PREFACE

THE idea of writing this little book occurred to me whilst reading Mr. W. C. D. Whetham's volume on 'The Recent Development of Physical Science.' I found the story of the modern progress of physics so interesting as to encourage the belief that a similar account of the subjects with which I was myself more particularly familiar might prove of a like interest to other people. I did not, indeed, suppose for a moment that I could vie with Mr. Whetham in the power of literary expression which renders his book so eminently readable. I rather hoped that the peculiar interest and importance of the theme might outweigh the present author's deficiencies in this respect.

For the group of subjects of which I intended to give a brief account Mr: W. Bateson has recently proposed the term 'genetics,' an expression which sufficiently indicates their scope to the initiated. Since, however, the meaning of the word 'genetics' is not yet clearly understood by everybody, it seemed better to adopt in the present instance a somewhat more descriptive title.

The rediscovery of Mendel's law some seven years ago led to a complete change in our attitude towards the problems of variation, heredity, and evolution; and the new method of study thus introduced has rendered possible a renewal of the attack upon these problems with increased vigour and with remarkable results. At the present time this activity may be said to have its centre in the school of genetic research founded at Cambridge by the independent energy of Mr. Bateson. So far-reaching are the results already arrived at by Mr. Bateson and others, both in their scientific interest and in their probable influence upon human affairs, that it seemed desirable to give an immediate account of these and of kindred lines of recent study, even though the rapid progress which is a characteristic manifestation of this department of science must render any such attempt a more or less transitory one.

Whilst I was still engaged upon my task, the first volume of Dr. Lotsy's admirable 'Vorlesungen über Descendenztheorien' made its appearance. But for the fact that most of the following pages had then already been written, I might have hesitated to pursue my project, since a book not altogether unlike the present might be produced by the comparatively simple process of making a series of judicious extracts from Dr. Lotsy's work. The latter is, however, in the German language, and on a considerable scale, so that there seemed still to be room for an introduction to

the science of genetics of the more modest dimensions which I had contemplated. I should wish, however, particularly to recommend Dr. Lotsy's lectures to any reader who wishes to go further into these matters.

I am indebted to several friends for assistance during the course of my work. Mr. R. P. Gregory kindly read through the proof of the chapter on cytology; and I wish here to record my thanks to Mr. J. Stanley Gardiner, to Mr. C. T. Regan, to Mr. W. S. Perrin, and to Mr. R. C. Punnett for information on special points. To the last-named I owe the photograph which appears as Fig. 15. I am particularly grateful to Mr. R. H. Biffen and to Mr. G. Udney Yule for access to work which has not hitherto appeared in print.

Adequately to acknowledge Mr. Bateson's influence upon these pages is a more difficult matter, and not the less so because I have deliberately refrained as far as possible from consulting him whilst the book was in course of preparation, in order that it might retain if possible some traces of individuality. It is therefore clear that he is in no way responsible for its deficiencies. But, apart from the fact that I am conscious of having quoted his ideas at more points than could possibly be acknowledged *seriatim*, I owe to Mr. Bateson both my first introduction to the science of genetics, and a continual fund of encouragement in the prosecution of studies connected with it.

I have to thank Mr. Francis Darwin for kind permission to reproduce a portrait of his father; Professor

de Vries for the present of an excellent portrait; and Mr. Francis Galton for the loan of a photograph well known from earlier reproductions. The portrait of Mendel is reproduced from the frontispiece to Mr. Bateson's 'Defence,' by the permission of the Syndics of the Cambridge University Press. Messrs. Macmillan and Co. have kindly allowed the reproduction of the diagram which occupies p. 80, and of the table and figure on pp. 82 and 83. The figures facing pp. 136 and 143 are from de Vries' 'Mutationstheorie,' published by Messrs. Veit.

The attempt has been made to render the following pages intelligible to the general reader, as well as to the more scientific public, to which they are primarily addressed. A short glossary has been added, which may be found useful by those who have no previous acquaintance with biological terms.

CAMBRIDGE,
October 23, 1906.