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THE ROMANCE OF THE NEXT DECIMAL PLACE¹

By Professor F. K. RICHTMYER

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IN the year 1896 the *Beiblätter zu den Annalen der Physik* devoted 1,032 pages to reviewing the literature of physics. In 1930 the corresponding journal re-quired almost five times that amount of space.

The *Physical Review* for 1896 contained 490 pages of text. Computed on the basis of the same size and form of page, the *Physical Review* for 1930 contains over 5,000 pages—an increase of over tenfold.

At the present rate, graduate schools in America are granting ten times as many doctorates in physics as they did at the beginning of the century.

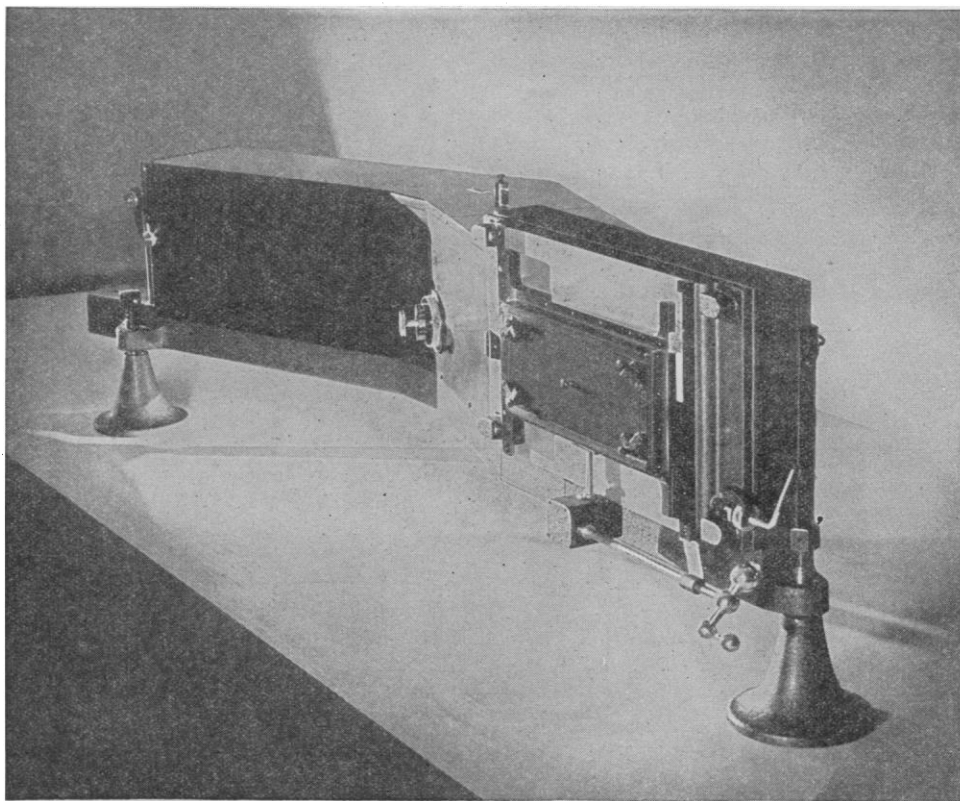
If we take into account the large amount of re-search in technical, industrial and governmental lab-oratories which is never published, and if we ignore the still larger amount of work in engineering which has grown directly out of physics and is published in engineering journals, we should probably be justified in making the statement, which I believe to be con-servative, that there is now in progress from twenty

to twenty-five times as much research in physics as there was a third of a century ago.

Physics in 1931, however, differs from the physics of, say, 1895 not only in volume of activity, great as that is to-day, but also in basic theories and view-point, as well as in underlying factual content. The physicist of 1895, in his wildest imagination, could not have dreamed of x-rays and radioactivity, each to be discovered within a year; of the quantum theory, to be proposed before the century ended; or of the rôle which the then hypothetical electron was to play not only in altering completely the whole framework of physical theory but in making possible inventions and other developments which were to revolutionize certain important phases of our economic and social life. Indeed we of to-day are so impressed with both the quantity and the fundamental nature of our contribu-tions that we are wont to think, and even sometimes to remark, that the progress which physics has made since 1895 exceeds that of all preceding time.

But if we view our science objectively and in

¹ Address of the retiring vice-president of Section B—Physics, American Association for the Advancement of Science, New Orleans, December 30, 1931.



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