

SCIENCE.—SUPPLEMENT.

FRIDAY, JANUARY 22, 1886.

THE COLLAPSE OF THE THEOSOPHISTS.

THE greater part of the last number of the *Proceedings of the Society for psychical research*¹ is taken up with the report of the committee appointed to investigate the famous Theosophical society.

For the information of those of our readers who have not followed the history of this society, a brief explanation will be necessary. The Theosophical society was formed in New York in 1875, by Colonel Olcott and Madame Blavatsky, for, it was asserted, philanthropic and literary purposes. Three years afterwards its seat of operations was removed to India, and among the better class of natives it seems to have gained not a few followers.

The evidence adduced before this committee of investigation—which included Prof. Henry Sidgwick and Messrs. F. W. H. Myers and Edmund Gurney—claims the existence in Thibet of a brotherhood whose members have acquired a power over nature which enables them to perform wonders beyond the reach of ordinary men. Madame Blavatsky asserts herself a *chela*, or disciple of this brotherhood, the members of which are spoken of as mahatmas, who are said to have taken a great interest in the Theosophical society, and to have performed many marvels in connection with it. They are said to be able to cause apparitions of themselves in places where their bodies are not, to communicate intelligently with those whom they thus visit, and to perceive what is going on where their phantasm appears. This phantasmal appearance the theosophists denominate the ‘astral form.’ The theosophists also brought forward evidence in support of another class of phenomena, including the transportation, even through solid matter, of ponderable objects, including letters, and of what the theosophists regard as their duplication, together with what is called ‘precipitation’ of handwriting and drawings on previously blank paper.

Because of the peculiar nature of the evidence, and the great improbability of the production of the alleged phenomena, it was decided to send a trusted observer to India, who should make a thorough examination of the persons involved, and

of places in which these remarkable occurrences took place. Therefore, a member of the committee, Mr. R. Hodgson, B.A., of St. John’s college, Cambridge, proceeded to India in December, 1884, and carried on his investigations for three months.

On hearing Mr. Hodgson’s report, which is appended to the report of the committee, and carefully weighing all the evidence before them, the committee unanimously reports:—

“1. She [Madame Blavatsky] has been engaged in a long-continued combination with other persons to produce by ordinary means a series of apparent marvels for the support of the theosophic movement.

“2. That, in particular, the shrine at Adyar, through which letters purporting to come from mahatmas were received, was elaborately arranged with a view to the secret insertion of letters and other objects through a sliding panel at the back, and regularly used for the purpose by Madame Blavatsky or her agents.

“3. That there is consequently a very strong general presumption that all the marvellous narratives put forward as evidence of the existence and occult power of the mahatmas are to be explained as due either (a) to deliberate deception carried out by or at the instigation of Madame Blavatsky, or (b) to spontaneous illusion, or hallucination, or unconscious misrepresentation or invention on the part of the witnesses.”

And, as the committee regards it as a waste of time to further prolong the investigation, many sober-minded readers will regard it as a foolish waste, that so much time has been already spent in the matter. But it must be recollected that this society was gaining ground and support, and was imposing on thousands of impressionable and credulous people. To them it is a real act of benevolence that this bubble has been pricked once and for all, and in a scientific way. As to Madame Blavatsky, a mere reading of the pages of evidence compels an agreement with the committee, who say, in conclusion, “We regard her neither as the mouthpiece of hidden seers nor as a mere vulgar adventuress: we think she has achieved a title to permanent remembrance as one of the most accomplished, ingenious, and interesting impostors in history.”

In addition to the report of this committee, of which the preceding is a summary, this volume of

¹ *Proceedings of the Society for psychical research*, part ix., December, 1885. London, Trübner, 1885. 8s.

the Proceedings contains an interesting essay on 'Some higher aspects of mesmerism,' by Messrs. F. W. H. Myers and Edmund Gurney, who treat of the existence, limits, and varieties of mesmerism as a therapeutical agency; and a further report on 'Thought-transference,' with numerous statistics and diagrams, by Malcolm Guthrie, J.P. While many of Mr. Guthrie's experiments are novel, and as a rule more difficult than usual, yet they are of the same general character as those with which those who have followed the progress of the societies for psychical research, both in England and in this country, are already familiar.

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GIANTS AND DWARFS.

THE above title is prefixed to a series of articles¹ recently published, but is, however, somewhat misleading. What is attempted is, not the consideration of the causes and consequences of abnormal deviations in height in the human species, but a presentation of the differences resulting from the absolute size of an animal, — a sort of 'animal mechanics,' which, in the author's opinion, is to become an important chapter of morphological science. The speculations presented are not without some value and considerable ingenuity: but they are characterized by a passion for reducing every thing to mechanical terms in a way which does not fit biological facts; by a peculiar anthropomorphic point of view, which gauges the actions of animals as though the animals were men; and by an avoidance of evolutionary principles, which one would think would be especially important in this connection. Perhaps it will not be altogether without interest to sketch very briefly the author's methods and his conclusions.

If a body is ten times smaller in one dimension, say in height, than another, and is to retain the same shape as the first, all linear dimensions will be reduced to 1-10, all surface dimensions to 1-100, and all solid dimensions to 1-1000, of their size in the original body. For brevity's sake, we will call an animal of average size a meso-animal (*Me*); an animal 1-10 as large will be a micro-animal (*Mi*); one 10 times as large, a macro-animal (*Ma*). Keeping these statements in mind, we will review the differences which would be caused in the several vital systems by a reduction of an animal to 1-10 its size.

Beginning with the skeleton. We will measure the strength of a bone by the multiple of the weight of the animal necessary to crush it. Now, as the strength of a beam (the bone) varies (1) as

the square of the thickness, (2) directly as the breadth, (3) inversely with the length, if the bone is reduced 1-10 in length, breadth, and thickness, it can carry 1-100 of its former weight, while it has been reduced 1-1000 in volume; i.e., it is relatively 10 times stronger than the large bone. If the tooth of a meso-dog can just bear the dog's weight, then the tooth of a micro-dog can carry 10 micro-dogs; or, if it is to carry its own weight, it can become 1-5 smaller in cross-section. The smaller an animal, the more tender, weak, and soft may its skeleton be to satisfy its needs. This principle accounts for the presence of teeth in micro-animals of such a shape as would be useless in meso-animals.

Next the muscles. If 1,000 micro-animals were to jump against one meso-animal, each *Mi* would jump as high as the *Me*; for relatively equal muscles, with a single contraction, do relatively equal work. But altogether they will do absolutely as much work as the *Me*. The jump will depend on the ratio of the muscular system available for jumping-purposes to the whole body. A thousand small muscles will lift 10 times as much as one muscle 1,000 times its weight. Moreover, the small muscles would contract quicker than the large one. If one meso-man can throw stones the size of his fist for a distance of 50 of his own steps in 1 second, then a micro-man could throw stones the size of his fist for a distance of 500 of his own steps in 1-10 of a second. A micro-girl would knit a stocking of an equal number of meshes in 1-10 the time required by a meso-girl.

Again, take walking. The vibration of the leg of the micro-man will take about $\frac{1}{10}$ ($\frac{1}{\sqrt{10}}$) of the vibration-time of the leg of the meso-man. The small man will walk very rapidly; but, as fatigue depends on the number of contractions, he will tire easily, will be out of breath soon, and will have covered very little distance. If we reduced our man by 1-100, the walking would be so rapid as to give forth a low tone; and if to 1-1000, the vibration of his legs would give a shrill note. Hand-shaking would take the form of a gentle chirp. The micro-man is evidently at a great disadvantage in walking: this can only be remedied by giving him different locomotive organs and a different mode of locomotion. If we give him very long extra legs on each side, and put his body between them, he will be able to overcome the inertia of his body much more readily; he will be able to resist small shocks without shifting to a great extent the centre of gravity; and he will acquire a hopping gait, which is much better suited to small animals. In short, he will approximate the arthropod, in

¹ K. Fuchs, *Kosmos*, 1885, ii., Nos. 3, 4, 5.