Tools for Reordering: Commonplacing and the Space of Words in Linnaeus's *Philosophia Botanica*

M. D. Eddy

* Durham University,

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TOOLS FOR REORDERING:
COMMONPLACING AND THE SPACE OF WORDS IN
LINNAEUS’S PHILOSOPHIA BOTANICA

M.D. Eddy

[The] reduction of the elements of intelligibility to the spatial arrangements of the topical logics suggests a further general theorem: the printer’s font corresponds to the locus of the topical logics, and the printed page to methodized discourse.¹

[B]y seeing the taxonomy of Linnaeus as directly descended from Pliny, they [historians of science] have occluded a series of obstructive presences, producing a genealogy in which one finds no extinct species or skeletons in the closet. Reduced to a sort of ‘round table’ of professors of formal logic or zoologists, the past created by these historians serves only to confirm the truth of the present.²

Spatial knowledge is inherently hierarchical.³

INTRODUCTION

Topical heads were ubiquitous in early modern literary circles.⁴ They were usually words or very short phrases which, first, were selected for their ability to represent a theme addressed in a block of text and which, second, were placed in the white space above, beside or at the start of the block in a manner that made the unit easier to find and remember. Taken as whole, the head and the block, often called a ‘commonplace’, comprised the content of commonplace books (adversaria) that were organized thematically. Although the commonplace tradition was refined by early modern thinkers such as Erasmus of Rotterdam and Petrus Ramus, the literary techniques used to organize it were extensions of the composition and memory instructions given in oratorical texts written by classical authors such as Cicero and Quintilian.⁵ By the end of the

⁴ Hereafter, I use ‘head’ as shorthand for a ‘topical head’.
century, topical logic, or commonplacing, had become an influential method by which authors selected and arranged heads. It was ‘logical’ in the sense that it was guided by principles and perceptions unique to individual authors based on their intellectual context and training. In contrast to relatively fixed early modern forms of deductive logic, and sometimes inductive logic, topical logic was more flexible and effectively ‘a product of rule-of-thumb pedagogical adjustments rather than of abstract reason’. In recent decades there have been a number of studies that have shown how humanist approaches to commonplacing not only evolved in tandem with attempts to coherently arrange naturalia in studioli, wunderkammern and museums, but also facilitated the conceptual development of natural history. Key works that led up to this reinterpretation were Walter Ong’s work on Ramus, Frances Yates’s history of the art of memory, Tony Grafton’s defence of humanistic textual practices and, crucially, Paolo Rossi’s argument that Francis Bacon used topical logic to organize his lists and tables. Once the topical box was opened, a number of seminal studies on commonplacing natural knowledge followed. Key entries in this canon are works written by Ann Blair, Ann Moss, Jonathan Spence and Howard Hotson.

The foregoing studies suggest two strands of commonplacing circa 1700. The first was the collection of authoritative knowledge, usually in the form of quotations. The second was the collection of personal or natural knowledge, with Francis Bacon’s lists, desiderata and aphorisms serving as early examples. While Moss has shown that the first strand was losing popularity by the 1680s, recent scholarship has shown that the second retained momentum through the eighteenth century, especially in scientific dictionaries, instructional cards, catalogues, etc.

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6 Ong, *Ramus*, 307. The notion of topical logic, or ‘place logic’, is addressed in Chapters 5 and 8. See also Chapter 9 for dichotomous tables. Since this essay focuses on the generative, or inventive, use of topical logic to create and spatialize heads, space has led me to set aside the historical reduction of topics into terms associated with the terminology of formal logic (classical, medieval or modern). Aspects of this deductive reduction are addressed in O. Bird, ‘The Re-Discovery of the Topics: Professor Toulmin’s Inference-Warrants’, *Mind*, 70 (1961), 534–9; O. Bird, ‘The Tradition of the Logical Topics: Aristotle to Ockham’, *Journal of the History of Ideas*, 23 (1962), 307–23.


These studies show that commonplace flourished as a form of information management and, in some cases, functioned as a method (methodus) that facilitated the ordering of natural history systems. In what follows in this essay, I wish to extend this point by examining the role played by heads in the work of Carolus Linnaeus (Carl von Linné). Although the role of topical logic in his career as a systematist has remained unexamined, examples of commonplace techniques appear throughout his works. For example, when he laid out the early form of his classification method in a pamphlet entitled Methodus (1736), he used heads to order the text. Since he is often credited for taming the apparent chaos of Enlightenment nomenclature, the use of heads by a systematically inclined thinker raises two very important questions. First, what were the economies of attention that guided his commonplace techniques? Second, what type of impact did his note-taking skills have upon the way that he arranged information in texts? This essay addresses both of these questions and suggests further avenues of inquiry. Whereas historians of science sometimes tend to focus on the role that he played as the unique originator of modern botanical and zoological classification systems, I approach his work merely as one example in a long tradition of commonplace that originated in the Renaissance, but which was still being used during the eighteenth century.

Since a definitive study of the flow of information through Linnaeus’s index cards, marginalia, letters, pamphlets and books awaits to be written, this essay focuses on his Philosophia Botanica (1751) because it provides an appropriate case study of the key commonplace methods that he used in his other manuscripts and printed texts. As a popular instruction manual, this was a widely disseminated work that was often read alongside the other systematic texts that he

9One recent step that has been taken to ameliorate this situation is the ‘Rewriting the System of Nature’ project at Exeter University which focuses on the materiality of Linnaeus’s writing. The results of its first survey of the Linnaean manuscripts held by the Linnean Society of London are featured in S. Müller-Wille and S. Scharf, ‘Indexing Nature: Carl Linnaeus (1707–78) and His Fact-Gathering Strategies’, Working Papers on The Nature of Evidence: How Well Do ‘Facts’ Travel? (London School of Economics), 36 (2009), 1–39.
In this book he not only laid out the key words and methods that he used to classify plants, but he also gave a fuller explanation of the books that he deemed to be central to the creation of his system. As I will explain in more detail below, he designed its twelve chapters and three hundred and sixty-five aphoristic sections during his student days, but he added, removed and expanded information within this textual structure throughout his entire career. Like so many naturalists of the Enlightenment, he was familiar with a wide variety of textual techniques, many of which were direct descendants of the compositional and pedagogical tools used to harness the mnemonic utility of words inscribed on the clean spaces of erasable surfaces such as *librellos de memoria* and chalk boards, or upon more permanent forms of print such as commonplace books (*adversaria*), cabinet labels, *marginalia* and printed books. Thus, for Linnaeus, the notion of ‘commonplace’ employed in this essay carries two interpretive meanings. First, it refers to the topical logic that facilitated the movement of a textual unit and, second, the fact that such techniques were ‘common’ in early modern print culture. Instead of concentrating on how terms became fixed in relation to his system, this essay looks at how they became adaptable heads, which facilitated the movement of information through the spaces provided by paper sheets, wooden shelves and earthen furrows. To facilitate my discussion, I use three types of head that, for want of better terms, I have labelled ‘titular’, ‘terminological’ and ‘nomenclatural’. These serve as focal points for reflection on how Linnaeus conceptually and spatially employed topical logic to order and reorder books, genres, *tabula*, cabinets and gardens.

**BOOKS AND GENRES**

In this section I explore how Linnaeus split and combined the content attached to titular heads in a manner that allowed him to reorder and respatialize various editions of the *Philosophia botanica*. We will see that he employed two key commonplacing techniques. First, he used heads as visual tags that dually signified the location of thematically related information and which facilitated the splitting of books into chapters, as well as the combining of chapters into books. Second, he used heads to summarize the content of books in a manner that turned them into the names of natural history genres. Overall, the consistent use of the same titular heads functioned as a form of visual encoding that signalled the conceptual nature of the textual content.

Perhaps the simplest way to connect the spatial relevance of Linnaeus’s chapter heads to his conceptualization of natural history genres is to look at how he actually constructed the book. In the introduction he calls the work a *compendium*, which was one of the main textbook formats of...

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21 Its first edition was printed in Stockholm by Gottfried Kiesewetter and in Amsterdam by Z. Chatelain. Aside from a difference in the paper and slight variances in the places, the content and spatial arrangement, these two printings were essentially the same. By 1800 the *Philosophia botanica* had reached its fourth Latin edition and had been published in numerous languages. These editions are listed in B.H. Soulsby, *A Catalogue of the Works of Linnaeus* (London: Trustees of the British Museum, 1933). Searchable online at: http://www.linnaeusth.org/luc/soulsbySearch.jsp. For more on the systematic content of plant identification manuals, see S. Scharf, ‘Identification Keys, the “Natural Method” and the Development of Plant Identification Manuals’, *Journal of the History of Biology*, 42 (2009), 73–117.

early modernity. The Latin noun ‘compendium’, and the phrase ‘via compendiaria’ were used as synonyms for the noun ‘methodus’ during the sixteenth and seventeenth centuries. By Linnaeus’s time, the word was used in Latin book titles to denote a compilation of collocated texts that had previously existed as separate works on their own, or which, if removed and distributed separately, could be read without recourse to other parts of the book. It was also possible that the different sections of compendia, which frequently appeared as numbered chapters, had already been published on their own and had existed as a separate genre. The division of texts in such a topical manner effectively spatialized the contents physically and conceptually, and fell squarely into the acts of topically guided encyclopedic ordering that gripped print culture at the time. Yet, whereas encyclopedias and dictionaries were genres that were comprised of small units of texts often arranged into one large book (often meant to be used in stationary settings like a desk or in a library), compendia were often small enough to be transportable in a fashion that allowed them to be used in the classroom, or in autodidactic settings such as gardens, salons or even oceanic voyages.

The *Philosophia botanica* was a collocation of chapters that Linnaeus had already published as books but which he had subsequently improved. Since he usually did most of his sorting and describing in a library, study, workroom or garden, the splitting and combining of his texts took place in tandem with his handling of specimens. He gives a sketch of the work’s publication history in the brief ‘To the Reader’ (lectori botanico) section at the beginning of the book. When these comments are considered in relation to his other early publications, it can be seen that the *Philosophia botanica* was a larger and refined version of *Fundamenta botanica*, the thirty-six page pamphlet that he had started to write as a student in Sweden, but which he did not publish until 1736 while he was arranging the natural history collection of George Clifford in Holland. It contained twelve chapters that explained the basic books, vocabulary and classification characters that were needed to create a system of natural history. When he returned to Sweden, he annotated it as he expanded his herbarium and sought to promote the merits of his system over others. By 1740 he had enlarged the *Fundamenta botanica* into a second edition and the marginalia in his personal copy reveals that he emended its entries over the next decade. It was this work of manuscript and print, moreover, that was eventually published as *Philosophia botanica* in 1751. Notably, though he tinkered with the aphoristic content, he reused the same chapter titles, therein retaining topical, and, hence thematic, continuity (see

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24 The classical meaning of this word was strongly linked to economic contexts. It was often used to denote ‘that which is weighed together, kept together, saved’. C.T. Lewis and C. Short, *A Latin Dictionary* (Oxford: Oxford University Press, 1999). For Enlightenment English speakers, the *Oxford English Dictionary*’s (OED’s) 2a definition for compendium, which takes its early modern usage in neo-Latinate culture into account, is: ‘An abridgement or condensation of a larger work or treatise, giving the sense and substance, within smaller compass.’
27 Many of the manuscripts composed before Linnaeus left Sweden are housed in the library of the Linnean Society of London. See A.H. Uggla, ‘The Preparation of the *Species Plantarum*’, *Taxon*, 2 (1953), 60–2.
28 S. Savage, *Synopsis of the Annotations by Linnaeus and Contemporaries in His Library of Printed Books* (London: Taylor & Francis, 1940), 6. Müller-Wille and Scharf ‘Indexing Nature’, also points out that Linnaeus interleaved blank sheets into his texts so that he could take notes. Cooper points out that this had been a common practice in natural history since at least the late seventeenth century (Cooper, *Inventing the Indigenous*, 74–5).
In other words, the chapter titles of the *Fundamenta botanica* were effectively titular heads which were transferable from one book to another and which served as labels for textual units that could be moved through the space of the page in a manner that split books into chapters and chapters into books.

Between 1736 and 1750, Linnaeus used the titular heads to order and reorder the many additions that he made to the content of the book. The expanded content of the chapters allowed him to divide them into separate genres, first, by extracting them from the original arrangement, and second, by printing them as separate, fully fledged books or more prescribed pamphlets. A modified version of Chapter 12, for example, was published as *Vires plantarum* in 1747, and an expanded version of Chapter 1, *Bibliotheca*, was published in 1736. Others were enlarged and then collated so that they could be printed as one book. This was the case for Chapters 7, 8, 9 and 10 which appeared as *Critica botanica* in 1737. Other editions appeared over the next decade. This means that by 1750, all the chapters of the *Philosophia botanica* had appeared elsewhere in one form or another as separately published works. In short, the *Philosophia botanica* was a

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**Table 1 The Correspondence of Chapter Heads**

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Pages</th>
<th>No.</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bibliotheca</td>
<td>1–5</td>
<td>1</td>
<td>Bibliotheca</td>
<td>2–17</td>
</tr>
<tr>
<td>2</td>
<td>Systemata</td>
<td>5–7</td>
<td>2</td>
<td>Systemata</td>
<td>18–36</td>
</tr>
<tr>
<td>3</td>
<td>Plantae</td>
<td>7–9</td>
<td>3</td>
<td>Plantae</td>
<td>37–51</td>
</tr>
<tr>
<td>4</td>
<td>Fructificatio</td>
<td>10–15</td>
<td>4</td>
<td>Fructificatio</td>
<td>52–85</td>
</tr>
<tr>
<td>5</td>
<td>Sexus</td>
<td>15–17</td>
<td>5</td>
<td>Sexus</td>
<td>86–96</td>
</tr>
<tr>
<td>6</td>
<td>Characteres</td>
<td>18–22</td>
<td>6</td>
<td>Characteres</td>
<td>97–157</td>
</tr>
<tr>
<td>7</td>
<td>Nomina</td>
<td>23–26</td>
<td>7</td>
<td>Nomina</td>
<td>158–201</td>
</tr>
<tr>
<td>8</td>
<td>Differentiae</td>
<td>26–9</td>
<td>8</td>
<td>Differentiae</td>
<td>202–38</td>
</tr>
<tr>
<td>9</td>
<td>Variations</td>
<td>30–1</td>
<td>9</td>
<td>Variates</td>
<td>239–49</td>
</tr>
<tr>
<td>10</td>
<td>Synonyma</td>
<td>31</td>
<td>10</td>
<td>Synonyma</td>
<td>250–5</td>
</tr>
<tr>
<td>11</td>
<td>Adumbrationes</td>
<td>31–2</td>
<td>11</td>
<td>Adumbrationes</td>
<td>256–77</td>
</tr>
<tr>
<td>12</td>
<td>Vires</td>
<td>33–5</td>
<td>12</td>
<td>Vires</td>
<td>278–87</td>
</tr>
</tbody>
</table>

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29 C. Linnaeus and F. Hassellquist, *Vires plantarum, dissertatione academica cum cons. ampliss. facult. medicae in regia academia* (Uppsala, 1747). This work was a dissertation written by Hassellquist (Linnaeus’s student) and Linnaeus. Although the topic of co-authorship goes beyond the scope of this essay, especially since most of the aphorisms in *Vires* follow the numeric sequence laid out in *Fundamenta*, the traditional approach to the dissertations supervised by Linnaeus has been to treat them as if he wrote them. See C. Linnaeus, *Species Plantarum: A Facsimile of the First Edition 1753*, edited by W.T. Stearn, 2 vols (London: The Ray Society, 1957–9), vol. 1, ch. 7 and J.L. Heller, ‘Notes on the Titulature of Linnaean Dissertations’, *Taxon*, 32 (1983), 218–52. Ku-ming (Kevin) Chang’s recent research on dissertations written at this time, however, suggests that such a traditional approach might be too simplistic. See his ‘Kant’s Disputation of 1770: The Dissertation and the Communication of Knowledge in Early Modern Europe’, *Endeavour*, 31 (2007), 45–9, and ‘From Oral Disputation to Written Text: The Transformation of the Dissertation in Early Modern Europe’, *History of Universities*, 19 (2004), 129–87.

30 C. Linnaeus, *Bibliotheca botanica recensens libros plus mille de plantis huc usque editos secundum systema auctorum naturale in classes, ordines, genera & species dispositos* (Amsterdam, 1736).

31 C. Linnaeus, *Critica botanica in qua nomina plantarum, generica, specifica; & variatia examini subiciuntur, selectiora confirmantur, indigna rejiciuntur* (Leiden, 1737).
compendium that was a genre unto itself; however, when its chapters were extracted and made into separate books, these became freestanding, more specific, genres on their own.32

Linnaeus’s use of commonplacing to divide books into genres, moreover, was not confined to the overarching structure of the book. It also occurred in the bibliotheca chapter of the Philosophia botanica, where he gave a bibliography of botanical texts. This type of chapter had been included in natural history texts since the sixteenth century and built on the bibliomania inspired by ‘universal’ bibliographies of knowledge.33 However, by the eighteenth century, such chapters were being expanded into sizeable books that functioned primarily as natural history bibliographies in their own right. An early example of this practice was Johann Jakob Scheuchzer’s Bibliotheca scriptorium (1716).34 It is possible that Linnaeus was influenced by this innovative move, which would explain why Bibliotheca botanica was the first expanded chapter of Fundamenta botanica that he published separately.35 Bibliothecae, either as chapters or books, were often catalogues, lists or indices that ordered texts by numeric (date, acquisition number, etc.) or alphabetic (surname, short title, etc.) categories. Like many library catalogues of the time, these categories were sometimes used simultaneously, either within the same text, or within separate lists that organized the same books around different logics.36 Interpreting such orderings was sometimes difficult for readers not privy to the oral traditions that underpinned their use in local settings. The unstandardized nature of the Bibliotheca botanica is what most probably lead the young Linnaeus to speculate about the application of his nomenclatural system of classes, orders, genera, species and varieties to the classification of natural history books.37 This ambition, however, ebbed after he visited the well-stocked libraries of Germany, Holland and England and it became less of a concern after he started to build his own library back in Sweden.38 The main way that Linnaeus ended up organizing his books in his Bibliotheca chapter was, unsurprisingly, through heads. Each one was determined by the publication’s subject matter, the method of arrangement or both. For instance, lexicographers (lexicographi) collated ‘names in different languages’, while nomenclators (nomenclatores) concentrated on naming the objects of natural history. In this case, the heads were distilled from the content of the book, or based on the name or occupation of the author and effectively represented Linnaeus’s view of natural

32 Here I am using genre in its most simple sense, that is, as a generic category assigned to species of visual features (image, space and arrangement) and linguistic structures (narrative, verse and description) that have been deemed to be related or relevant to a given community of readers and listeners. J. Frow, Genre (Abingdon: Routledge, 2006), chs. 1 and 3.

33 A well-known example of this genre is Conrad Gesner’s Bibliotheca universalis (1545). For more on the arrangement of this book and the ways in which indexical heads were used to access the content of books in the century before Linnaeus, see A. Blair, ‘Reading Strategies for Coping with Information Overload ca. 1550–1700’, Journal of the History of Ideas, 64 (2003), 11–28. P. Nelles, ‘Reading and Memory in the Universal Library: Conrad Gesner and the History of Ideas’, in Ars Reminiscendi: Mind and Memory in Renaissance Culture, edited by D. Beecher and G. Williams (Toronto: Centre for Reformation and Renaissance Studies, 2009).

34 J.J. Scheuchzer, Bibliotheca scriptorium historiae naturali omnium terrae regionum inservientium (Zürich, 1716).

35 The similarity between Scheuchzer’s Bibliotheca scriptorium (1716) and Linnaeus’s Bibliotheca botanica (1736) is addressed in Cooper, Inventing the Indigenous, 155–6.

36 For the combinatorial logics used to make book catalogues at this time, see Garberson, ‘Libraries, Memory and the Space of Knowledge’. See also Chapter 8, ‘The Library Catalogue’, in W. Clark, Academic Charisma and the Origins of the Research University (Chicago, IL: University of Chicago Press, 2006).

37 See the ‘Clavis Classarium in Systemate Phytothologorum’ in the front material of Linnaeus, Bibliotheca botanica (1736). In this work Linnaeus was attempting to apply the same nomenclatural categories to books as he did to plants. His use of heads to classify books in quintuple fashion (including his use of varieties), is addressed in J. Heller, ‘Linnaeus’ Bibliotheca Botanica’, Taxon, 19 (1970), 363–411. A brief outline of Linnaeus’s bibliographic classification system occurs in R. Pulteney, A General View of the Writings of Linnaeus […] To which is Annexed the Diary of Linnaeus (London, 1805), 54–6.

Being taxonomically inclined, Linnaeus could not resist his old desire to create some sort of hierarchy of book categories. In the absence of any suitable classification system (including the one he proposed in his youth) he opted to treat his heads as categories that could be used to create a hierarchy of genre titles. Accordingly, he dichotomously divided his books under two heads: botanists (botanici) and amateurs (botanophili). The former were divided into collectors (collectores) and Methodisers (methodici), both of which were further subdivided into further heads. A summary of the hierarchy appears in Table 2.

The foregoing use of heads to facilitate the splicing and classification of chapters and books emanated from a much larger context in which natural history genres were relatively fluid. Not only did the features and structures of such texts continually change, but it was common for smaller genres to be expanded or combined with others. As intimated in the introduction of this essay, the partnership between heads and the collocation of texts reached back to the sixteenth century when, for example, small genres like adages (adagia), epigrams and figures were combined to make emblem books. By the early eighteenth century, Linnaeus’s practice of

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Table 2  Bibliotheca Heads as Genres of Natural History

<table>
<thead>
<tr>
<th>Botanici</th>
<th>Botanophili</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collectores Patres</td>
<td></td>
</tr>
<tr>
<td>Physiologi</td>
<td>Anatomici</td>
</tr>
<tr>
<td>Commentatores</td>
<td>Hortulanici</td>
</tr>
<tr>
<td>Ichnigraphi</td>
<td>Medici</td>
</tr>
<tr>
<td>Descriptores</td>
<td>Astrologi</td>
</tr>
<tr>
<td>Monographi</td>
<td>Chemici</td>
</tr>
<tr>
<td>Curiosi</td>
<td>Observatores</td>
</tr>
<tr>
<td>Adonides</td>
<td>Diabetici</td>
</tr>
<tr>
<td>Floristae</td>
<td>Botano-Systematici</td>
</tr>
<tr>
<td>Peregrinatores</td>
<td>Miscellanei</td>
</tr>
<tr>
<td>Methodici</td>
<td></td>
</tr>
<tr>
<td>Physiophi</td>
<td></td>
</tr>
<tr>
<td>Oratores</td>
<td></td>
</tr>
<tr>
<td>Eristici</td>
<td></td>
</tr>
<tr>
<td>Institutores</td>
<td></td>
</tr>
<tr>
<td>Systematici</td>
<td></td>
</tr>
<tr>
<td>Heterodoxi</td>
<td></td>
</tr>
<tr>
<td>Orthodoxi</td>
<td></td>
</tr>
<tr>
<td>Universales</td>
<td></td>
</tr>
<tr>
<td>Fructistae</td>
<td></td>
</tr>
<tr>
<td>Corollistae</td>
<td></td>
</tr>
<tr>
<td>Calycistae</td>
<td></td>
</tr>
<tr>
<td>Sexualistae</td>
<td></td>
</tr>
<tr>
<td>Partiales</td>
<td></td>
</tr>
<tr>
<td>Compositorum</td>
<td></td>
</tr>
<tr>
<td>Umbellatorum</td>
<td></td>
</tr>
<tr>
<td>Graminum</td>
<td></td>
</tr>
<tr>
<td>Muscorum</td>
<td></td>
</tr>
<tr>
<td>Fungorum</td>
<td></td>
</tr>
<tr>
<td>Nomenclatores</td>
<td></td>
</tr>
<tr>
<td>Synonymistae</td>
<td></td>
</tr>
<tr>
<td>Critici</td>
<td></td>
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<td>Etymologi</td>
<td></td>
</tr>
<tr>
<td>Lexicographi</td>
<td></td>
</tr>
</tbody>
</table>

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39 Linnaeus’s creation of bibliographic heads drawn from the occupation of the author as well as the content book deserves further research, especially since it complicates Michel Foucault’s thesis on the ‘author function’ emerging at this time period. Similar complications are addressed in Chapter 2 of R. Chartier, *The Order of Books: Readers, Authors and Libraries in Europe between the Fourteenth and Eighteenth Centuries*, translated by L.G. Cochrane (Cambridge: Polity, 1994).

40 See Colie, *Resources of Kind*. 
combining and splitting texts was common in both printed and manuscript texts, particularly in pedagogical contexts where lists of books, lecture topics, definitions and specimens were compiled into syllabi, textbooks, pamphlets and catalogues that were published and sold as one single volume. In addition to fitting snugly into this setting, Linnaeus’s work reminds us of the spatialized division of text on the printed page that originated in the type of topical logic introduced into Western culture by humanists during the sixteenth century. In Ong’s words: ‘The age of topical logics is the age in which the titles of books become, typically, nouns in the nominative case, and, specifically, nouns which are not merely expressive of the form of discourse but which directly “stand for” the book’s “contents.” Titles have become labels like those of a pharmacist.’ In Linnaeus’s work, moreover, the titles had indeed become labels that were intended to signify different genres and in this sense the ‘age of topical logics’ showed no sign of diminishing in his work.

### TABLES AND SENTENCES

As Linnaeus’s career progressed through the 1720s and 1740s, titular heads provided him the spatial means to manage the ever-increasing number of information units that were moving in and out of the chapters and books that eventually became the *Philosophia botanica*. When viewed from a compositional, or even structural, perspective, such acts of arrangement can be seen as thick technologies of space in which inclusion and exclusion of information was determined by intentionally broad topical categories. When it came to ordering the content of individual chapters, however, Linnaeus employed a much thinner commonplacing technology in which terminological heads, usually crafted to address more specific types of information, functioned as key spatializing units. There were two important concepts that framed this process. First, there were several basic types of paginal space in which terms were placed. Second, blocks of text were spatially split through the vertical realignment of select terms deemed to be important to Linnaeus’s larger botanical interests. The following section first addresses paginal space, and then looks at textual placement in space.

Linnaeus’s notion of a *clavis* (word key) incorporated several key visual forms that enabled him to spatialize a term on the page. At the most basic level the space was divided linearly through the alignment of words into vertical margins and the traditional horizontal axis of sentences or clauses committed to print. In particular, he split up his word lists or narrative blocks with dichotomous brackets. This was effectively division by visual enclosure in which a terminological head was placed at the apex of the bracket. Striking examples of this hierarchical technology occur throughout his student notes, particularly in his *Örtabok* (1725/1727) and his *Manuscripta Medica* notes (c.1727–1731). Whereas the terminological relevance of the words used as heads in these divisions have received due attention in relation to their various

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42 Ong, *Ramus*, 311.

43 Here I am drawing from Clifford Geertz’s ethnological notion of ‘thick’ description and Gaston Bachelard’s ‘thinning processes’. Rephrasing Ken Alder’s take on these terms, thick descriptions represent multiple (and divergent) human points of view and thinning processes ‘synthesize[ing] explanatory power of the physical […] to create those tractable objects that constitute legitimate objects of inquiry’. See K. Alder, ‘Thick Things: Introduction’, *Isis*, 98 (2007), 80–3 (82).

44 C. Linnaeus, *Örtabok* (1725/1727). This was a student notebook now housed at Växjö. It is available online at http://www.vaxjo.se/ortaboken/.

connections to contemporary interpretations of Aristotle’s *Categories* or John Locke’s comments on natural kinds in his *Essay Concerning Human Understanding* (Book III, Chapters I–VII),

their specific role as contingent, or perhaps rule-of-thumb, spatial divisions has been overlooked. While the precise interaction between the spatial dimension and the classificatory relevance of the *term-cum-head* awaits further investigation, I will give one example that sheds light on the commonplacing techniques that were embedded in Linnaeus’s attempts to sort botanical terms and definitions into visually accessible formats.

My example is a longitudinal tracing of one of Linnaeus’s dichotomous tables that takes us back to his student days in the 1720s. In his *Manuscripta medica*, he employed dichotomous tables to group lists of the main classification categories used by influential systematists.

A clear example of this practice is evinced in the table that dichotomized the main classes featured in the influential system of Joseph Pitton de Tournefort (1656–1708). He placed a list of the classes on the far right and then used five vertically aligned bands of dichotomous brackets with heads to divide the table from the left to right (Figure 1). These bands served two important purposes when it came to spatially accessing the class heads. First, when read from left to right, the bracket heads, which were words related to plant morphology, moved from general to more specific terms, therein forming a hierarchical complex of space divided by bracketed heads. Second, the bracket bands functioned as individual units of proximate order, that is, a kind of spatial ordering based on the ‘closeness’ of heads plotted near each other on the page.

When Linnaeus reduced these notes to the one-sentence Aphorism 64 on Tournefort in Chapter 2 of the *Fundamenta botanica* (1736), the dichotomous heads and brackets disappeared (Figure 2). However, two years later, when he expanded *Fundamenta*’s Chapter 2 into *Classes Plantarum* (1738), the Tournefort entry used the same heads and brackets of the five vertical dichotomous divisions featured in his *Manuscripta medica* (Figure 3). Ten years later, when he compressed the six hundred and fifty-seven pages of *Classes* into the eighteen pages of Chapter 2 in the *Philosophia botanica*, Aphorism 64’s dichotomous divisions disappeared again, but the brackets were nominally replaced with white space that effectively pointed to the terminological head appearing at the beginning of the prose (Figure 4).

Linnaeus not only employed this practice for Tournefort’s system, he followed a similar process when he created the spatialized heads that he used to represent the classes of the systems produced by leading naturalists such as John Ray (1627–1705), Hermann Boerhaave (1668–1738) and Johann Jacob Dillenius (1687–1747). Thus, for the young students using *Philosophia* as their first botanical handbook, the heads and brackets that originally allowed Linnaeus to reduce other systems down to overarching heads were invisible. This effectively prevented them from seeing the proximate forms of nominal and ordinal

It should perhaps be noted that these tabular hierarchies are Linnaeus’s own topical interpretation of the authors under consideration; that is, he reordered their classification categories so that they could be dichotomized.


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Figure 1. ‘Methodus Plantarum Tournefortiana’ table, in Carolus Linnaeus, *Manuscripta Medica* MS (c.1727–31). Special Collections, Linnaean Society of London, Linnaeus’s Manuscript Collection, Box Marked ‘Lin Pat Gen 2’.
order that he had used to rearrange the classification categories used by other authors. All they saw was a list that gave no hint as to the malleability of the arrangement. Such a situation made it much easier to view the world through the fixed ways of ‘seeing’ communicated by the form and content of the *Philosophia botanica*.

Figure 3. ‘Clavis Classium Tournefortii’ table, in Carolus Linnaeus, *Classes Plantarum* (1738), 331. University of Aberdeen Special Collections.
At first glance such techniques of inscription and erasure might seem to be a minor matter until one considers that, in the conversion from the bracketed space to the vertical lists appearing in the *Fundamenta* and the *Philosophia*, the heads became more easily replicable in print, and, again, more fixed. Notably, this type of erasure occurred not only in the places mentioned above, but also in relation to matters that were of foundational importance to Linnaeus’s own classification methods. Such a change can be seen by comparing the heads of the bracketed dichotomies that group his twenty-four classes in his 1735 *Systema Naturae* pamphlet to the simple numeric list of the same classes presented in Chapter 2 of *Philosophia botanica*. In the *Clavis Systematis Sexualis* table featured in this early version of the *Systema*,

Figure 4. Aphorism 64, the expanded Tournefort table in Carolus Linnaeus, *Philosophia Botanica* (1751), 23. Wellcome Library, London.
he made sense of the classes by placing them at the end of a series of dichotomous divisions, that is, by using the same type of topical hierarchy employed in the *Manuscripta medica* (Figure 5). These tables were included in most subsequent editions of the *Systema*, but not in the *Philosophia botanica*, where, like the notebook-to-print transformations of the Tournefort table, the brackets were replaced by an indentation of white space (see Aphorism 68 in Figure 6). This means that though the bracketed heads helped him make mnemonic and conceptual sense of the twenty-four classes throughout his entire career, they were replaceable when the constraints or purposes of the publication necessitated their removal. But, though they were

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**Figure 5. ‘Clavis Systematis Sexualis’ table, in Carolus Linnaeus, Systema Naturae (1735). Private Collection of Staffan Mülle-Wille.**

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50 While I was writing this paper, Karen Reeds reminded me that two major constraints for the post-1760s editions of *Systema Naturae* were the size of the page used for various editions and the increasing amount of text that began to limit the spatial possibilities. These two factors often worked in concert with each other and might explain the reduction of brackets in later editions such as the one published in 1758.
rendered invisible to most students and savants (or even future historians) unaware of the history of his texts, they were still part of a cognitive framework that was fundamentally spatial and that continued to influence the ways in which Linnaeus himself made sense of the arrangement – a point that is evinced by the fact that the bracket heads of his 1735 *Clavis Systematis Sexualis* table continued to appear in later editions of *Systema Naturae* that he edited.\(^{51}\)

Based on his use of the terminological heads outlined above, it can be seen that they were a vital information management tool that substantially facilitated concepts central to his systematic thought. Another good example of this point is evinced in the manner that he used heads to split

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aphoristic sentences (*sententiae*) into *tabula*.\(^{52}\) Following on from the well-established aphoristic tradition that existed in early modern medicine and natural history, most notably in the works of authors like Bacon and Boerhaave, Linnaeus’s aphorisms came in the form of pithy principles, maxims, precepts, axioms or instructions.\(^{53}\) When he composed his *Fundamenta botanica* during the early 1730s he divided it into 365 aphoristic sections. The first one appeared in Chapter 1 and it was given the number 1 and the rest ascended upward. To eliminate repetitive numbering, the first aphorism of each subsequent chapter did not revert back to the number 1. Rather, it followed on from the number of the last aphorism in the preceding chapter. The numerical sequence ascended straight through all the chapter divisions and worked in conversation with the fact that the content of each chapter was thematic, conforming to the subject matter summarized in the one-word title (*characteres, nomina, differentiae*, etc.). Thus, like the numerous catalogues often used to order books in early modern libraries, the aphorisms of the *Philosophia botanica* could be accessed through more than one organizational principle.

Notably, when Linnaeus expanded the *Fundamenta* into the *Philosophia*, he did not change the aphoristic sequence, which means that most of the numbers assigned to the aphorisms not only correspond to the originals in the *Fundamenta*, but also occur in the same chapters. Although the subject matter of the aphorisms remained relatively consistent, there were significant changes to the way in which the text of the *Philosophia* was respatialized on a case-by-case basis within each aphoristic unit. In most cases, Linnaeus used typographically distinct heads featured at the start of the first sentence of each aphorism to signify the content of the entry. Here we can see that visual differentiation functioned as a type of spatial commonplacing, a method of tagging and positioning words in a way that made them stand out within the textual blocks of the *Philosophia*’s aphorisms. The visual tagging of words as heads in this manner, however, was not something new. The rise of the use of heads as internal forms of tabular arrangement, for example, arose in tandem with the continual spatialization of texts that occurred throughout early modernity.\(^{54}\) In Linnaeus’s case, he emphasized words that were usually relevant to the subject matter stated in each chapter’s title, which, of course, had been originally selected because of its importance to his systematic interests. Since he was writing in Latin, he could arrange the narrative of each aphorism so that it began with a head that cued the reader to the content of the subsequent narrative. In just about every case, these heads were read vertically in a manner that allowed the reader to start at the top of the page and move down to the bottom, thereby creating faster

\(^{52}\) Here I am using the early modern notion of ‘*tabula*’, which included a wide variety of spatialized words and figures, including indices, catalogues and lists. For a better sense of this usage, see S. Ferguson, ‘System and Schema: *Tabulae* of the Fifteenth to Eighteenth Centuries’, *The Princeton University Library Chronicle*, 69 (1987), 9–30. Such egalitarian definition, therefore, includes, but is not limited to, the modern notion of a ‘table’, which, in the Goody’s words, is often described as a ‘paired list forming rows as well as columns’. J. Goody, *The Logic of Writing and the Organisation of Society* (Cambridge: Cambridge University Press, 1986), xiii.

\(^{53}\) Aphorisms were originally employed by many ancient thinkers, but it was Galen’s use of them that seems to have influenced how they were employed in Enlightenment medicine, the subject matter in which Linnaeus was trained. See S. Müller-Wille and K. Reeds, ‘A Translation of Carl Linnaeus’ Introduction to *Genera Plantarum*’, *Studies in the History and Philosophy of the Biological and Biomedical Sciences*, 38 (2007), 563–72, esp. 564.

access to the subject matter of each aphorism (see Figures 4, 6, 7 and 8). In addition to capitalizing entry heads, Linnaeus italicized key words that occurred inside his aphorisms. In these instances, outside of Chapter 1 (*Bibliotheca*), the bulk of them were morphological terms that played an important conceptual or classificatory role in his sexual system. 55

If the number of differentiated heads exceeded more than a handful, Linnaeus sometimes respatialized the text by transforming them into a vertical table. This form of representation occurs only intermittently in the *Fundamenta botanica*, but select cases are worth noting because they serve as good comparison point for Linnaeus’s *Philosophia botanica*. A particularly salient example occurs in Aphorism 81 (Figure 7). It begins with a capitalized ‘RADIX’ (root) and states that there are three kinds (*3plex* [*triplex*] *est*) and that their names are featured in italics: *bulbosa*, *tuberosa* and *fibrosa*. 56 Yet, Linnaeus was not solely content with this sentential arrangement and this led him to replicate the three demarcated words in the space below the aphorism. In this reconfiguration, the heads were replotted into a vertical list in which each one was assigned a Greek letter so that it could be clearly referenced. 57 This effectively respatialized his sentential descriptions and illustrates how one head could be used in two different kinds of spatial arrangement in the same entry at the same time.

When Linnaeus expanded his *radix* aphorism in the first edition of the *Philosophia botanica*, he adapted the foregoing act of spatialization to create an even more muscular *tabula*. The revised entry for *radix* (Figure 8) began with a sentence that stated the definition of a root and that it was composed of *medulla* (marrow), *ligno* (wood), *libro* (rind) and *cortex* (bark) and that its main morphological parts were the *caudex* (trunk-like part) and the *radicula* (radicle). When he transformed the sentence into a table, however, Linnaeus only used *caudex* and *radicula*, thereby omitting the other terms contained in the previous horizontal alignment. He made his first table head *radicula* and then divided *caudex* to make two new heads: *caudex descendens* (descending trunk) and *caudex ascendens* (ascending trunk). There are two important points to note here. First, the vertical table’s inclusion of the heads extracted from the sentence indicates that Linnaeus was not attempting to create a comprehensive representation of all the tagged words italicized in the preceding prose of the aphorism. Second, the omission and retention of the heads was, as intimated above, linked directly to the value that his method of classification placed on specific external features of a plant. 58 Thus, since *medulla* and *libro* were internal parts, and *ligno* a part tangential to Linnaeus’s method, they were omitted from the respatialization.

**CABINETS AND GARDENS**

So far, we have seen that Linnaeus used titular heads to reorder and respatialize books and chapters, and that he divided up paginal space and sentences by resituating terminological heads. In this final part of the essay I consider the connection between the commonplacing techniques that he used on the printed page and those that he used within the architectural spaces of his herbarium and garden. The interaction between topical arrangement and early modern spaces like theatres, libraries and museums has been emphasized by a number of scholars and my thoughts on this

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55 Linnaeus gives a summary of his typographical and paragraphical logics of space in *Philosophia botanica* (1751), §329.
56 For these Latin terms, and those that follow in this paragraph, I use the italicization provided by Freer in *Linnaeus' Philosophia Botanica*.
57 Ong maintains that this type of spatialization of aphorisms into heads started in the Renaissance. See Ong, *Ramus*, 315.
58 More specifically, this was most probably influenced by what is sometimes called Linnaeus’s ‘cortex-medulla theory’, that is, a set of causal (perhaps even metaphysical) connections that he made between morphology, heredity and growth. See B.B. Gardiner, ‘Linnaeus’ Species Concept and His Views on Evolution’, *The Linnean*, 17 (2001), 24–5; P.F. Stevens and S.P. Cullen, ‘Linnaeus, the Cortex-Medulla Theory, and the Key to his Understanding of Plant Form and Natural Relationships’, *Journal of the Arnold Arboretum*, 71 (1990), 179–220.
matter take forward ideas developed by Yates, West and Garberson. Although the common-placing practices evinced in the *Philosophia botanica* present many avenues of architectural enquiry, I concentrate on how the format of tabularized heads provided a convenient spatial template for the organization of Linnaeus’s herbarium and garden. More specifically, I first explain how his herbarium cabinet was divided into bilateral columns that were labelled by nomenclatural heads imported from the classes of his system. Following on from this point, the final part of the section suggests that he used a similar method to divide the space of his botanical garden.

59 Yates *Art of Memory*, ch. 1; West, *Theatres and Encyclopaedias*, ch. 2; Garberson ‘Libraries, Memory and the Space of Knowledge’. For a multicultural introduction to the architectural imagery of early modern memory practices, see Spence, *The Memory Palace of Matteo Ricci*. 
Linnaeus’s herbarium consisted of two important components: dried specimen sheets and the cabinet that housed them. In order to understand how commonplacing techniques are relevant to the spatial orientation of these two types of object, a few contextual points need to be mentioned. Although he appreciated the pragmatic value of botanical illustrations, Linnaeus was ultimately critical of their pedagogical and representational utility.\footnote{This is not to say that Linnaeus discouraged botanical illustrations across the board. See Linnaeus, \textit{Philosophia botanica} (1751), §§331–3. Linnaeus’s evaluation of images is addressed in \textit{Species Plantarum: A Facsimile}, vol. 1, ch. 6 and in O. Hagelin, \textit{George Dionysius Ehret and His Plate of the Sexual System of Plants} (Stockholm: Hagströmer Biblioteket, 2000), 22–7.} Moreover, he held that the detailed
The images afforded by copper-plate illustrations were too expensive and could only serve as a meagre proxy for the real specimens. A good example of this belief is evinced by the fact that he makes no mention of collecting printed images of plants in the section addressed to botanical neophytes at the end of the *Philosophia botanica*. Instead, he recommended that botanists should ‘collect, dry and glue onto sheets of paper the larger plants, as many as one can’. It was these sheets which served as the basis for a systematically ordered herbarium, making the affixed plants a naturalized form of illustration. He developed this practice early in his career and it was most probably inspired in part by contemporary attempts to turn *naturalia* into books which could be filed on a shelf for easy reference. In contrast to the sheets used by other contemporary naturalists, he refrained from binding his into a proper book and this allowed him to stack them in a bespoke cabinet (arca) in a manner that allowed him to insert, remove and reorder them as he saw fit. It was for this reason that the *Philosophia botanica* gave explicit instructions on how to build the cabinet and how to organize the specimen sheets within it. He recommended that the internal space be split into two columns with shelves that were collectively divided into twenty-four sections, each of which was assigned a numerical head that represented a class within his system. Each class section was filled with select specimen sheets divided by bands into genera. In his words:

> If the folding doors are marked with the numbers and names of the genera, with the space on the shelves corresponding exactly, and linden bands are kept between the spaces, enclosing the same genera and themselves marked with the number of the genera, then any plant can be pulled out and produced without delay.

Linnaeus was not, of course, the only early modern naturalist or savant who paid close attention to the spatial organization of *naturalia* in a cabinet. Uppsala’s famed Augsburg Cabinet, for example, utilized baroque spatial conventions similar to those employed by other wealthy collectors across Europe. On a more practical scale, contemporary medical cabinets like the one featured as the frontispiece of Linnaeus’s own *Materia Medica* (1749) employed longstanding forms of symmetrically designed storage units (Figure 10). These types of furniture, however, were not explicitly conducive to the spatial practices that Linnaeus used in conjunction with his

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61 Linnaeus felt that elaborately coloured plates were simply too expensive for the average naturalist. The longer version of Aphorism 266 in *Critica botanica* (1737), for example, gives clear voice to this factor. For the context of *Critica* comments on this matter, see L. Daston, ‘Type Specimens and Scientific Memory’, *Critical Inquiry*, 31 (2004), 153–82 (167–8). See also J.L. Heller, ‘Linnaeus on Sumptuous Books’, *Taxon*, 25 (1976), 33–52. The only Linnaean book that contained a large proportion of illustrations was *Hortus Cliffortianus* (Amsterdam, 1738).

62 Linnaeus, *Philosophia botanica* (1751), 289. In the introduction he states that he composed the section as a guide for instruction. Linnaeus discusses his specimen sheets in *Philosophia botanica* (1751), §11.


64 Linnaeus’s specimen sheets are addressed in Jarvis, *Order of Chaos*, ch. 5 and *Species Plantarum: A Facsimile*, vol. 1, ch. 12. For the contemporary use of specimen sheets in Holland at the time Linnaeus was living there, see S. Müller-Wille, ‘Linnaeus’ Herbarium Cabinet: A Piece of Furniture and Its Function’, *Endeavour*, 30 (2006), 60–4.

65 There were a variety of multilateral cabinets being used during the eighteenth century and their symmetrical format and contents were often influenced by the aesthetic, epistemic and metaphysical assumptions of the designer. E.C. Spary, ‘Scientific Symmetries’, *History of Science*, 62 (2004), 1–46 (7–12).


67 Nor was this an isolated incidence of how commonplacing or memory practices were transferred from paper sheets and pages into architectural spaces. See Yates, *Art of Memory*, ch. 15 and Garberson ‘Libraries, Memory and the Space of Knowledge’.

commonplacing. Like the spatial hierarchies presented in the *Philosophia botanica*, he wanted a simple form of linear order that allowed him to access his sheets quickly. Such a desire led him to reject the spatial divisions featured in many contemporary curiosity and medical cabinets, that is, closed drawers that were stacked in multiple columns. This rejection was probably linked to the fact that he had already seen a better way forward in the form of filing systems that were physical instantiations of commonplace divisions used so often in books. For example, Lauren-tius Normann (Lars Norman), the professor of logic and metaphysics at the University of Uppsala, used a kind of commonplace cabinet a full three decades before Linnaeus matriculated there as a student.69

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Although it is difficult at present to know the precise impact of such filing systems, it is clear that Linnaeus’s design mirrored the ways in which he arranged heads in his notes and books. The interior space of his cabinet was divided into two open-faced columns, which meant that it was a physical instantiation of a bilateral table. Such a situation allowed him to read the heads in the cabinet in the same vertical manner that he read the heads of the printed tables that he used to arrange the content of the *Philosophia botanica*. This connection between the topical space of book pages and cabinet interiors was reinforced by the very word, *loculus*, which Linnaeus generally used to refer to cabinet compartments. This term was diminutive of *locus*, that is, the word employed by classical orators to denote a ‘place’ in the mind reserved for related ideas or concepts. Early modern humanists drew direct analogies between the label assigned to such places in the mind and the heads that they used to gloss the content of quotations and personal observations. This relationship between the ‘space’ of the mind and space on the page facilitated the logic of commonplacing all
the way through the eighteenth century.\textsuperscript{70} Within this tradition, a \textit{loculus} was a ‘small place’ – physical or mental – and this most likely explains why Linnaeus used the term.\textsuperscript{71} Furthermore, when referring to the space inhabited by one class in the cabinet, he used the word \textit{loculamentum}, which meant ‘the lesser of the small places’. Each \textit{loculamentum} was signified by the numeric head that denoted the botanical class of the contents. As mentioned above, he was not the first person to connect the spatial configuration of commonplace notation to that of a compartmentalized cabinet,\textsuperscript{72} or even to the divisions of library cabinets.\textsuperscript{73} Indeed, the possible practices in which the labels of his \textit{loculamentum} modified the format of previous \textit{arcae} deserves further attention in the future. It seems, however, that he did add an innovative twist to the commonplace \textit{arca} concept when he coupled the tradition with the spatial arrangement of plants in his botanical garden.

The foregoing connection becomes more relevant to heads and spatial order when it is considered in relation to the fact that Linnaeus’s herbarium was located in the roomy and bright workspace of the garden’s conservatory that he had redesigned during the 1740s in collaboration with the influential architect Carl Hårleman.\textsuperscript{74} There Linnaeus could open the cabinet’s double doors, step back and then observe its entire contents in a glance, thereby making it easier to quickly locate a given class. Once a specimen had been found by using the \textit{loculamentum} heads of vertically aligned shelves, it was pulled out and consulted. Thus, the specimen sheets of his herbarium, like words in a list, or heads in a table, could be removed from the cabinet and reinserted at will.\textsuperscript{75} The possible transference of bookish spatial techniques to a physical object, however, was not limited to his cabinet because they also appeared in his botanical garden in Uppsala (\textit{hortus upsalensis}). Like his cabinet, he divided the main section into two columns of rows in which representative specimens were cultivated. He introduced this spatial feature when he redesigned the garden alongside the conservatory during the 1740s. Each column could be read in a vertical fashion when he stood at the bottom of the garden (Figure 11). Within the rows, each of which corresponded to a class, the living specimens functioned as heads that collectively represented a shared trait of an entire class or genus.\textsuperscript{76} Although this adjustable archive of nature was indeed a marvel of Enlightenment order, its inception was facilitated by the topical logics that allowed him to create and spatialize heads in the \textit{Philosophia botanica}.

CONCLUSION

We have seen that Linnaeus organized his manuscripts and printed texts with commonplace techniques. Guided both by spatial concerns and his classification interests, he reduced various

\begin{itemize}
\item \textsuperscript{70} The formation of \textit{loci} was an extension of classical memory techniques. See Yates, \textit{Art of Memory}, chs 1–2. The impact of such practices upon eighteenth-century visual and material culture is recounted in te Heesen, \textit{The World in a Box}.
\item \textsuperscript{71} He also used \textit{loculus} to name small cells found in plants. In classical Latin, \textit{loculus} denoted ‘a little place’ or ‘a small receptacle with compartments’ (Lewis and Short, \textit{A Latin Dictionary}). Pliny the Elder, the famed natural historian, used it in the latter sense in his \textit{Historia naturalis}. Linnaeus cited Pliny’s text throughout his works.
\item \textsuperscript{72} For several examples of how commonplace gave rise to filing systems during the sixteenth and seventeenth centuries, see Malcolm, ‘Thomas Harrison and his “Ark of Studies”’.
\item \textsuperscript{73} Garberson, ‘Libraries, Memory and the Space of Knowledge’.
\item \textsuperscript{74} A brief history of the garden is given in the preface of C. Linnaeus, \textit{Hortus upsalensis, exhibens plantas exoticas. horto upsalensis academiae, vol. i} (Stockholm, 1748). A number of Swedish university laboratories, museums and observatories were rebuilt or redesigned from the 1730s to the 1760s. The space of Swedish laboratories at this time is innovatively explored in H. Fors, ‘J.G. Wallerius and the Laboratory of Enlightenment’, in \textit{Taking Place: The Spatial Contexts of Science, Technology and Business}, edited by E. Baraldi, H. Fors and A. Houltz (Sagamore Beach, MA: Science History Publications, 2006), 3–33.
\item \textsuperscript{75} A large number of Linnaean specimens have now been digitized and can be viewed on the websites of the Linnaean Plant Name Typification Project (http://www.nhm.ac.uk/research-curation/projects/linnaean-typification/), the Linnean Collections of the Linnean Society (http://www.linnean-online.org/) and the Swedish Museum of Natural History (http://linnaeus.nrm.se/botany/fbo/hand/welcome.html.en).
\item \textsuperscript{76} The spatial arrangement of Linnaeus’s \textit{hortus upsalensis} is described in Manktelow ‘Teaching Botany’, 160–3.
\end{itemize}
aspects of books, genres, sentences and specimens down to heads that represented units of information and which could be moved across paper, wood and earthen surfaces. The invention of such heads, however, was not necessarily constrained by the deductive or inductive logics that guided the use of the categorical terms featured in the authoritative versions of *Systema Naturae* or *Species Plantarum* that are often cited by modern scientists and historians. In the cases examined above, Linnaeus used various topical logics to thematically and spatially order the *Philosophia Botanica* in a manner that was expedient to communicating the basic nomenclature and classification of his system. In other words, commonplacing was both a spatial and conceptual method of categorization that he used to order and reorder various sources of information into lists, tables and indices inscribed on, and in relation to, a multiplicity of objects. Seen from this perspective, commonplacing was a notable link between two acts of inscription. The first involved taking notes from observations made while travelling, teaching, reading or ‘botanising’ in his garden. The second was the fixing of information into the prescribed terms and nomenclatural categories necessitated by his system. It was between these initial and final acts of inscription where the textual techniques of commonplacing operated as a ‘middle’ level of categorization by division that sorted properties and descriptions from his preliminary observations into heads that corresponded to morphological, sexual and reproductive concepts. He then used these middle-order heads to reduce the entire world of plants down to the select terms and five overarching categories that formed the basis of his system. Despite its pervasive presence in Linnaeus’s papers and early publications, this middle level has effectively remained invisible to historians because studies tend to focus on the first impressions and observations that he made in
his travels and at the workbench, or they give historiographical priority to the final place a specimen was assigned in his system.

Linnaeus’s use of commonplace also points to the centrality of print culture within the world of systematically-inclined naturalists. At one level, the spatiality inherent in the plotting of heads and white space on material objects, especially on the pages of manuscript and printed books, suggests a situation in which commonplace *tabulae* effectively functioned as memory aids to be used in conjunction with other texts and the direct observation of objects. Such a form of print was a valuable information management tool that was easily replicated because it played to the strengths of common printing technologies like the linear blocking of moveable type. This means that the reproducibility of heads in tables cannot be underestimated because this form required only a small number of figures that, firstly, eliminated the expenses associated with engraving and colouring and, secondly, made it easier and cheaper to republish subsequent editions across Europe and its colonies. Although the popularity of Linnaeus’s works are sometimes attributed to genius of his system, such economic and practical advantages of his topically arranged *Philosophia* suggest that the success of his book also may be linked to the fact that his readers found his commonplace practices familiar and, hence, memorable. He realized that the great diversity of data in books and in nature worked against the notion of fixed heads at the compositional level and he addressed this issue directly in *Philosophia* by providing a conceptual and spatial template for heads in a manner that spoke to a general mood of the time. In so doing, he ended up creating a book that became one of the standard texts used to teach students botanical classification throughout the rest of the century.

Durham University

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