

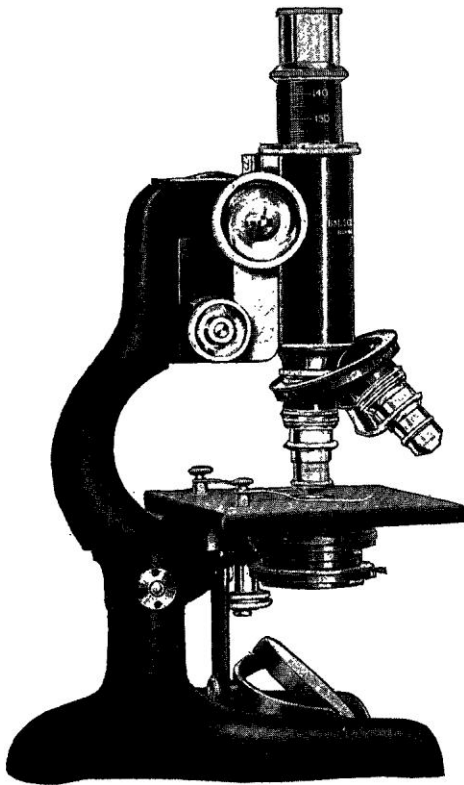
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# SCIENCE

VOL. LXIV

JULY 16, 1926

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## EMPIRICISM AND RATIONALISM<sup>1</sup>

MEMBERS of the Harvey Society, ladies and gentlemen, I have been asked to discuss the proper manner of treating data from a statistical and mathematical viewpoint and I have chosen as the precise wording of my topic the more general formulation "Empiricism and Rationalism," to the end that I might emphasize a distinction in point of view between methods, and more generally between aims, in the treatment of data by statistical or mathematical analysis. For I believe that without a keen appreciation of the distinction between empiricism and rationalism it is impossible properly to understand the problem of the treatment of observational material.

When we seek for definitions of empiricism or rationalism we may well turn to the Century dictionary in which the philosophical definitions were formulated by Charles S. Peirce, an expert in making refined physical observations and in reducing them, and a great logician and philosopher. I understand that in the medical sense empiricism is quackery, so at any rate the Century dictionary states, but this part of the definition may not be due to Peirce. We find the following:

Empiricism—3. The metaphysical theory that all ideas are derived from sensuous experience—that is, that there are no innate or *a priori* conceptions.

And again:

Rationalism—3. In metaphysics the doctrine of *a priori* cognitions, the doctrine that knowledge is not all produced by the action of outward things upon the senses but partly arises from the natural adaptation of the mind to think things that are true.

You will notice the difference between these definitions. It isn't that empiricism emphasizes the importance of sensuous experience. It is that it states that all ideas are so derived and that there are no innate or *a priori* conceptions. This notion is not unfamiliar; one finds it expressed by a good many writers, and particularly by writers in the biologic fields. Some seem to hesitate a little bit at the extreme form of the statement and to qualify it by some sort of assumption that there may be an inheritance of ideas, so that empiricism should be stretched to

<sup>1</sup> Lecture delivered before the Harvey Society on February 6, 1926.

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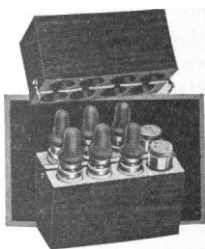
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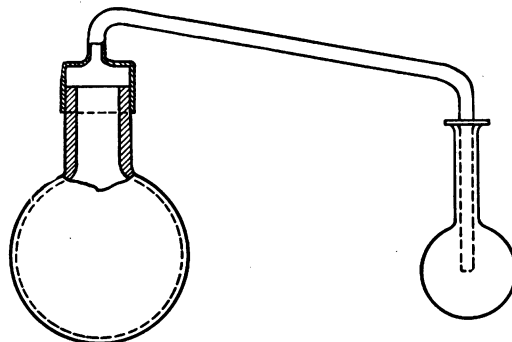
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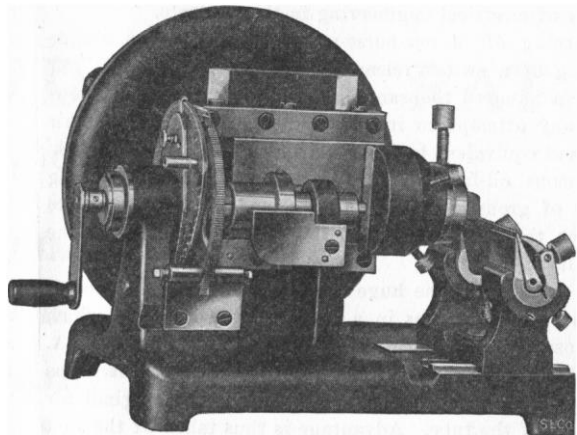
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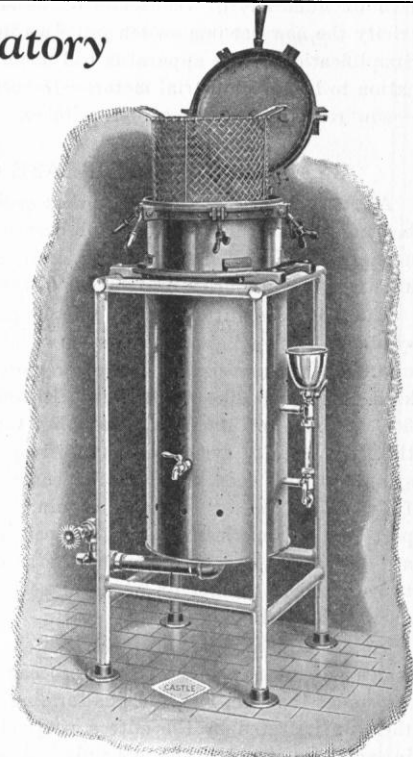


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