



## On the sensation produced upon the tongue by magneto-electricity

Mr. F. Watkins

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Excepting between Berne and Thun, in an autumn morning in 1814, we have never seen a fog-bow. It was formed, however, by the rays of the sun ; and in so far as we remember, a fog-bow formed by the lunar rays has never been described.

D. B.

ON THE SENSATION PRODUCED UPON THE TONGUE BY  
MAGNETO-ELECTRICITY. BY MR. F. WATKINS.

*To the Editors of the Phil. Mag. and Journ. of Science.*

Gentlemen,

Among the several electrical effects exhibited by natural, artificial, steel, and electro-magnets, none are in my estimation more curious than that produced on animals. Dr. Faraday in his excellent paper on experimental researches in electricity, published in the Phil. Trans. of the past year, observes, in page 138, that when using an armed load-stone of great power, belonging to Prof. Daniell, he convulsed a frog powerfully, and adds with a diffidence so peculiarly his own, that "I thought also I could perceive the sensation upon the tongue, and the flash before the eyes." That this eminent philosopher did observe the phenomenon in a slight degree (at this moment) there can be no doubt; but as the effect was feeble, in consequence of the exciting cause not being sufficiently powerful, he alludes to it in the manner here quoted.

Through the kindness and liberality of the proprietors of the National Gallery of Practical Science, Adelaide Street, West Strand, I have seen and performed several magneto-electric experiments with great success, with their superb artificial steel magnet; and as I have not noticed in print anywhere else than in Dr. Faraday's paper, that the tongue had been electrified (if I may use the expression) by a magnet, I shall briefly recount what R. W. Fox, Esq., Mr. Saxton, and myself experienced on the 5th of June last. And should you consider the remarks worthy a space in your forthcoming Number, they are at your service.

Two slight copper wires were so disposed, that while one had an end connected with the ascending portion of the compound helical wire surrounding the armature or lifter of the large magnet, the other was joined to the descending portion, thus affording the means of completing the circuit in the mouth. When the free end of one wire was situated underneath the tongue, and the free end of the other placed above that organ, and in contact,—on breaking the connexion between the armature and magnet, a shock was felt; and when the process was repeated several times, the sensation was truly painful. Hence the original observation of Dr. Faraday was perfectly correct.

I remain, Gentlemen, your obedient humble Servant,

5 Charing Cross, 12th Jan. 1833.

FRANCIS WATKINS.

OF THE POWER OF THE HOUSE SPIDER TO ESCAPE FROM AN  
INSULATED SITUATION. BY J. F. PHENIX.

Having in the course of my reading, years ago, when a boy, met with an account of the powers of the common house-spider (*Aranea*