Cambridge Transactions	Scientific Papers	Read	Instead of
p. 79, l. 6 f. b.	p. 224, l. 6 f. b.	$$\dfrac{N n'^2}{R R'}\dfrac{dF}{dt}$$	$$N\dfrac{n'^2}{R'}\dfrac{dF}{dt}$$
p. 81, l. 11 ,,	p. 226, l. 1 ,,	$$\nabla^2 p_2$$	$$\nabla^2 p$$
,, ,, 2 ,,	corrected	$$-\dfrac{1}{4\pi}\dfrac{I}{2}\cos\theta\omega y$$	$$\dfrac{1}{4\pi}\dfrac{I}{2}\cos\theta\omega y$$
p. 82, l. 4 f. a.	,, ,,	$$k\left(\dfrac{da_2}{dy}-\dfrac{db_2}{dx}\right)$$	$$k\left(\dfrac{du_2}{dy}-\dfrac{dv_2}{dx}\right)$$
,, ,, 9 ,,	,, ,,	$$p_2=\dfrac{I\omega}{16\pi}\left[-\left(x^2+y^2\right)\cos\theta+xz\sin\theta\right]$$	$$p_2=\dfrac{I\omega}{16\pi}\left[\left(x^2+y^2\right)\cos\theta-xz\sin\theta\right]$$
,, ,, 14 ,,	p. 228, l. 6 f. a.	$$\dfrac{TR^4}{48\pi k}\omega I\sin\theta$$	$$\dfrac{TR^3}{48\pi k}\omega I\sin\theta$$
,, ,, 9 ,,	,, ,, 14 f. b.		
,, ,, 7 ,,	,, ,, 12 ,,		
,, ,, 3 ,,	,, ,, 7 ,,		
p. 83, l. 3 ,,	,, ,, 2 ,,	$$I$$	$$I_1$$
p. 82, l. 3 f. b.	,, ,, 7 ,,		
,, ,, 2 ,,	,, ,, 6 ,,		
p. 83, l. 3 f. a.	,, ,, 2 ,,		
,, ,, 4 ,,	,, ,, 1 ,,	$$TR$$	$$T$$
,, ,, 12 ,,	p. 229, 8 f. a.		
,, ,, 6 ,,	,, ,, 1 ,,	$$\cotg\phi=-\dfrac{TR\omega}{24\pi k}$$	$$\cotg\phi=-\dfrac{TR^3\omega}{24\pi k}$$
,, ,, 6 ,,	,, ,, 1 ,,	$$I'=\tfrac{1}{2}\dfrac{\dfrac{TR\omega}{24\pi k}}{\sqrt{1+\left(\dfrac{TR\omega}{24\pi k}\right)^2}}I\sin\theta$$	$$I'=\tfrac{1}{2}\dfrac{\dfrac{T}{24\pi k}\omega}{\left(\sqrt{1+\dfrac{T}{24\pi k}\omega}\right)^2}I_1\sin\theta$$
,, ,, 7 f. b.	,, ,, 9 f. b.	$$\tfrac{1}{2}\dfrac{T\omega R^4 I\cos\theta}{\sqrt{(24\pi k)^2+T^2R^2\omega^2}}$$	$$\tfrac{1}{2}\dfrac{T\omega R^3 I\cos\theta}{\sqrt{(24\pi k)^2+T^2 u^2}}$$
,, ,, 5 ,,	,, ,, 6 ,,	$$\dfrac{12\pi k T\omega R^4 I^2\cos^2\theta}{(24\pi k)^2+T^2R^2\omega^2}$$	$$\dfrac{12\pi k T\omega R^3 I^2\cos^2\theta}{(24\omega k)^2+T^2\omega^2}$$
,, ,, 3 ,,	,, ,, 4 ,,	$$\dfrac{12\pi k T\omega^2 R^4 I^2\cos^2\theta}{(24\pi k)^2+T^2R^2\omega^2}$$	$$\dfrac{12\pi k T\omega^2 R^3 I^2\cos^2\theta}{24\pi k+T^2\omega^2}$$

LUDWIG BOLTZMANN.

Vienna, October 25.

The Late Dr. Haughton.

IN your account of the late Dr. Haughton, as well as in those written of him elsewhere, I see no mention of a somewhat fantastic instance of his versatility—namely, his investigation into the most merciful way of hanging criminals. It was, I believe, entirely owing to him that the present method of the "long drop" was introduced. According to the older method the rope was so arranged that the culprit fell barely knee deep, all the rest of his body being in view above the scaffold. He died usually by strangulation, sometimes combined with apoplexy, after what seemed to be a protracted agony. Now, he is allowed to fall through some 10 feet, more or less, according to his estimated bulk and weight, and he dies with a broken neck more painlessly than virtuous persons in their own beds. The problem was to find out the length of drop that would suffice to break the neck bone, but would be insufficient to tear off the head. Dr. Haughton experimented on the tensile strengths of the spine and of the muscles, and he published a formula for the length of drop, dependent on the height and weight of the culprit. In this, I thought he had omitted a small factor, and wrote to him about it—namely, the increased sectional area of the muscles of the neck in fat men. It should be mentioned that a case actually occurred in which the drop was too deep, and the head of the criminal became wholly detached, and the legal doubt arose whether under those circumstances the sentence of being "hanged by the neck" had been duly carried out. I regret much that I have to write wholly from memory now, which I trust has not deceived me. It is very possible that Dr. Haughton's formula may be found in one of the earlier numbers of NATURE.
F. G.

The Supposed Dowsing Faculty.

PERMIT me to guard your readers against a misapprehension likely to be caused by the review in NATURE of October 14, of an investigation I have recently published on the alleged existence of a faculty for finding underground water, a power claimed by certain persons called "diviners" or "dowsers."

The reviewer states twice over that the "bulk of the paper is taken up with hearsay evidence," and again that it is "an accumulation of second-hand evidence," and that I do not give "enough weight to the natural tendency of mankind to conceal their failures." If these statements could be justified I should agree with your reviewer that my investigation "leaves the subject in the same state as it found it." But the peculiar meaning your reviewer attaches to the words he employs, and hence the value of his opinion, may be inferred from the following facts :—

Six years ago I was asked by the Council of the Society for Psychical Research to examine this question. I had, therefore, in addition to experiments which I myself conducted, to take the place of a judge in a court of inquiry, and give weight to no evidence but that of *eye-witnesses;* and so, in almost every one of the 152 numbered cases *pro* and *con* that are given in my paper, I quote such written and signed evidence, independent of the dowser himself. These witnesses are mostly men of good position, or wide experience, and to whom the question of obtaining water was a matter of practical importance and pecuniary outlay. The argument that some of them were biassed is a perfectly fair criticism, if true, but the bias was usually more on the side of incredulity than of credulity; take, *e.g.* the extreme scepticism of Mr. Richardson, the employer in the remarkable Waterford case, and of Sir Henry Harben in that at Warnham.[1] No evidential value is

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1 It may well be urged that a man would not employ a dowser unless he were already biassed in his favour. But the gentlemen named above, and several other witnesses I have cited, consented to this course, either to gratify their friends, or as a *dernier ressort*, only after scientific advice and large expenditure on boring had failed to find the water supply they needed. Their attitude towards the dowser when he arrived was that of ill-disguised contempt. How far "lucky hits" or "mother wit" can explain the dowser's success in these and other cases, the reader of my paper must judge for himself.