SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

CONTINUITY.[1] II

THE so-called non-Newtonian mechanics, with mass and shape a function of velocity, is an immediate consequence of the electrical theory of matter. The dependence of inertia and shape on speed is a genuine discovery and, I believe, a physical fact. The principle of relativity would reduce it to a conventional fiction. It would seek to replace this real change in matter by imaginary changes in time. But surely we must admit that space and time are essentially unchangeable: they are not at the disposal even of mathematicians; though it is true that Pope Gregory, or a daylight-saving bill, can play with our units, can turn the third of October in any one year into the fourteenth, or can make the sun south sometimes at eleven o'clock, sometimes at twelve.[2]

But the changes of dimension and mass due to velocity are not conventions, but realities; so I urge, on the basis of the electrical theory of matter. The Fitzgerald-Lorentz hypothesis I have an affection for. I was present at its birth. Indeed I assisted at its birth; for it was in my study at 21 Waverley Road, Liverpool, with Fitzgerald in an arm chair, and while I was enlarging on the difficulty of reconciling

[1] Address of the president of the British Association for the Advancement of Science, Birmingham, 1913.

[2] In the historical case of governmental interference with the calendar, no wonder the populace rebelled. Surely some one might have explained to the authorities that dropping leap year for the greater part of a century would do all that was wanted, and that the horrible inconvenience of upsetting all engagements and shortening a single year by eleven days could be avoided.