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“WITCHING” FOR WATER AND OTHER THINGS.

By J. T. LOVEWELL, Topeka.

FROM time immemorial, at least for hundreds of years, there has existed a widespread belief that certain persons have the ability to discover underground streams of water through the agency of a forked twig of witch-hazel, peach or willow, which, held in a certain way, is moved downward on passing over a subterranean stream or body of water.

The forked twig is not essential, for a watch, suspended by its chain, or any heavy body similarly supported pendulum-wise, will, it is said, set up vibrations on being carried over subterranean water. We had in Topeka a believer in water-witching, who found his carriage whip held by its slender end was an effective indicator of water, bowing down under its influence. The common name with us for persons who thus locate wells is water-witches. In England they call them dowsers or dippers, while in France they are termed *sourciers*, or discoverers of sources. The Germans have a term with similar meaning, *wasser finders*. Their business is important enough so that we may call it a trade, to which is added generally the prosaic occupation of well digger. They commonly are persons with little pretension to culture or scientific knowledge, and it is surprising how many who want a well dug are willing to contribute a fee for witching it. They may not admit a belief in the witch-hazel, but justify the practice by saying that everybody knows in digging a well it makes a great difference where you put it, and these diggers by long experience can tell the best place by general appearance of the locality or by the divining rod, it matters not which, and so they earn their fee.

We propose to examine the validity of these claims of the water-witches with the candor due to many people of acknowledged ability and integrity who believe in them. There is a great deal of mystery in the construction of this earth on whose surface we live. We can not penetrate it more than about one mile, nor can we rise above it more than about five miles. Geology enables us to guess more or less closely what is the construction of this thin shell less than one ten-thou-

sandth part of the diameter of the earth. The seas, lakes and rivers send up into the air their tribute of vapor, which is finally precipitated upon the earth and is carried by gravity back to Mother Ocean. Part of this precipitation soaks into the soil, as we say; it settles down, saturates the surface deposits and the rocks below, and finally reaches a ground-water level where it never dries out, and this is the layer which our wells must penetrate. Gravity still acts upon the water at this level and it still continues its onward journey to the sea.

There are very likely rifts in rocks where are underground rivulets and our wells strike some of them, but more often the movement is a percolation through gravel and sand where capillary forces come into play, modifying and retarding the flow. Most wells simply enter this porous stratum and in no proper sense do they tap a flowing stream.

They only act as reservoirs and gather up the water as it flows into the cavity of the well. In some instances water will come into a well which at first appears to be dry, and after a time there will be a supply of water sufficient for domestic use. This means that the flow of water into the well cavity, at first imperceptible, after a time becomes stronger as obstructions dissolve out and is sufficient for the demands of the well. With these facts before us with reference to the sources of water in our wells, we may consider the pretensions of the source finders. It is evident that water may be found almost anywhere in the crust of the earth if penetrated to the ground-water level, but the question is, Can the favorable or unfavorable place for a well be discovered by the divining rod? It is claimed that there is a sort of attraction of water upon the rod but this is not manifested except in the hands of persons of peculiar temperament. This exception is the stumbling block in the way of any accurate tests. It introduces a psychological inquiry and begs the question if we are to decide it by the established principles of science.

It would seem that the first question to settle is whether such discoveries are actually made by the means employed, and here we are met with abundance of conflicting testimony. Many people of good faith and intelligence have asserted that water has been found in this way much oftener than the doctrine of chance would justify, and yet just the same evidence may be found for table tipping, clairvoyance, "spirit rappings," etc.

When the French scientists asked Franklin to explain why a fish swimming in water loses its weight that philosopher wisely asked if the fish really did lose its weight, and testing by experiment they found the fish weighed just as much in water as out of it, and there was nothing to explain.

So when we investigate the witch-hazel our first inquiry should be whether it is drawn down when passed over a stream or body of water. Our test is not quite so simple as was the case with Franklin's fish. In the first place it costs considerable to verify by digging and the chances are that we shall find water anywhere. In the second place the "witch" must be a person of peculiar temperament, and so we have a psychological problem thrust upon us and must argue with spirit rappers, clairvoyants, table tipping, levitation, and witches pure and simple, such as Cotton Mather, Luther, and many others have believed in. All who enter this realm may as well abandon science. Nevertheless experiments have been made in Germany, France, and in this country, with the result that no valid proof has been found to substantiate the claims of the water-witches, and few scientists give them any credence.

But there is another phase of the subject which "queers" the whole proposition. It is claimed that the divining rod can discover oil and gas just as certainly as it reveals water. It can also show where are deposits of lead, zinc, and the precious metals. This, of course, opens up a profitable trade to the "fakirs," who never lack victims.

The credulous believers try to silence their critics by quoting the old Shakesperian adage, "There are more things in heaven and earth than are dreamed of in your philosophy." Then they talk about electricity, radium, the constitution of matter, as if these puzzles of science were excuses for belief in "old wives' fables." My conclusion is that all the claims of water-witches are delusions unworthy scientific consideration.