

**OUR NATIVE FERNS AND THEIR
ALLIES: WITH SYNOPTICAL
DESCRIPTIONS OF THE
AMERICAN PTERIDOPHYTA
NORTH OF MEXICO, PP.1-147**

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Our Native Ferns and Their Allies: With Synoptical Descriptions of the American Pteridophyta
North of Mexico, pp.1-147 by Lucien Marcus Underwood

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LUCIEN MARCUS UNDERWOOD

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CARBONIFEROUS PTERIDOPHYTA.—(After Dana.)

OUR
NATIVE FERNS

AND

THEIR ALLIES

WITH

*Synoptical Descriptions of the American
Pteridophyta North of Mexico*

BY

LUCIEN MARCUS UNDERWOOD

Professor of Botany in De Pauw University

FOURTH EDITION, REVISED



NEW YORK
HENRY HOLT AND COMPANY

1893

PREFACE.

THE first edition of this manual was published in 1881 and the second in 1882; the continued call for copies of the work is the only apology for a new edition. During the past six years the interest in ferns has largely increased, and has resulted not only in a wider and more thorough study of known forms, but in the less explored portion of our territory new species are continually being brought to light. Of the true ferns (forming the order *Filices*) 140 species were described in the first edition and 145 in the second; in the present edition 156 species are recorded, while three species recognized in former editions have been reduced to varieties.

The Fern Allies are here augmented by the addition of a genus new to this country (*Salvinia*), and five species, two of which are here described for the first time; a reduction of three species has resulted from a more extended study of large suites of specimens, so that 68 species are here recorded.

While the general plan as developed in the former editions has not been greatly modified, the details of the entire work have been thoroughly revised in order that it may be in harmony with the present aspect of structural and systematic study which every year is adding to the sum of our knowledge.

The work is intended as an introduction to the study of ferns and a manual for the easy determination of our species; as such it has aimed to be suggestive in methods of study; to this end the student is referred to the necessary literature, classified according to subjects, at the close of each chapter. It is hoped that the introduction of eight pages of references to the introductory literature of plants lower than the pteridophytes may prove valuable to students who, like the writer, have been obliged to grope in the dark with no kindly suggestion as to what works were valuable for beginners.

Acknowledgments are here rendered to those who have aided in the preparation of this edition. Especially we would mention Dr. Sereno Watson, of the Botanic Gardens at Cambridge for access to numerous specimens; Professor Daniel C. Eaton, of Yale, for elucidating the synonymy of *Aspidium patulum*; and most of all, Mr. George E. Davenport for very many kindly suggestions, specimens, and courtesies extending through a series of years.

SYRACUSE UNIVERSITY,
Feb. 18, 1888.

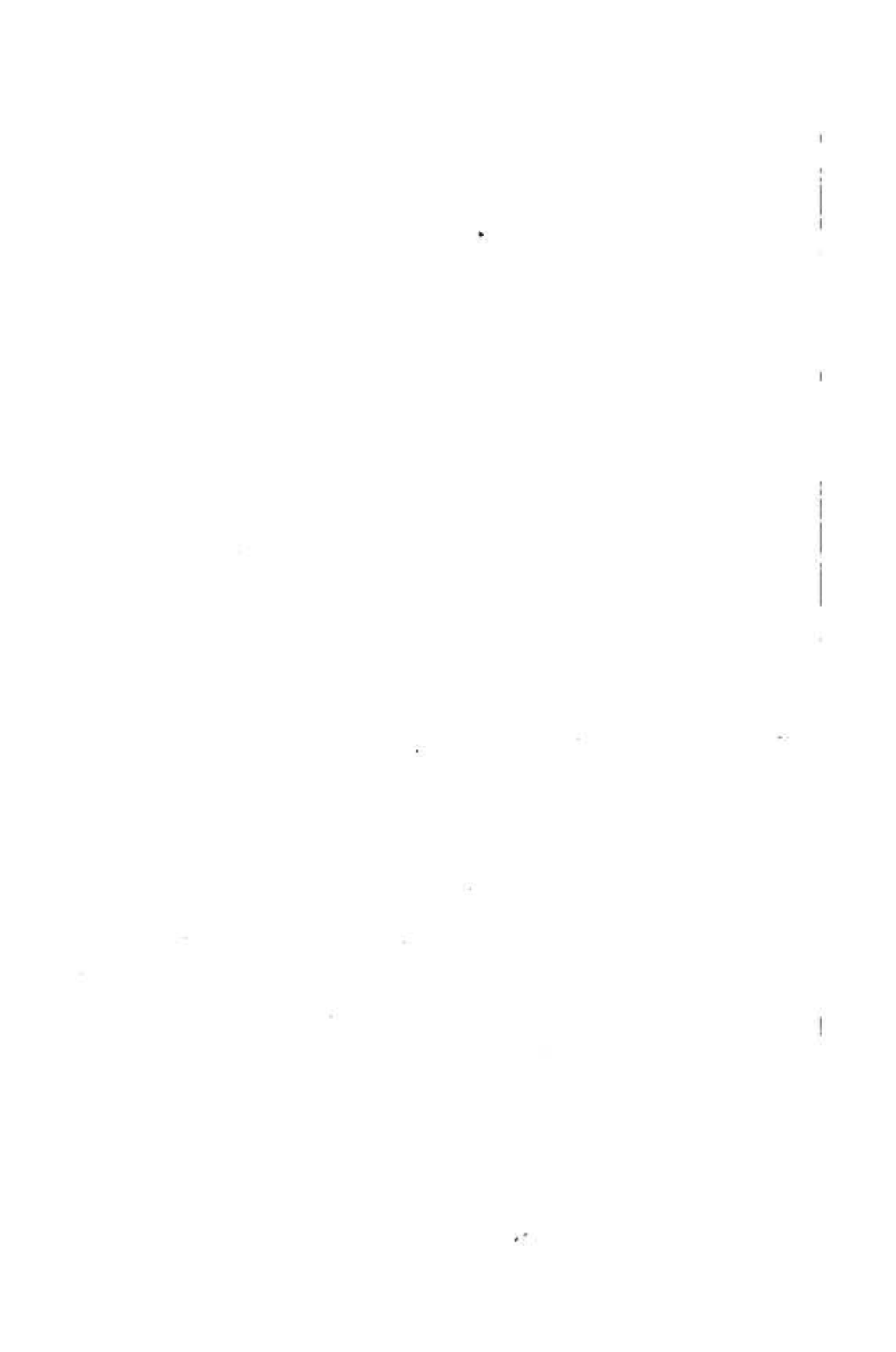
PREFACE TO FOURTH EDITION.

IN the present edition several changes have been made with the purpose of bringing the subject-matter to date. Four additional species have been found in our territory since the last edition was issued, bringing the total number in our flora to 228. Additional matter has been inserted in the text and Chapter VIII has been rewritten in order to bring the classification of the lower plants more in accord with our present knowledge. The most notable change will be found in the nomenclature, which has been revised according to the principles adopted by the American botanists at their meeting at Rochester in August 1892. While many will regret the change of names long familiar, all will see the justice and propriety of the changes. These, however, are not very extensive except in the genus *Aspidium*, and in this case it will be remembered that the greater part of the species have always been separated by the English botanists under a distinct genus.

DE PAUW UNIVERSITY,
June 1, 1893.

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INTRODUCTION.

IN the entire vegetable world there are probably no forms of growth that attract more general notice than the Ferns. Delicate in foliage, they are sought for cultivation in conservatories and Wardian cases, and when dried and pressed add to the culture of many a domestic circle by serving as household decorations. They furnish to botanists a broad and inviting field for investigation, and he who examines their more minute structure with the microscope will find deeper and still more mysterious relations than those revealed to the unaided eye. Ferns thus appeal to the scientific element of man's nature as well as to the æsthetic, and while they highly gratify the taste, they furnish food for the intellect in a like degree.

The Fern allies have also played their appointed part in the domestic and decorative economy of this and other generations. The scouring-rushes served our ancestors for keeping white their floors and wooden-ware in the days when carpets were a luxury. The trailing stems of various species of *Lycopodium* have long been valued for holiday decorations ; while their burning spores have flashed in triumphal processions, and have added their glow to the fervor of political campaigns.

In olden time the obscure fructification of the common brake led to many superstitious ideas among the common people, and the older poets have woven these popular notions into our literature. Butler tells in *Hudibras* of bugbears so often created by mankind :

“ That spring like fern, that infant weed,
Equivocally without seed,
And have no possible foundation
But merely in th' imagination.”