

## BOOK REVIEWS

DOWSING—AN OUTLINE OF PRESENT KNOWLEDGE: 1994 by S. Scammell, BSc, F LAS. D. A. H. Grayling, Crosby Ravensworth, Cumbria. (Available from The Clouds Estate Office, East Knoyle, Salisbury, SP3 6BE for £5.00 plus postage).

The title of this 35-page booklet by a prominent land agent is more ambitious than warranted by the largely autobiographical contents, but it is a valuable contribution nevertheless to our understanding of a uniquely important paranormal phenomenon. There are two reasons for that uniqueness. The first is that dowsing, in its many forms, is probably the only area of the paranormal which has a direct and measurable economic value. The second is that it is very widely employed as a practical, workaday tool by a great many official institutions, statutory authorities, mining companies, archaeological societies and water organizations, as well as by countless individuals. These are two of the qualities which make the adoption of dowsing as an officially approved and funded area of scientific research both more promising and more imminent. It is the principal objective of this little volume, summarizing the lifelong experience of the 85-year-old author, to add weight to the plea for official recognition of a subject still classified as occult, and still regarded by sceptical organizations as illusory.

Despite the huge volume of literature on dowsing there has not until recently been much describing the properly controlled double-blind tests which provide the sort of evidence on which scientific opinion prefers to depend. Books on dowsing date back even before the publication of the standard textbook on mining and minerals for the next two centuries, *De re Metallica* by Georgius Agricola in 1556, perhaps earlier. One of the SPR's most illustrious founder-members, Sir William Barrett, was prolific in his output of studies of the mysterious force (e.g. Barrett, 1897-98; 1910; 1913). Dowsing has been so widely recognized and practised that the celebrated Major Pogwood, official water diviner to the Government of India in 1920, was reported to have claimed a 97% success rate over several years, compared with a mere 80% by the average operator (Underwood, 1980).

There has been no shortage of experiments to determine the existence and parameters of the force responsible. George P. Hansen's (1982) impressive survey of experimental literature lists 141 books or papers. His melancholy conclusion was that, despite the large number of investigations, the status of dowsing remained unclear, due largely to "sloppy experimental procedure and/or report writing". Hansen's survey was published immediately after, but apparently written in ignorance of, an earlier controversy in this Journal between Professor Charles Osborne and James Randi, in which Osborne claimed that Randi's 30-year search for evidence of reputed paranormal abilities had been successfully ended by the positive results of dowsing tests in Sydney, Australia, in July 1980: tests which Randi himself had devised and supervised. Osborne found the results significant at the 1% level, but Randi vigorously contested the validity of Osborne's statistical methods. Silence

ensued, with the high ground resolutely occupied by the sceptics, and Randi still in full possession of his promised prize of \$10,000.

With the notable exception of Professor Hans-Dieter Betz's lengthy paper on unconventional water-detection, briefly discussed below, there appears to have been little since then which satisfies scientific rigour. Professor Vincent Reddish's little volume, *The D-Force: A Remarkable Phenomenon*, received heavily qualified approval from Dr Richard Wiseman in this *Journal* (January 1996 issue, pp.54-55), on the grounds that the findings were valuable but the methodology weak. That review was written before Dr Wiseman had studied the two issues of the *Journal of Scientific Exploration* (1995, Vol. 9, Nos. 1 & 2) in which Betz's work over a period of some twelve years was summarized. In essence Betz, who is in the department of physics at the University of Munich, has combined two functions. One is as a supervisor and assessor of a large number of dowsing operations conducted by the German Government's technical aid agency (Deutsche Gesellschaft für Technische Zusammenarbeit— GTZ) in exploring for and developing water resources in arid areas of third-world countries, using the orthodox skills of water engineers who have developed dowsing expertise. The other is as experimenter (in conjunction with other German universities and specialist institutions) designing and supervising double-blind tests which have produced results comfortably in excess of chance expectation.

Two elements distinguish Betz's work. First is the impressive, and sometimes financially quantifiable, difference in a dozen countries over as many years between the GTZ successes using dowsing alone or as an ancillary device, and the limited success of other water exploration teams employing orthodox methods. Second is the linked series of laboratory-type experiments using both gifted and less gifted subjects. Like Scammell, Betz deplors official science's resolute neglect of the subject, and pleads for its incorporation into research programmes. But equally like Scammell, he underestimates the formidable psychological hurdles to be leapt.

Valuable though Betz's work has been, especially since it is reported to have stimulated replication efforts in both Germany and the UK, both the terrestrial explorations and the laboratory tests have been related to a search solely for water, and to the reaction of the dowsing rod or fork to locations where water might be found. His speculative hypotheses revolve around some form of naturally-existing fields of physical origin to which some people have a well-developed biological sensitivity. This is the prudent line for any scientist, especially a physicist, to follow. And provided one limits one's observations to experiments and results which are sufficiently narrowly based, this may work up to a point. It is also the line followed by Professor Reddish.

But it avails nought. Betz's account is full of examples in which water engineer Hans Schroter (especially) was able not merely to locate water hidden in narrow fissures of fractured limestone up to 100 metres below surfaces which possess few topographical or morphological hints, and no adequate geological guides, but to estimate with reasonable accuracy both the yield and the potability, or mineral content. Of the several variations on the field-force theme, none is able to comprehend a capacity to determine flow rates, a prior estimate of which is a prerequisite to sinking a successful, and costly, borehole.

This hints at the reason scientists have for so long fought shy of the subject: it evades any hypothesis which might be fitted, however uncomfortably, into established physical laws; and further examination only makes matters worse. Map dowsing, widely practised, is clearly outside any field-force theory. All the anecdotal evidence (meaning simply evidence not produced by repetitive, controlled investigations; the phrase carries no pejorative or dismissive nuances) records total geographical isolation from and causal independence of the target area. Dowzers commonly assert that their power is linked with, if not fulfilled by, wishes. Any attempt to examine this evidence, let alone suggest mechanisms to account for its diverse operations, would doubtless have pushed Dr Betz and his collaborators into the pariah region. Yet no serious study of dowsing, if made with a view to testing a hypothesis, can be limited simply to experiments for the location of water or buried pipes.

No such inhibitions worry Scammell. A retired land agent with a scientific background, he has no academic tenure to imperil and no status to uphold. His booklet summarizes his life-long experimentation with dowsing reactions to a seemingly infinite number of substances: metal, stone, living, dead, large, small, deep, shallow, male, female . . . There is a maddening imprecision in his methodological descriptions, but then Scammell, like so many dowzers, was not setting out to conform to laboratory protocol but to discover by trial and error what worked for him and what did not. Unfortunately, it is by no means clear just what steps he takes to isolate involuntary muscle movement from the behaviour of detecting rods and, more particularly, of pendulums. Since many of his more challenging conclusions are derived from the sort of detailed measurements of line lengths first expounded by T. C. Lethbridge (1965), it is important to know much more about the precise way the unsupported pendulum thread is held, how the line is marked, the mechanism of exact linear measurement, what constitutes a discernible rotational movement and how its diameter is determined.

Lethbridge found that each dowser has a scale of pendulum lengths peculiar to him : only one measurement appears to be universally constant : a length of 40 in, which applies to a dead or sleeping animal. All other measurements of pendulum lengths lie, it seems, at 20 in or less, or else may be added on to the 40-in constant. According to Lethbridge the 40-in addition continues to 80 in and beyond. But Scammell was unable to confirm this. He reproduces his own series of pendulum lengths for the detection of materials ranging from plastics and iron (6 in and multiples thereof) to gold and mercury (6.75 in), increasing through water (7.5 in) and glass (9 in) to living organisms and lead (disconcertingly both 13.5 in) to cotton (18 in) and coal (20 in).

The manner in which these very precise figures have been arrived at does not inspire confidence, however. The author states without qualification that where the radius of the circle described by the pendulum is equal to the pendulum length the pendulum gives a reaction. Not, however, unless Pythagoras got it wrong, since the line described by the swing of the pendulum cannot extend to the circumference of a circle whose radius equals the pendulum's length. Nor is there any explanation of how such exact measurements can be obtained when (presumably) a free holding hand is dangled over the dowsed object.

As the hand is raised, so that the height of the pendulum above ground level is increased, the radius of the circle it describes reduces. Experiment led Scammell to deduce from this the shape of force fields, each with a distinctive rate of taper, and this he relates to the depth at which the material dowsed is buried. All this may tax credulity; but what of Lethbridge's startling claim that the sex of objects, dead or alive, can be similarly dowsed, since each sex has its own pendulum length ?

The fact that Lethbridge and Scammell have different series of pendulum lengths appropriate to the same objects would be hailed by sceptics as a clear demonstration of the absurdity of dowsers' claims, but every dowser recognizes that, whatever the nature of the external force involved in the detection process, it cannot be divorced from the consciousness of the dowser. The process is clearly subjective. As Berwyn Eastwood (1993) put it, the reaction appears to be a "mind-dependent biophysical reflex". Eastwood, a medical doctor, associated the phenomenon with acupuncture points, and found that the faculty disappeared when the dowser was hypnotized. After fifty years of dowsing, he claimed to be able to distinguish the differing signals given out by different plants such as holly and tamarisk. The faculty exercised may or may not be a universal attribute, but the competence and achievements of dowsers differ as greatly as people's prowess as pianists or singers. Testing dowsing ability with the less able grouped with the highly skilled performers necessarily dilutes the results and pushes averages towards chance expectation.

It has often been pointed out by dowsers that it is not the dowsing instrument which is divining but the mind of the dowser. The bewildering range of functions for which it can reportedly be employed, the seemingly endless list of materials and shapes which may be used, and the bizarre claims made by experienced practitioners for the efficacy of a pendulum in answering questions: all of these conspire to deter the scientific investigator seeking ways in which the phenomenon can be conscripted into conventional physics. Scammell confesses that his anxiety to avoid crossing the border into "the field of ESP" was confounded at point after point, forcing him to go further. How much further becomes apparent only in the brief final paragraphs of the booklet, written after hesitating long for fear of ridicule.

Scammell was "astonished beyond conception" to find that holding a pendulum over water will enable an affirmative or negative response to take place immediately the operator speaks the name of a dead person. This old wives' tale, as he frankly describes it, resulted in messages, tediously spelled out letter by letter. Over a period of nine years he claims to have accumulated a considerable volume of information as to the conditions of survival, some of it containing information of which he could not possibly have been aware, even subconsciously. A detailed report on this is promised. If there are deceased entities with whom we can communicate, there are vastly swifter and more efficient mechanisms which would seem to have nothing to do with dowsing. But if there is indeed evidence of veridical communications by the extraordinarily cumbersome means he describes, then we clearly have yet a further reason for concluding that dowsing risks becoming unmanageably complex by defying the production of any hypothesis on which scientific testing procedures can be applied

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