coarse gravel mingled with tolerably round stones, and very frequently is found on reaching the face of the rock, a fine spring of pure rock water, and why? because from the upper fissures of the rock the natural rock water is poured out, and this coarse gravel and stones present an easy passage over the surface of the rock, and in many instances over the top of the earth where it is met by the boring. This I have tested in many instances; one of which I will mention, and perhaps a more curious, instructive, and conclusive cannot be referred to.

I was employed to bore a well in the Washington Market, in this city, and a more unfavourable spot to expect pure water could hardly be selected. I passed down through rubbish, filth, dock-logs, &c., till I met the natural river beach of sand and shells. I next passed through a thick strata, as the President of the Lycium would call it, but as we mechanics name it a bed of coarse gravel and an abundant supply of salt water. This continued for about sixty feet, when I met a bed of compact tenacious clay, of about twelve feet thick, when I struck on some sand and gravel, I met the surface of the rock and then found a supply of pure rock water, equal to the

mountain springs. This boring I very effectually secured with cast iron tubes, which completely excludes the impure and salt water, and remains permanent and excellent, to the refutation of the unanimous opinion of the Lycium faculty.

I could mention a number of other wells I have bored in this city and elsewhere, showing that there is other than rain or surface water to be had by boring to the face of the rock. Nothing is more wonderful to the curious observer than the unconfused and effective separation caused by the different beds or layers of compact clay of a few feet thick, furnishing a complete barrier between the salt and fresh water. The next position of the Lycium men is, that water cannot be had by boring the rock. I say it can—for this plain and unscientific reason, because it always has been obtained, and most abundant, in all well directed attempts for that purpose. I think I have shown that the best supplies of water are always those issuing from rocks, and every man knows it that knows any thing about the geology of his country.

At New-Hope, Pennsylvania, a constant spring issues out of a rock so abundantly, that it supplies water power for several mills and factories in a short distance, and then falls into the Delaware river. Besides this I have seen many others nearly similar.—And Spafford's Gazetteer mentions several in this state that afford mill-power within a very short distance from where they issue, and some of them are issuing from the primitive rock, if granite is primi-

tive, for I have viewed them myself. If, therefore, water can be had from the rock, Lycium wisdom cannot deny the superiority of the supply. Having been all my life a uniform observer of rocks, I find independent of science, that they are separated one from another by fissures, and in those fissures below a certain depth there is always a constant and forcible supply of pure water.

I assert this on the positive experience of constant experiment for years past. It is not for me, a plain mechanic to say why it is so ; some of the science people say, that fissures are to the rocks as veins are to the animal body or pores to vegetables, and necessary for their continuance and preservation. Bore where you will you must meet them, and the only risk is that at one point or place you will meet them sooner than at another, from the unequal thickness and shape of the rock. But the veins you must strike as sure as you pass from one rock to another. And as experience proves the interior of the earth to be all rock, it is therefore impossible to miss rock sooner or later in all places whatever ; and in those fissures, as I have before stated, there is always water. I know this, because in boring the rock two consequences inevitably follow the striking of a vein ; first, the boring tools fall, and the depth of the fall is the extent of the vein ; Secondly, the water instantly rises proportionably to the size of the vein struck. Having established the fact that water can be obtained by boring, and that of the purest and softest quality, it only

remains to be ascertained whether water can be had in a sufficient quantity to supply this city.

I say it can : as I have bored several wells in the Gneiss rock of this island with nearly the same results attending them all ; therefore to me, further proof is not wanting. I will name one of these rock wells that the reader may judge. I have bored a well for the Manhattan Company at the corner of Broadway and Bleeker-Street ; I made and sunk down a wooden curb of twelve feet in diameter to the rock forty-four feet in depth, when I met with a thin bed of clay, then coarse gravel, and stones next to the top of the rock, with a copious flow of good water which rises to about fourteen feet high, and so remains all weathers and seasons. Then inside of the curb I have bored a hole in the rock of the following dimensions : I first made a hole ten inches diameter and two feet deep, and put in a cast iron pipe which I secured water tight and reaching above the water in the well ; I then bored a two and a half inch hole four hundred feet deep in the rock, from which the water rises about nineteen feet above the face of the rock in the pipe, at the rate of thirty gallons per minute, which I ascertained by a pump ; and it rises five feet higher than the water stands in the well. Now, this well alone, by fair calculation, will yield about one third of what the present inhabitants of this city would take if conveyed to their doors in pipes.

Now let me say a few words for the benefit of the Lycium people, as they have taken considerable pains

to describe those wells sunk as they say in the rock, in the rear of the City Hall. Now as the Lycium men are determined to make those wells mineral, I must explain the reason why they are so. First, the water in these wells is surface water, beyond a doubt; therefore, if the water is mineral, the cause is apparent when we see so much urine spilt in that neighbourhood. But the gentlemen say that urine sweetens water. Now if that is a fact, I would just ask how it is possible for the water to be hard where there is such copious supplies of this corrective urine.

I bored those wells, and they do not extend to the rock; they are from eighty to ninety feet deep, and have been wholly ruined by an ill timed economy.—They being bored through sand and coarse gravel, of course required to be well secured with pipes. The proper description could not be had at that time in this city, for less than three dollars per foot; but they were of an excellent quality. The corporation were informed that they could be obtained in Philadelphia for one dollar and forty cents per foot; the saving was obvious, and they were purchased there. Now mark the result.—They were so thin that they were a sort of mechanical curiosity, totally unfit to bear the pressure or operation of the heavy tools required in constructing the wells. Holes were broken in them in putting down, through which the surface water mingles with the good water below, and thus we see the whole expense has been thrown away and my reputation injured by the experiment.

With my boring as with all new undertakings, much practice is required for a perfect understanding; there was some of my first efforts spoiled either by the penuriousness of the employer, or by the negligent management of my agents. Some future day I purpose giving a more detailed account of the wells bored by me in different parts of the country, showing, most conclusively, that good water may be had in most all places of our country by boring earth and rocks, and securing the wells with cast iron pipes, that the top and impure waters do not mix with, and spoil the pure water to be obtained from the lower or more central springs.

LEVI DISBROW.

86 Bleecker-Street.

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