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The Shaping of Cambridge Botany

S. M. WALTERS



Cambridge University Press
978-1-108-00230-1 - The Shaping of Cambridge Botany
S. M. Walters
Frontmatter
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Frontispiece: *Rosa* 'Cantabrigiensis', a spontaneous hybrid studied by Hurst in the Botanic Garden, and given a Royal Horticultural Society Award of Merit in 1931.



Rosa 'Cantabrigiensis'

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The Shaping of Cambridge Botany

A short history of whole-plant botany in Cambridge
from the time of Ray into the present century

by

S. M. WALTERS

*Director of the University Botanic Garden, and
Fellow of King's College, Cambridge*

Published on the occasion of the sesquicentenary of
Henslow's New Botanic Garden, 1831–1981

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Contents

	<i>List of illustrations</i>	vii
	<i>Preface and acknowledgements</i>	xi
1	Introduction: botany, medicine and horticulture	1
2	Ray and the herborising tradition	6
3	Bradley and the horticultural tradition	15
4	The Martyns and the Linnaean tradition	30
5	Henslow and the rise of natural science	47
6	Babington, Vines and Lynch: the fragmentation of botany	65
7	The New Botany School: Marshall Ward and his successors	83
8	Whole-plant botany and the modern Botanic Garden	95
	<i>Bibliography</i>	111
	<i>Index</i>	117

‘It seems, as one becomes older,
 That the past has another pattern, and ceases to be a mere sequence –
 Or even development: the latter a partial fallacy
 Encouraged by superficial notions of evolution,
 Which becomes, in the popular mind, a means of disowning the
 past.’

T. S. Eliot: *Four Quartets: The Dry Salvages*

. . . We would urge men of University standing to spare a brief interval from other pursuits for the study of nature and of the vast library of creation so that they can gain wisdom in it at first hand and learn to read the leaves of plants and the characters impressed on flowers and seeds. Surely we can admit that even if, as things are, such studies do not greatly conduce to wealth or human favour, there is for a free man no occupation more worthy and delightful than to contemplate the beautiful works of nature and honour the infinite wisdom and goodness of God. . . . Of course there are people entirely indifferent to the sight of flowers or of meadows in spring, or if not indifferent at least pre-occupied elsewhere. They devote themselves to ball-games, to drinking, gambling, money-making, popularity-hunting. For these our subject is meaningless. We offer a hundred banquets to . . . the true philosophers whose concern is not so much to know what authors think as to gaze with their own eyes on the nature of things and to listen with their own ears to her voice; who prefer quality to quantity, and usefulness to pretension: to their use, in accordance with God’s glory, we dedicate this little book and all our studies.

John Ray: Preface to *Catalogus
 Plantarum circa Cantabrigiam nascentium*,
 1660 (trans. Raven)

Now we have taken this short View of Nature and its Order, we may judge how shocking and detestable must every Thing be, that is contrary to it; its Beauty is Freedom, and its Gaiety familiar . . . Nature is full of Variety, and it is the great Variety in Nature that captivates the Mind, and draws Admiration.

Richard Bradley in
General Treatise of Husbandry & Gardening
 (the first horticultural periodical),
 Aug.—Sept. 1724, 14; from
Collected Writings on Succulent Plants, Ed. G. Rowley

List of illustrations

Frontispiece: *Rosa* 'Cantabrigiensis'

- 1 *Geranium sanguineum* and the Devil's Dyke.
- 2 John Ray.
- 3 Pages from John Martyn's copy of Ray's *Catalogus*.
- 4 Loggan's Plan of the Oxford Botanic Garden.
- 5 The three species of *Primula*.
- 6 Frontispiece from Ray's *Methodus*.
- 7 Drawings of seeds from the essay on seeds in the *Methodus*.
- 8 Specimen of the Pasque Flower, *Pulsatilla vulgaris* Miller, from Ray's own Herbarium.
- 9 A page of the *Catalogus Plantarum Angliae*.
- 10 Specimen of the cornfield weed *Silene gallica*.
- 11 Coffee plant.
- 12 Map used by Stephen Hales and his friends.
- 13 An account of the Ananas or West Indian Pine Apple.
- 14 Monthly notes for November 1724, from Bradley's *General Treatise*.
- 15 Title-page and illustration from Bradley's *The Virtue and Use of Coffee*, 1721.
- 16 Illustration from Bradley's *Philosophical Account of the Works of Nature*.
- 17 Title page and frontispiece from Bradley's *New Improvements of Planting and Gardening*.
- 18 Description and illustration of the Tulip-tree, *Liriodendron tulipifera*.
- 19 Title-page and illustrations from a manuscript by Bradley.
- 20 Title-page and frontispiece from Bradley's *Country Gentleman and Farmer's Monthly Director*.
- 21 Title-page and frontispiece from Bradley's *The Riches of a Hop-Garden Explained*, 1729.
- 22 Illustration of pollination.
- 23 *Martynia* and the gates of the Chelsea Physic Garden.
- 24 Illustrations of floral structure from John Martyn's *First Lecture of a Course of Botany*, 1729.
- 25 Unpublished illustration of *Pilularia* by John Martyn.
- 26 Preface to Martyn's *Historia Plantarum Rariorum*, 1728.
- 27 Illustration of a *Pelargonium*.
- 28 Fruit of *Martynia* (*Proboscidea*).
- 29 Illustration of *Passiflora* from Martyn's *Historia*.
- 30 Specimen in Martyn's Herbarium.

viii List of illustrations

- 31 Title-page and frontispiece of John Martyn's copy of Linnaeus' *Flora Lapponica*, 1737.
 32 Page from Thomas Martyn's *Plantae Cantabrigienses*, 1763.
 33 Dedication in Thomas Martyn's translation of Rousseau's *Letters on the Elements of Botany*, 1785.
 34 Illustration of *Viola* from Thomas Martyn's *Thirty-eight Plates . . .*, 1788.
 35 Heberden's *Course of Lectures*, 1747.
 36 View of the main entrance to the Old Botanic Garden.
 37 Ackermann print of The Old Botanic Garden.
 38 Herbarium specimen of *Silene maritima* made by Donn.
 39 *Dipsacus strigosus* in Little St Mary's Churchyard.
 40 Lecture-rooms in the Old Botanic Garden, as Henslow knew them.
 41 Illustrations from Henslow's early paper on the geology of Anglesey, 1821.
 42 Two of Henslow's 'Botanical Diagrams'.
 43 Henslow's specimen of Box leaves.
 44 Plan of the Old Botanic Garden.
 45 Site of the present Botanic Garden in 1809.
 46 Old label on Commemorative Lime Tree at entrance to Garden.
 47 Lapidge's design for the glasshouse range dated 1830.
 48 Lapidge's design for the 'New Botanic Garden' dated 1830.
 49 Plate from Henslow's booklet prepared for the day excursion from Hitcham to Cambridge on 27 July 1854.
 50 Portrait of Henslow by Maguire, 1849.
 51 Bridge of Sighs, St John's College, with *Elodea canadensis*.
 52 Yew Tree (*Taxus baccata* var. *dovastoniana*), planted by Babington in 1843.
 53 Staff of the Botanic Garden in 1876.
 54 Allotment advertisement from the time of Lynch.
 55 *Opuntia cantabrigiensis*.
 56 Staff of the Botanic Garden in 1912.
 57 *Thladiantha dubia*.
 58 The glasshouse range in 1911.
 59 *Lathraea clandestina*.
 60 An Edwardian postcard.
 61 The main gates on Trumpington Road.
 62 Lime Tree (*Tilia × europaea*).
 63 The old *Sophora* tree on the Old Botanic Garden site, 1931.
 64 Marshall Ward's Elementary Botany class in 1906.
 65 *Ginkgo biloba*.
 66 Cover of the third number of the *Tea Phytologist*.
 67 Illustration by Vulliamy from Seward's *Plant Life Through the Ages*.
 68 Frontispiece from Elwes and Henry's book on trees.
 69 *Platanus cantabrigiensis* Henry.
 70 Plate from Hurst's account of the genetic history of Roses.
 71 The dwarf Pine, *Pinus sylvestris* 'Moseri', on the Old Rock Garden, c. 1927.
 72 Willows by the River Cam.
 73 Humphrey Gilbert-Carter.

List of illustrations ix

- 74 Sunday tea-party at Cory Lodge.
- 75 Student excursion at Swaffham Prior, 1942.
- 76 *Magnolia* plate from Hickey and King 1980, drawn from live material grown in the Garden.
- 77 Old entrance to the Garden from Bateman Street, c. 1935.
- 78 Cedar of Lebanon, *Cedrus libani*.
- 79 Vertical aerial photograph of the Garden taken on 26 August 1945.
- 80 *Cytisus battandieri*.
- 81 View of the Garden in 1953.
- 82 Staff of the Garden in 1959.
- 83 The limestone mound in the Ecological Area.
- 84 Conservation display in the Alpine House, 1979.

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To Lorna

Preface and acknowledgements

An institutional anniversary provides the occasion to stand back from the transient pre-occupations of administration, teaching and research, and look at the tradition in which the particular institution operates. In my own case, several factors have coincided to make the process especially congenial. The first, and most important, is very personal, and concerns my attitude to history. Twenty years ago, the suggestion that I should write a book on the history of the Botanic Garden, or of Cambridge botany, would have worried and even depressed me: now I find the opportunity richly rewarding. I can only report this change of heart without comment.

A second factor is the product of my career as Curator of the Herbarium and Lecturer in the Botany School, from which I was appointed in 1973 as Director of the Garden. This translation from a professional career in scientific botany in the main University Department to my present post enables me to appreciate the separate and combined elements in two interestingly different traditions, and stimulates me to ask how the differences came about. To some extent, this book is a product of such questioning.

The third of the factors encouraging me to write this little book concerns the nature and size of the University Botanic Garden itself. An institution occupying under 40 acres and employing fewer than 40 people is a comprehensible whole, in which it is possible to feel personal links and loyalties and to understand the nature and strength of tradition. I am peculiarly fortunate in that I lived, for the whole 25 years of my Botany School career, in the corner of the Garden, so that the beauty and value of the collections were part of my own background, and indeed that of my wife and family also. We took it for granted that a benevolent university should provide such a gracious mixture of science and amenity, and I gradually came to recognise who or what was responsible for this extraordinarily enlightened policy. I hope the book will make clear what I now see as the important figures and ideas in the history of the Garden and Cambridge botany, and the part played by certain men in shaping that history.

xii Preface and acknowledgements

The fourth element in the picture is the contribution of my predecessors. My debt to Humphrey Gilbert-Carter, first Director of the Garden, will become apparent to readers in the main text of the book, and needs no further comment. I owe, however, a debt of similar importance to my immediate predecessor, John Gilmour, for two influences in particular: for his infectious enthusiasm for the theory and philosophy of classification, and especially of biological taxonomy, which led me to read the history of my subject with care; and more concretely for his work in creating and furnishing, over the first twenty years of the life of the Cory Fund, the excellent horticultural and botanical Library which the Garden now possesses. Without reference works to hand, such as the *Dictionary of National Biography*, or the recent study of *British Botanical and Horticultural Literature before 1800* by Blanche Henrey (a book, incidentally, which owes its very existence to John's bibliographic interests), my task would have been incomparably more difficult. F. G. Preston, Superintendent of the Garden in my student days, had published in 1940 a paper on the history of the Garden which stimulated my interest and provided a basis on which to build. In explaining my debt to the third of my teachers, Professor Sir Harry Godwin, I find a special difficulty, for he has guided and influenced not only my academic career but even, with his characteristic kindness and generosity, the detailed shape of this book. The allusions in the main text to the value and importance of Sir Harry's influence I have consciously left in a very personal form, hoping that if there is merit in my career and my writing, credit may go to the right place.

A fifth factor, which obviously overlaps, is the helpful and encouraging attitude of my contemporaries. I succeeded to the Directorship of the Garden when the late Professor Brian was in the Chair of Botany, and benefited greatly from his wise, tolerant guidance at a time of some difficulty, when the role and importance of the Garden were, reasonably enough, under close scrutiny because of financial stringency. In particular I recall that he was very encouraging when I first suggested a possible celebration of this 150th Anniversary, and we discussed the publications, including this book, which might be associated with it. Though Percy Brian's research fields were in biochemistry and mycology, he had a genuine interest in whole-plant botany, strengthened by a passion for gardening; for him the Botanic Garden tradition needed no laborious explanation or defence. From his successor, Richard West, who shares with me and many others the distinction of being a pupil of Godwin, I have naturally received full encouragement, and Richard is responsible for the suggestion, made early in our discussion of the possible scope of the present book, that I might enlarge it so that it tells a story of Cambridge botany over more than three centuries.

Preface and acknowledgements xiii

Writing such a book as this *in medias res* brings its problems, of which the most obvious is shortage of time. Many things could have been more completely or more felicitously explained had I been able to drop everything else and pursue every hare which started up. Perhaps the imperfections and inadequacies are most evident in the later chapters, where the relevant material is so plentiful that I cannot but be aware of my neglect of important sources. That these inadequacies are not even more crude and glaring is in great measure due to several colleagues who have very kindly read and criticised part or all of the draft text. In particular I must thank, in addition to those already mentioned, my colleague David Coombe, whose detailed knowledge of the history of Cambridge botany has been put very generously at my disposal, and Professor David Webb (Trinity College, Dublin) and Mr Arthur Chater (Department of Botany, British Museum, Natural History), both Cambridge men, who have kindly read and criticised my writing in various stages.

In using the title I have chosen, I am aware that the contents of my book may be a disappointment to some readers. A tour of the Botany School in Cambridge today reveals how diversified the subject has become and how, in particular, several areas of development in the present century make much botanical research quite different in kind from what went on before. Two of these need special comment. The first is epitomised by the rise of the term 'cell biology', and its implied contrast with the 'whole organism' biology with deep traditional roots. The sub-title I have chosen is intended to emphasise that it is the science of the whole plant which is my theme. The second is the study of lower plants, and in particular the rise, mainly in the present century, of that part of biology concerned with the diseases caused by fungi and bacteria. This is no part of my story, however important it may be to modern agriculture, forestry and medicine. A more serious misunderstanding may, however, arise with regard to those 'whole-plant' subjects which I have not explicitly excluded from consideration, but for which my account is ludicrously inadequate as a review of the history of any of those subjects themselves. I refer especially to genetics, plant physiology, and ecology. An account of Cambridge genetics which does not mention Catcheside, Fisher, Whitehouse or Thoday, or Cambridge plant physiology which says nothing of the work of F. F. Blackman or G. E. Briggs, or Cambridge ecology which ignores the contribution of A. S. Watt, would be a travesty indeed. My excuse for such extraordinarily cavalier treatment is that I am concerned with the factors shaping the 'new botany' of the present century, rather than the recent history or, even less, what goes on in the Department at the present day. In setting this as my

xiv Preface and acknowledgements

goal, I run the risk of offending those whose work receives no mention; my only defence is that I had to define some limits, and try to hold to them.

I have reserved a special position to record my indebtedness to Dr Raymond Williamson, of Clare College, who has a unique knowledge of Richard Bradley and an almost complete set of Bradley's works. Not only has Dr Williamson kindly made available to me a mass of excellently-ordered unpublished notes on Bradley's writings, which saved me a great deal of time-consuming search, but he has confirmed his intention to bequeath his set of Bradley's books to the Botany School, where it will greatly improve our remarkably inadequate representation of the published works of the first Professor of Botany.

I am grateful to the Cambridge University Press as publishers for the decision to provide lavish illustration, and for all the help I have received in the pleasant task of assembling the illustrations. A special word of thanks is also due to Geoff Green, who designed the book. The head-pieces for the Chapters and other plant illustrations have been specially drawn by Michael Hickey, a former student of the Garden, and a grant towards the expenses of preparing these illustrations has been made by the Botanic Garden Association, CUBGA. It is also a pleasure to record my indebtedness to Graham Thomas, Gardens Consultant to the National Trust, and a former student of the Garden, for the water-colour illustration of *Rosa* 'Cantabrigiensis' which makes an excellent frontispiece. The decision to include a colour frontispiece was taken late in the planning of the book, and it was particularly good of Mr Thomas to undertake the painting, based on colour photographs we provided, and sketches by Mrs D. M. Watson who worked with flowering material from the Garden. The cost of printing this colour frontispiece has been borne by the Cory Fund.

In conclusion I must record my special thanks to members of the Botanic Garden staff and others who have helped in important ways during the preparation of this book. My thanks go first to my colleagues Peter Orriss, Superintendent, and Peter Yeo, Taxonomist and Librarian, from both of whom I have had encouragement and much practical help. For special help with bibliographic matters I would wish to thank particularly the Assistant Taxonomist and Librarian, Clive King; not only has he carefully checked the references, but he has also in recent years helped me to arrange the sorting and transfer of much of our historic archival material to the University Library. To the Assistant Archivist in the University Library, Dr Elizabeth Leedham-Green, I am grateful for her efficient cataloguing of all the Garden archives, including those retained by us; and I must also record my thanks to Dr Christine

Preface and acknowledgements xv

Quartley, who has in recent years given excellent voluntary service to the Garden in sorting and indexing our correspondence. I am especially grateful to Mrs Betty Attmore and Mrs Anne James for taking my badly-written manuscript and converting it so quickly and correctly into a typescript suitable for publication. My final thanks I reserve for my wife; not only has she compiled the index, but she has also borne with characteristic loving care the brunt of my sometimes unreasonable enthusiasm to finish this book.

S. M. Walters
March 1980

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