IONS IN GASES

By Professor JOHN ZELENY
YALE UNIVERSITY

The problem of size and that of mass, which is usually connected with it, has been one of great perplexity. This problem presented itself at the very outset of the study of these ions, and has remained with us ever since.

Forty-four years have passed since Thomson and Rutherford\(^1\) adopted the ionization theory to explain the conductivity imparted to gases by x-rays. At the time, the electron had not been isolated, and the process of ionization of a diatomic molecule was regarded as consisting in the pulling apart of its two atoms.

However, when Thomson and Rutherford obtained a rough estimate of the speeds with which the ions migrate in an electric field, they found that the mobility was much smaller than an ion of atomic size should have according to the kinetic theory of gases.


\(^1\) Address of the retiring president of the American Physical Society given in Philadelphia, December 27, 1940.
Editor's Summary

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