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978-1-108-01322-2 - Algae: Myxophyceae, Peridinieae, Bacillarieae, Chlorophyceae

G. S. West

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Algae

George Stephen West (1876–1919) was a prominent British botanist specialising in freshwater algae. In 1906 he became a lecturer in botany at the University of Birmingham and was later appointed the Mason Professor of Botany. This volume was first published in 1916 as the first of the Cambridge Botanical Handbooks series and provides a description of both marine and freshwater algae in the Myxophyceae, Peridinieae, Bacillarieae and Chlorophyceae classes. West describes the habitat, biological conditions, distribution, internal and external structures and life history of these algae in great detail, with a bibliography concluding each chapter. The book provided the first detailed description of the Myxophyceae (or blue-green) class of algae, and provides an insight into knowledge and classification of algae at the time of publication. A second volume containing a full taxonomic account of freshwater algae was planned, but not published owing to the author's death in 1919.

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Cambridge Botanical Handbooks

Edited by A. C. SEWARD and A. G. TANSLEY

ALGÆ

VOLUME I

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BACILLARIEÆ CHLOROPHYCÆ

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ALGÆ

VOLUME I

MYXOPHYCÆ, PERIDINIEÆ, BACILLARIEÆ,
CHLOROPHYCÆ, TOGETHER WITH A BRIEF
SUMMARY OF THE OCCURRENCE AND
DISTRIBUTION OF FRESHWATER ALGÆ

BY

G. S. WEST, M.A., D.Sc., A.R.C.S., F.L.S.

MASON PROFESSOR OF BOTANY IN THE UNIVERSITY OF BIRMINGHAM

Cambridge :
at the University Press

1916

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THE rapid development of certain branches of botanical science in recent years has emphasised the need of books by specialists on different groups of the vegetable kingdom. After acquiring a superficial knowledge of the larger groups, the student who desires to pursue the subject beyond the limits of a general text-book receives but little assistance from existing treatises, at least as regards recent researches into the morphology and natural history of plants. The enormous output of original papers renders the task of keeping abreast of current work increasingly difficult: the accumulation of facts necessitates a periodic review from a broad standpoint of the results of recent work, more especially as they affect the actual problems of evolution presented by the various classes of plants. It is with a view of meeting this want that the present series is designed.

Professor West's book dealing with certain groups of Algæ is the first of the Handbooks to appear. The Volumes on Lichens, Fungi, and Gnetales by Miss Lorrain Smith, Dr Helen Gwynne-Vaughan, and Professor Pearson respectively are in an advanced state of preparation.

BOTANY SCHOOL,
CAMBRIDGE.

August 1, 1916.

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PREFACE

IT is now twelve years since the publication of the author's 'Treatise on British Freshwater Algæ' and several years since that work was sold out. Since the time of its publication great strides have been made in our knowledge of many groups of Algæ and it is now proposed to replace the 'Treatise' by two works of which this is one. The present volume, contributed to the series of Cambridge Botanical Handbooks, is a biological account of all the Algæ included in the Myxophyceæ, Peridinieæ, Bacillarieæ and Chlorophyceæ, both freshwater and marine, and therefore from the biological aspect more than covers the Algæ dealt with in the 'Treatise.' The author has also in preparation a distinct work which will be a complete systematic account, with illustrations, of all the Freshwater Algæ (with the exception of Desmids and Diatoms) which are known to occur in the British Islands. This is a task of some magnitude and will still take some time to complete.

An endeavour has been made to be impersonal throughout this volume, but the whole work must of necessity be largely the embodiment of the views of the author.

A chapter has been devoted to the Peridinieæ because these organisms are important as 'producers' of organic substance, especially in the marine plankton, and they store starch and oil as food-reserves; moreover, no comprehensive modern account of the group has previously been published in an English text-book. It might be suggested that the Flagellata should have been included in this volume, since the majority of them are also 'producers,' but the immense additions in recent years to our knowledge of these organisms certainly necessitates a separate volume to do them justice.

The greater part of this work deals with the Green Algæ. It is to this group that the author has devoted most of his investigations and a number of new details of classification are suggested. The treatment of this group is different from that of the Myxophyceæ, Peridinieæ and Bacillarieæ, being sectional in character. Generalizations are well nigh impossible in such a large group containing so many diverse types, and to set forth an intelligible

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and reliable account of the various forms in a manner which would not confuse the student, sectional treatment was deemed essential. It must always be remembered that in the Green Algae taxonomy is intimately bound up with cytology and life-histories.

The bibliography of the various groups does not pretend to be complete, but consists only of the works which have been cited in the text. It will, however, be found to contain almost all the publications of importance which the student may wish to consult.

There are 271 illustrations comprising 1284 lettered or numbered figures, of which 681 are from original drawings by the author.

The author wishes to express thanks for permission to reproduce certain figures to Professor N. Wille of Christiania, to Professor C. A. Kofoid of Berkeley, California, to Dr F. Börgesen of Copenhagen, to Professor F. Oltmanns of Freiburg, and to Mr E. N. Transeau of Columbus, Ohio; his best thanks are also due to Mr W. B. Grove of Birmingham for kindly consenting to read through the whole of the final proofs.

There has been considerable delay in the publication of this volume, largely owing to a prolonged illness of the author in 1913–14 and partly owing to conditions which have arisen as a result of the present calamitous European upheaval.

G. S. WEST.

THE BOTANICAL LABORATORY,
THE UNIVERSITY,
BIRMINGHAM.
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ERRATA

- Page 96, line 36, *for* Mereschowsky *read* Mereschkowsky.
,, 142, to description of fig. 94 should be added 'from Oltmanns.'
,, 165, line 18, *for* Schwarda *read* Schmarda.
,, 168, in description of fig. 97 *I* and *J*, *for* *Pteromonas angulosa* (Carter) Lemm.
 read *Pteromonas Takedana* G. S. West.
,, 169, line 5, *for* *Chlamydomonas giganteus* *read* *Chl. gigantea*.
,, 194, line 33, *for* *Diplosiphon* *read* *Diplosphaera*.
,, 206, line 25, *for* *Ch. Nordstedtii* *read* *Ch. globosum*.
,, 217, in description of fig. 143 *I*, *for* *P. glandulifera* *read* *P. glanduliferum*.
,, 219, line 14, *for* '3 to 6 nuclei' *read* '4 to 8 nuclei.'
,, 425, line 23, *for* *E. majus* *read* *E. major*.