



LETTER TO THE EDITOR

From Garry J. Tee

Dear Sir,

Karl Pearson on Atoms

During the second half of the 19th century, the theory of atoms was vigorously rejected by many philosophers and by some scientists. The most distinguished scientific opponents were Karl Pearson and the physical chemist Wilhelm Ostwald. In the first edition of "The Grammar of Science" (1892), Karl Pearson had ridiculed the theory of atoms. As late as 1911, in his Preface to the Third edition of that book, Pearson confidently declared that "It seems almost unnecessary now to republish a book, the lesson of which is that objective force and matter have nothing whatever to do with science, and that atom and ether are merely intellectual concepts solely useful for the purpose of describing our perceptual routine. Or, again, may there not be some danger that the physicist of today may treat his electron, as he treated his old unchangeable atom, as a reality of experience, and forget that it is only a construct of his own imagination, just so far useful as it describes his

experience, and certain to be replaced by a wider concept as his insight expands?"

Pearson forms an interesting contrast with Ostwald, who had become notorious for his vituperation against scientists who regarded atoms as real. Ostwald, in his 1904 Faraday Lecture, expressed his satisfaction at developing chemical theory without that unnecessary hypothesis of atoms. But soon after that, Jean Perrin performed his classical experiments on Brownian motion, which verified Einstein's mathematical theory of Brownian motion of particles being caused by molecules impacting those particles. In 1908, Ostwald published his acceptance of atomic theory, since Perrin's experiments had proved that molecules actually do exist.

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