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LII. *On the Virgula Divinatoria, or Divining Rod.* By
WILLIAM PHILLIPS, Esq. Read before the Askejian
Society in the Session 1801.

THE *virgula divinatoria*, or divining rod, is a forked branch, or two shoots or young branches of a fruit-bearing tree, tied together at one end, and held by the other ends one in each hand. When held in a certain position, and under certain circumstances, which I shall endeavour presently to describe, it is said to discover the situation of metals, &c. in the earth, by dipping as it approaches the place beneath which they immediately lie.

It is not known who was the discoverer of it; but Agricola, in his Treatise *De Re Metallica*, supposes that it took its rise from the magicians, who pretended to discover mines by enchantment: others are of opinion that the discovery is of later date, and that the inventor was hanged in Germany as an impostor. Be that as it may, no mention is made of it earlier than the 11th century; and though it has occasionally occupied attention for so long a time, yet the niceties attending its use according to the prescribed directions, and probably, too, the difficulty of accounting for the effects said to be produced by any plausible theory consistent with the admitted laws of natural philosophy, may have retarded its progress; for it is now almost totally neglected.

About the middle of the 18th century it was ably supported in France by De Thouvenel, who published a book upon the subject, in which he endeavoured to substantiate the virtue of the divining rod by the recital of about six hundred instances of its successful employment, principally by himself or within his own knowledge; and soon after by a philosopher of unimpeachable veracity, and a chemist, William Cookworthy, late of Plymouth. The favourable opinion he entertained of it was grounded, according to his own account, as became a chemist, upon actual experiment. It appears that his experiments were frequently repeated, and that the ease which he attained in using the *virgula* was the means of his satisfying many intelligent men of its virtue, by experiments for the discovery of pieces of metal hid in the earth, as well as by the discovery of a copper mine near Oakhampton, which was worked for several years. Thus it became introduced into Cornwall, where the discovery of several mines is attributed to it; and there are yet a few

among the most intelligent practical miners in the county who continue to believe in its virtue. The first knowledge he procured of the rod was from a captain Rebeira, who deserted the Spanish service in queen Ann's reign, and became captain commandant of Plymouth garrison; and as Cookworthy's veracity and abilities were unquestionable; and as it undeniably appears that he made many experiments with the rod, it seems as if his account demands some degree of confidence. But the earlier writers who mention it, appear to have supposed that its operation was the effect of magic; and thence the cutting of it was, according to their directions, to be attended by the utterance of certain cabalistic words and the performance of certain ceremonies: they directed it to be cut on a certain day, and at a certain hour, from a tree of a certain description, before sun-rise, about the day of the annunciation of the Virgin Mary, but especially with an increasing moon. It has, however, of later times been agreed, that a forked hazle rod, or two straight rods of one year's growth, being most pliable, cut in the winter and kept till they are dry, answer best; or, if these be not at hand, suckers of the apple or currant-tree, or shoots of the peach-tree, willow, or oak, though green, will do tolerably well, but those of the fruit-bearing trees are preferred. If the rod be made of two separate shoots, they are tied together at their larger ends with some vegetable substance; and these, it is said, answer better than those which grow forked, the shoots of which, being rarely of equal size and length, do not handle so well. The length of the rod is from $2\frac{1}{2}$ to 3 feet.

Upon a nice observation of the mode of holding the rod, prescribed by Cookworthy, much seems to depend. Having, as has been observed, tied the larger ends of the sticks together, the smaller are to be held one in each hand, with that part of it which is grasped by the hand so turned as to be brought parallel to the horizon, and the tied ends pointing upwards at an elevation of about 70 degrees. The more strongly the rod is grasped, the livelier is said to be its action: but it is peculiarly necessary to observe that it be grasped steadily and equally; for if, when the movement or attraction of the rod is commenced, there be the least imaginable opposition to it by a jerk, it will not move any more till the hands have been opened and a fresh grasp taken. It appears that a due observance of this is of much importance, and that the operation of the rod has in many instances been defeated by a jerk or counter-action; and thence, says Pryce, in his *Mineralogia Cornubiensis*, who was "well convinced of its absolute and improveable virtues,"

tures," it has been concluded that there is no real efficacy in the rod. It must, he says, be particularly observed, that as our animal spirits are necessary to this process, so a man ought to hold the rod with the same indifference and inattention to, and reasoning about it, or its effects, as he holds a fishing-rod, or a walking-stick; for, if the mind be occupied by doubts, reasoning, or any other operation that engages the animal spirits, it will divest their powers from being exerted in the process, in which their instrumentality is absolutely necessary: hence, he observes, it is that the rod constantly answers in the hands of peasants, women, and children, who hold it simply, without puzzling their minds with doubts or reasonings. Whatever, adds he, may be thought of this observation, it is a very just one, and of great consequence in the practice of the divining rod.

Equipped as has been described, and duly observing the foregoing directions, the person in search of a metallic lode is to walk steadily and slowly forward; and when he approaches a lode so nearly as its semi-diameter, the rod, it is said, will feel loose in his hands, and be sensibly repelled towards his face: if it be thrown back so far as to touch his hat, it must be brought forward to its usual elevation, when it will continue to be repelled till his foremost foot is over the edge of the lode: and when this is the case, if the rod be held well, there will be first a small repulsion towards the face; but this is momentary, and the rod will be immediately drawn irresistibly down, it is said, and will continue to be so during the whole passage over the lode: but as soon as the foremost foot is beyond its limits (Pryce's *Mineralogia Cornubiensis*), the attraction from the hindmost foot, which is still on the lode, or else the repulsion on the other side, or both, throw the rod back towards the face. When the rod has been drawn down, the hands must be opened, the rod raised by the middle fingers, a fresh grasp must be taken, and the rod held again as before; for, if it be raised again without opening the hands, it will not work.

Pryce, at p. 123 of his *Mineralogia Cornubiensis*, informs us that many mines have been discovered by means of the rod, and quotes several; but it must be observed that, by his own account of the adventures, not one of them turned out a profitable concern; and hence he takes occasion to observe, that it is by no means a disadvantage that the rod dips equally to a poor as to a rich lode, which he allows to be the case; otherwise the great prizes in the mining lottery would soon be drawn, and future adventurers be discouraged.

But though the rod is said to dip equally to a poor as to a

rich lode, it is not found to dip with the same force to all metals; nor, indeed, does it appear to be confined to metals alone, but that it is also attracted by coals, bones, limestone, and springs of water, with different degrees of strength, in the following order:—1. Gold: 2. Copper: 3. Iron: 4. Silver: 5. Tin: 6. Lead: 7. Coals: 8. Limestone and springs of water. The mode directed by Cookworthy for proving this is the following: With the rod held according to the prescribed rules, stand with one foot advanced, put under it a guinea, and a halfpenny under the other, and the rod will be drawn down forwards: if the pieces of money be shifted, it will still be attracted towards the gold, *i. e.* towards the face; which proves that the gold possesses the stronger attraction: and, by thus varying all the forementioned substances, the strength of their respective attractions will be found to correspond with the order in which they are placed.

According to captain Rebeira, the virtue necessarily resident in the human body for the discovery of metals, &c. in the earth by means of the divining rod, is confined to but few persons; and Agricola very shrewdly insinuates, that where it does not act, it must be owing to some singular occult quality in the person. Cookworthy and Pryce, however, assert that Rebeira was mistaken; for that the virtue, as he calls it, resides in all rods and in all persons, though not in every rod in the hands of every person. Willow and other rods, say they, not of fruit-bearing trees, that are not attracted in the hands of those in which the fruit-bearing rods are attracted, will answer in the hands of those in which the fruit-bearing rods are not attracted; so that all persons possess the virtue.

If a piece of the same wood as that of which the rod is composed be placed under the arm, it will totally destroy the operation of it, except in the instance of water, for which any rod, they say, in any hand will answer; or if the least animal thread, as silk, or worsted, or hair, be placed on the top of the rod, it will prevent its operation: but if a piece of the same animal substance, or of the same wood as that of which the rod is made, provided the rod does not answer, be placed under the arm, it will cause the rod to operate. If a piece of gold be held in the hand and touching the rod, it will prevent its being attracted by that metal or by copper, for the rod will be repelled towards the face; or if iron, lead, tin, silver, limestone, bone, or coal, be held in like manner, it will also be repelled, and *vice versa*. If a person with whom the rod does not naturally operate hold a piece of gold in his hand, the rod then answers to gold and copper; and thus

thus with respect to the other metals and substances; and upon these properties of the rod depends its power of distinguishing one metal or substance from another. Another mode however, grounded upon the same principles, is pointed out as being much more ready and certain, viz. by preparing rods that will only answer to some one of the aforementioned substances. The mode of preparing them is by boring a small hole in the top of the rod, and by putting into it a very small quantity of each substance except that after which search is to be made: the hole is then to be stopped up with a piece of the same wood of which the rod is made. These are the directions which Cookworthy has given for the use of the divining rod.

It is now but little if at all practised in this country: the few among the curious, or among practical miners, who continue to assert that it possesses an influence in the discovery of ores, seem so far to have yielded to its opponents as to have given up the use of it. Two with whom I became acquainted in Cornwall still assert their belief in it, and that it has been the means of discovering mines there; and a third assured me that he had himself, by the accidental use of the rod, in a place where he did not expect that it would have been acted upon, viz. in his own shop, discovered a lode which is now working under the town of Redruth: but it must be acknowledged that there are many more among the most intelligent miners who ridicule the rod, than believe in the influence of minerals upon it. Taking it for granted, however, that metals do act upon the rod to the fullest extent of Cookworthy's belief, it still remains a question, notwithstanding the accommodating opinion of Pryce, whether it would prove a benefit to the miner, as it is allowed that it dips equally to the poor as to the rich lode, to a silver penny as to the mines of Potosi; for it is too often experienced in Cornwall that lodes are not wanting, but ore. The advantage to be derived from it, therefore, with regard to metallic veins seems by no means a counterbalance to the niceties and uncertainties attending its use; for the projector, implicitly depending upon the information of the rod, might, at a ruinous expence, ransack the bowels of the earth, in consequence of its dipping to a rich gossan, or a dead lode.

Believing with Boyle, that they who have seen the experiment can much more reasonably believe than they who have not, and being desirous of annexing to this account of the divining rod any little testimonial of my own experience, which a sedulous attention to the preceding directions might afford, I cut, during the last winter, a number of hazle rods,

and laid them by till they became dry; when, having tied two together with a vegetable substance, I proceeded to endeavour the discovery of some pieces of metal: but repeated trials, both by others and myself, afforded us no opportunity of becoming convinced by experience that metals possess any influence upon the rod; and we were obliged, in giving up the trial, to acknowledge that we possessed those "singular occult faculties" which, according to Agricola, in some people prevent its action. It would, however, be an absurd and unwarrantable conclusion, to assert that the accounts which have been handed to us have been fabricated merely to excite our wonder, because those effects which have been asserted to accompany the use of the rod occasionally have not, in these few instances, been observed. Yet it has so long been considered the prerogative of human reason to deny what cannot be explained, that it is with much difficulty we can admit as fact, however respectable the authority, that of which we have no ocular or sensible testimony, or for which no physical cause has been assigned. Two centuries ago who would have believed in the existence of the electric fluid? or who, if ocular demonstration were wanting, would not deny the incomprehensible attraction of the magnet? Philosophy, like fanaticism, has its prejudices, and has often rejected as impossibilities what have afterwards been confirmed by experience. But so strongly does the respectability of its advocates claim a favourable opinion as to the real existence of the virtues ascribed to the divining rod, that, though it seems impossible wholly to admit their testimony, it seems equally so wholly to reject it.

The faculty of subterraneous discovery has been referred to the theory of effluvia, or to the corpuscular philosophy, for explanation; but it seems only to have been hypothetically referred to an hypothesis. For, in the first place, although the asserted effects of the rod have been copiously described, a definition of its *modus agendi*, where it will act, has been wanting, nor have we been told what particular constitutional defects have in most cases prevented its acting at all; and secondly, the theory of the corpuscular philosophy, though perhaps it may be impossible wholly to reject it, has never been completely admitted. Rebeira permitted persons to see him use the rod, but would discover no more; and neither Cookworthy nor Pryce has said whether, as the practiser in the divining art approaches a spot under which springs or metals lie hid, he feels any internal sensations: but Thouvenel has more completely provoked doubt, by asserting that internal sensations, nearly approaching to morbid affections,

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are felt, at the same time that an external motion is communicated to the rod. These singular emotions, none of which were observed to take place, when he was above stagnant waters were followed by head-ache, fatigue of body, debility of mind, and other symptoms of nervous irritation. The dry state of the atmosphere, also favourable to electric experiments, was observed to render him more active and lively in his prognostics; but a full meal evidently diminished the capacity; and an inflammatory fever, which confined him a fortnight to his bed, deranged or destroyed the miraculous power for the space of three months. From these circumstances it should seem that its action is dependent on some peculiar nervous sensibility; that our faith or our imagination should be prepossessed in its favour, according to Pryce; and that much depends on an harmonious distribution of the animal spirits, devoid of anxiety or reasoning respecting the event: but that a state of doubt is an obstruction to its operation. These, perhaps, may be the principal difficulties in using the divining rod; but we are assured by Cookworthy and Pryce, that, regarding these and other essentials in its use, a rod may be found adapted to the peculiar system of every person.

Difficult, however, as is the admission of belief in the asserted virtue of the divining rod, and little as it has been understood by those who have most ably espoused its cause, it may not be amiss just to trace the outlines of that theory to which it has been by them referred for explanation, that of the corpuscular philosophy, which is a mode of accounting for the phenomena of nature by the motion, figure, rest, position, &c. of the corpuscles or minute particles of matter. Boyle sums up the chief principles of this hypothesis in the following particulars:—1st, That there is but one catholic or universal matter, which is an extended, impenetrable, and divisible substance, common to all bodies and capable of all forms. 2d, That this matter, in order to form the vast variety of natural bodies, must have motion in some or all of its assignable parts; and that this motion was given to matter by the Creator of all things, and has all manner of directions and tendencies. 3d, Matter must also be actually divided into parts, and each of these primitive particles, fragments, or atoms of matter, must have its proper magnitude or size, as also its peculiar figure or shape. 4th, It is supposed that these differently sized and shaped particles may have different orders and positions, whereof great variety may arise in the composition of bodies (*Encyclopædia Britannica*.) Pryce, in his *Mineralogia Cornubiensis*, gives the following

account of the mode in which these corpuscles or minute *impenetrable* and *divisible* particles of matter act through the medium of the human body or nerves, or by the assistance of the animal spirits, upon the divining rod. "The corpuscles, it is said, that rise from the minerals, entering the rod, determine it to bow down, in order to render it parallel to the vertical lines which the effluvia describe in their rise. In effect, the mineralogical particles seem to be emitted from the earth: now the *virgula*, being of a light porous wood, gives an easy passage to those particles, which are very fine and subtle: the effluvia, then, driven forwards by those that follow them, and pressed at the same time by the atmosphere incumbent on them, are forced to enter the little interstices between the fibres of the wood, and by that effort they oblige it to incline or dip down perpendicularly, to become parallel to those little columns which the vapours form in their rise." If this jargon, this fabric of unintelligible conclusions, raised upon the slender foundation of *pre-supposition*, be not sufficiently absurd, I beg leave to refer to page 114 of Pryce's work, where he attempts an elucidation of the corpuscular theory.

If an advocate for this theory, as applied for solving the cause of the operation of the divining rod, were to be asked why hazel rods, and branches of other trees said to be attracted by metals, are not attracted by them in their natural growth; and why, consequently, they do not grow with their top declining towards the earth, I feel at a loss to conceive what would be the answer. Would he say that the *vis inertiae* of matter is not sufficiently powerful to overcome the living principle of the tree? or would he not say that the human body is an excellent conductor of those minute particles or corpuscles, which, according to Hartley, are perpetually flying off from all bodies, for ever seeking new combinations, and of the same catholic matter forming an infinite variety of modifications throughout the universe? Some conclusion, equally satisfactory and philosophical, might be expected from the hypothetical advocates of this theory; and as, in all probability, this theory cannot be established by ocular demonstration, or by any means be made manifest to our senses, it seems as if it were better to acknowledge, if really there be any virtue in the rod, that, as in the instances of the magnetical influence and the electric fluid, it is one of those mysterious effects of the mysterious laws by which nature is governed, inscrutable to human wit, and indefinable by human investigation.