

JOURNAL OF THE AMERICAN SOCIETY

FOR

PSYCHICAL RESEARCH

Vol. XLV
1951

AMERICAN SOCIETY FOR PSYCHICAL RESEARCH, Inc.

880 FIFTH AVENUE

NEW YORK 21, N. Y.

Dowsing: A Field Experiment in Water Divining

L. A. DALE, R. M. GREENE, W. MILES, G. MURPHY,
J. M. TREFETHEN, AND M. ULLMAN, M.D.

Introduction

As our readers are well aware, the alleged ability of certain individuals to discover underground water (and other useful things) has been the subject of investigation for many decades, with results which are very intriguing, very complicated, and very difficult to interpret.

Two papers on the history of water divining in the United States were recently published in this JOURNAL (1, 2) and this American work is but a fraction of the historical material obtainable for the world. The standard study of the problem by Barrett and Besterman (3) gives extensive documentation and there are likewise many studies in the languages of the European continent.

It is not our purpose in this report to present an evaluation of the evidence for and against the general claims of water diviners or of the conclusions reached by other investigators. Our small study is based on a very limited objective and we should not wish to be interpreted as believing that we have contributed any findings which radically change the over-all research situation.

As a result of our studies of the research literature and some slight contact with water diviners in the Northeastern United States, we came to the conclusion that one type of urgently needed investigation had not as yet been undertaken and that we should devote all our energies to filling in this gap. This was the problem: Can water diviners find water under conditions in which the professional geologist is unable to do so? We needed, of course, to define this problem in such a way that both the diviners and the geologists could work in a straightforward and objective way, so that the accuracy of their indications regarding the presence of water could be checked without material error. It would only be necessary to choose a terrain without surface water, wells, etc., which would betray the presence of underground water and in which digging or drilling could, without great expense, categorically prove the correctness or incorrectness of the indications. As will be noted below, however, even this simple experiment could not be conducted in ideal form through scarcity of funds. We ought really therefore to reformulate our question in this fashion: Is it feasible, in the

course of a few days, and without large expense for drilling, to demonstrate the success of water diviners under conditions in which success is not achieved by qualified geologists?

The Problem

The first thought of conducting the present study occurred to us when, in the summer of 1948, Mr. Kenneth Roberts invited some of us to observe a group of dowsers at work on his farm in Kennebunkport, Maine. On that occasion (which, for various reasons, did not permit us to reach any conclusions about the reality of the water-divining ability), we began to wonder whether somewhere nearby in Maine there might not be a terrain permitting the direct comparison of diviners with geologists. Two of us (JMT¹ and GM) discussed the question whether a rather level and sandy region could be found in southern or eastern Maine where the situation was completely "blind" as far as surface indications of water were concerned. A tentative decision was made to recruit a group of diviners and to check their accuracy.

During the winter of 1948-1949 a correspondence between JMT and GM led to the decision to utilize a tract of land near Liberty, Maine, containing no wells or surface water, sufficiently level to be walked on easily even when blindfolded, and quite sure to contain water at a depth which could feasibly be ascertained by driving down a pipe. It must be explained at once that it would have been much more dramatic to have chosen a very complex terrain involving great irregularities and huge rock formations; under these conditions, however, it would have been impossible to have tested the dowsers' indications. We would have spent our entire research appropriation, perhaps drilling at one point, and would never know whether the water struck at a great depth had been responded to in some paranormal fashion or merely reached as the result of a lucky shot. We had to have a region in which a number of diviners could work and where the claims of each could be objectively tested without great expense. It must be remembered that if one allows oneself to go down to depths such as 150 or 200 feet, one is almost sure to strike water at any point in Maine, or indeed at any point in the Northeastern United States—a fact which calls in question the usual divining procedure in which one follows the diviner's indication and finds good water at distances of 50 or 100 or 150 feet without having specified in advance the depth at which water will be found.

Having chosen the general location of our site and having ordered

¹ Professor of Geology, University of Maine.

standard equipment adequate to locate and pump water up to a distance of 25 feet beneath the surface, we chose the time—the first week in August—in which relative drought insures the absence of surface water and in which the water table changes but little from week to week. We then sent invitations to a few water diviners in the area about whom we already knew and advertised in four Maine newspapers (the *Kennebec Journal*, the *Waterville Morning Sentinel*, the *Bangor Daily News*, and the *Belfast Republican Journal*), using the following form:

WATER DIVINERS—Dowsers, those who can find water with forked stick, are invited to take part in search for water in open country near Liberty, Maine, on August 4th, 5th, or 6th, for the benefit of scientists interested in this power. Travel expenses and \$12 for the working day available; also prize for outstanding success. Those interested write to: Gardner Murphy, Ashland, N. H.

The responses began immediately to flow in to GM and he replied day by day, indicating a specific appointment at the Adams House in Liberty. Those who are interested in the sociology and folklore of the phenomenon may be impressed by the fact that replies from 130 diviners were received.

Using the principle "first come first served," we made appointments for the three-day period with as many individuals as we felt we could accommodate, and simply sent word to the others that we regretted our inability to make use of their services at the time. (Those interested in further research on divining may at any time borrow our list of names and addresses.)

As it happened, a few contenders failed to appear for their appointments. The actual number who went through the procedure was 27 (twenty-two men, four women, and one adolescent girl).

A week before the tests were run, JMT and GM visited Liberty, selected the exact site to be used, and arranged with a local resident who owned a truck to employ helpers for the driving of the pipe and the pumping of the water after the tests had been made. Since there was a well a few hundred yards from the site (completely hidden by trees) it was obvious that the depth of the water could not be more than ten or fifteen feet. It would therefore be possible accurately to check each diviner's indication as to depth of water (the surface being fairly level and the ground so soft that the water below the surface would be level rather than standing in pockets or flowing) and rate of flow by driving pipe down, ascertaining at just what point water was struck and pumping it out to find the actual number of gallons flowing per minute.

Procedure

LAD, RMG, and WM joined JMT and his helpers as field team while MU and GM cooperated in the task of meeting and interviewing the diviners who arrived—mostly by car—at Adams House for their appointments. MU and GM took turns in questioning the diviners according to the following form:

INTERVIEW FORM

Name:

Address:

Date:

Sketch of Dowsing History

1. Does water-divining ability run in the family?
2. How and when did you first hear that such an ability exists?
3. When and by whom did you first actually see it practiced?
4. When and under what circumstances did you yourself first try it?
5. Were you successful from the start?
6. Has your ability improved, remained the same, or lessened over the years?
7. Do you feel that your physical and/or mental states influence your ability?
8. What is your theory as to how water divining works?

Sketch of Life History

1. Place of birth (specify whether urban or rural)? Date?
2. Number of brothers and sisters (how many older, how many younger)?
3. Parents still living (if not, give cause of death)?
4. How many brothers and sisters still living?
5. As a child did you get along well with parents? With brothers and sisters?
6. What is one outstanding thing you remember about your father? Your mother?
7. As a child, did you have many close friends outside the family?
8. How much schooling have you had?
9. Did you enjoy school?
10. What was your favorite subject in school?
11. What was your favorite pastime or hobby as a child?
12. Were your parents church-goers?
13. Do you go to church regularly now? If not, did you do so at any time in your life?
14. What is your present occupation?
15. Have you ever had any other trade or occupation?

16. What are your hobbies or special interests at the present time?
17. Do you belong to any clubs, lodges, etc.?
18. What do you most like to listen to on the radio?
19. What is your favorite reading matter?
20. Are you married? If so, for how long?
21. Do you have children? If so, number, age, and sex.
22. Do you have many close friends?
23. Have you ever had any serious illnesses or accidents?
24. Do you dream often? Vividly?
25. Do you think that sometimes dreams may foretell the future?
26. Do you think there is such a thing as thought transference or mind reading or "mental telepathy"?
27. Do you think there is anything unusual about yourself that accounts for, or might be related to, your gift for water divining?

In spite of the formal questionnaire, the interviewing was actually quite casual. In the case of MU, there was reasonably systematic conversation relating to the backgrounds and interests of the diviners, and as a psychiatrist MU was able to acquire some impression of their personalities. In the case of GM, however, who was restricted by problems of meeting people who often came in batches and had to be put at their ease, the interviewing was much more sketchy.

After completion of the interview, either MU or GM drove the diviner to the experimental terrain, which was about a mile and a half away. Here he was met by LAD at a point some 200 yards from the actual testing ground. There was a heavy screen of evergreens between so that no diviner on leaving the car was able to see the testing ground. Before reaching a point from which it could be seen, the diviner was blindfolded by LAD and then led to the testing ground. Work was done first with blindfold, then without, the following "Field Record" being filled out in each case:

FIELD RECORD

Name:

Date:

Time expt. started:

Time expt. terminated:

Details about rod (with close-up photo):

I. WORK WITH BLINDFOLD

- (a) Method:
- (b) Number, intensity, form of rod-movements:
- (c) For each dip of rod, get specific reading on
 1. Depth in feet:
 2. Amount of flow (gallons per min.):
- (d) At end, ask subject to choose his best shot:

II. WORK WITHOUT BLINDFOLD

- (a) Method:
- (b) Number, intensity, form of rod-movements:
- (c) For each dip of rod, get specific reading on
 1. Depth in feet:
 2. Amount of flow (gallons per min.):
- (d) At end, ask subject to choose his best shot:

Most of the diviners brought their own sticks or rods with them; indeed, some of them brought several sticks. Others made use of sticks which they cut on the way or sticks provided by the experimenters. Tufts of grass, blueberry bushes, scrub growth and, at the lower edge of the terrain, small but thickly growing evergreens and other trees interfered somewhat with movement (see sketch of the terrain, Fig. 1). In a few cases, this caused stumbling. One individual was not asked to work blindfolded because of his arthritic condition, and one of the ladies became panicky and removed her blindfold prematurely. Two other diviners, because of advanced age or infirmity, were also excused from working blindfolded. It will be seen below that these circumstances could not have altered the findings.

There was, of course, no limit on the amount of time the diviner might spend since he could, in any event, walk back and forth until the rod turned. In point of fact, it did turn in every instance within a few moments and in most cases after just a few steps had been taken. As a rule, there were several points with blindfold and several points without blindfold at which the rod moved. The diviner was asked to select the "best" spot of those chosen with blindfold and the "best" spot of those chosen without it. Here again, we were governed by considerations of expense. We could not have driven the pipe and pumped out the water for every individual point for each of the 27 persons.

Each individual was asked in relation to his two "best" points how deep he thought the water was and how fast the rate of flow would be. The first question was answered in terms of feet and was apparently gauged in most cases by the vigor of the turning movement of the rod. Most of the diviners, however, were very reluctant indeed to say anything specific about the rate of flow at each point. They used expressions such as "good flow" or "strong flow" or "not much water" or "not enough for a well" and it required considerable persuading to get them to use the concept of number of gallons per minute. It was thought necessary, however, to try to obtain something specific about rate of flow which could be checked upon and which would serve to differentiate them from one another

- 1A Dowsers' location and number
- 1B Dowsers, blindfold
- 1 Observation hole number
- Boundary of test area

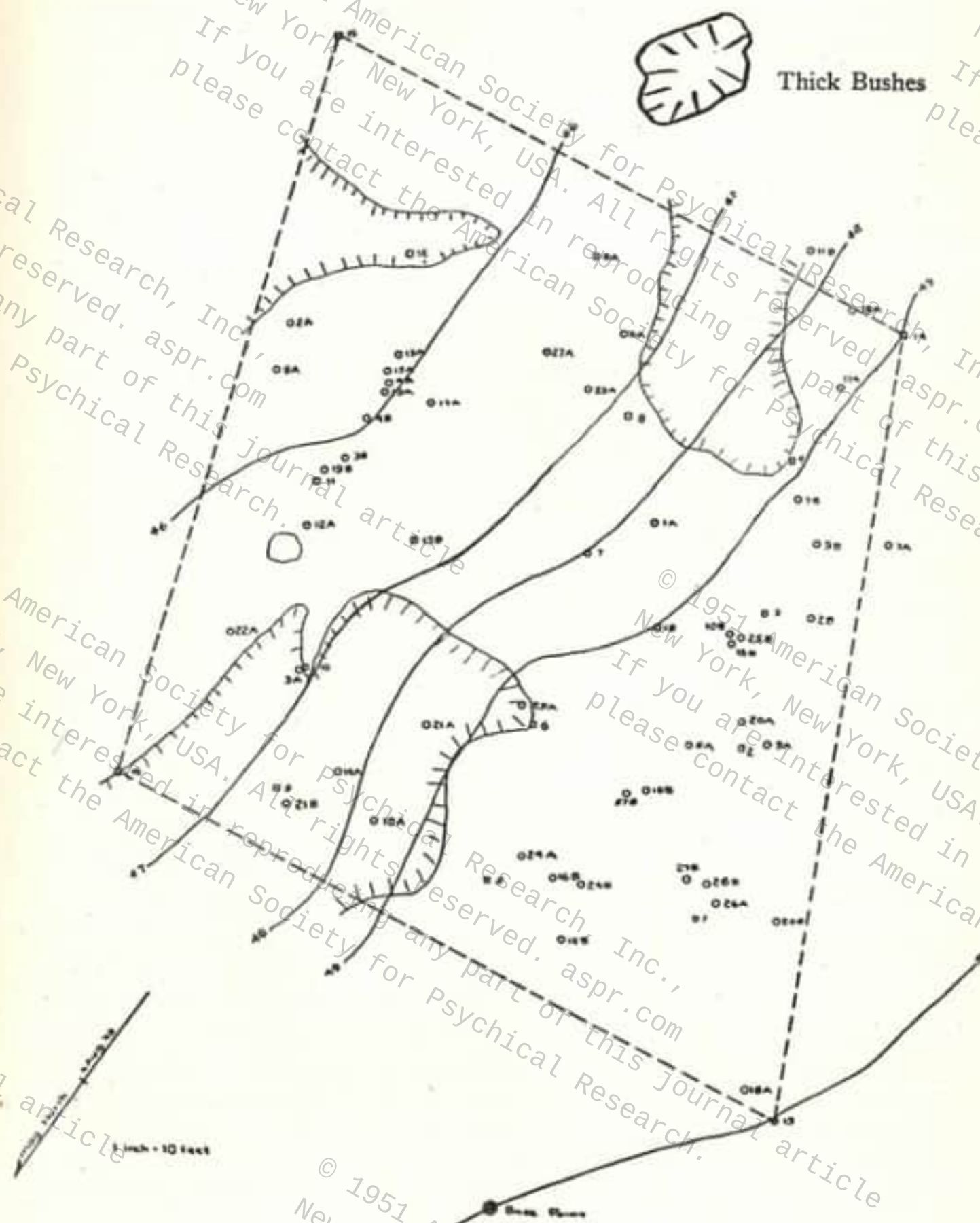


FIG. 1.
Site of dowsing experiment near Liberty, Maine.

in terms of accuracy. In two instances, it was impossible to get a specific estimate.

The attitude of the diviners to the testing seemed to be in all cases essentially positive. They did indeed quite properly object to the artificiality of the situation as they saw it, for it was hard to believe that anyone was actually planning a house and well in that field. The blindfold was frequently unpleasant, especially when the ground was bumpy or one ran into thickets. In spite of such minor difficulties, however, it was apparently the belief of all that the rod responded in its normal way to underground water.

Further light on the matter of the diviners' attitude is offered by the following considerations: When MU and GM asked the diviners about their own explanation of the movement of the rod, every person (with one doubtful exception) replied in terms of a physical force, usually conceived in terms of electricity, or some form of energy allied to electricity. Despite the fact that a few remarks about "psychic matters" were made in the course of the interviews, not a single diviner said anything about the kinds of interpretations which are current among parapsychologists, such as Barrett's belief that clairvoyant perception of water is followed by a motor automatism of hands or arms activating the rod. There did not appear to be a single individual who thought that divining was due to clairvoyant perception of water, or, on the other hand, to psychical action upon the rod in the form of psychokinesis. The universal interpretation was the physical interpretation rejected by Barrett. This interpretation was held apparently in the same way in which one holds one's beliefs regarding other chemical and physical forces. The diviners thought that divining was a physical phenomenon which was not as yet fully understood, but which was in the same general category with all the other phenomena of physics. Without exception, they recognized the prevalence of skepticism about the reality of divining ability, but they gave incidents in their own history which for them established its reality.

Incidentally, this belief on the part of the dowsers that they were dealing with physical forces, and their constant comparison of these forces with those which are known in radio and other modern expressions of electrical engineering, seemed to the research team to count strongly against the view that the dowsers were special kinds of people. Neither the interviewers nor the field staff saw anything to suggest that they were different from the general farm and small town population of the region from which they were drawn. It might be argued that they were at least people of very limited education. Against this point, however, it must be urged that one of the dowsers, a successful retail merchant, had gone through the University of Maine and had, as a matter of fact, been a classmate

of JMT's. Another in the group was also a college graduate and a highly successful business man. The fact that these people drove in good cars considerable distances tends on the whole to suggest relatively comfortable standards of living and the kind of leisure to "knock off from work" which is not found among workers or farmers at the lowest educational level.

The "Field Record Sheet" shown above was filled out by LAD for each diviner as he moved over the terrain, while WM took notes on his method of working, etc. Motion picture shots were taken by RMG of each diviner in action. After the dowser had chosen the best spots *with* and the best spots *without* blindfold, JMT's team, which included Mr. Stackpole, district water engineer of the U. S. Geological Survey, located the points by stadia measurement and plotted them on a large-scale map.

When the diviners returned to the hotel, GM asked them how they liked the test and paid them at the rate of \$12 for the experiment plus 5¢ a mile for the distance traversed from and to their homes. (In most instances, the diviner had to take the whole day off and it was arbitrarily decided that eight hours at \$1.50 per hour was fair compensation.)

Having completed the tests on Saturday, JMT and GM stayed over and made sure that the pumping crew understood the correct procedure and watched while pipes were driven, measuring in inches the depth to which a bob had to be dropped within the pipe to touch water. Likewise the pump removed the water at a rate timed with a stop watch so as to enable us to see just how fast the water flowed in. We aimed to measure the depth and rate of flow for one blindfold point and one non-blindfold point of each of the 27 diviners. Actually, however, various exceptions have to be noted: (1) Places where a boulder was struck. (2) Places where the point was so very close to another point already selected that there could not be a difference of more than an inch or two in the depth of the water. (3) Instances, as noted above, where the diviner did not wish to accept the blindfold. (4) Instances, also noted above, where we could not obtain from the diviner an estimate of rate of flow. (5) All blindfold holes not sunk because of exhaustion of funds.

Results

The results revealed by the driving of the pipe and the pumping as compared with the guesses made by the diviners are shown in Figs. 2 and 3. In these scatter diagrams it can immediately be seen that there is no general correspondence between the estimates and the actual facts. Neither in the case of the depth estimates nor in the case of the estimates of rate of flow is there any relation between

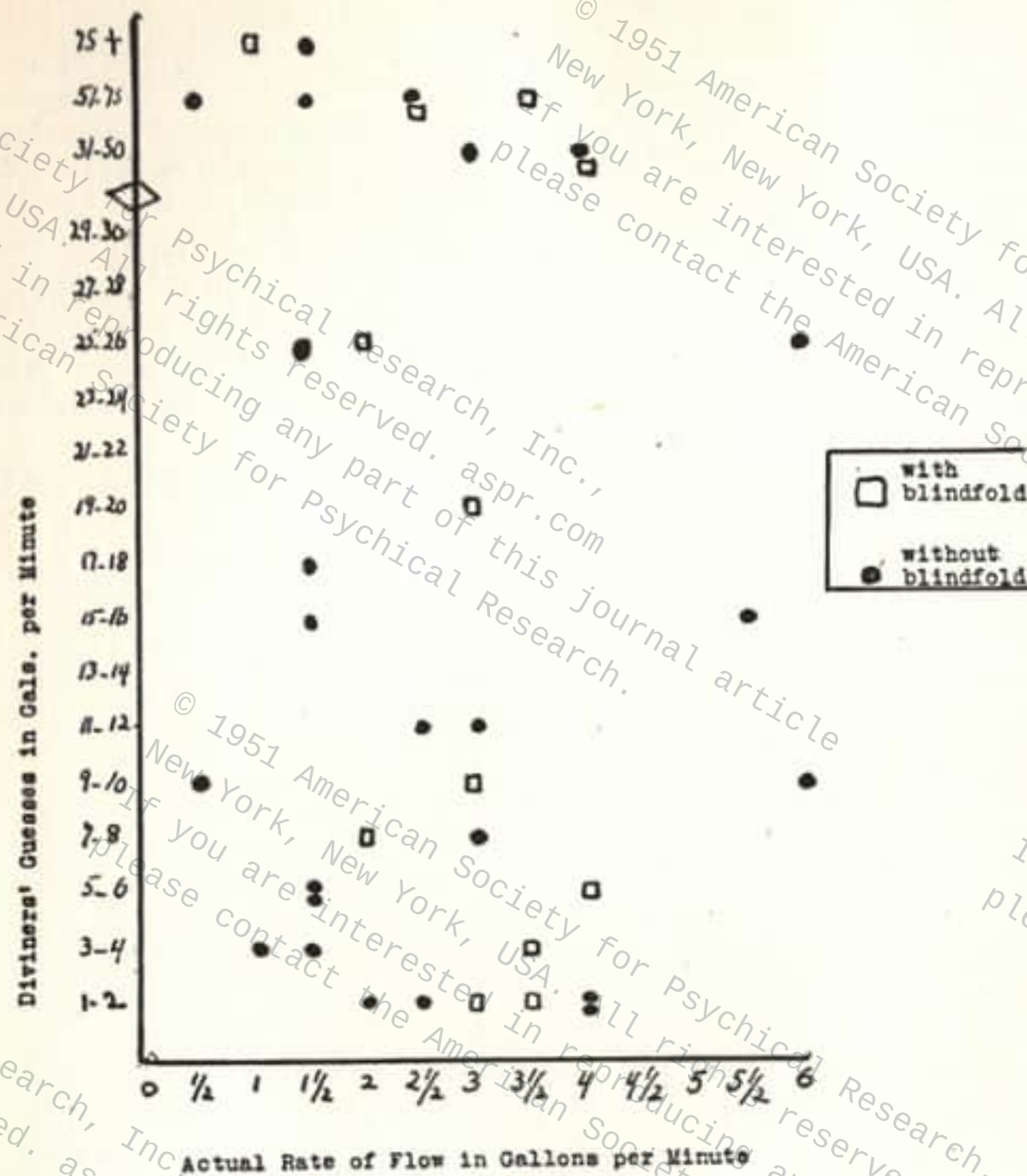


FIG. 2.

Actual rate of flow in gallons per minute compared with diviners' guesses as to actual rate of flow.

the dowsers' indications and the facts, except such as might easily have occurred by chance. Attention is drawn especially to the tendency very greatly to overestimate both depth and rate of flow.

For control purposes, as indicated, we wished to find out how good an estimate could be made by relying upon normal utilization of facts about underground water. Prior to the driving of the pipe JMT and the water engineer, Mr. Stackpole, independently made estimates as to depth and rate of flow at each of 16 different points which had been staked out in straight lines across the terrain from the four

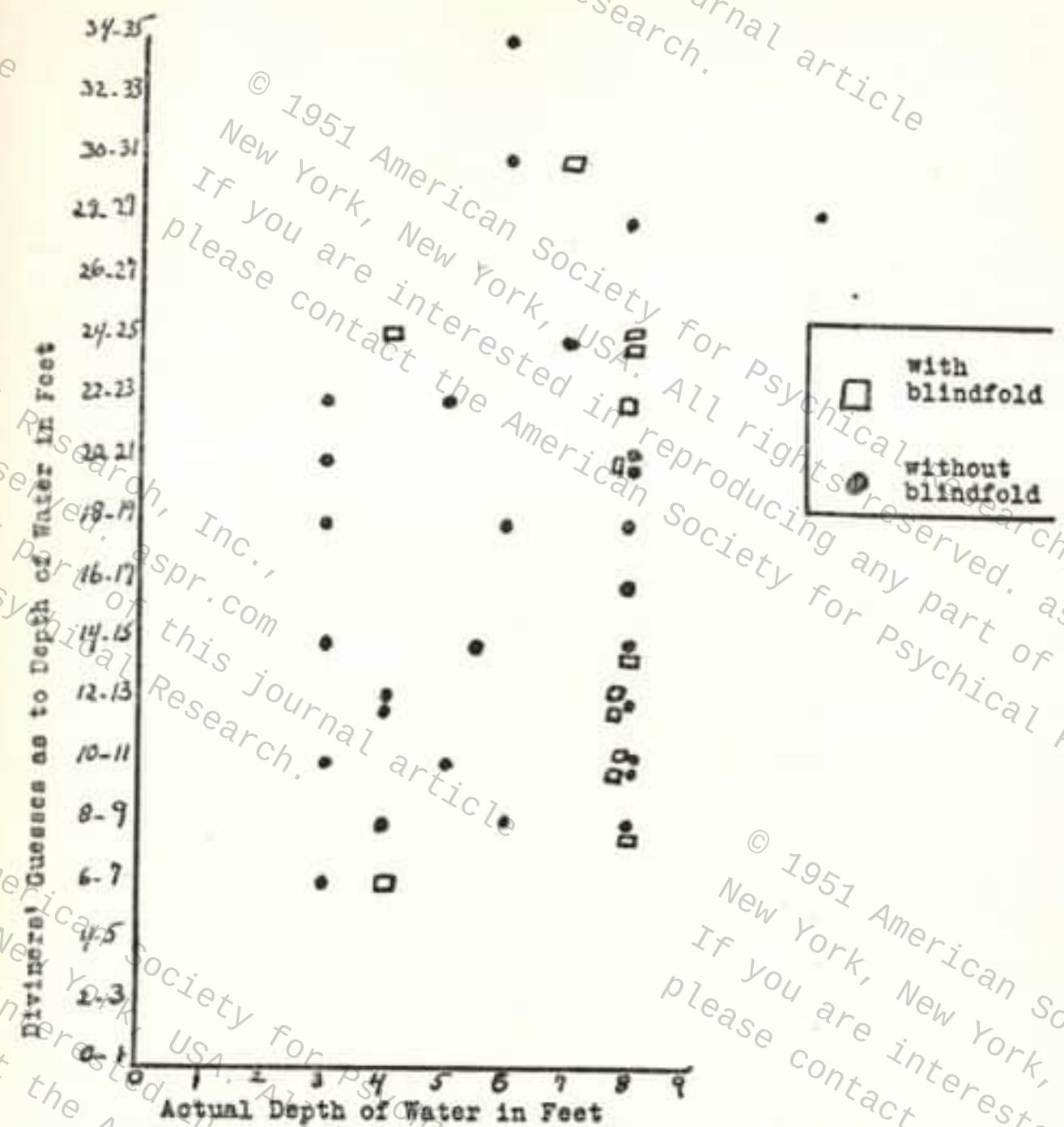


FIG. 3.
Actual depth of water in feet compared with diviners' guesses as to depth.

corners. The geologist and the water engineer were at a slight disadvantage here as compared with the diviners, since the diviners could choose any points they liked and the "experts" had to follow a prearranged plan. On the other hand, the experts had the advantage of knowing of the presence of a nearby well; and knowing that the water in soft soil must be nearly level, they could properly apply their information. The dowsers, thinking and working in terms of "veins" of water (which did not of course exist) could hardly make use of the fact of the well even had they known about it.

Figure 4 shows that the "experts" estimated quite closely the over-all depth of the water table and also depth at the specific points; there is a very substantial positive correlation between the

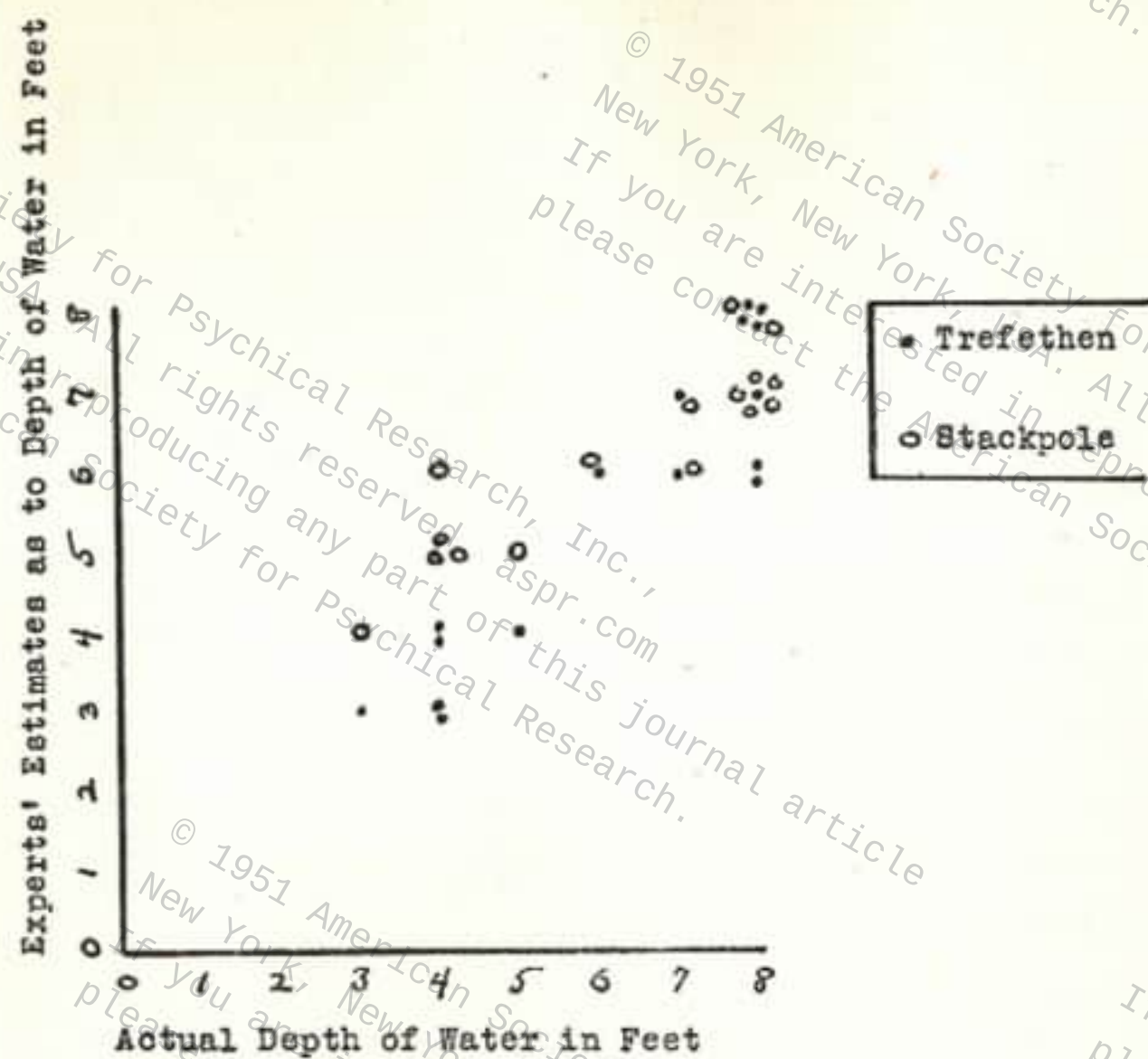


FIG. 4.
Actual depth of water in feet compared with experts' estimates as to depth.

estimates of the two men as to the depth and the actual facts as to depth point by point. The estimates are necessarily based in part upon the slope of the land, which was considerable, but secondary considerations also entered in since neither of the men consistently reduced every estimate in exact proportion as the land fell off.

When it comes to the estimates of rate of flow, as shown in Fig. 5, the over-all or average estimate given by the water engineer for the terrain as a whole is very good. That of the geologist was very much too low. When the actual rates of flow at different points are compared with the point-by-point estimates given by the two experts, it becomes clear that these results are such as would be obtained by chance alone.

To summarize, then: Both experts did extremely well with the matter of *depth*; the water engineer did well in over-all estimate of *rate of flow*, but did not appropriately vary his estimates from point to point within the terrain; the geologist's estimates of rate of flow were too low and likewise unrelated to the actual point-by-point variations.

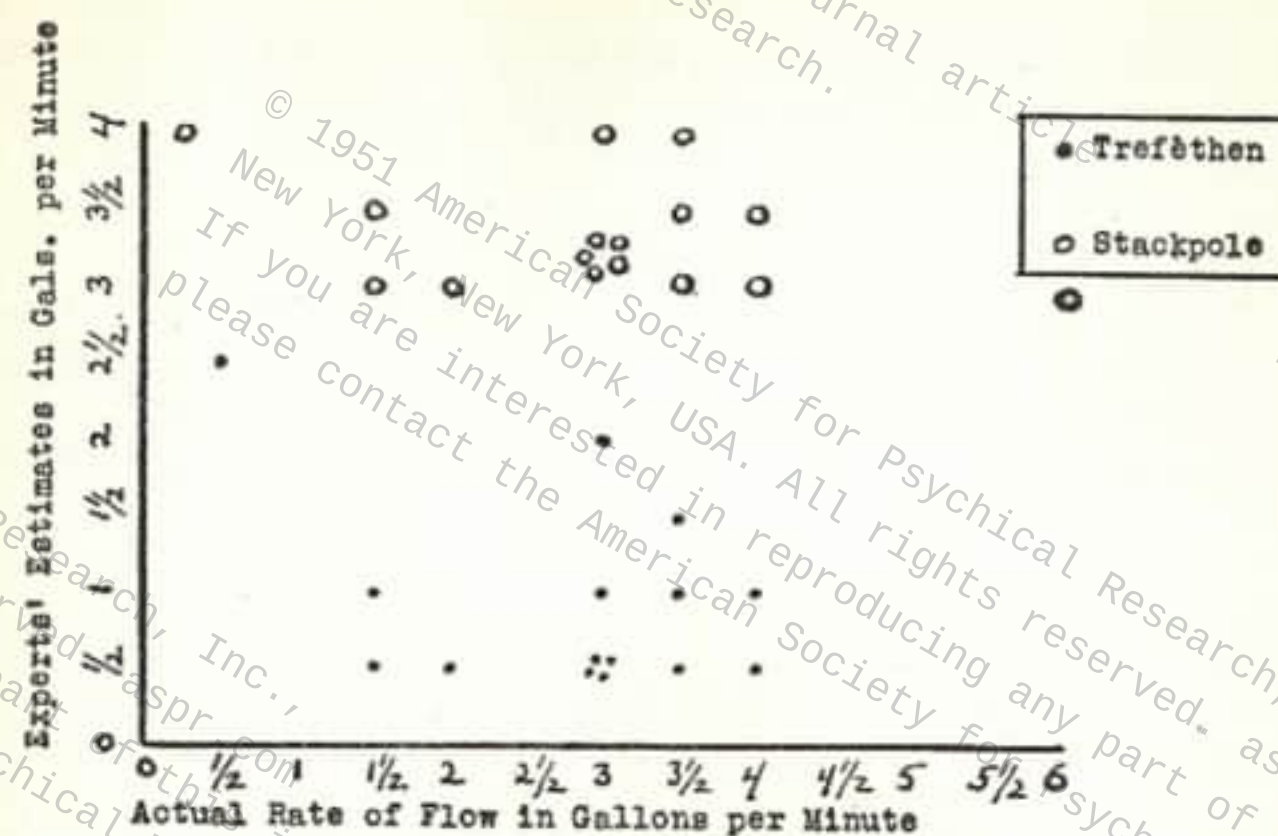


FIG. 5.
Actual rate of flow in gallons per minute compared with experts' estimates as to rate of flow.

While, therefore, the experts did not score successes on every point on which they were consulted, they did dramatically succeed in their estimates of depth. Even the very best estimates of the diviners belong in a completely different category. Not one of our diviners could for a moment be mistaken for an "expert."

We had promised, as will be recollected, to award prizes for the best performances. First, second, and third prizes were won by those diviners whose combined estimates as to depth and rate of flow, blindfolded and non-blindfolded, showed the smallest error. In a note of congratulation later sent out to the participants, it was made clear that the awards were based solely on objective approximation to the facts and that we were not committing ourselves to any theory regarding divining. It is of some interest to note that the diviner who did best of all had used convenient round numbers, saying for both his blindfold and non-blindfold depth test "10 feet" (at most points near the upper edge of the sloping ground where he worked the water was a foot or two short of 10 feet down) and for rate of flow "5 gallons" (this was too high, but still not an unreasonable guess for water flow in that area). The man who came in second was one who had lived in Liberty. He quite frankly announced before the test began that he was well acquainted with the terrain and made no attempt to conceal the fact that he was using his knowledge. (This in JMT's estimation should have disqualified him, but GM did not see how disqualification could fairly

be decided upon after an invitation to him to participate, together with instructions and promise of rewards, had been made. This was one of the various slips and errors made by the research team.)

Discussion

There is not much more to be said. We draw no conclusion about divining in general. We made no direct observations on the problem of "what activates the stick." But in most cases, the observers felt entirely certain that the diviner's muscles were turning the stick down, despite the fact that other muscles were opposing this movement. We saw nothing to challenge the prevailing view that we are dealing with unconscious muscular activity, or what Frederic Myers called "motor automatism." We do not stress this point, however, because our research dealt only with the question of accuracy in water finding. The one point that we wish to bring out is the only point in which this study has any originality or value: There was a direct comparison between experts and diviners, and the particular group of diviners which took part in this project was notably inferior to the experts in the matter of estimates of water depth and rate of flow. This small point may have its value in a larger context. But two major issues remain open: (1) Does water divining ever occur by virtue of a paranormal process? and (2) Is the motion of the stick invariably the result of the diviner's own muscular contractions? The present writers do not wish to commit themselves at this time on these issues, believing that far more research is needed before they can be answered.

A documentary film based upon the motion pictures mentioned above has been prepared by RMG and is available for distribution to universities and other research centers. The use of this film may perhaps help in one of the activities to which the A.S.P.R. is especially committed—the task of enabling scientists and the general public to understand the social context, the level of scientific comprehension, and the folklore of the community which serve as the matrix within which the phenomena of psychical research are embedded. This film, if used without dogmatism in connection with the present report, may have some educational value. It is hoped that further work can be carried out by at least some members of the present group of authors and that improvements in methodology can be achieved.

REFERENCES

1. Katz, E., and Paulson, P., "A Brief History of the Divining Rod in the United States," *JOURNAL A.S.P.R.*, Vol. XLII, October, 1948, pp. 119-131.
2. ———, "A Brief History of the Divining Rod in the United States, II" *JOURNAL A.S.P.R.*, Vol. XLIII, January, 1949, pp. 3-18.
3. Barrett, W. F., and Besterman, T., *The Divining Rod*, Methuen, London, 1926.