Thomas H. Morgan Given New Honor

General Science

Famous Authority on Heredity Elected A. A. A. S. President

The American Association for the Advancement of Science has chosen Dr. Thomas Hunt Morgan to succeed the eminent physicist, Dr. Robert Andrews Millikan, as president. When the A. A. A. S. meets next Christmas week in Cleveland, Dr. Morgan will preside and Dr. Millikan will give the address as retiring president.

To many the name of Thomas Hunt Morgan is synonymous with the modern theory of the gene as the determining factor in heredity. Upon his observations is based the work of many other experimental biologists. A quotation from the address of Dr. Charles B. Davenport, of the Carnegie Institution of Washington at the Des Moines meeting of the A. A. A. S. shows graphically the place his work has had in solving the great problem of heredity and evolution:

"The mechanism of inheritance has long been a subject of speculation. Since egg and sperm are equal carriers of heredity, yet have little in common but their nuclei, the nucleus was early regarded as the carrier of the mechanism of heredity. Weismann worked out in detail its role and on speculative grounds concluded that the germ plasm or the totality of the chromosome was the special mechanism. The work of the past quarter of a century under the influence of Morgan has placed this hypothesis on a firm basis of fact. Now we know the essential thread in the course of evolution; it is the germ plasm; and the problem of evolution is the problem of the history of the germ plasm. Some one has said that the hen is the egg's method of making more eggs. One may even more truly say that the hen and the cock; the man and the woman, are the germ plasm's method of perpetuating itself; of multiplying infinitely its particular kinds of genes."

Dr. Morgan is now at the California Institute of Technology. Previously he was professor of experimental zoology at Columbia University, and much of his research work has been conducted there. He has also served as special lecturer at many other universities. Yet he has found time to contribute largely to scientific journals and to write a number of widely read books, a few of which are "Experimental Embryology," "The Theory of the Gene," "Experimental Zoology," "Evolution and Genetics," and "The Physical Basis of Heredity."

His election to the presidency of the American Association for the Advancement of Science adds to a long list of honors. He has been president of the National Academy of Sciences since 1927. He is a member of many learned societies in this country and abroad, and holds doctorate degrees from Edinburgh and McGill universities as well as from Johns Hopkins University and the Universities of Michigan and Kentucky.

The following is a quotation from "The Theory of the Gene," one of Dr. Morgan's best known works:

"There remains, however, a problem of some interest, namely, whether some or many of the changes in the genes that lead to the occurrence of mutant characters (whether recessive, intermediate, or dominant, makes little difference) may not be due to a breaking up of a gene, or to its reconstitution into another element producing somewhat different effects. There is, however, no reason for assuming that such change, if it occurs, is a downhill one rather than the development of a more complex gene, unless it appears more probable, *a priori,* that a highly complex stable compound is more likely to break down than to build up. Until we know more concerning the chemical constitution of the genes, and how they grow and divide, it is quite futile to argue the merits of the two sides of the argument. For the genetic theory it is only necessary to assume that any kind of a change may suffice as a basis for what is observed to take place.

"It is equally futile to discuss, at present, whether new genes arise independently of the old ones, and worse than futile to discuss how the genes arose in the first instance. The evidence that we have furnishes no grounds whatsoever for the view that new genes independently arise, but it would be extremely difficult, if not impossible, to show that they do not arise. . . .

"The only practical interest that a discussion of the question as to whether genes are organic molecules might have would relate to the nature of their stability. By stability we might mean only that the gene tends to vary about a definite mode, or we might mean that the gene is stable in the sense that an organic molecule is stable. The genetic problem would be simplified if we could establish the latter interpretation. If, on the other hand, the gene is regarded as merely a quantity of so much material, we can give no satisfactory answer as to why it remains so constant through all the vicissitudes of outcrossing, unless we appeal to mysterious powers of organization outside the genes that keep them constant. There is little hope at present of settling the question. A few years ago I attempted to make a calculation as to the size of the gene in the hope that it might throw a little light on the problem, but at present we lack sufficiently exact measurements to make such a calculation more than a speculation. It seemed to show that the order of magnitude of the gene is near that of the larger-sized organic molecules. If any weight can be attached to the result it indicates, perhaps, that the gene is not too large for it to be considered as a chemical molecule, but further than this we are not justified in going. The gene might even then not be a molecule but only a collection of organic matter not held together in chemical combination.

"When all this is given due weight it nevertheless is difficult to resist the fascinating assumption that the gene is constant because it represents an organic chemical entity. This is the simplest assumption that one can make at present, and since this view is consistent with all that is known about the stability of the gene it seems, at least, a good working hypothesis."

The election of Dr. Morgan to the presidency of the American Association sets a remarkable record for the California Institute of Technology. In four years, three of the Association's heads have come from "Caltech." In December, 1926, Dr. Arthur Amos Noyes, director of the Gates Chemical Laboratory at the Institution, was elected. Dr. Millikan is president of the institution.

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