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Scientific Papers of Asa Gray

Born in the state of New York, Asa Gray (1810–88) abandoned a medical career to pursue his true interest in botany. He sought the mentorship of the influential American botanist John Torrey and their collaborative efforts in classifying North American flora according to biological similarities paved the way for Gray's professorship at Harvard University after years of research. Gray was also one of the few scientists to whom Charles Darwin revealed his early ideas of evolutionary theory. After Gray's death, his fellow botanist Charles Sprague Sargent (1841–1927) compiled the lesser-known writings of a prolific author whose user-friendly *Manual of the Botany of the Northern United States* and other works inspired generations of botany enthusiasts. The two-volume collection appeared in 1889. Volume 1 contains Gray's reviews of important scientific publications, illuminating the development of botanical literature between 1834 and 1887.

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VOLUME 1

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SCIENTIFIC PAPERS

OF

ASA GRAY

SELECTED BY

CHARLES SPRAGUE SARGENT

VOL. I.

REVIEWS OF WORKS ON BOTANY AND
RELATED SUBJECTS

1834-1887

London
MACMILLAN AND CO.
1889

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INTRODUCTION.

ASA GRAY'S first scientific paper was published in 1834; his last was written in 1887, a few weeks before the end of his life. The number of his contributions to science and their variety is remarkable, and astonishes his associates even, familiar as they were with his intellectual activity, his various attainments, and that surprising industry which neither assured position, the weariness of advancing years, nor the hopelessness of the task he had imposed upon himself, ever diminished.

Professor Gray's writings may be naturally grouped in four divisions. The first in importance contains his contributions to descriptive botany. These with few exceptions were devoted to the flora of North America, and although it did not fall to his lot, as it did to that of some of his contemporaries, to elaborate any one of the great families of plants, the extent and character of his contributions to systematic botany will place his name among those of the masters of the science.

His works of a purely educational character are only second in importance to his writings on the flora of North America; and their influence upon the development of botanical knowledge in this country, during the half century which elapsed between the publication of the first and the last of the series, has been great and must long be felt. No text-books of science surpass them in the philosophical treatment of the subjects they embrace, or in the beauty and clearness of their style.

A series of critical reviews of important scientific publications, and of historical accounts of the lives and labors of botanical worthies, may be conveniently grouped in the third division of Professor Gray's writings; while in the fourth fall

a number of papers which owe their existence to the discussions which followed the publication of Mr. Darwin's "Origin of Species,"—discussions in which Professor Gray took in this country the foremost position.

It is not proposed to republish the works of descriptive botany, although some of the early and most important of these memoirs are out of print and quite beyond the reach of the great mass of botanical students. The value of these papers, however, is historical only, as all that they contain of permanent usefulness has already been incorporated in standard works upon the science, or will be used in due time to lighten the burden of those upon whom has fallen the task of completing the "Flora of North America." There is even less reason for reprinting any of the earlier editions of the text-books. The last editions contain their author's latest views upon the science, and are still within the reach of students. Works of this character change necessarily as knowledge increases, and the value of every edition of a text-book, except the last, is merely historical.

The philosophical essays, or the most important of them, which grew out of the discussion of the Darwinian theory, have already been republished by their author, and another republication of these papers is therefore not proposed at this time, although it is impossible, without having read them, to understand rightly Professor Gray's influence upon the intellectual movement of his time.

There remain the reviews, the biographical notices, and a few essays upon subjects of general interest to botanists. They have long been out of print and have not been incorporated in any recent publication. It was believed therefore that a reissue of these papers, or a selection from them, would be a useful contribution to botanical literature, and a proper tribute to the memory of their author; and for these reasons these volumes have been prepared. Many of the reviews are filled with original and suggestive observations, and, taken together, furnish the best account of the development of botanical literature during the last fifty years that has yet been written.

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There can hardly be a question with regard to Professor Gray's value as a critic. His reviews represented the opinion of a just and discriminating mind, thoroughly familiar with all sides of the question before it, critical rather than laudatory, loving the truth and its investigators, but the truth above everything else. No other naturalist of his reputation and attainments ever devoted so much time to literary work of this sort, or continued it so uninterruptedly for so many years; and in our time the criticism and advice of no other botanist has been so eagerly sought or so highly valued by his contemporaries.

The selection of the articles for republication has been an embarrassing and difficult task. The amount of material at my disposal has been overwhelming, and desirable as it might have been to republish it all, it has not been possible to do so within reasonable bounds. More than eleven hundred bibliographical notices and longer reviews were published by Professor Gray in different periodicals; and it was necessary in preparing these volumes to exclude a number of papers of nearly as great interest and value as those which are chosen.

I have endeavored in making this selection to present, as far as it is possible to do so in a series of papers written independently of each other during a period of more than fifty years, a history of the growth of botanical science during a period which must remain one of its great eras — a period marked by the gradual change of ideas among naturalists upon the origin and fixity of the species which has broadened the field of all biological investigation; by the establishment and systematic arrangement of vast herbaria gathered from all parts of the world; by the introduction of improved and more philosophical methods of investigation in the laboratory; and by the growth of popular appreciation for the value of scientific training. I have tried, in making a selection of these articles, to display as far as possible the mental grasp of their author and his varied attainments in all departments of botany; and to include the reviews of those works which Professor Gray himself believed had played in the two continents, during his

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INTRODUCTION.

time, the most important part in elevating the science to which his whole life was devoted.

The second and third volumes of this series will contain a few essays of general interest, and a selection of the biographical sketches of the principal botanists who have died in recent years.

C. S. S.

BROOKLINE, April, 1889.

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