

VIII.—NOTES.

ON A CASE OF ALLEGED HYPNOTIC HYPERACUITY OF VISION.

In an interesting paper which appears in the *Revue Philosophique* for November last, M. Bergson of Clermont-Ferrand gives an account of a case of supposed thought-transference or clairvoyance which turns out to be much more probably explicable by hypnotic hyperacuity of vision. The large majority of my readers no doubt conceive thought-transference to be a mere delusion, but they may feel some interest in tracing the abnormal physiological conditions which in this curious instance led at first to the belief that a transmission of ideas or images was taking place by other than the recognised channels of sense. And to the few who have satisfied themselves that such transmission does sometimes occur it is specially important to sift away all the spurious cases which, while apparently supporting, must in the end discredit the novel theory.

Briefly, then, MM. Bergson and Robinet found that a boy, who was supposed to be a clairvoyant, or a telepathic percipient, could read figures and words under the following conditions. One of the observers hypnotised the boy, stood with his back nearly against the light, opened a book at random, held it nearly vertically facing himself, at about four inches from his own eyes, but below him, and looked sometimes at the page and sometimes into the boy's eyes. The book had often to be slightly shifted; but ultimately the boy could generally read the number of the page. Asked where he saw it, he pointed to the back of the book, just opposite the number's true position. Asked where the binding of the book was, he put his hand underneath the book, and indicated the place where the binding would have been, had the book faced him.

It occurred to M. Bergson—and he deserves full credit for being the first to insist on this precaution—that, small though the figures were, the boy might really be reading them as reflected on the cornea of the hypnotiser. Experiments with slightly altered position showed that in fact the boy could not read the letters unless adjustment and illumination were carefully made as favourable as possible. The letters were 3 mm. in height,—nothing is said of their thickness,—and their corneal image would be about 0.1 mm. in height, as M. Bergson computes, under the conditions employed. This seems a very small image to see distinctly; but Mr. J. N. Langley and Mr. H. E. Wingfield, who have kindly tried some careful experiments to test this point, inform me that they can read in each other's cornea the reflexion of printed letters of about 10 mm. in height. We know from Binet and Féré's experiments, &c., how greatly the hypnotic state does sometimes increase acuity of vision; and we may, I think, conclude that the boy probably did read the letters on his hypnotiser's cornea.

What, then, are we to make of the boy's statement that he saw the words as though in a book facing him? M. Bergson feels sure that this was the boy's real belief. There was no suspicion of charlatanism, and in fact the boy disliked the experiments, and now, as M. Bergson writes to me, refuses to renew them. M. Bergson supposes, and I think justly, that this was a case of *simulation inconsciente*; the hypnotised subject genuinely referring his sensations to the source to which his *first* hypnotiser (a believer in thought-transference) had suggested to him that they were due.

And, in fact, this unconscious simulation which leads the subject to refer his unusual sensations to the special cause which his hypnotiser, or some

caprice of his own mind, suggests, is a not uncommon and a very interesting phenomenon. It was observed, for instance, by Elliotson, who pointed out a good many hypnotic peculiarities which his successors are now gradually rediscovering. It is a *hypnotic exaggeration* of a familiar phenomenon, namely, of the large infusion of erroneous inference which we most of us import into the account which we render to ourselves of our ordinary sensations.

A particularly curious case is briefly described in the *Journal of the Society for Psychical Research*, June, 1884. A man was brought to us who, when hypnotised, could often name cards held in front of him, although his eyes had been plastered up and bandaged in a most elaborate way. The man's friends took this for clairvoyance, and the man assented, being sure that he could not see the cards in the usual way. They 'flashed upon him,' as he said. Now after a good deal of puzzling over the case, Mr. R. Hodgson found that he also could sometimes manage to see over similar bandages, through small chinks between the skin and the paper gummed over the eyes. But he, too, found that he saw fitfully, the power of vision seeming to come and go,—and he actually could not tell with which eye he was seeing, except by covering each eye in turn with his hand. The distorted position of the eyeball, and the minute and oddly-placed channels of vision, produced so much confusion that there seemed no reason to suppose that the hypnotised subject's belief that he was seeing 'clairvoyantly' was other than genuine.

The case of M. Bergson's boy seems to have been a similar one. And his idea that he was reading from the book seems to have been a sort of compromise between the feeling that he was reading *somewhere* and the hypnotiser's suggestion that the words were being transferred supernormally from mind to mind.

Thus far, then, M. Bergson's narration and explanation seem credible enough, and his argument as against thought-transference in this boy's case seems well made out. But he proceeded to further experiments which, as recounted, seem incredible, and which may lead some readers to distrust the accuracy of the whole series.

To explain the difficulty, I must first point out that the word *hyperæsthesia* is loosely used for three different classes of phenomena. It is used (1) for an exaggeration of the familiar action of specialised organs, as when the eye is sensible to very small amounts of light. It is used (2) for alleged perceptions, which would imply a specialisation of what I may term our *undifferentiated fund of nervous sensibility* in novel directions. Sensibility to the action of magnets, of metals in contact, of medicaments at a distance, may or may not exist, but should scarcely be called by the same name as (say) the eye's extra sensitiveness to light. And again, the word is used (3) for cases where our non-specialised organs are credited with performing functions which, so far as we can see, demand a definite sense-specialisation, or our specialised organs are credited with functions which, on measurable anatomical grounds, appear to overpass the limits of their specialisation. This last class of cases must be received with extreme caution.

Well, M. Bergson says that he showed the boy a microscopic photograph of twelve men, its longest diameter 2 mm., and that the boy saw and imitated the attitude of each man. Also that he showed the boy a microscopic preparation, involving cells not greater than .06 mm. in diameter, and that the boy saw and drew these cells.

Now I might, in the first place, object that thought-transference was not formally excluded, since M. Bergson himself knew the photograph and the look of the cells. I do not press this, for the other experiments seem to me to negative thought-transference in this case; I merely point out that

if we wish to prove that a subject does not receive an image from our minds we should present to him an object with which we are ourselves unacquainted.

But the real difficulty is as regards the *minimum visibile*. It is usually supposed that in order to produce a definite image more than one retinal cone must be stimulated; and that consequently no object can be separately discernible which does not subtend (say) an angle of sixty seconds, or whose retinal image is less than (say) .004 mm. in diameter. Floating particles, none of them exceeding .0029 mm. in diameter, have, I believe, been seen as a *cloud* in a ray of electric light sent through a tube of filtered air, but have never been seen *separately* by the naked eye.

Now the *retinal image* of an object itself only .06 mm. in diameter, and placed within the range of distinct vision, will be much less than .004 mm. in diameter. To bring it up to this minimum the retinal image must be $\frac{1}{6}$ of the size of the object itself; and this implies a nearness to the eye involving mere darkness and blur. The microscopic slide was presumably transparent; but nothing was said as to the transparency of the *photograph*, and yet the points distinctly visible on the photograph must have been even *smaller* than the cells on the slide.

A letter with which M. Bergson has favoured me has done much to remove these difficulties. It seems that the photograph was transparent, and that the boy held it close to his eye. Moreover, after seeing the photograph the boy could not read ordinary print. "C'est trop grand," he said; and it was some time before the eye (which M. Bergson believes to have been always myopic—query hypermetropic?) resumed its normal state. It seems, then, conceivable that hypnotic suggestion had induced (by spasm of the ciliary muscle?) some change in the shape of the crystalline lens, which made the eye a microscope for the time being. Mr. George Wherry has kindly communicated to me two somewhat analogous cases, where ciliary spasm (itself induced by microscopic or telescopic work) led to unocular diplopia, in one case even triplopia. In these cases *irregular* ciliary spasm turned the lens into a kind of *multiplying glass*:—is it possible that M. Bergson induced a *regular progressive* ciliary spasm, which turned the lens into a powerful *magnifier*?

Turning back to the question with which we started, the possibility of a hyperæsthetic explanation of cases of supposed telepathy, I must add that I earnestly hope that the experiments recorded in *Phantasms of the Living* may receive careful criticism from this point of view. Few, if any of them, will, I think, be found explicable by the *cornea-reading* discussed above, but there may be other sources of error which have escaped our care. Yet in the hands of some critics hyperæsthesia itself assumes attributes almost magical. In the *Revue Philosophique* for December Dr. Ruault maintains that he and others have frequently sent subjects to sleep "by an effort of will" in an adjoining room; but that the real cause of the sleep was the suggestion given by the changed sound accompanying the hypnotiser's quickened circulation, which the subject hears through the wall. This is meant, it seems, to apply to the Havre case, now well known, of *sommeil à distance*, where Dr. Gibert or M. Pierre Janet can throw Mme. B into the hypnotic trance, "by an effort of will," from their houses to hers.¹ Yet I confess that, whatever may be the true meaning of this curious history, I find it hard to believe that a peasant woman is sent to sleep by "the sound of a going" in the arteries of an elderly physician, at a distance of half a mile.

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¹ An account of this case will be found in the *Proceedings of the Society for Psychical Research*, Part x., Art. "Telepathic Hypnotism".