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PHYSICS AND POLITICS¹

AN OLD ANALOGY REVISED

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It is just fifty-five years since Walter Bagehot wrote his "Physics and Politics," a very suggestive book in its day. He began the first chapter of this book with a reference to "the sudden acquisition of much physical knowledge" which had marked the second half of the nineteenth century, and declared it his purpose to show the bearing of these new ideas upon the political conceptions of mankind. That purpose he fulfilled with much ingenuity, pointing out the various lines along which the advance in natural science seemed to suggest modifications in the old theories of the state and government.

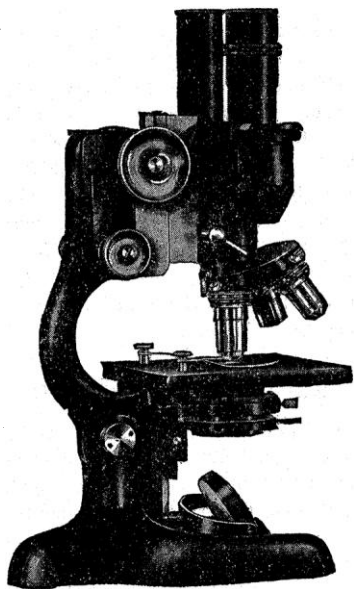
This was only a half-century ago; yet the new physics of Bagehot's day has already grown old. Its basic concepts have been turned inside out and upside down. Its laws relating to the indestructibility of mass and the conservation of energy have been radically amended. Even a generation ago the atom was held to be the ultimate and indivisible unit in the composition of the universe. It was the basis upon which the scientists of the nineteenth century built up an inclusive set of laws and principles relating to the structure of all creation.

To-day, all this is changed. The world is still composed of atoms; but we have discovered that they are not the last word in matter. On the contrary, they are themselves incessantly in process of division into still smaller, highly-energized particles known as electrons. These diminutive units of disembodied electricity, as they may be called, are continually in flight, yet they form part of every atom in the universe. It is quite possible, and even probable, that these electrons are engaged in the business of transforming matter into energy, and energy into matter. If this be so, there is nothing solid in the old sense, nothing static, nothing that is not continually in process of change.

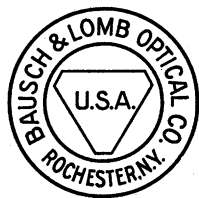
Nor is this all. In Bagehot's day the science of physics was mainly concerned with visible and large-scale phenomena, with such mechanics of nature as were observable to the naked eye. To-day the physicist has shifted most of his attention to the study of

¹ Presidential address delivered at the twenty-fourth annual meeting of the American Political Science Association, Washington, D. C., December 29, 1927.

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