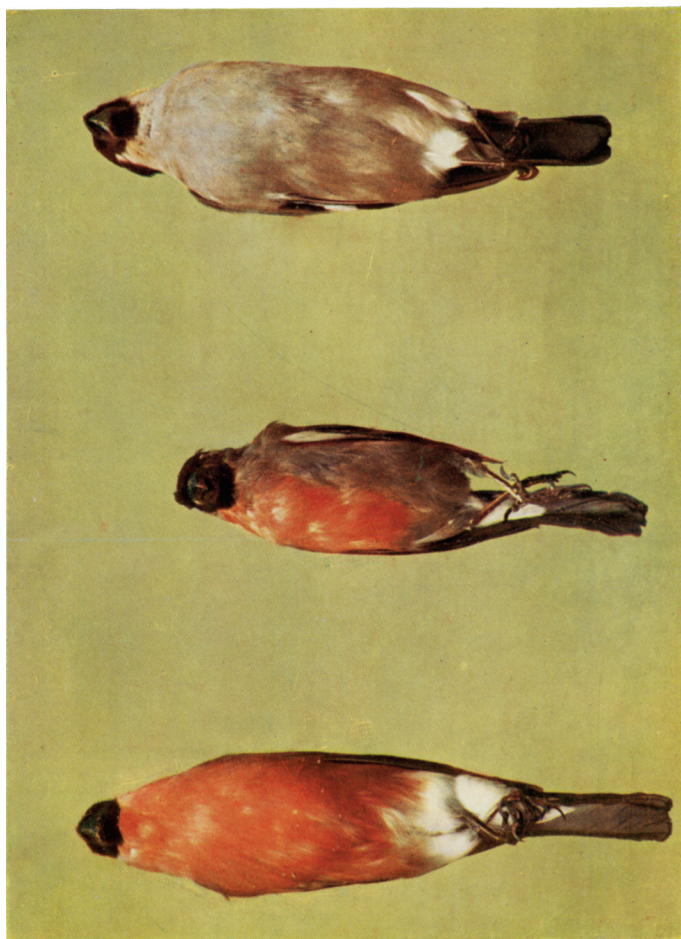


Cambridge University Press  
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Gynandromorph Bullfinch. (From blocks given by Prof. Poll.) On the left, normal male: on the right, normal female. In the centre, gynandromorph with male coloration on the bird's right side, female on the left.

THE  
DETERMINATION OF SEX

BY  
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Cambridge :  
at the University Press  
1914

Cambridge University Press  
978-1-107-49284-4 - The Determination of Sex  
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[More information](#)

**CAMBRIDGE**  
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

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[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9781107492844](http://www.cambridge.org/9781107492844)

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First published 1914

First paperback edition 2015

*A catalogue record for this publication is available from the British Library*

ISBN 978-1-107-49284-4 Paperback

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## PREFACE

THIS little book was originally planned as a companion volume to my *Heredity in the Light of Recent Research*, which was first published in 1910. It was intended to treat more fully the problems shortly dealt with in a chapter added to the second edition of that book, and to show how recent investigations on Sex, approaching the subject from several different sides, tend to suggest conclusions in many respects in accord with one another. As the writing of the book progressed, it was found necessary to make considerable alterations in the original plan, in consequence of the differences in the condition of our knowledge of Heredity and of Sex.

The study of Sex has not yet reached a stage at which it is possible to give an account of established facts, and of generally accepted inferences from them, which shall be even comparatively free from controversial matter. The subject has been approached by many quite different lines, and these lines, although convergent, have as yet given no indisputable indication of the central point towards

which they all tend. Under these circumstances, a completely impersonal survey of the facts, and of the interpretations which have been suggested, would be of little value, and consequently I have not hesitated to give my own opinion, to suggest interpretations which appear to me to be probable, or to criticize those of others. In this way I have tried to make the book rather more than a mere summary, and to give a general account of our present knowledge of the problem of sex-determination from the point of view of one engaged in research on the subject.

I have striven to avoid as far as possible the use of technicalities which might embarrass the untrained reader, but in a subject the roots of which ramify into almost every field of biology, the employment of some technical terms has been unavoidable. I have explained most of these where they are first used, and have defined the greater part of them in a glossary. A list of references has been added to all the chief authorities quoted, but in a book of this size it is impossible even to mention many very important contributions to the subject, and no attempt has been made either to give a complete bibliography, or to summarize the whole of our knowledge. My aim has rather been to discuss all the more important lines of evidence which bear on the problem of sex-determination, and to illustrate

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each by one or more representative examples. The reader who should wish to follow any branch of the subject further, will easily find references to other works in those quoted in the list.

I have intentionally confined my account to the problems of sex-determination in animals, including Man, and have omitted all reference to the work of the same kind which has been done on plants. One reason for this is the limitation of space, but the problems raised by plants are in some respects different from those in animals, and it is perhaps preferable, at the present time at least, to consider them separately. When the subject of sex-determination in plants is more fully known, it will doubtless fall into line with the knowledge obtained from animals, and any complete account of the subject will have to include both, but for the present the omission does not leave a very serious blank.

Of the illustrations, about half a dozen are new, and are reproduced from drawings or photographs made for me by Mr E. Wilson; a few are reproduced, in some cases with some modifications, from well-known figures, and for the remainder I am indebted to the courtesy of the various authors for permission to copy their illustrations. In the case of all which are not original, the source is acknowledged in the description, and I take this opportunity of recording my sincere gratitude to the authors, editors and

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publishers, not only in England, but also in Germany and elsewhere, who have given me such valuable help in this matter. My thanks are more especially due to Prof. Poll, of Berlin, for giving me the blocks from which the frontispiece is printed, to Prof. Morgan, of New York, for lending original drawings of mutations in *Drosophila* (Plate VII), and to Mr H. Main, for giving me the photographs of the gynandromorphic ant and family of *A. betularia* reproduced on Plates XX and XXI.

L. DONCASTER.

CAMBRIDGE,  
*November 1914.*



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