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‘A GREAT DEAL IN A LITTLE ROOM’ – JOHN RAY’S CAMBRIDGE CATALOGUE (1660)

The publication of John Ray’s *Catalogus plantarum circa Cantabrigiam nascentium* (“A catalogue of plants growing around Cambridge”) in 1660 was an important event in the history of British science. It was the first product of Ray’s interest in natural history which developed in the 1650s when he was a Fellow of Trinity College, Cambridge. This led to a sequence of books of national and international significance published after Ray left Cambridge in 1662. The *Catalogus* also has a special place in the affections of British botanists as the first County Flora, as a systematic account of the plants of a county has come to be known. As Ray’s biographer Canon Charles Raven commented, “Few books of such compass have contained so great a store of information and learning or exerted so great an influence upon the future; no book has so evidently initiated a new era in British botany”.

This exhibit celebrates the 350th anniversary of the publication of the *Catalogus*. A brief introductory section includes some key works on Ray by 20th-century authors. We then show some of the wide range of sources used by Ray in compiling his work. Finally, we show some local Floras to illustrate the development of the genre in the last 350 years.

A symposium to celebrate the *Catalogus* will be organised in the Library on 3 November by the Society for the History of Natural History; for details of the programme and registration see the Society’s website (www.shnh.org.uk). This exhibit draws on the work that P.H.O. and C.D.P. have done in preparing a translation of the *Catalogus* which will be published by the Ray Society in the next few months.

P.H. Oswald, C.D. Preston & E. Dourish

[John Ray]

Catalogus plantarum circa Cantabrigiam nascentium.

Cambridge: Excudebat Ioann. Field, 1660

The *Catalogus* was printed in Cambridge by the University Printer, John Field. The University Printers were commercially unadventurous and the town’s booksellers acted in effect as publishers for this and other academic works, which did not have the guaranteed sales of bibles or almanacs. The Hampshire botanist John Goodyer bought his copy for 2s. 6d. (12½ p.) in May 1660.

Although there are eight parts to the *Catalogus*, the core of the work is the alphabetical catalogue of Cambridgeshire plants. In this section Ray lists synonyms drawn from earlier works and often gives (from his own observations) the habitat and locality of the species in Cambridgeshire (in italics). To illustrate Ray's approach, we have provided our translations for two of the species on the pages shown here. Many of the species entries include numbered notes, some original (such as his description of the diet of the Great Bustard) and others from the literature.

Hhh.287, Cam.e.660.5

Translation of Ray's *Catalogus*: entries for Hemlock, now called *Conium maculatum* (p. 34), and Meadow Thistle, now called *Cirsium dissectum* (p. 35):

Cicuta Trag. Matth. Dod. Ad. Lob. Ger. I, sive major C.B. vulgaris major Park. serotina caule maculoso hort. Bat. among the indigenous plants. Cicuta veteribus & neotericis J.B. Hemlock.

N. 1. We dissected the stomach of a great bustard or *Tarda avis* and found it full of hemlock seed, with only four or five grains of corn intermixed, which that bird had neglected in favour of hemlock seed even at harvest time, so much does it delight in hemlock.

2. For what serious & astonishing symptoms a tray of meats cooked with the roots of hemlock and placed before two religious fathers (i.e. monks) caused, see the work of *Kircher about plague, section 2*.

Cirsium Anglicum primum, & Cirs[ium] Ang[licum] aliud Park. Cirs[ium] Angl[icum] Lob. Clus. Ger. emac. Cris[ium] Ang[licum] radice hellebori nigri modo fibrosâ, folio longo I.B. Cirs[ium] Pannonicum primum Clusii folio non laciniato, and likewise Cirs[ium] Britannicum Clusii repens for the same author. Carduus Cirsium dictus IV, V, & VIII, C.B. The English soft or gentle Thistle, Melancholy Thistle, for the most part single headed. In the first close you pass through, as you go in the foot-way from Cambridge to Cherry-hinton, near a little ditch or gripe that crosseth the close from corner to corner. It does not escape us that some excellent botanists have separated this plant into several species and have designated it by different names, as their titles given by us above show, when it is only one (as it seems to us). In this matter, since we have seen even Jean Bauhin uncertain, we have followed the opinion of Johnson in his revision of Gerarde, principally because his description exactly fits this plant of ours.

MODELS FOR THE *CATALOGUS*

Caspar Bauhin

Catalogus plantarum circa Basileam sponte nascentium: cum earundem synonymiis & locis in quibus reperiuntur.

Basileæ: typis Johan. Jacobi Genathii, 1622

Ray modelled his title on this small checklist of the plants of Basel by Caspar Bauhin, dropping the *sponte* because he included crops as well as wild plants. However, Ray arranged the species alphabetically rather than in systematic order, and the layout of his text bears little resemblance to that of Bauhin's *Catalogus*. The more substantial works of Caspar Bauhin and his elder brother Jean were amongst the most important of his sources and are also shown in this exhibit. CCE.47.2

[How, W.]

Phytologia britannica, natales exhibens indigenarum stirpium sponte emergentium.

Londini: typis Ric. Cotes, impensis Octaviani Pulleyn, 1650

William How, a doctor, published this checklist of British plants at about the time when Ray began to study plants. The format of Ray's *Catalogus* follows this very closely, although Ray's text lacks the black-letter font used by How for localities. Ray's text is, however, much more detailed, as comparisons of the entries for *Cirsium Anglicum* show, even though his work is much narrower in its geographical scope. CCE.47.18

THE FOUR MAJOR SOURCES (continues in next case)

Thomas Johnson

The herball or generall historie of plantes. Gathered by John Gerarde ... Very much enlarged and amended by Thomas Johnson.

London: A. Islip, J. Norton and R. Whitakers, 1636

Gerarde's *Herball* is perhaps the most famous of all British botanical books, although many have argued that it does not deserve its lasting reputation. It was originally published in 1597 and substantially revised by Thomas Johnson in 1633 in an edition which became known as *Ger. emac.* Both Johnson and Ray were critical of Gerarde's work, but Ray nevertheless took more names for his plants from the *Herball* than from any other source. The illustration of *Cirsium Anglicum* of Lobel in *Ger. emac.* is shown here and gives some idea of the problems Ray must have faced in matching his Cambridgeshire species with published descriptions and illustrations.

John Nidd, a Fellow of Trinity, collaborated with Ray on the *Catalogus* but died in 1659, before it was published. He left his copy of the *Herball* to Ray in his will and this was probably the 1636 printing of Johnson's edition, which we therefore exhibit here. CCA.47.59

John Parkinson

Theatrum Botanicum: The theater of plants: Or, an Herball of a large extent.

London: Tho. Cotes, 1640

John Parkinson was in his seventies when his *Theatrum Botanicum* was published. In her book *Herbals* Agnes Arber describes him as the last British writer who belonged to the true lineage of herbalists, “though he was, in some ways, a degenerate representative”. His work was second only to its commercial rival Gerarde amongst Ray’s English sources. However, Ray says in the *Catalogus*, “I do not criticise the man’s industry, but I frequently question his judgement and accuracy”. He cites, for example, Parkinson’s record of *Galega officinalis*, Goats Rue, “also found of late growing wilde in the Medowes by *Linton* in *Cambridge shire*” (this is on the page after the illustration shown here) but he adds “*we could not find it there, and do suspect that it is not there to be found*”. It is a curious feature of Ray’s *Catalogus* that he only refers to earlier plant records from Cambridgeshire if he has not been able to find the plant in the county himself. de Laszlo a 12

Jean Bauhin & Jean-Henri Cherler

Historia plantarum universalis ... quam recensuit et auxit Dominicus Chabræus. 3 volumes.

Ebroduni [Yverdon]: 1650 (vol. 1), 1651 (vols 2–3)

This is perhaps Ray’s most important source. Ray describes Jean Bauhin in the *Catalogus* as “a man of exceptional erudition, the highest fidelity, boundless scholarship and mature judgement, highly versed in all the writings of botanists both ancient and more recent, most learned in every kind of the more humane and serious literature, in a word the Coryphæus [chief] of Botanists”. This page shows Bauhin’s illustration of *Melampyrum cristatum* (in fruit), a plant which Ray found, new to Britain, “*In Madingley and Kingston woods, and almost in all woods in this County plentifully ... whence we cannot but wonder that it should not be described or figured by Gerard or Parkinson*” L.1.17

Caspar Bauhin

Πινάξ [Pinax] theatri botanici.

Basileæ: sumptibus & typis Ludovici Regis, 1623

The initials *C.B.* for Caspar Bauhin are as frequent in the *Catalogus* as those of his elder brother *J.B.* and in most cases they refer to his *Pinax*, which was the most complete compilation of the synonyms of plants produced in the 17th century. It was thus an essential work of reference, though as a book without descriptions or illustrations it cannot have had a very general appeal. K.4.6

WORKS BY CLASSICAL AUTHORS

Johannes Bodaeus à Stapel

Theophrasti Eresii de historia plantarum libri decem, graecè et latinè.

Amstelodami: Apud Henricum Laurentium, 1644

Ray's tutor at Trinity, James Duport, was devoted to the classics and Ray wrote virtually flawless Latin in the classical style. There are many references to classical authors in the *Catalogus*. The Greek botanist Theophrastus (c. 371–c. 287 BC) is often cited, as are the comments of Bodaeus in his edition of Theophrastus' *De historia plantarum* (to which Bodaeus added much extra material). CCA.47.29

Philemon Holland (translator)

The historie of the world: commonly called, The naturall historie of C. Plinius Secundus. Translated into English by Philemon Holland Doctor of Physicke.

London: Printed by Adam Islip, 1634

Much of Ray's information on the plants of classical authors is taken from Pliny's *Natural history* or *History of the world*. This vast compilation preserves information from many classical authors which would not otherwise have survived. Ray would have used Latin editions but we show here the great English translation of Philemon Holland. Ray includes in the *Catalogus* a list of plant monographs by classical authors, based on information which must have been derived from Pliny. These include "one entire book" written by King Juba of Mauretania about the "vertues and properties" of *Euphorbia*, a plant that Juba is said to have discovered and named after his personal physician. Pliny's account appears towards the bottom of p. 222 of Holland's edition. CCA.47.36

SOURCES FOR RAY'S NUMBERED NOTES

John Worthington

Miscellanies ... also a collection of epistles, written to M^r Hartlib of pious memory.

London: printed for John Wyat, 1704

After many of the accounts of plants in the *Catalogus* (especially trees, crops and other useful plants) Ray includes numbered notes. These cover a wide range of topics and are very variable in length. John Worthington, Master of Jesus College, clearly appreciated them. He wrote soon after the publication of the *Catalogus*, in July 1661, that "such portable *Phytologies* as have only the *Latin* and *English* Names (without any choice *Notes*) are but lean and imperfect Things".

A few of the sources for Ray's notes are shown here.

C.5.68

Thomas Moufet

Insectorum sive minimorum animalium theatrum: olim ab Edoardo Wottono, Conrado Gesnero, Thomaque Pennio inchoatum.

Londini: ex. Officina Thos. Cotes, 1634

Some of the longest and most vivid passages of the *Catalogus* deal with the observations on invertebrates made by Ray and his friend Francis Willughby. These include the first ever report of the hermaphrodite mating of snails and the most detailed observations to date of parasitic wasps hatching out of caterpillars (although in the case of the parasites Ray did not quite understand at this stage of his career what he was observing). Ray tried to relate the animals he saw to those depicted in the only book then published on British insects, compiled by Thomas Moufet. He could not always match them up successfully, but he was able to recognise the caterpillar of the Privet Hawkmoth, *Sphinx ligustri*, as Moufet's "noblest of the greens", nicely illustrated on p. 182. M.14.42

Thomas Moufet

Healths improvement: or, Rules comprizing and discovering the nature, method, and manner of preparing all sorts of food used in this nation. Corrected and enlarged by Christopher Bennet.

London: Printed by T. Newcomb for S. Thomson, 1655

Some notes about cereals refer to this book about diet, and Ray also passes on Moufet's suggestion that the young leaves of Cotton Thistle, *Onopordum acanthium*, "are very nutritious & restore strength, either boiled in broth or baked in an oven in meat-pies" and that the young roots of Burdock (*Arctium*) also provide what we now call "food for free". The reference to the latter is on p. 217 (mis-printed as 117): see *Burr-roots* under *Personatae radix*. K.16.88(2)

Ulisse Aldrovandi

Ornithologiae, hoc est de avibus historiae, libri XII.

Bononiae: apud Franciscum de Franciscis Senensem, 1599–1601

Giambattista della Porta

Natural magick, by John Baptista Porta, a Neapolitane: in twenty books ... wherein are set forth all the riches and delights of the natural sciences.

London: Printed for T. Young and S. Speed, 1658

Aldrovandi's *Ornithologia* was the best known bird book of its period, and it was certainly present in the library of Trinity College in the 1650s. Ray takes from it a long note following his entry for Nettle (*Urtica dioica*), in which he describes how a capon (a castrated cockerel) will care like a mother for a hen's chicks if the feathers of its belly are plucked off and the skin then rubbed with nettles. Aldrovandi himself took the story from Giambattista della Porta's *Magiae naturalis*, first published in Naples in 1558 but shown here as the later English translation (p. 159, *A Cock foster Chickens as the Hen doth*). Ray's biographers have usually drawn attention to those

notes in the *Catalogus* which impress the modern reader by their scientific acumen, but his first book also includes several stories and anecdotes such as this, the sort of material which he excluded from his later botanical works. N*.2.18(B)
M.14.58

Francis [Bacon], Lord Verulam, Viscount St Alban
Sylva Sylvarum: or a naturall historie in ten centuries.
London: Printed by J.H. for William Lee, 1627

Francis Bacon's *Sylva Sylvarum* was first published in 1626, just after his death, and is referred to several times in the *Catalogus*. Although much less well known than other works of Bacon, such as *Novum organum*, it is the only one of Bacon's books that Ray mentions. Yule.b.106

Thomas Browne
Hydriotaphia, urne-buriall, or, A discourse of the sepulchrall urnes lately found in Norfolk; Together with The garden of Cyrus, or The quincunciall, lozenge, or network plantations of the ancients, artificially, naturally, mystically considered.
London: Printed for Hen. Brome, 1658

This work by the Norfolk author Thomas Browne was published while Ray was writing the *Catalogus*. He may have encountered it after completing a draft of the note on the germination of cereals in which it is cited. In the first paragraph of his note Ray suggests that the root of the germinating seed appears first and then the stem, an account based on Theophrastus' *Historia plantarum*. Having thus led the reader up the garden path, he adds a second paragraph saying: "This was the opinion of the Ancients & of those who were philosophising confusedly. For, if we examine the matter more attentively, as that Most Illustrious Man Master Tho[mas] Brown M.D. has observed in his golden little book recently published in English which is entitled *The Garden of Cyrus*, we shall see that ... the germination of both, the root and the blade alike, begins at the same point and origin at the same time, and those who think that Oats and Barley germinate from both ends are too vulgarly mistaken". Williams.492

Peter Lauremberg
Apparatus plantarius. Tributus in duos libros. I. De plantis bulbosis. II. De plantis tuberosis.
Francofurti ad Moenum [Frankfurt]: 1654

Unlike modern Floras, which usually include only plants growing in the wild, Ray included crop plants in the *Catalogus*. One of these was Saffron, *Crocus sativus*, then "cultivated in fields" in Cambridgeshire. He cited Lauremberg's name for this species, *Crocus verus nusquam nisi Autumnno florens, odoris suavissimi, coloris purpurascens* ("The true crocus never flowering except in Autumn, with the sweetest scent and a purplish colour"). This is an example of his technique, described in the Preface, of citing synonyms which together take the place of a description. (He

only provides descriptions for plants which he cannot match with confidence in the existing literature.) He also reports Lauremberg's observation that "Irish women dye their clothes with saffron, both so that they may be kept free of lice and so that strength may come to their limbs therefrom". N*.10.16(D) (2)

SOURCES FOR RAY'S 'ETYMOLOGY'

Matthias Martini

Lexicon philologicum.

Bremæ [Bremen]: 1623

After the main catalogue of species, the longest section of the *Catalogus* is the 'Etymology', giving the derivations (or supposed derivations) of plant-names. This part of Ray's work has received very little attention from students of his work. Most of Ray's explanations are drawn from other reference works, and his most important source is Martini's *Lexicon*, which appeared in two editions (1623, 1655). In the 'Etymology', as elsewhere, Ray loves a good diversion and one of the longest passages deals with the true meaning of the belief that the Pythagoreans in ancient Greece, though they were vegetarians, avoided beans. Does this mean that they were not supposed to eat beans? Or is it an injunction to abstain from public office (since beans were originally used as voting counters when magistrates were elected) or to avoid sexual intercourse (on the grounds that beans in the line by the poet Empedocles, *Wretched, all-wretched ones, keep your hands away from beans*, actually refers to testicles)? Or perhaps, as Gesner asserts, beans actually means eggs? Most of these alarmingly varied possibilities are taken from Martini, though Ray also draws on Plutarch in this extended passage. M*.8.25(C)

[John Ray]

Catalogus plantarum circa Cantabrigiam nascentium: Index plantarum agri Cantabrigiensis, in quo nomina Anglica Latinis præponuntur ordine alphabetico.
Cambridge: Excudebat Ioann. Field, 1660

Angelo Canini

Ελληνισμος [Hellenismos], copiosissimi Græcarum Latinarumq[ue] vocum indicis accessione per Carolum Haubæsium locupletatus.

Londini: apud Ioannem Billium, typographum regium, 1624

Ray's etymology (published as the *Index plantarum* alongside the main *Catalogus*) is in general sound, although a few of the explanations he presents are far-fetched. However he goes spectacularly astray in his entry for *Hyssopus*, in which he cites a long list of words (none of the rest of them even botanical) which he believes have been derived from Hebrew or Punic. Most are taken from *Hellenismos* by Canini, one of the greatest of 16th-century linguists. Hyssop itself is a loan-word from Hebrew or another Semitic language, but the resemblance between most of the Greek words that Ray lists and their supposed Hebrew or Punic precursors is accidental. Ray may have been influenced by the characteristic 17th-century belief that the Hebrew language

was related to Greek and Latin, a belief held by many distinguished Cambridge men including Ray's own tutor, James Duport. There was no real need for Ray to have dealt with *Hyssopus* at all: the true plant is absent from Britain and the name appears in his *Catalogus* only as a synonym of other species. He probably included the entry as an excuse for this long, if misguided, etymological diversion.

Aa*.5.14(F)
Cam.e.660.

STUDIES OF JOHN RAY

Charles Earle Raven

John Ray, naturalist, his life and works.

Cambridge: Cambridge University Press, 1942

The basis of the modern understanding of Ray is the great biography by Canon Raven, who was Regius Professor of Divinity and Master of Christ's College. Unable to follow his hobby of natural history in the field during the early years of the Second World War, he found it "a refreshment to follow such pursuits vicariously and in the setting of an earlier time". He managed to convince himself that Ray was an unduly neglected figure and much of his motivation for the biography seems to come from his passionate desire to restore his reputation. His mastery of the source material and his superb prose stamp his interpretation almost indelibly on the mind. Subsequent accounts of Ray's life in the botanical literature are largely summaries of Raven's biography. However, as Arthur Cain wrote, "Raven's account of him, in other ways excellent, is too concerned with finding modernity in his concepts to give a balanced estimate of his intellectual position".

382:2.c.90.13

Geoffrey Keynes

John Ray : a bibliography.

London : Faber and Faber, 1951

"Had Ray's work been restricted to botany, or had his personality been less attractive, it may be that I should never have attempted to compile a full-scale bibliography of his works; but the versatility of his attainments, the variety of his books, and the real nobility of his character made him irresistible." Keynes' bibliography complements Raven's biography and is the standard account of Ray's publications; a second edition was published in 1976. One of his achievements was to use bibliographical evidence to show that the two parts of Ray's Cambridge catalogue, though separately paginated and with their own title-pages, could not have been intended to be offered for sale as separate books, as was previously thought. Keynes' own copies of Ray's works were bequeathed to the University Library.

S340.b.95.74

John Ray

Ray's flora of Cambridgeshire (Catalogus plantarum circa Cantabrigiam nascentium) translated and edited by A. H. Ewen and C. T. Prime.

Hitchin: Wheldon & Welsey, [1975]

Ewen & Prime's partial translation has provided an easily accessible edition of Ray's *Catalogus* for the last 35 years. It concentrates on those aspects of the text which are of interest to the field botanist, omitting Ray's synonyms, the 'Etymology' and the 'Interpretation' of technical terms.

372:2.c.95.37

THE DEVELOPMENT OF COUNTY FLORAS, 1660–2010

Christopher David Preston

'Perceptions of change in English county Floras, 1660-1960'

Watsonia 24: 287-304 (2003)

The 'County Flora' has become an established feature of the British botanical tradition, and all English counties have been covered by at least one (and often by more than one) Flora since Ray initiated the genre in 1660. As the graph shows, his book was over 100 years ahead of its time. The second Flora, Deering's *Catalogus stirpium &c.*, covering Nottinghamshire, was not published until 1738. It was not until the late 18th century that the production of County Floras really got going, with peaks in the two great heydays of natural history, the Victorian period and the modern era. The following examples show their development in very broad outline.

Offprint, UL copy at P370.c.75

William Allport Leighton

A Flora of Shropshire.

London: 1841

It was not until the mid 19th century that County Floras settled down to the pattern they were to follow for over a century. They were written in English from about 1800 onwards, but this Flora by the wealthy cleric W.A. Leighton (a Cambridge contemporary of Charles Darwin) still has some characteristics of a national Flora, with descriptions of species and illustrations of technical differences such as the umbellifer fruits shown here. Thereafter most Floras assumed that the reader could identify plants using the range of handbooks which were becoming available at a modest price and concentrated on describing the distribution of species within the county.

MD.37.44

Charles Cardale Babington

Flora of Cambridgeshire : or a catalogue of plants found in the county of Cambridge, with references to former catalogues.

London : John Van Voorst, 1860

Babington's *Flora* was published in 1860, two hundred years after Ray's *Catalogus*. In some respects it is typical of the more modest Victorian Floras, with plant records listed in eight numbered districts into which Babington divided the county. As befits a work by a botanist of national reputation, it lacks any of the poems or illustrations with which less high-minded authors attempted to enliven their work. However, Babington was the first Flora writer to appreciate the extent to which human activities were affecting plants. The large-scale agricultural enclosure of the county and subsequent agricultural improvement had exterminated many plants from the localities where they had been seen by Ray and his 18th-century successors. Those localities "which rest solely upon the authority of the older botanists" are printed in italics. Note that the sundew *Drosera intermedia* has already become extinct in the county as a result of the drainage of the moors near Cambridge on which it grew.

Cam.d.860.4

MD.22.45

George Claridge Druce

The flora of Berkshire.

Oxford : Clarendon Press, 1897

G. C. Druce made a small fortune as an Oxford chemist (with a sideline in money-lending) and was able to retire early to pursue his interest in botany. A man of immense energy, he worked with great rapidity but not always with very great accuracy. By the time of his death he had written Floras of Oxfordshire, Berkshire, Buckinghamshire and his native Northamptonshire, an achievement which no other author has come close to emulating. In addition he amassed a large herbarium, wrote innumerable papers and notes, and ruthlessly eliminated potential rivals until he achieved complete dominance of the Botanical Society and Exchange Club of the British Isles. His Flora of Berkshire, published in the Diamond Jubilee year and dedicated to the Queen, follows the usual 19th-century model but on a larger than usual scale. Its introductory section is remarkably detailed and includes much material which is only marginally relevant to the county, as his long account of the life of John Ray demonstrates.

MD.26.5

H. J. Riddelsdell, G. W. Hedley & W. R. Price (editors)

Flora of Gloucestershire.

Cheltenham: Cotteswold Naturalists' Field Club, 1948

By 1950 the rate of publication of Floras had slowed and there were signs that the genre was running out of steam. *Flora of Gloucestershire* had a gestation period of 71 years and "two of the three whose names appear on the title page had been dead for seven years by the time the book made it" (D. E. Allen). The long lists of localities are presented without any clear distinction between old and new records, and with no attempt at synthesis other than the use of the by now traditional subdivisions of the county by botanical districts. Potential authors in other counties could scarcely have been encouraged to follow this model. However, the published records provide

crucial information against which subsequent changes in plant distribution can be assessed.

372:2.c.90.11

John G. Dony

Flora of Hertfordshire.

Hitchin: Hitchin Museum, 1967

The impetus which revived the County Flora tradition came from the successful completion of the *Atlas of the British Flora* in 1962. In this British and Irish botanists mapped the distribution of plants in the 10 x 10 kilometre squares of the Ordnance Survey national grid. The Staffordshire botanist E. S. Edees was the first to realise that such methods could be used to map distributions at the county scale in 2 x 2 km squares, or 'tetrads', but John Dony, a Luton schoolmaster, took up the idea and was the first to publish such a Flora. It was not easy to integrate the maps and the text in these early 'tetrad' Floras, so the maps were segregated at the back of the book. Tetrad mapping provided a feasible way of recording counties in a structured way within a reasonable time scale and it proved popular with volunteers. This methodological advance, coupled with the increasing mobility and prosperity of the post-war decades, led to a great increase in the number of published Floras.

372:2.c.95.20

Richard Crewdson Leaver Howitt & Brenda Margaret Howitt

A flora of Nottinghamshire.

Privately published, 1963

Although most Floras follow the prevailing model of the day, there are occasional 'eccentric Floras' which plough their own furrow. These can be infuriating in their failure to provide the standard information which readers expect from a Flora, but often compensate by providing insights which are lacking in the more stereotyped works. Leaver Howitt's *Flora of Nottinghamshire* is one of the eccentric Floras, to the extent that he even adopted his own spelling for scientific names (*Trefolium* rather than *Trifolium* for the clover genus, for example). However, he was a landowner with his own willow holt and his description of the decline of the basket-making industry in the Trent valley is both entertaining and informative.

372:2.c.95.19

D. A. Cadbury, J. G. Hawkes and R. C. Readett

A computer-mapped flora : a study of the County of Warwickshire.

London & New York: Academic Press, 1971

Dony's tetrad maps in his *Flora of Hertfordshire* were hand-plotted. Four years later came the first Flora to plot maps from a computer database, using the computer facilities of the University of Birmingham. The title suggests that the authors (or Academic Press) found the methodology more exciting than the content. The maps were over-ambitious in their attempts to show habitat as well as distribution and only

one author has attempted to follow this model. It was not until the 1990s that the availability of personal computers and biological recording software led to the routine adoption of computers for Flora production. However, since then the availability of computer methods of mapping and book production has helped maintain the County Flora tradition by making it increasingly feasible for books to be published without the need to involve professional publishing houses. Atlas.6.97.87

Martin Sanford & Richard Fisk

A Flora of Suffolk.

Ipswich: D. K. & M. N. Sanford, 2010

One of the latest County Floras, this illustrates the ability of the modern author to map plant distributions against environmental features such as soil patterns and to make lavish use of photographs to illustrate the difference between related species – thus providing for some species an updated version of the identification guide provided by Leighton in 1841.

Central Science Library, QK306 .S26 2010