

THE MECHANISM
OF
MENDELIAN HEREDITY

0.0 YELLOW SPOT.	0.0 STREAK.	0.0 SEPIA.	
0.7 LETHAL I.			BENT.
1.0 WHITE, EOSIN, CHERRY.			
0.0 ABNORMAL.			EYELESS.
0.0 BIFID.			
14.7 CLUB.	18.0 DACHS.		
19.0 SHIFTED.			
		25.0 PINK, PEACH.	
22.5 LETHAL III.			
27.0 TAN.			
33.0 VERMILION.	34.7 BLACK.		
33.0 MINIATURE.		40.0 KIDNEY.	
	40.0 PURPLE.		
41.7 LETHAL V.			
43.0 SABLE.			
49.0 LETHAL IV.	52.0 VESTIGIAL.	55.0 EBONY, SCOTT.	
55.1 RUDIMENTARY			
56.0 FORKED.	59.4 CURVED.		
57.0 BAR.			
59.0 FUSED.		72.0 BEADED.	
63.0 LETHAL 3.	84.1 ARC.	88.0 ROUGH.	
	90.0 SPECK.		
	91.0 MORULA.		

(Frontispiece.)

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OF
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To

EDMUND BEECHER WILSON

PREFACE

From ancient times heredity has been looked upon as one of the central problems of biological philosophy. It is true that this interest was largely speculative rather than empirical. But since Mendel's discovery of the fundamental law of heredity in 1865, or rather since its re-discovery in 1900, a curious situation has begun to develop. The students of heredity calling themselves geneticists have begun to draw away from the traditional fields of zoology and botany, and have concentrated their attention on the study of Mendel's principles and their later developments. The results of these investigators appear largely in special journals. Their terminology is often regarded by other zoologists as something barbarous,—outside the ordinary routine of their profession. The tendency is to regard genetics as a subject for specialists instead of an all-important theme of zoology and botany. No doubt this is but a passing phase; for biologists can little afford to hand over to a special group of investigators a part of their field that is and always will be of vital import. It would be as unfortunate for all biologists to remain ignorant of the modern advances in the study of heredity as it would be for the geneticists to remain unconcerned

as to the value for their own work of many special fields of biological inquiry. What is fundamental in zoology and botany is not so extensive, or so intrinsically difficult, that a man equipped for his profession should not be able to compass it.

In the following pages we have attempted to separate those questions that seem to us significant from that which is special or merely technical. We have, of course, put our own interpretation on the facts, and while this may not be agreed to on all sides, yet we believe that in what is essential we have not departed from the point of view that is held by many of our co-workers at the present time. Exception may perhaps be taken to the emphasis we have laid on the chromosomes as the material basis of inheritance. Whether we are right here, the future—probably a very near future—will decide. But it should not pass unnoticed that even if the chromosome theory be denied, there is no result dealt with in the following pages that may not be treated independently of the chromosomes; for, we have made no assumption concerning heredity that cannot also be made abstractly without the chromosomes as bearers of the postulated hereditary factors. Why then, we are often asked, do you drag in the chromosomes? Our answer is that since the chromosomes furnish exactly the kind of mechanism that the Mendelian laws call for; and since there is an ever-increasing body of information that points clearly to the chromosomes as the bearers of the

Mendelian factors, it would be folly to close one's eyes to so patent a relation. Moreover, as biologists, we are interested in heredity not primarily as a mathematical formulation but rather as a problem concerning the cell, the egg, and the sperm.

T. H. M.

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