of the 1699 reorganisation of the Académie, Fontenelle was to inaugurate the tradition of 'éloges' for Academicians which, as Charles B. Paul has illustrated, were to prove seminal in the eighteenth century in promoting the ethos of science in its institutional embodiment. Indeed, it is interesting to find an English commentator in 1710 comparing Fontenelle with Oldenburg and regretting the lack in the Royal Society at that point of such a figure, who 'would bee as it were the Soule of the Society'.[32]

This does not mean, however, that I am advocating some kind of 'great man' theory of institutional history, for what is important in these and other cases is the interrelationship of the individual and the corporate. For all that men like Oldenburg and Fontenelle could achieve, they were only mortal, whereas institutions had a corporate identity that not only transcended the efforts of individuals, but also outlived them, giving continuity to the enterprise to which they were devoted even when activity flagged. Hence the initial aspiration to institutionalization was at once prescient, yet also flawed. The founders of the Royal Society and of other comparable institutions were correct in their clear if rather general conception that the collaborative and organised pursuit of natural knowledge had advantages over purely individual and informal enterprise. But they had to find out the hard way just what was feasible for such an organisation to achieve and what was not, discovering some initiatives to be more fruitful than others in a manner that could not have been foreseen in advance. Hence the early history of the institutionalization of science was more of a matter of trial and error than is often realised, and the story of this evolutionary process deserves a more central place in our accounts of the subject than it has received hitherto.

32 Thomas Smith to Martin Lister, 25 February 1710, Bodleian Library, Oxford, MS Lister 37, fol. 179; C.B. Paul, *Science and Immortality: the Eloges of the Paris Academy of Sciences (1699–1791)* (Berkeley and Los Angeles, 1980).

6

The Cabinet Institutionalized: The Royal Society's 'Repository' and its Background

INSTITUTIONAL COLLECTIONS in seventeenth- and early eighteenth-century England are worthy of study because they occupy an intermediate position between private cabinets and public museums. They therefore stand at a transitional point in the process of evolution which may be said to be the *raison d'être* of this volume.[1] The significance of institutional collections is that – at least in theory – they had a potential for continuity which their private counterparts ordinarily lacked. Whereas cabinets accumulated and owned by individuals were vulnerable to dispersal after that person's death, institutions had a corporate life beyond the lives of their members, thus offering a potential guarantee of indefinite continuity and growth for collections vested in them. This advantage was something that was appreciated at the time: when the existence of the Royal Society's museum was announced in *Philosophical Transactions* in October 1666, potential benefactors to the collection were encouraged with the assurance that their gifts would there be preserved for posterity 'probably much better and safer, than in their own private Cabinets'.

The most famous of such early public collections fall outside my terms of reference, namely the Ashmolean and the British Museum. Here I shall be dealing with a number of less august ventures: in fact, though included here because of their institutional status, some of the collections which I shall be covering proved as transitory as private cabinets, nor is the dividing line between these two types always easily drawn. In addition, institutional collections were often not very different in their content and its treatment from the private cabinets in Britain which have been dealt with elsewhere. As we shall see, this even applies to the Royal Society's museum, the most interesting and important of the collections with which I shall be dealing. But part of the reason why the Royal Society's 'repository' is the most interesting of them is that, although it showed similarities to earlier collections, this was in spite of ambitions to be qualitatively different from its predecessors, ambitions which I

1 *The Origins of Museums: the Cabinet of Curiosities in Sixteenth- and Seventeenth-century Europe*, eds. Oliver Impey and Arthur MacGregor (Oxford, 1985), in which this essay originally appeared. For the quotation at the end of this paragraph, see *Phil. Trans.*, 1 (1666), 321.

wish to survey. The context of these partially realised hopes was the grandiose Baconian programme of the early Royal Society, and the history of its repository reflects in microcosm the tension between ambition and actuality that characterises the Society's early history as a whole.

The commonest milieu for these early institutional collections was academic. A number of benefactors seem to have seen universities and colleges as appropriate recipients for miscellaneous curiosities, evidently as much because of the permanence accruing from their institutional status as because it was thought that such collections would serve a direct didactic function. Various gifts were made, which in some cases grew into collections sizeable enough to attract the attention of visitors. To some extent this applied to colleges. From the 1650s onwards, and particularly in the early years of the eighteenth century, we learn from travellers' accounts of rarities preserved at various colleges in both Oxford and Cambridge, including collections of coins, natural objects such as dried animals, and miscellaneous curiosities: the latter included (at Merton College, Oxford) 'the Thorn, which they say our Saviour was Crowned withal', a strange throwback to medieval relic-collecting.[2] Some of these accumulations were more extensive than others, while discrepancies between the reports of different travellers suggest a rather haphazard element about them. Indeed, in many cases these college cabinets were apparently hardly more formal or permanent than private ones.

Perhaps more impressive were the collections which the central institutions of the universities acquired, both at Oxford and Cambridge, though there was much more of a development towards an authentic 'museum' at the former than the latter. At Cambridge the University Library was presented with a collection of coins and other antiquities by Andrew Perne, Master of Peterhouse, as early as 1589. This was swelled by further donations during the seventeenth century, and the university accounts reveal that a cabinet was made for the coins in 1659–60 and repaired in 1660–1.[3] But during the seventeenth century hardly any more miscellaneous curiosities were on show, and the university seems to have acquired specimens of this kind on a significant scale only in the 1720s, with the bequests of George Lewis and John Woodward.[4]

At Oxford, on the other hand, sizeable collections existed at a much earlier date, perhaps connected with the greater degree of scientific endowment which Oxford

2 Evelyn, *Diary*, iii, 108–11; R.T. Gunther, ed., *Early Science in Oxford* (14 vols., 1923–45), xi, 53, 193, 240–2; Ralph Thoresby, *Diary*, ed. J. Hunter (2 vols., London, 1830), i, 293–4; J.E.B. Mayor, *Cambridge under Queen Anne* (Cambridge, 1911), pp. 127, 129, 161, 169, 176–7; W.H. and W.J.C. Quarrell, eds., *Oxford in 1710 from the Travels of Zacharias Conrad von Uffenbach* (Oxford, 1928), pp. 17, 58; *British Curiosities in Nature and Art* (London, 1713), pp. 58–9, 62, 78, 80; Sir Geoffrey Keynes, *The Life of William Harvey* (Oxford, 1966), pp. 273–5.

3 C.E. Sayle, *Annals of Cambridge University Library, 1278–1900* (Cambridge, 1916), pp. 56, 78, 90–2; C.H. Cooper, *Memorials of Cambridge* (3 vols., Cambridge, 1880), iii, 68, 71. The reference to the university accounts has kindly been supplied by David McKitterick.

4 J.C.T. Oates, 'An Old Boot at Cambridge', *The Book Collector*, 10 (1961), 291–300; Cooper, *Memorials* (n. 3), iii, 72, 104–7; Sayle, *Annals* (n. 3), pp. 95–7.

acquired in the seventeenth century and especially in the 1620s and 1630s.[5] At this time rooms in the Schools Quadrangle was refurbished as an Anatomy School, and both here and at the Bodleian Library collections seem to have taken shape from this date: the earliest account of the collections comes from two travellers who visited Oxford in 1630 or 1631.[6]

The most important collection at the Bodleian was of coins. The core of this comprised five cabinets presented by Archbishop Laud in the 1630s. It was augmented by further gifts over the following decades, and between 1658 and 1666 was catalogued by Elias Ashmole.[7] In addition, however, the Bodleian also acquired more miscellaneous rarities, some from alumni and others from London merchants, who seem to have regarded the Bodleian as an appropriate repository for rarities acquired during their voyages. Hence visitors were regaled with a miscellany of curiosities, mainly ethnographic items but also including such memorabilia as Guy Fawkes's lantern, presented in 1641.[8]

On the whole, a rough division of labour seems to have been imposed, so that natural rarities which were presented to the university went to the Anatomy School rather than the Bodleian even when their donor intended them for the Bodleian, as with items presented by the London alderman Sir Robert Viner in 1684.[9] The size and nature of the Anatomy School Collection is revealed by catalogues of it made respectively in 1675 and between 1705 and 1709.[10] By the early eighteenth century the collection comprised some 400 items, thus constituting quite a serious museum. The collection seems to have been somewhat akin to that in the Anatomy School at Leiden, with which it was compared by one traveller.[11] Prominent among the exhibits were articulated skeletons and tables of muscles used for teaching purposes. In addition, Oxford could offer a pale reflection of the famous sequence of 'moralised skeletons' at Leiden, not least in the form of the skeleton of a woman who was said to have had eighteen husbands and to have been hanged for murdering four of

5 R.G. Frank, jr., 'Science, Medicine and the Universities of Early Modern England: Background and Sources', *History of Science*, 11 (1973), 194–216, 239–69, on pp. 239–40; Charles Webster, *The Great Instauration: Science, Medicine and Reform, 1626–1660* (London, 1975), pp. 122–6.

6 R.G. Frank, jr., *Harvey and the Oxford Physiologists* (Berkeley and Los Angles, 1980), pp. 45–6, 61; W.D. Macray, *Annals of the Bodleian Library, Oxford* (2nd edn, Oxford, 1890), pp. 74–5.

7 Ibid., pp. 84, 125, 483; Josten, *Ashmole*, i, 123–4.

8 Macray, *Annals* (n. 6), pp. 93, 133 and passim; Evelyn, *Diary*, iii, 107–8; Lorenzo Magalotti, *Travels of Cosmo III, Grand Duke of Tuscany, through England (1669)* (London, 1821), p. 262; Quarrell, *Oxford in 1710* (n. 2), pp. 11–14; Gunther, *Early Science in Oxford* (n. 2), iii, 249–51.

9 Macray, *Annals* (n. 6), p. 154 and passim.

10 Gunther, *Early Science in Oxford* (n. 2), iii, 258–60; Bodleian Library, Oxford, MS Rawlinson D 912, fols. 201, 203–4 (printed in Gunther, *Early Science in Oxford*, iii, 260–3); MS Rawlinson C 865, fols. 9–20 (partly printed in rearranged form in Gunther, *Early Science in Oxford*, iii, 264–74).

11 Gunther, *Early Science in Oxford* (n. 2), iii, 255; *A Catalogue of all the cheifest Rarities In the Publick Theater and Anatomie-Hall of the University of Leiden* (Leiden, 1683).

them.[12] Beyond that, the collection comprised human and animal oddities, exotic birds, fishes and plants, ethnographic specimens and historical curiosities: the division of labour with the Bodleian does not seem to have been so rigorously applied that all 'artificial' things went to Bodley to compensate for the natural objects which were almost invariably sent from there to the Anatomy School.

In addition, no satisfactory division of labour from the point of view of content was worked out with the Ashmolean. The university apparently failed completely to comply with Ashmole's wish in setting up his museum that all rarities belonging to the university 'except such as are necessary for the Anatomy Lecture' should go to the Ashmolean.[13] It is interesting that his view was echoed by one of the visitors who gave an account of the Anatomy School, Zacharias Conrad von Uffenbach, who felt in 1710 that 'there are many [specimens] . . . which do not belong at all to an anatomical museum, but would be much more suitable to a *Kunstkammer* like the Ashmolean Museum'.[14] The university, however, does not seem to have agreed about the desirability of specialisation; if anything, advantage was taken of Ashmole's benefaction to move lectures to the Ashmolean and make the Anatomy School more of a gallery, and by the mid-eighteenth century a further list of curiosities on show actually conflates the most memorable items in the two collections.[15]

Turning to London – and leaving on one side the menagerie, armouries and crown jewels at the Tower of London[16] – perhaps the most surprising institutional collection was that of the East India Company at its headquarters, East India House, a rather interesting phenomenon in view of the links between collecting and the opening up of contacts with the non-European world which others have stressed. Here, our sole informant is the Italian traveller Lorenzo Magalotti, who visited East India House in 1669 and reported that the rarities kept there 'to gratify the curiosity of the public' included various exotic birds, animals, fishes and plants from Egypt, Virginia and especially India. But nothing more is then heard of the collection, and, by the time a museum was begun afresh by the company in the late eighteenth century, the earlier venture had apparently been entirely forgotten.[17]

More important was the collection of the London College of Physicians. In 1651

12 Th.H. Lunsingh Schleurleer, 'Un amphithéatre d'anatomie moralisée', in Th.H.Lunsingh Scheurleer and G.H.M. Posthumus Meyjes, eds., *Leiden University in the Seventeenth Century* (Leiden, 1975), pp. 217–77, esp. pp. 220–8; Gunther, *Early Science in Oxford* (n. 2), iii, 265; *British Curiosities* (n. 2), p. 63.

13 Josten, *Ashmole*, i, 248.

14 Quarrell, *Oxford in 1710* (n. 2), p. 24 (but 'Kunstkammer', which is there misleadingly translated, has been inserted from Z.C. von Uffenbach, *Merkwürdige Reisen durch Niedersachsen, Holland und Engelland* (3 vols., Ulm, 1753–4), iii, 117–18).

15 Gunther, *Early Science in Oxford* (n. 2), iii, 256; John Pointer, *Oxoniensis Academia* (London, 1749), pp. 156–61.

16 *British Curiosities* (n. 2), pp. 48–50; Magalotti, *Travels of Cosmo III* (n. 8), pp. 175–7; Thoresby, *Diary* (n. 2), ii, 26.

17 Magalotti, *Travels of Cosmo III* (n. 8), pp. 325–7; Ray Desmond, *The India Museum, 1801–79* (London, 1982), ch. 1.

William Harvey offered to build for the college a so-called 'Museum': this was opened in 1654 and architectural drawings survive of the structure, which was destroyed in the Fire of London.[18] In fact, 'Museum' is slightly misleading from our point of view, since what Harvey founded seems to have been primarily a library, 'Museum' being used in the more traditional meaning of a place for learned occupations and hence as appropriate a description of a library as of a cabinet.[19] When a catalogue of the contents of the 'Museum' was issued by Christopher Merrett, its keeper, in 1660, forty of its forty-three densely-packed pages were devoted to books. But the remaining three pages did list some 119 other items in the collection, forty-five entries detailing surgical instruments and seventy-four describing 'Res Curiosae & Exoticae'.[20] A few of these were skeletons and other anatomical specimens appropriate to the professional responsibilities of the college, but the collection – like the selection of books in the library – was broader. It contained things like armadillos, gourds and ostrich eggs – the standard natural *exotica* of virtuoso cabinets at the time – and it was particularly well stocked with fishes and marine curiosities, presumably due to a special gift.

As we have been reminded by the work of Charles Webster, in the 1650s the College of Physicians was a centre of non-medical as well as medical research.[21] At that time it served some of the functions for science in London which the Royal Society did after its foundation in 1660, and this collection is perhaps to be seen as one aspect of this, despite its limited scale. After 1660, however, with the new scientific society in existence, the College of Physicians seems gradually to have abandoned the overlapping territory between the two institutions and concentrated on its medical functions.[22] As far as its collection is concerned, this was apparently destroyed with the college buildings in the Fire of London, and that is the last we hear of it.

18 W.R. Munk, *The Roll of the Royal College of Physicians* (new edn, 3 vols., London, 1878), iii, 323–6; Sir George Clark, *A History of the Royal College of Physicians of London* (2 vols., Oxford, 1964–66), i, 285–6, 298–9; Keynes, *Life of Harvey* (n. 2), ch. 42; C.E. Newman, 'The First Library of the Royal College of Physicians', *Journal of the Royal College of Physicians*, 3 (1969), 299–307, esp. pp. 303–7; John Harris and A.A. Tait, *A Catalogue of the Drawings by Inigo Jones, John Webb and Isaac de Caus at Worcester College, Oxford* (Oxford, 1979), pp. 34–5 and plates 57–62. On William Gilbert's 1604 bequest to the College, which included a cabinet of minerals, globes and instruments as well as books, see Newman, 'First Library', p. 299; none of these items are listed in Merrett's 1660 catalogue.

19 See appendix below.

20 Christopher Merrett, *Catalogus Librorum, Instrumentorum Chirurgicorum, rerum curiosarum, Exoticarumque Coll. Med. Lond. Quae Habentur in Musaeo Harveano* (London, 1660), pp. 41–3 and passim.

21 Charles Webster, 'The College of Physicians: "Solomon's House" in Commonwealth England', *Bulletin of the History of Medicine*, 41 (1967), 393–412; id., *Great Instauration* (n. 5), pp. 315–6. See also R.G. Frank, jr., 'The Physician as Virtuoso in Seventeenth-century England', in Barbara Shapiro and R.G. Frank, *English Scientific Virtuosi in the Sixteenth and Seventeenth Centuries* (Los Angeles, 1979), pp. 57–114, on pp. 84–92.

22 Hunter, *Science and Society*, p. 144.

So we come to the Royal Society, founded in the year of the Restoration with the specific purpose of furthering scientific research by collaborative endeavour, with none of the responsibilities either for teaching or upholding professional standards which provided part of the *raison d'être* for the accumulation of exhibits at the Oxford Anatomy School and the College of Physicians. The Society began to accumulate experimental equipment and natural rarities from its earliest years: the largest single donation of such material of which we hear at this stage was made in the autumn of 1663 by John Wilkins, Dean of Ripon and the former convenor of the group of experimental philosophers at Oxford in the 1650s.[23] At much the same time Robert Hooke, the Society's 'Curator of Experiments', was named as 'Keeper' of the 'Repository', a word first used to describe the collection in the Society's minutes on that occasion and habitually employed thereafter, with 'museum' being seen as the Latin equivalent of this.[24] So a nucleus already existed, but the museum received an artificial boost – which was retrospectively regarded almost as a foundation – early in 1666 when the Society purchased a substantial private cabinet, that of Robert Hubert (Anglicized in the Society's minutes as 'Mr Hubbard'), which had previously been publicly displayed in London.[25] This was bought for the bargain price of £100, a sum which was put up by the Society's Treasurer, the London citizen Daniel Colwall.

Quite why the collection was so cheap is unclear since, after the Tradescants', Hubert's was perhaps the most interesting collection of curiosities in England at that time, and it was the only one apart from the Tradescants' to merit a printed catalogue, of which various recensions had been issued in 1664 and 1665.[26] As this catalogue reveals, and as others have made clear elsewhere, Hubert's collection was typical of virtuoso cabinets of the day with its emphasis on the rare, the exotic and the marvellous, and in the element of social snobbery in its presentation: Hubert laid special stress on the gifts he had received from foreign potentates while displaying

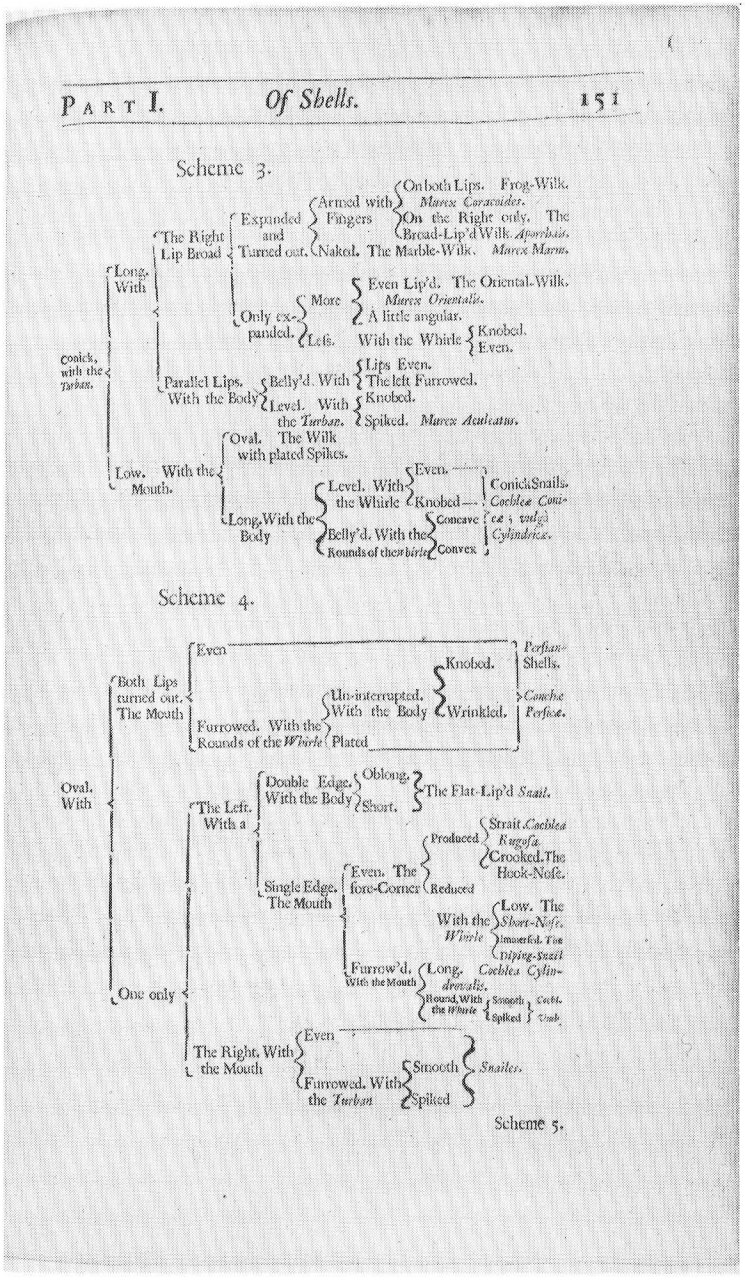
23 Birch, *History*, i, 324; see also, for example, ibid., i, 23, 85.
24 Ibid., i, 324, and see appendix below. For an ostensibly earlier usage of the word to describe the Royal Society's collection (though this may in fact date from the 1680s, when this part of the diary was written up in its current form), see Evelyn, *Diary*, iii, 334.
25 Birch, *History*, ii, 64; Sir David Murray, *Museums: their History and Use* (3 vols., Glasgow, 1904), i. 130–3 (who apparently first saw the connection).
26 The earliest recension is evidently the undated catalogue of part of the collection (*A Catalogue of part of those Rarities Collected in thirty years time with great deal of Pains and Industry, by . . . R.H. alias Forges*, London, n.d.) of which a copy survives in the Bodleian Library, Oxford (Ashmole 967) (this deduction is based mainly on a collation of the lists of benefactors in the different versions); of the version dated 1664 (*A Catalogue of the Many Natural Rarities, with Great Industry, Cost and thirty Years travel in Foraign Countries, Collected by Robert Hubert*, London, 1664) there are two recensions, of which the later has an addendum describing new acquisitions (a copy of this will be found in British Library shelfmark 957.e.13); the content of the addendum is then incorporated into the final recension, dated 1665, to which is appended a catalogue of the rarities on show at the university garden in Leiden.

his collection on the continent during the Interregnum.[27] But in one respect his cabinet was unusual, and this does much to account for its appeal to the Royal Society: it was almost entirely limited to 'Natural Rarities' (to quote the title-page of the printed catalogue). It thus stood in marked contrast to the Tradescants' collection, completely lacking, for instance, the ethnographic curiosities, coins and other human artifacts which were so prominent a part of the Tradescant rarities,[28] and hence holding particular appeal for a society which specialized in research into natural history.

So, like the Ashmolean, the Royal Society's collection had its origins in a private cabinet, but from the first there were hopes that it would transcend these origins and 'be employed for considerable Philosophical and Usefull purposes', to quote the announcement of Colwall's benefaction in *Philosophical Transactions*.[29] The promise of continuity with which potential benefactors were urged on has already been cited, and there were also hopes that through such additions the collection could be transformed into a valuable tool for the reform of knowledge by collaborative endeavour to which the Society was committed. Thomas Sprat, in the polemical *History of the Royal Society* (1667) in which he expounded the aims of the fledgling institution, was rather disdainful of the cabinets of the virtuosi but grandiloquent about the Society's museum, describing 'a General Collection of all the Effects of *Arts*, and the Common, or Monstrous *Works* of *Nature*' as 'one of the Principal Intentions' of the Society.[30] He and others aspired to 'complete' the collection,[31] and this urge to acquire a systematic rather than haphazard series of objects reached its climax in 1669, when the Society employed the botanical collector Thomas Willisel to perambulate the British Isles obtaining 'such natural things, as may be had in England, and were yet wanting in the society's repository'.[32]

Indeed, aspirations for the collection seem to have been linked to hopes that it might be possible to construct a universal taxonomy which would accurately mirror the order of nature. Such ideas were closely linked with another ambition of the time, to devise a new, rational language. Various Fellows of the Royal Society contributed to John Wilkins' famous work along these lines, *An Essay Towards a Real*

27 Hubert, *A Catalogue* (n.d), *A Catalogue* (London, 1665). For the context, see esp. Arthur MacGregor, 'Collectors and Collections of Rarities in the Sixteenth and Seventeenth Centuries', in Arthur MacGregor, ed., *Tradescant's Rarities* (Oxford, 1983), pp. 70–97, esp. pp. 84–5. On the collection's peregrinations on the continent see J.D. Major, *Dissertatio Epistolica de Cancris et Serpentibus Petrefactis* (Jena, 1664), p. 63; id., *See-Farth nach der Neuen Welt ohne Schiff- und Segel* (Hamburg, 1683), pp. 109–12; *Calendar of State Papers Domestic, 1661–2*, p. 390 (I am indebted to David Sturdy for this reference); Murray, *Museums* (n. 25), i, 127–8.
28 John Tradescant, *Musæum Tradescantianum: or, a Collection of Rarities, preserved at South-Lambeth neer London* (London, 1656).
29 *Phil. Trans.*, 1 (1666), 321.
30 Sprat, *History*, pp. 251, 386.
31 Ibid., p. 251; John Wilkins, *An Essay Towards a Real Character, And a Philosophical Language* (London, 1668), sig. a1v. Cf. Sir John Hoskins to Aubrey, 25 March 1674, Bodleian Library, Oxford, MS Aubrey 12, fol. 214.
32 Birch, *History*, ii, 358, 378–9, 395, 425–6, 431, 433.


PART I. *Of Shells.* 151

Scheme 3.

Scheme 4.

Scheme 5.

15. Two of the 'schemes' arranging shells according to their structural and decorative characteristics included in Grew's *Musæum Regalis Societatis*, p. 151. Bodleian Library, Sherard 652

Character, And a Philosophical Language (1668), by providing classified tables of natural phenomena which were intended to enable the language at the same time to describe and to define the components of the natural world, thereby serving an important taxonomic function as well as a linguistic one.[33] It is no coincidence that both Sprat and Wilkins referred to the repository in connection with these ambitions, thinking it appropriate for the collection to be arranged and its desiderata assessed according to this method, and catalogues of the museum according to the system of classification in Wilkins' *Essay* were actually begun by Robert Hooke in the 1660s and by John Aubrey in the 1670s, though neither has survived.[34]

A catalogue was ultimately compiled in the late 1670s by the botanist Nehemiah Grew, and published in 1681 as *Musæum Regalis Societatis, or a Catalogue & Description of the Natural and Artificial Rarities Belonging to the Royal Society And preserved at Gresham Colledge*. Contrary to what has sometimes been claimed,[35] this did not follow the classificatory scheme enshrined in Wilkins' *Essay*, the shortcomings of which had already been revealed by further investigations.[36] Grew's arrangement was in fact eclectic, but the integrity of his book to these taxonomic efforts is nevertheless clear, particularly in the section in which he deals with the shells in the collection: this includes a series of tables or 'Schemes' in which shells are classified according to their structural and decorative characteristics.[37]

Moreover, in his preface Grew also echoed the cry for comprehensiveness of authors like Sprat, aspiring to 'an Inventory of Nature' which would include 'not only Things strange and rare, but the most known and common amongst us'. Grew not only attacked the cult of rarity which informed many virtuoso collections; he also criticised the obscurantism of existing catalogues, advocating a fullness and precision of description which he then proceeded to exemplify through the entries in his text.[38] His citations illustrate the breadth of his reading in relevant scientific literature – some of it specially bought by the Royal Society for his use[39] – and in his descriptions he was frequently able to use specimens in the collection to convict earlier writers of inaccuracy and misidentification, while also rationalising some of the strange phenomena which had preoccupied virtuosi like Hubert, such as the supposed power of the *Echeneis remora*.[40]

33 M.M. Slaughter, *Universal Languages and Scientific Taxonomy in the Seventeenth Century* (Cambridge, 1982). See also Vivian Salmon, *The Works of Francis Lodwick* (London, 1972), esp. ch. 2; James Knowlson, *Universal Language Schemes in England and France, 1600–1800* (Toronto and Buffalo, 1975), ch. 3.

34 Sprat, *History*, p. 251; Wilkins, *Essay* (n. 31), sig. a1v; Michael Hunter, *John Aubrey and the Realm of Learning* (London, 1975), p. 45 and n. 8.

35 Dorothy Stimson, *Scientists and Amateurs: a History of the Royal Society* (New York, 1948), p. 111; Slaughter, *Universal Languages* (n. 33), p. 175.

36 C.E. Raven, *John Ray, Naturalist* (2nd ed., Cambridge, 1950), ch. 8.

37 Nehemiah Grew, *Musæum Regalis Societatis* (London, 1681), pp. 150–3. See plate 15.

38 Ibid., preface and passim.

39 Birch, *History*, iii, 450; RS Account Books, s.v. 1679–81.

40 Grew, *Musæum* (n. 37), passim and p. 104; Hubert, *A Catalogue (1665)* (n. 26), p. 24.

So the repository was central to the Royal Society's plan for the systematic reform of knowledge, but what was it actually like? In fact, the enterprise fell short of the grandiose ambitions for it in a manner which was typical of the early Royal Society. For one thing, the idea of a comprehensive series of common things as well as rare ones fell by the wayside, as is revealed by comparing the actual collection chronicled in Grew's *Musæum Regalis Societatis* with Hubert's catalogue. For though by 1681 the collection had been swollen by gifts to between two and three times the size of Hubert's cabinet, it remained similar to Hubert's in its basic physiognomy, dominated by the exotic and the monstrous at the expense of ordinary items. In the section on quadrupeds, for instance, some items were added, such as a beaver and fragments of a tiger; in other cases, as with a rhinoceros horn, the Royal Society could boast multiple specimens where Hubert had had only one; but much remained the same – a sloth, armadillos, chameleons, crocodiles and the like.[41] Throughout, exotic specimens greatly outnumbered native ones, while even things like 'A Cross of wood, growing in the form of Saint Andrews Cross', which Hubert had valued as a great curiosity, remained in the collection as catalogued by Grew, although Grew had a perfectly prosaic explanation of the process of grafting which had evidently occurred.[42] It is almost as if the 'scientific' characteristics of Grew's catalogue were imposed on a collection which remained inspired by the criteria of rarity and curiosity typical of virtuoso cabinets. Indeed, a comparison of Grew's and Hubert's catalogues reveals that the collection had actually become more like a normal virtuoso cabinet, since whereas Hubert's cabinet had been limited to natural rarities, well-intentioned gifts added a miscellaneous selection of man-made curiosities to the Royal Society's museum, such as a box of 100 turned cups one within the other and various ethnographic specimens.[43]

In this, the repository reflected the proclivities of the virtuosi who formed the staple of the Society's membership and whose gifts were the principal source of the additions which were made to the collection in the Society's early years. They clearly shared the preoccupation with the outlandish and the extraordinary, and the disdain for the commonplace, which is so marked in virtuoso collections like Hubert's. It is evident that only the unusual seemed to them appropriate as gifts – double eggs rather than ordinary ones, African birds rather than British – and these donors remained immune to the valuation of the ordinary urged by Grew and others.[44]

A collection of this kind undoubtedly had a certain value. Anatomical oddities could claim attention as illustrating nature 'erring' or 'out of course',[45] while the

41 Grew, *Musæum* (n. 37), part 1, sect. 2; Hubert, *A Catalogue (1665)* (n. 26), passim.
42 Hubert, *A Catalogue (n.d.)* (n. 26), p. 18; Grew, *Musæum* (n. 37), p. 184.
43 Ibid., part 4. This section also contains the Society's scientific apparatus.
44 Ibid., pp. 4–5, 78–9 and passim. On virtuoso values, see esp. W.E.Houghton, 'The English Virtuoso in the Seventeenth Century', *Journal of the History of Ideas*, 3 (1942), 51–73, 190–219.
45 Francis Bacon, *Works*, eds. James Spedding, R.L. Ellis, and D.N. Heath (14 vols., London, 1857–74), ii, 102. See also Katherine Park and L.J. Daston, 'Unnatural Conceptions: the Study of Monsters in Sixteenth- and Seventeenth-century France and England', *Past and Present*, 92 (1981), 20–54, on pp. 43–51.

plethora of exotic items at least enabled naturalists to examine species which they would not otherwise have had an opportunity to see. It is clear that visitors too were mainly intrigued by unusual items of the kind which dominated the repository.[46] But what is significant is that – with the exception of the brief episode involving Willisel – the ideals of comprehensive accumulation advocated by authors like Sprat were never implemented, but succumbed to circumstances like other aspects of the Society's initial Baconian programme. Moreover, the haphazard nature of the collection and its stress on the exotic limited its value to the taxonomic effort of the day, as Grew noted at one point in his catalogue, regretting that a 'perfect' classification was not there feasible 'because as yet the Collection it self is not perfect'.[47]

So the repository was less different from virtuoso cabinets than had initially been intended. Equally revealing are the difficulties that the Society encountered in administering the collection: these are symptomatic of the Royal Society's institutional weakness, its lack of large-scale endowment and its vulnerability to fluctuations in the support of the virtuosi who made up the bulk of the membership.[48] Even the 'foundation' of the museum in 1666 can be seen in this context, since it is clear from remarks in the correspondence of leading figures in the Society that this was a deliberate gesture intended to reinvigorate activities after the dislocation caused by the Great Plague in 1665.[49]

Problems recurred almost immediately. In its earliest years the Royal Society held its meetings in the spacious milieu of Gresham College in the City of London and plans were afoot to display the rarities there when the Fire of London necessitated the Society's removal in 1667 to temporary quarters provided by the Howard family at Arundel House in the Strand.[50] Here there was evidently no space for the museum, which was left 'as in a storeroom', and only after the Society returned to Gresham College in 1673 was it possible to display the collection properly in one of the College's large galleries.[51]

Moreover, throughout its history the repository was dogged by the fact that, with limited resources at its disposal, the Royal Society could never afford sufficient staff

46 Walter Charleton, *Onomasticon Zoicon* (London, 1668), pp. 84, 112, 113, 113, 114, 115, 116, 186; Ray to Lister, 19 Dec. 1674, in E. Lankester, ed., *The Correspondence of John Ray* (London, 1848), p. 112; Francis Willughby, *De Historia Piscium Libri Quatuor* (Oxford, 1686), sig. b1v, pp. 148, 154, 212, 216, appendix pp. 19–24, and plates G9, I2, 7, 10, 20, 22–4, N13, O3–4, X11. For visitors, see, e.g., W.H. Quarrell and M. Mare, eds., *London in 1710 from the Travels of Zacharias Conrad von Uffenbach* (London, 1934), pp. 99–101.
47 Grew, *Musæum* (n. 37), p. 124.
48 See Hunter, *Royal Society*.
49 Evelyn to Mrs G. Evelyn, 29 Jan. 1666, in L.G. Sharp, 'Sir William Petty and Some Aspects of Seventeenth-century Natural Philosophy' (Oxford D.Phil. thesis, 1977), p. 256 n. 4; Hooke to Boyle, 3 Feb. 1666, in Boyle, *Works*, vi, 505; Oldenburg to Boyle, 24 Feb. 1666, in *Oldenburg*, iii, 45.
50 Birch, *History*, ii, 96, 113–14.
51 W.E.K. Middleton, ed., *Lorenzo Magalotti at the Court of Charles II: his 'Relazione d'Inghilterra' of 1668* (Waterloo, Ontario, 1980), p. 140; Birch, *History*, ii, 300, iii, 191, 242, 310–11; RS Miscellaneous Manuscripts, 16, fol. 39.

to look after the collection properly. In the Society's early years the responsibility for it was given to Robert Hooke, despite the fact that he was expected to run the business of the weekly meetings virtually singlehandedly, in addition to his commitments outside the Society.[52] Things looked up while Grew was preparing his catalogue, but thereafter responsibility for the museum seems to have been left mainly to the Society's 'operators', who also had plenty of other functions to perform.[53] The result was a history of negligence. In the 1660s it was hoped that a register of benefactors should be kept, but the fact that in the early eighteenth century more than one attempt was made to compile such a list retrospectively from the Society's minutes suggests that no such record ever existed.[54] Even the task of allocating new donations to the appropriate categories in the repository seems to have fallen behind, so that in the eighteenth century repeated efforts had to be made to reduce the collection to a better order.[55]

There were times when the museum was in quite a creditable state, and R.T. Altick was wrong to write it off virtually from the start.[56] When the Royal Society moved from Gresham College to Crane Court in 1710, a purpose-built gallery for it was erected, almost certainly to a design by Wren, and the objects were rearranged.[57] Further improvements occurred in the 1730s when an elaborate new classification for the collection was devised by the Society's secretary, Dr Cromwell Mortimer.[58] But complaints of neglect preceded both episodes and recurred in the mid-eighteenth century, and it must have become increasingly apparent that the administration of a collection like this was really beyond the capacity of a voluntary body like the Royal Society. When the Society moved to rooms in Somerset House in 1779, the collection was offered to the British Museum, ostensibly because of lack of space but in fact probably because it was by now apparent that a museum was more of a burden than the asset which it had appeared to be in the 1660s.

Ironically, at this transitional stage a voluntary institution like the Royal Society may have been less able to look after a collection of rarities properly than an enthusiastic individual like Sir Hans Sloane with a burning commitment to the enterprise. It is symptomatic that during the revamping of the museum in the 1730s, Sloane's collection was held up as an example to the Society on one occasion,[59] and from this point of view it is interesting to note the impressions of von Uffenbach,

[52] On Hooke's appointment, see Birch, *History*, i, 316; Hunter, *Establishing the New Science*, pp. 23, 285–6, 349.
[53] A.D.C. Simpson, 'Newton's Telescope and the Cataloguing of the Royal Society's Repository', *Notes and Records*, 38 (1984), 187–214.
[54] Birch, *History*, i, 344; *Phil. Trans.*, 1 (1666), 321; RS Domestic Manuscripts, 5, fols. 85–9; R.S. MS 416.
[55] RS MSS 413–17; Simpson, 'Newton's Telescope' (n. 53), pp. 194f.
[56] R.T. Altick, *The Shows of London* (Cambridge, Mass., 1978), p. 14.
[57] J.A. Bennett, 'Wren's Last Building?', *Notes and Records*, 27 (1972), 107–18; Simpson, 'Newton's Telescope' (n. 53), p. 192.
[58] Ibid., pp. 194f.; RS MS CMB 63, MSS 414, 416 and esp. 415/2–5.
[59] RS MSS CMB 63, minutes of meeting of 8 May 1733.

whose high hopes of the Royal Society's repository were disappointed when he visited it in 1710, just as he compared the Ashmolean unfavourably with private cabinets.[60]

To an extent, institutional collections suffered from their status, which aroused expectations that were easily disappointed, whereas private cabinets stimulated fewer pre-existent expectations and were therefore likelier to please. More important is the relatively rudimentary evolutionary stage which institutions like the Royal Society had reached, since their lack of staff and dependence on voluntary effort presented difficulties in ensuring the continuity of care on which the well-being of a collection depended. As is well known, problems of a not dissimilar kind plagued the British Museum in its early years.[61] They are a reminder that, though the idea of an institutional museum was well established in Augustan England, the transition from private to public was by no means straightforward.

[60] Quarrell and Mare, *London in 1710* (n. 46), pp. 97–8; Quarrell, *Oxford in 1710* (n. 2), p. 26. Cf. [John Macky], *A Journey through England* (3 vols., London 1714), i, 166.
[61] Edward Miller, *That Noble Cabinet. A History of the British Museum* (London, 1973), ch. 3.