

SCIENCE

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THE EFFECT OF RESEARCH IN GENETICS
ON THE ART OF BREEDING¹

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MEMS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

THE knowledge of breeding has advanced so rapidly in recent years that few of us realize the great change that has taken place in our understanding of the fundamental principles, and the effect that this change has had on the methods of practical breeding which we advocate. I had the good fortune to begin my studies and experiments in breeding in 1890, ten years before the rediscovery of Mendel's now famous principles of heredity, or the publication of de Vries's mutation theory. I have thus had the opportunity to follow this change through all its ramifications. From a condition of ignorance and largely of chaos, where all advance was taken as a lucky chance, we have developed to a position where practically each step may be taken intelligently. True, we touch the limits of knowledge on every hand and many of the most fundamental problems still remain unsolved, yet our understanding to-day, which enables us to analyze a plant into its component parts or characters, and then in turn by synthesis to build up a new structure by the combination of different characters into a new race or variety, is to our former understanding as light to darkness. The knowledge of breeding has developed into the science of genetics, and is fast assuming through the orderly presentation and classification of facts, the form of an exact science. Yet with all this advance in our understanding,

¹ Paper No. 27, Department of Plant Breeding, Cornell University, Ithaca, New York. Annual address of retiring chairman of the Plant Section, American Breeders' Association.

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