

Dowsing Rods

At <http://www.energygrid.com/spirit/2005/02ap-dowsinggod.html>

Andrew P. writes:

“WHETHER WE ARE SEEKING water, ley-lines, health or the answers to specific questions, dowsing has proved invaluable through the ages for connecting ourselves to a huge source of information — our own subconscious. Dowsing allows our conscious minds to draw on the greater perspective and wisdom of the unconscious; it presents a communication channel by which our subconscious can express itself to our conscious minds in as clear and unambiguous a way as possible.

Maybe, but there isn't a shred of evidence to support this. There is however, evidence that Dowsing is indicating something rather mysterious. The whole effect of dowsing in general was studied scientifically at a barn in Germany, known as the Munich Experiment.

http://www.nhn.ou.edu/~johnson/Education/Capstone/Ethics/Dowsing_F2001.ppt

The meat of the article is essentially the researchers came to the conclusion that the dowsing phenomenon is real. The realness of it is not based on subconscious or collective hallucination, but in the response of dowsing rods without human interaction to what appears to be a form of unknown energy flow. It has been proven time and time again that dowsing requires no special talent or personal power. You can try this yourself. Take two wire coat hangers and untwist them. Cut away the areas you can not straighten with pliers, and cut them to the exact same length. Take the two straight pieces of wire and bend one end of each with a 90° bend, creating a “handle about 8” long. Next take a soda straw and cut it in half. Insert the handles through the straws and hold them about 6 inches apart, with the rods pointing out in front of you. Walk around in your yard. You will find an area where the rods converge, or where they move apart, almost magically, regardless of what your hands are doing. If you are like me, you took your fertilizer broadcaster and fixed the two rods to either side of the handles, and pushed it around the yard to find an area that affects the rods. The idea is to remove hand movement from the mix entirely. It's a lead pipe cinch at some point, the rods will move as if by themselves. Magic? Hardly. Paranormal? No way!

Here is a sensible rebuttal to the research:

<http://www.csicop.org/si/9901/dowsing.html>

Additional scientific based research has been performed, but they seem to center around the person as the enabler, not the device. A good example of this research is here:

<http://www-sop.inria.fr/agos-sophia/sis/dowsing/dowsdean.html>

I have always thought that the rods were responding to a directional magnetic field. However, I was recently watching a show on UFO's reported around prehistoric sites, as well as trying to track "ley" lines with dowsing. The researchers used a magnetometer to measure the field present when the rods reacted. According to them, there was no magnetic field present. This seemed to shoot my theory in the foot. Now my curiosity was peaked. What DOES cause the reaction in Dowsing rods?

It has been proven by many researchers including James Randi that dowsing is unreliable in finding wire, metal objects and water. On this note I would tend to agree, except now there seems to be new research to the contrary, as reported in this article in Popular mechanics:

<http://www.popularmechanics.com/science/research/1281661.html>

Some proposed explanations:

Most serious scientists scoff at the idea of dowsing being anything other than fantasy. But some researchers have weighed in on the subject offering possible causes for the dowsing phenomenon.

Recent experiments have been conducted into a phenomenon of itself, called *electroreception*. Electroreception is the biological ability to receive and make use of electrical impulses. It is much more common among aquatic creatures, as water is a far superior propagation medium than air. Electroreception in nature is primarily used for electrolocation, or the ability to use electric fields to locate objects.

I have discussed this concept with a friend who is a marine biologist. We now know that primitive fish such as sharks, rays, lampreys, lungfish, coelacanths, and sturgeons have electroreceptive senses which are believed to be derived from the lateral line sense. However, electroreception is absent in most relatively modern fish except for the catfish, and the electric eel. The sense operates in two main modes; active and passive. Active electroreception relies upon tuberous electrororeceptors which are sensitive to high frequencies (20-20,000 Hz). Passive electroreception utilize ampullary receptors which are sensitive to low frequencies (below 50 Hz); Ampullary receptors incorporate a jelly filled canal leading from the sensory receptors to the skin surface while tuberous receptors lack a canal but show a loose plug of epithelial cells which electrostatically couples the cells to the environment.

Active electroreception

In "active" electroreception, the animal senses its surrounding environment by generating electric fields and detecting anomalies in these fields using their electroreceptor organs. This ability is vital in murky water, where normal visibility is low.

The weakly electric fish, which generates very small electrical pulses using an organ in the tail consisting of two to five rows of modified muscle cells (electrocytes) is an example of active electroreception. They can actually discriminate between objects of differing resistance and capacitance values, which many marine biologist believe may help them in identifying an object. The weakly electric fish kicks it up a notch however, in that they can also communicate with each other via modulating the electrical waveform they generate; this is called "electrocommunication". Active electroreception generally is short ranged, only about one body length. An interesting anecdote is that objects with an electrical resistance similar to that of water are nearly undetectable by these animals.

Passive

An animal that is able to employ "passive" electroreception senses the weak bioelectric fields generated by other animals. Sharks and rays (also an ancient animal family) are typical examples of creatures that employ this phenomenon. Since there isn't a shred of evidence to indicate humans have this ability, and unless your dowsing is being performed by a lungfish, I think it is safe to say that this is most likely NOT a contributing factor to dowsing.

Another proposed possibility is *Magnetoception*. Magnetoception is the ability to detect changes in a magnetic field to perceive direction or altitude and has even been postulated as a method for animals to develop regional maps. This is pretty amazing stuff when you think about it. It is most commonly observed in birds, (another ancient animal type) though it has also been noted in many other animals including insects such as honeybees and amphibians, specifically turtles.

Researchers have identified a probable sensor in pigeons as a small, heavily innervated region of the skull, which contains biological magnetite. Interestingly I found out that Humans have a similar magnetite deposit in the ethmoid bone of the nose, and there is some evidence this gives humans some magnetoception. This would explain a lot of things in my book, as it offers a scientific explanation for human conditions such as Electromagnetic Hyperactivity Sensitivity and Disorder.

Although there is little dispute that a magnetic sense exists in most birds (it is essential to the navigational abilities of migratory birds), it is a controversial and not well-understood phenomenon. To compound the issue, certain types of bacteria called magnetotactic bacteria, and fungi are also known to sense the

flux direction, through organelles known as magnetosomes. In bees for example, it has been observed that magnetite is embedded across the cellular membrane of a small group of neurons. The theory is that when the magnetite aligns with the Earth's magnetic field, induction causes a current to cross the membrane which depolarizes the cell. Now this has some real possibilities in the field of paranormal research AND dowsing.

A telluric current (from Latin tellūs, "earth") is an electrical current which moves underground or through the sea. Telluric currents result from both natural causes and human activity, and the discrete currents interact in a complex pattern. The currents are extremely low frequency and travel over large areas at or near the surface of the Earth.

Telluric currents are phenomena observed in the Earth's crust and mantle. In September of 1862, an experiment to specifically address Earth currents was carried out in the Munich Alps (Lamont, 1862). The currents are primarily induced by changes in the outer part of the Earth's magnetic field, which are usually caused by interactions between the solar wind and the magnetosphere or solar radiation effects on the ionosphere. Tellurics also result from thunderstorms. Telluric currents flow in the surface layers of the earth. The electric potential on the Earth's surface can be measured at different points, enabling us to calculate the magnitudes and directions of the telluric currents and thence the Earth's conductance. Telluric currents will move between each half of the terrestrial globe at all times. Telluric currents move equator-ward (daytime) and pole-ward (nighttime).

The field varies in time and over the frequency range 0.001 to 5 Hz (Krasnogorskaja & Remizov, 1975). Electric potential gradients caused by telluric currents are of the order of 0.2 to 1000 volts per metre. (Krasnogorskaja and Remizov, 1975; Vanjan, 1975). At any location, the current density is a direct function of the interhemispheric currents and their potential gradients. It has been estimated that telluric currents overall during twelve hours in one hemisphere are in range of 100 to 1000 amperes. This intensity of telluric currents is sufficient to drive the air movements that create atmospheric electricity, from the global fair weather charge accumulator to thunderstorm bases.

Both the telluric and magnetotelluric methods are used for exploring the structure beneath the Earth's surface (such as in industrial prospecting). For mineral exploration the targets are conductive ore bodies. Other uses include exploration of geothermal fields, petroleum reservoirs, fault zones, ground water, magma chambers, and plate tectonic boundaries. Telluric currents can be harnessed to produce a useful low voltage current by means of earth batteries. Such devices were used for telegraph systems in the United States as far back as 1859.

Quantum biology is a speculative and interdisciplinary field that seeks to link quantum physics and the life sciences. Essentially, it is an attempt to study biological processes in terms of quantum mechanics (QM), using quantum theory

to study the structure, energy transfer and chemical reactions of biological molecules in an effort to apply quantum principles to macroscopic systems as opposed to the atomic or subatomic realms generally described by quantum theory. Quantum biology uses mathematical computation to model biological interactions in light of QM effects

Some of the biological phenomena that have been studied in terms of quantum processes are the absorbance of frequency-specific radiation (i.e., photosynthesis and vision); the conversion of chemical energy into motion; magnetoreception in animals and brownian motors in many cellular processes. The field has also been active in researching QM analysis of magnetic fields and bird navigation, and may possibly shed light on Circadian rhythms in many organisms.

In a scientific study in Munich, five hundred dowsers were initially tested for their "skill", and the experimenters selected the best 43 among them. These 43 were then tested in the following way. On the ground floor of a two-story barn, water was pumped through a pipe; before each test, this pipe was moved in a direction perpendicular to the water flow. On the upper floor, each dowser was asked to determine the position of the pipe. Over two years, the 43 dowsers performed 843 such tests. Of the 43 pre-selected and extensively tested candidates, at least 37 of them showed no dowsing ability. The results from the remaining 6 were said to be better than chance, resulting in the experimenters' conclusion that some dowsers "in particular tasks, showed an extraordinarily high rate of success, which can scarcely if at all be explained as due to chance ... a real core of dowser-phenomena can be regarded as empirically proven"

Five years after the Munich study was published, scientist Jim T. Enright contended that these results are merely consistent with statistical fluctuations and do not demonstrate any real ability. He noted that the best tester was on average 4 millimeters out of 10 meters closer to a mid-line guess, an advantage of 0.0004%. The study's authors responded but Enright remains unconvinced.

More recently, a study was undertaken in Kassel, Germany, under the direction of the Gesellschaft zur Wissenschaftlichen Untersuchung von Parawissenschaften (GWUP) [Society for the Scientific Investigation of the Parasciences]. The three-day test of some 30 dowsers involved plastic pipes through which a large flow of water could be controlled and directed. The pipes were buried 50 centimeters under a level field. On the surface, the position of each pipe was marked with a colored stripe, so all the dowsers had to do was tell whether there was water running through the pipe. All the dowsers signed a statement agreeing this was a fair test of their abilities and that they expected a 100 percent success rate. However, the results were no better than what would have been expected by chance.

Some researchers have investigated possible physical or geophysical explanations for dowsing abilities. For example, Soviet geologists have made

claims for the abilities of dowzers, which are difficult to account for in terms of the reception of normal sensory cues. Some authors suggest that these abilities may be explained by postulating human sensitivity to small magnetic field gradient changes.

One study concludes that dowzers "respond" to a 60 Hz electromagnetic field, but this response does not occur if the kidney area or head are shielded.

A review of archaeological studies in Iowa suggests that dowsing is ineffective at finding unmarked human burials

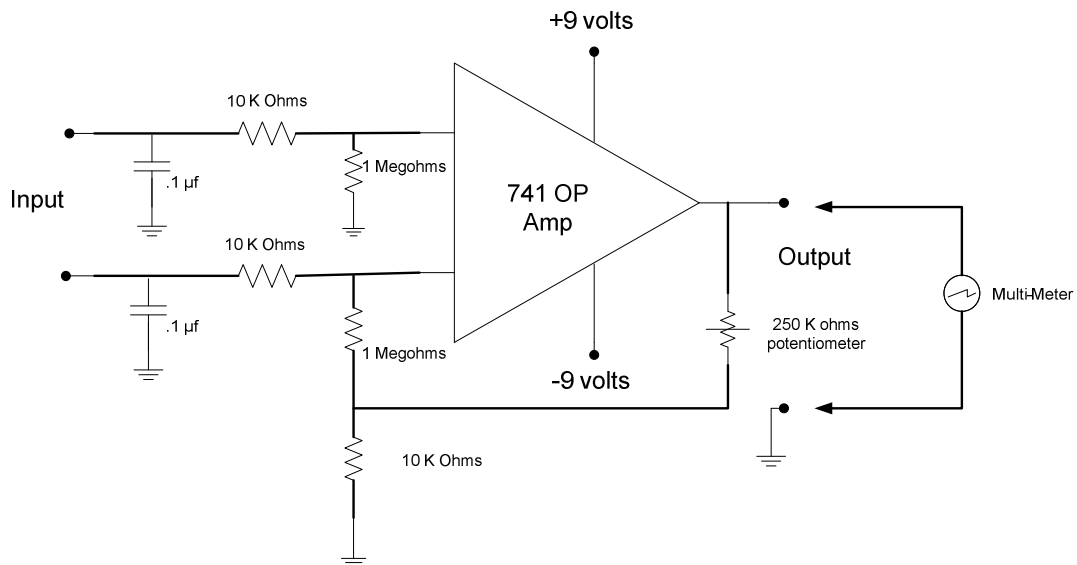
However, no one has seemed to be able to satisfactorily explain what the rods are detecting, since they can be used supposedly to detect everything from metallic ore to water to ghosts! Since I believe any phenomena can be measured, as long as we know what we are measuring, I felt the urge to find what indeed a dowsing rod detects. So...to the LAB!

The first order for the experiment with dowsing was to attempt to find a way to *artificially* move the rods in a static mount, to determine what natural means could be used to trigger the movement. To do this, I used a micro vise, a device used to hold printed circuit boards in a position to allow inspection.



Using the alligator clips, I was able to set up my dowsing rig in a static position that was stable, and would isolate the rods from motion thus eliminating that as a cause. Now the fun could begin.

Looking objectively at dowsing rods of the metallic variety, they are a simplistic example of an electroscope. Specifically, my example of the bent coat hanger dowser is in fact a variation of Gilbert's straw needle electroscope. There is a current theory that explains the dowsing rods are charged with static electricity from the dowser's own body. Whether this is true or not is easy enough to determine, as static electricity can be measured with a multi-meter. To measure this voltage I would prefer to use a static electricity detector, such as ones offered by Kapital instruments. Using this device, we can determine the surface static electricity of the dowser's hands. Another method prescribed by some researchers, would be to use a multi-meter to measure the potential between the hands of the dowser, utilizing a differential amplifier across the inputs to the voltmeter.



The amount of voltage measured should vary depending on the person, the temperature, the humidity and the environment. In this matter, the dowser "charges" the rods. The idea behind this theory is the higher the static potential, the greater the success rate as a dowser.

This would indicate that a rod charged positively should move in the dowser's hand to line up parallel to a negatively charged energy flow. A rod charged negatively should remain perpendicular to a negatively charged energy flow. This is attributed to like charges repel, while unlike charges attract. This would indicate that two rods are not required for dowsing, and on the show I watched the other evening, the dowser used only one rod. Taking this a bit further, when

two rods are used, and they cross, the proposed explanation is one of the rods is being moved to line up parallel with the charged energy flow. The other rod is moving to line up parallel to the first rod. A second reason offered for the two rods crossing is that of an alternating current source, such as a pipeline or buried cable. These are usually buried shallow and are conducting ground currents as the path of least resistance. Again, this is easy enough to test!

An explanation for why conventional devices cannot detect these positive and negative charges is due to the propagation pattern in which the charged object gives off its lines of force, theoretically in all directions. Most instruments being omni-directional devices would not supposedly detect the small incremental changes in voltage along the earth's surface. But the bent rods being unidirectional devices can only turn to line up parallel to the lines of force, when they are directly above the lines of force.

Really?

What about other dowsing devices?

According to this theory, the willow crotch, perhaps the most common type of dowsing device from the early history of dowsing and still in use today, begins to respond to the energy field prior to reaching the object, having its greatest amount of pull directly over the object (could the willow tree house a natural energy amplifier?). The theory goes on to state that after dowsing with the willow crotch, the crotch itself can be dowsed with the bent rods, which should indicate a charge left on each arm of the crotch, one positive and one negative.

Again, this is easy enough to check out.

Also according to this theory, a metallic pendulum attached by a wire or metallic chain will take on the charge of the user's hand. A pendulum held by a nonconductive string will take on the charge of the last hand that touched it. The pendulum when rotating above an object of a similar charge or field of force, will continue to rotate and eventually swing back and forth perpendicular to the object. When the pendulum rotates above an object of the opposite charge it will eventually start to swing back and forth parallel to the object or field being dowsed.

Fascinating! However, when facing the prospects of this theory, I am from Missouri. I have to see it to believe it. While items in motion in air will accumulate a static charge based on friction derived from the movement of air molecules across its surface, i.e. a human's skin as well as the dowsing device, I am not sold on the idea that static electricity is the key to this phenomenon, but I do hold out that it certainly can be a contributing factor.

Ok, so first we set up our rods inside small plastic tubes and clamp them about 4 inches apart in the PC board vise. We then mount the device on a mobile object, in my case, the fertilizer broadcaster I use in my yard. This is accomplished by the use of some scrap plywood and some carpenter clamps. I assembled an "L" shaped platform and clamped it to the broadcaster, then clamped the vice and rods to the "L" platform. Now we are ready for a dowsing safari.

I first moved around the yard and focused on areas I knew should be detectable, such as buried gas main, water pipe, sewer etc. Incredibly, the dowsing rods responded when the path of travel carried them over these items. So unless the energy in my hands of subconscious manipulated the rods via osmosis, the rods were responding to something relative to the buried pipes. Now, time to expand the scope. I carefully set up a grid search pattern and covered my entire back yard. My neighbors thought I was on drugs most likely. Consequently I got several hits where there were no apparent items to react to.

Until I dug down a few inches.

I found a rusty bolt, a quarter, a piece of steel screen, a Balentine Beer can, and a pair of tweezers.

At this point, I was stymied. What WAS the dowsing rods reacting to? Metal? Magnetic variations? Static electricity? Time to return to the lab.

Inside the lab, I set the dowsing rods up in a controlled environment (no drafts except for those created by my movement) and one strong source of EMF, my electrical service box. The rods reacted to the electrical service. Next I took a fairly strong magnet that I use for picking up nails and screws off the floor to clean up after projects. No surprise, the rods responded to the magnet because they were ferrous in make up. The same held true for electromagnets. All of these things caused the rods to respond. But I was not firmly convinced that EMF alone or magnetic fields were the culprit to explain the dowsing operation. Time to go back outside.

Now I turned on the garden hose. The rods detected the garden hose, which was made from a rubber type of material. The only thing that could cause this to my knowledge is EMF. So, are metal dowsing rods a primitive EMF detector? Does the length of the rod determine the frequency response?

We will continue our experiments and keep you posted on this fascinating and mysterious apparatus.