Collections from the
ROYAL SOCIETY

The Early Letters and Classified Papers, 1660–1740

University Publications of America

Collections from the
ROYAL SOCIETY

The Early Letters and Classified Papers, 1660–1740

Project Editor
Paul Kesaris

Guide compiled by
James P. Hoy

A microfilm project of
University Publications of America
An Imprint of CIS
4520 East-West Highway • Bethesda, MD 20814-3389

Library of Congress Cataloging-in-Publication Data

Royal Society (Great Britain).
Collections from the Royal Society. The early letters and classified papers, 1660–1740 [microform] / project editor, Paul L. Kesaris.
microfilm reels
Accompanied by printed reel guide compiled by James P. Hoy.
ISBN 1-55655-171-1 (microfilm)
1. Scientists--Correspondence--Microform catalogs. 2. Royal Society (Great Britain)--Sources--Bibliography--Microform catalogs. I. Kesaris, Paul. II. Hoy, James P., 1967– . III. Title.
Z6616.A2R68 1990
[Q141]
509.2'2--dc20 92-1047
CIP

ISBN 1-55655-171-1.

TABLE OF CONTENTS

INTRODUCTION

The Royal Society, 1660–1740: History in the Archives

Enthusiastic Beginning

Some six months after the restoration of Charles II to the English throne in May 1660, a handful of scientific enthusiasts that had gathered in Gresham College, London, resolved to form a voluntary association of individuals interested in the study of "Physico-Mathematicall Learning." By so doing, those present at the historic meeting of 28 November sought to institutionalize the informal gatherings that had been taking place at Oxford and London since 1645 and place them on a firmer basis. Implementing many of the ad hoc practices of the earlier gatherings, the members of the new body agreed upon a set of regulations to accommodate the projected weekly meetings. Carefully delineated were the procedures governing the election of officers and new members; the financial and intellectual obligations to be assumed by members; and the manner in which a complete record of the meetings was to be maintained. Aware that such procedural matters alone were insufficient to ensure the long-term survival of the new scientific body, the core of the most active members—a group that included Sir Robert Moray, John Wilkins, Viscount William Brouncker, Sir William Petty, William Ball, Sir Paul Neile, and Jonathan Goddard—aggressively canvassed, and eventually obtained, a Royal Charter that, when it passed the Great Seal on 15 July 1662, incorporated the new institution as "The Royal Society for the promotion of experimental learning."

The Charter, which was amplified the following year and again in 1669, was most lavish. It invested a president, a council of 21 members, and the body of Fellows with the right to convene freely and regularly and to determine the range of topics they wished to discuss. It granted the Society the right to accept and manipulate to its advantage gifts of land and money and to build one or more colleges for its use. Members were also given the liberty to correspond freely with savants on the continent and to publish, free of censorship, all works pertaining to natural knowledge. To further embellish the stature of the new body, the king and his brother became Fellows of the Society and their example was quickly followed by many courtiers. Three years after it had obtained its first Charter, the Royal Society totaled no less than 202 registered members, one third of whom were titled, including four dukes, fourteen earls, four viscounts, one marquis, nine lords, and forty-one knights.

This seemingly rapid and consummate success, however, soon proved illusory. Within a few years of its foundation, it became painfully clear that King Charles was unwilling to munificently endow the Society. As for the initial enthusiasm of its members, as the novelty wore off, so did their interests in the Society's proceedings. To compound this problem, negligent Fellows not only failed to contribute to the work of the Society or attend its meetings, but even stopped paying dues, thus seriously hampering its

ability to function properly. Concurrently, the sort of scientific work that was carried out at the weekly meetings and the somewhat presumptuous claims of certain members concerning the Society's aim to reform knowledge and ameliorate society elicited a growing chorus of ridicule. The result of this combination of factors was to put the Royal Society increasingly on the defensive. The outbreak of the plague in June 1665 (which put a halt to the Society's meetings for eight months) and the Great London Fire a few months after the Society reconvened (which forced the Society out of its abode at Gresham College) further contributed to its floundering fortunes.

Small wonder, then, that during 1667–1668 the nucleus of active Fellows sought to counter the growing criticism leveled against the Society and reinvigorate its proceedings by initiating an aggressive propagandist campaign. Its aim, beyond silencing opponents once and for all, was to expand and enhance the Society's infrastructure in the form of an ambitious fund drive to finance the building of two colleges, a library, a laboratory, and an observatory. Equally ambitious were the efforts to reinvigorate the Society's meetings. Unfortunately this zeal to both revitalize and expand awakened the jealousy and fears of other corporate bodies such as the Royal College of Physicians and the universities. Apprehensive of the inherent threat posed by the Royal Society to their own survival and reputation, these bodies now reacted angrily to the inflammatory rhetoric of Thomas Sprat and Joseph Glanvill. Both men set up a dichotomy between the Royal Society, which supposedly promoted "true and useful knowledge," and Oxford and Cambridge (as well as the College of Physicians), which were now viewed as the bastions of antiquated learning. More reckless still was the invocation by both propagandists of religion to sanction the Society's work and exculpate the new science it upheld. Not surprisingly, a swift reaction ensued between 1668 and 1671. Best known is the acrimonious pamphlet war that broke out between Glanvill and Henry Stubbe, a fray others joined as well. The personal abuse to which the protagonists in this war of words stooped had the effect of so alienating the intellectuals on both sides of the dispute that they eventually lost interest and withdrew their support. Still, as a consequence of this quarrel, quite a few Fellows were now wary of the Society and consequently distanced themselves from its proceedings.

Crisis of Leadership

A more subdued and apprehensive institution emerged in the early 1670s. But despite sporadic efforts at reform, the ensuing years witnessed a continuous decline in attendance, a sharp decrease in the number of experiments performed at meetings, and a rapid swelling of the Fellows' arrears.[1] More ominous still, the membership deteriorated into cliquishness and in-fightings—over both personalities and real intellectual positions—the first open manifestation of which was the ousting in 1677 of President Brouncker. The flurry of activity that followed the election of Sir Joseph Williamson—a flurry that was to be repeated three years later with the election of Sir Christopher Wren

[1] Less than one fifth of the Fellows are known to have participated in any way in the Society's activities, and after 1670 even the anniversary meetings rarely attracted more than 40 members. Arrears rapidly accumulated and in 1672 they amounted to nearly £2,000. Hunter, *The Royal Society and Its Fellows*, 114, 37.

as president—proved short-lived, despite a substantial pruning of dead wood and a vigorous campaign to recover arrears. It became clear that the active members could not be expected to sustain their reforming efforts over extended periods of time and that the Society's chronic financial problems would not allow it to retain paid officers and curators who could carry out the experimental and bureaucratic work. The alternative—to press a larger segment of the membership into action—also proved futile. Though it became institutionalized, the Society did not proceed to become professionalized as well, remaining instead a loose body of volunteers who proved difficult to coordinate. Only a strong leadership could have imposed a unified program and pressed members into active participation. Such leadership failed to emerge. In part this crisis of leadership was an unavoidable consequence of the exalted social composition of so many members, which meant that only a distinguished member of the upper class could have compelled the respect and acquiescence of upper-class Fellows. Yet the number of Fellows who were endowed with both commitment and social standing was limited. Wren was one such person, but his other occupations prevented him from carrying on with the presidentship for more than two years. Robert Boyle and John Evelyn, similarly endowed, also could not be persuaded to take the position. It is hardly surprising, then, that the 25-year period that separated Brouncker's ousting in 1677 and the election of Newton in 1703 witnessed a succession of no less than 10 presidents, most of whom were absent for much of their tenure.

Thus, instead of becoming a national research institution as its founding members envisaged, in which a group of committed individuals sharing common aspirations collaborated to generate new experimental knowledge, the Royal Society slowly metamorphosed into a group whose scientific work was only the reflection of the sum total of private endeavors carried out elsewhere by its members. As an institution, the Society functioned as a clearinghouse for information it received from English and foreign correspondents; as a social club its catered predominantly to those Fellows who resided in London and looked forward (when other engagements did not interfere) to a pleasing intellectual soirée preceded (and/or followed) by dinner and drinks. By and large, however, the membership comprised a group of nonspecialists, endowed with wide-ranging interests, who enjoyed—indiscriminately—discussions of antiquities and astronomy, monstrosities and botany. Modern scholars have often lamented the acquisition of such an "unfortunate" and nonscientific attitude by the Society, yet in so doing they apply to early modern science criteria and goals shared by very few contemporaries.[2]

Nor was the face of the Society radically transformed with the election of Newton as president. Though he proved more successful than his predecessors in placing the Society on a more sound financial footing (and he certainly was instrumental in moving the Society to quarters of its own), the reforms attempted by him were not substantially different from those attempted during the previous four decades, nor did they prove to be more durable. The significant increase in the number of experiments—single-mindedly

2 According to Westfall, even Newton was unable to eradicate the profusion of "miscellaneous reflections which threatened always to swamp serious scientific discussion." Richard S. Westfall, *Never at Rest*, (Cambridge, 1980), 634.

aimed at validating and disseminating Newton's own work—quickly fell off, while factionalism and internal dissension became more pronounced than ever. And from the late 1710s, continuing with the presidentship of Sir Hans Sloane from 1727 to 1742, the Society reverted to functioning as an elevated intellectual club concerned primarily, but not exclusively, with a wide range of scientific issues but adverse to transforming into a professional group of scientific experts along the French model.

Sources about the Society

Our knowledge concerning the work and life of the Society derives primarily from three major sources: the Society's Journal books and Council minutes, the early letters, and the classified papers. The former[3] presents the official record of the Society's weekly meetings and the minutes of its Council proceedings. These records are the most familiar to scholars by virtue of the publication in 1756–1757 of Thomas Birch's transcript of the Journal books and minutes of the Council between 1660 and 1687. However, as important as these official records are for the study of the Royal Society, they are by no means complete. It should be remembered that, owing to their very nature, "minutes" tend to summarize and reduce and therefore cannot be taken as a complete account of everything said and done. More important, though, the terseness of the official record—and sometimes the absence of any record—is often deliberate. In many cases when dissension raised its ugly head among Fellows over such matters as the future course of the Society, its relations with other corporate bodies, the manner in which the Society should respond to critics, or simply expressed personal rivalries and animosities, the secretaries believed it prudent to gloss over these delicate altercations and keep them out of the official registers. Consequently, the Journal books and Council minutes betray little evidence of the intense disputes and disagreements that transpired among members and officers within a short period of the Society's foundation. For example, only through a careful study of letters does one become fully aware of the series of disputes that Robert Hooke engaged in during the early 1670s with Newton, Huygens, Hevelius, and Leibniz, or of the magnitude of the rift that befell Hooke's relationship with the Society's Secretary Henry Oldenburg. Similarly, without recourse to the letters it would be virtually impossible to appreciate the extent of the breach that transpired among the Society's Fellows between the 1690s and 1720s as a consequence of the disputes between John Woodward and a handful of his supporters on the one hand, and Sloane and his larger group of supporters on the other. These disputes, initially occasioned by fundamental disagreements concerning geology and natural history, soon deteriorated into a passionate clash of personalities, becoming so intense that the proceedings of the Society were often interrupted as a result; the antagonists, for their part, carried the fray not only into the meetings but into the annual election of officers, which became particularly intense and dirty, to the delight of satirists and the chagrin of many members. The only instances where the official minutes betray signs of such factionalism are when one party proved victorious, as happened in 1675 when Oldenburg managed to secure a vote of confidence in Council against Hooke's

---

3 Available from University Publications of America on microfilm: *Journal Books of Scientific Meetings, 1660–1800* (18 reels) and *Council Minutes, 1660–1800* (3 reels).

accusations that Oldenburg had disclosed Hooke's horological discoveries to Huygens, or again in 1710 when Woodward was expelled from Council after a public outburst between him and Sloane. It is to the early letters and the classified papers (among other sources), then, that we must turn in order to elucidate the personal rivalries that grievously affected the workings of the Society as well as to appreciate the detailed routine of the Society's work in general.

Value of Early Letters, Classified Papers

The early letters (EL) include a sizeable number of epistles addressed to the Society by its English and foreign correspondents (many of whom never became Fellows) who sent news, observations, discoveries, or reflections on work carried out by others. The classified papers (CP) contain information on the more substantial projects and contributions. Unfortunately, not all of the incoming correspondence is to be found today in the archives of the Royal Society, since in the early modern period the distinction between the private and public domains was ambiguous. Letters addressed to, and copies of the responses by, the Society's officers were often kept among the papers of these individuals and not in the Society's archives. For example, it was primarily the result of Hooke's effort to substantiate his allegations concerning Oldenburg's duplicity that caused him to work hard to retrieve the bulk of Oldenburg's correspondence following the latter's death in 1677. The Society was less "fortunate" regarding the extensive correspondence of its long-time secretary and president Sir Hans Sloane, whose "official" correspondence is housed today among his other papers in the British Library. Still, the early letters comprise over 4,200 items, roughly half of which have been published in the magnificent edition of the Oldenburg correspondence prepared by A. Rupert Hall and Marie Boas Hall or in the modern editions of the works of such renowned scientists as Newton, Leeuwenhoek, and Malpighi. For the most part, the letters are arranged alphabetically according to the correspondent's name.

In contrast to the more epistolary nature of the early letters, the classified papers comprise formal papers, reports, memoranda, and reviews submitted to the Society either in the form of a letter or a paper, at times even as an enclosed document, the cover letter of which can be found among the early letters. Sorted under 25 headings, the papers in each classification are arranged chronologically. A. H. Church has counted some 800 different authors who combined for an output of some 2,500 papers. The significance of these manuscripts is two-fold. First, many were not published in the *Philosophical Transactions*. But even in those cases in which a paper was published, the manuscript invariably displays evidence of the publisher's editorial scissors. Such evidence is invaluable for elucidating the sort of policy that informed the publishers' decisions concerning what was "fit" to be published and what was considered personal or offensive and therefore in need of excising. Furthermore, frequently the manuscripts of the submitted papers are joined with the reports and comments prepared by members of the Society who were designated to evaluate them. Thus, careful study of such material is indispensable for the light it sheds on the nature and content of the Society's work, as well as on the *Philosophical Transactions* themselves. In addition, the classified papers include three more homogeneous collections consisting of a group of papers by Robert

Hooke, another by Edmond Halley, and a third comprising a more diverse group of papers by Hooke, Oldenburg, and John Collins.

The accruing of such a sizeable collection of letters and papers can be attributed to the significance attached by some active early members—most notable Oldenburg—to the exchange of information and collaborative efforts for the promotion of the various sciences and mechanical arts. In one of the first meetings of the Society, a "committee was appointed for considering of proper questions to be inquired of in the remotest parts of the world," and from the start the Society sent out (and furnished travelers with) questionnaires soliciting information on a variety of topics with which its members wished to be acquainted. Oldenburg articulated such a desire for information again in 1666 when he told Boyle: "We have thoughts of engaging as many of ye Society, as are cordiall and have opportunity, to observe and bring in, what in any wayes considerable of Naturall productions in England, Ireland [and] Scotland...as well as we intend to collect what is abroad, by enlarging our Correspondencies every where." Many of these questionnaires, and the responses to them, can be found in the archives. In 1675, for example, a Frenchman responded to a request published seven years earlier in the *Transactions* soliciting "learned men to send them what they have noted concerning local motion," while not a few individuals responded in the 1720s to James Jurin's request for meteorological information.[4] More attractive still was the early advertisement by the Society that not only did it serve as the proper forum in which to discuss and evaluate the merits of all discoveries and inventions, but that its archives could best ensure the safekeeping of the work of practitioners, safeguarding their papers for posterity as well as ensuring the priority claims and reputation of their authors. As Oldenburg wrote Boyle in 1665:

> I acknowledge, yt yt jealousy, about the first Authors of Experiments, wch you speak off, is not groundlesse: And therefore offer myselfe, to register all those, you or any person shall please to communicate, as new, wth yt fidelity, wch both of ye honor of my relation to the R. Society . . . and my owne inclinations doe strongly oblige me to.

That such claims were not far-fetched may be seen from two notable instances. In February 1670, when Huygens lay grievously ill in Paris, he desired to entrust the Society with some of his most cherished scientific papers in orders to ensure his priority and posthumous reputation. As he confided to Francis Vernon, who was to serve as the conduit for these papers, "hee chose rather to depositt those little labours of wch God had blesst [him] & those pledges wch to him were dearest of any thing in this worlds, in their hands soner then in any else . . . because hee judged the Seat of Science to bee fixed" in the Royal Society and its fortunes more propitious than any other institution, including the Royal Academy of Paris of which Huygens had been a pensionary member! Two decades later Marcello Malpighi displayed similar sentiments in his willing that after his death his papers be sent to the Royal Society, some to be published by its members and others to be kept in its archives.[5]

---

4 Birch, *History of the Royal Society*, i. 15; Oldenburg, *Correspondence*, iii. 32; xi. 506; EL G. 2. 6, 7.

5 Oldenburg, *Correspondence*, ii. 486; vi. 504–5; Howard B. Adelmann, *Marcello Malpighi and the Evolution of Embryology*, 5 vols. (Ithaca, 1966), i. 658.

In addition to providing scholars with the raw material for the evaluation of science of the late seventeenth as well as the eighteenth centuries, the early letters and classified papers also chronicle the routine that transpired at the Society's weekly meetings. As mentioned earlier, the Society quickly evolved from an institution primarily intended to engage in carrying out experiments and original research into a body that served as a clearinghouse for information and whose members devoted the greatest portion of the meetings to hearing and discussing reports of experimental results and discoveries obtained elsewhere. This trend can best be demonstrated quantitatively. Nearly 40 percent of all 1677 experiments that were performed at meetings of the Royal Society during the period 1660–1760 took place during the first decade of its existence, and in subsequent decades the number of actual experiments carried out decreased significantly. Moreover, not only did the absolute number of experiments tried annually decrease, but a perceptible and important shift can be detected even among those experiments that were performed. With a few exceptions, these tended to become "demonstrative" rather than "investigative" experiments, replicating and validating experimental knowledge attained elsewhere rather than representing work conceived and originated at the meetings of the Society. Analogously, while carrying out experiments became increasingly peripheral to the weekly meetings, the reading of lectures and reports increased proportionately. If in the period 1661–1665 a total of 245 papers were read, the following five-year period saw the figure increase to 304, with the quinquennium of 1681–1685 reaching a record of no fewer than 441 papers.[6] The shift to this more passive form of scientific activity is attributable as much to the Society's lack of resources, which prevented the employment of a professional staff of curators, as to the preference of most individuals to pursue their research privately. The Society's role, insofar as it dealt with experimental results, was now confined to the confirmation and accreditation of research carried out elsewhere.

In addition to papers and communications sent to the Society, the archives are also rich in material relating to inventions and discoveries, for many inventors submitted their designs and proposals, desiring either approbation or an endorsement in the hope that this would facilitate a patent or publication. In fact, shortly after its foundation, the Society itself appears to have actively sought a license from the king stipulating "that all proposals, that should be made concerning mechanical inventions, be referred to the council of the society, to be examined by them, whether they were new, true, and useful." The desire to become the "official arbiter" in all matters concerning natural philosophy was not officially obtained until 1713, when Queen Anne ordered that all patent applications must be referred to the Society's judgment prior to their approval. [7] Nonetheless, both before and after that date many projectors and aspiring inventors petitioned the Society for its appraisal of their labors, hoping for validation or endorsement—and sometimes even for financial support—that would increase their chances, not only for a patent, but also for commercial success. One such petitioner, Robert Lowman, recapitulated the common wisdom of many contemporaries when he claimed that the Society was "the Great Touchstone, and Judges of the probability and

6 R. P. Stearns, *Science in British Colonies of America* (Urbana, 1970), 96–7; Hunter, *Science and Society in Restoration England*, 42–3.

7 Birch, *History of the Royal Society*, i. 116, 391, 397; JB xi. 326.

feasableness of experimentall designs." Among the numerous examples that may be cited is the submission in 1739 by Samuel Bewley of the Römer type thermometer he was proposing to sell for 5s, thereby undercutting the far more expensive Dutch thermometers, or the fantastic project of the Virginian John Tennent who dreamed of a considerable fortune and public acclaim if only the Society endorsed his "discovery" of a Senega root "decoction" he claimed was capable of curing pleurisy and fevers.[8]

The most spectacular rush to obtain the Society's approbation occurred in 1714 after Parliament offered the staggering sum of £20,000 to whoever could produce a serviceable method for determining longitude at sea. A large number of claimants came forward, so many that we are told that at some point Martin Foulke, vice-president of the Society under Newton and Sloane and later president himself, refused to consider any new longitude discoveries. Examples in the archives of such applications include George Lynn's submission of 1726 and Philip Baratier's submission in 1737. In seeking the Society's approbation, however, Baratier submitted his method in a concealed form, and Thomas Stack, to whom the discovery was referred, returned the curt verdict that the Society could not deal with secrets, and that, besides, Baratier's "invention" was too reminiscent of that of William Whiston.[9] In general, the Society was careful on these and other occasions not to endorse any invention or discovery, partly for fear of committing an error of judgment (and thus exposing itself to ridicule) and partly from a disinclination to antagonize competing claimants. Attempting to retain an aura of impartiality, it usually dismissed applicants with encouraging, but noncommittal, words in a language similar to the one used in 1672 when Johann Ludwig Hannemann was informed that it was not the Society's "custom to be hasty in delivering their judgment in any philosophical matters."[10]

In addition to shedding light on the actual work of the Society and the projects it considered, the letters and papers are seminal to understanding the nature and dynamic of its institutional life and internal politics. For example, it is primarily through such records that we are made privy to the fierce priority and interpretative disputes that raged during the early 1670s between Robert Hooke, on the one hand, and Newton Huygens, and Hevelius on the other, and the extent to which these squabbles fed into (and occasionally were fanned by) the growing antagonism between Hooke and Oldenburg. Similarly, John Wallis's extensive correspondence, particularly with Oldenburg, reveals the central role that the Oxford professor was allowed to take in shaping the peer review system of the Society. With the exception of Hooke, Wallis was the most important arbiter of all matters mathematical and physical that were submitted to the Society, and the heavy reliance on his judgment, coupled with his intimacy with Brouncker and Oldenburg, enabled Wallis to exert a disproportionate influence over the Society's external relations. Yet Wallis was a harsh critic who did not always do justice to the individuals whose work he was called on to evaluate, and his censure occasioned the antagonism of some correspondents and the distancing of others from the Society's affairs. From the letters and papers it also becomes clear that Wallis's protracted controversy with Thomas

8 CP. vii (1) fol. 33; EL B.3.80; Stearns, *Science in British Colonies of America*, 290.
9 EL L. 6.42; B.3.67–8.
10 Birch, *History of the Royal Society*, iii. 10.

Hobbes, perhaps even more than the debate between Boyle and Hobbes, was instrumental in keeping Thomas Hobbes not only out of the ranks of the Society's members, but out of the pages of the *Transactions* as well. For though Hobbes submitted papers and wrote Oldenburg that, in view of the freedom Wallis enjoyed to attack him with impunity on every occasion, he should be given space to respond, Wallis's influence with Oldenburg was sufficient to prevent Oldenburg from complying.[11]

The Society's Foreign Relations

A little studied feature of the Society's early history is the importance of its foreign relations. As Hunter pointed out, even though the Society's fortunes "fluctuated at home," its overseas reputation steadily increased. Indeed, this trend is evident in the number of foreigners who were elected Fellows. By the 1690s a quarter of all new recruits were non-Englishmen and their proportion grew steadily. If in 1698 they comprised 19 percent of the total membership (28 as compared to 199 English Fellows), by 1740 the ratio of native and foreign Fellows had become almost two to one (301 compared to 146).[12] The aspiration of so many to join the rank of members is well documented in the early letters. Early in 1672 Francis Vernon informed Oldenburg from Paris that Giovanni Domenico Cassini was preparing to "write to the Royall Society & propose it to them, whether they would please to doe him the honour as to make him a member of it." A few months later, Gottfried Wilhelm Leibniz actively sought a Fellowship while on a visit to London, promising Oldenburg that in return he would do everything in his power to promote the Society's design. For his part, Anthoni van Leeuwenhoek responded to the news in 1680 that he was proposed a Fellow with a fulsome letter in which he stated that his election was "the greatest honor in all the world." After his election he seemed to swell in consequence, asking Constantijn Huygens "whether he still had to give precedence to a medical doctor now he had been received in the ranks of the illustrious London Society." Étienne François Geoffrey, too, was proud to have become what he told Sloane, "is a honour that I esteeme above all things in the world. I shall never omit any thing for deserving more and more in succeeding times this so great advantage."[13] Much more can be gleaned from the letters concerning the manner in which Fellowships were solicited and the gratitude that followed election, although the records also corroborate Hunter's acute observation that almost two-thirds of all foreign members ceased to correspond with the Society soon after their election.[14]

Many other savants who did not seek election—or who felt that a Fellowship was beyond their reach—nonetheless eagerly hoped to obtain the Society's endorsement of

---

11 Oldenburg, *Correspondence*, viii. 179; ix. 329–30; CP iv (1). 30. For different interpretations of the issue, see Quentin Skinner, "Thomas Hobbes and the Nature of the Early Royal Society," *The Historical Journal* 12 (1969), 217–39; Steven Shapin and Simon Schaffer, *Leviathan and the Air-pump* (Princeton, 1985); Noel Malcolm, "Hobbes and the Royal Society," 45.

12 Hunter, *The Royal Society and Its Fellows*, 107–10; Lyons, *The Royal Society*, 341.

13 Oldenburg, *Correspondence*, viii. 501; ix. 21–2, 24, 492; BL MS Sloane 4025, fol. 132 quoted in I. Bernard Cohen, "Isaac Newton, Hans Sloane, and the Académie des Sciences," *Mélanges Alexander Koyré*, 2 vols. (Paris, 1964), i. 82–3; Clifford Dobell, *Anthony van Leeuwenhoek and his "Little Animals."* (New York, 1960), 47, 49–50.

14 See, for example, EL B.3.74; L.6.54, some interesting letters by Mathias Belius and Joseph Lieutaud who were elected Fellows in 1738 and 1739, respectively.

their ideas and publications. In 1734 Samuel Christian Hollman, seeking to capitalize on the Royal Society's reputation on the Continent, coupled reverence with flattery in attempting to obtain the Society's endorsement of a treatise on natural philosophy, which he submitted to the Society's "superior and solid judgement." To "what other Tribunal of Learning," he asked rhetorically,

> ought any thing new, particularly in point of Natural Knowledge be referred, than to that Society which hath for so many years drawn upon itself the Eyes and Attention of the whole Learned world, for the priority of it's Establishment, the greatness of it[']s Merits, the Glory of it's Name, and the Excellency and Eminency of it's Members?[15]

Caspar Cuenz went a step further. When he submitted his "A System Concerning the Nature of Being" to the Society's examination in 1739, "with as much Respect as perfect Docility to the Judgment of that learned Assembly," he declared that, were the opinion of the Society to be unfavorable, he would desist from publication. The work was referred to H. W. Guerder, who made a rather lukewarm appraisal that nonetheless seemed to satisfy Cuenz. The report, he told his friend Bouhier, "hemmed and hawed" yet the theologian appointed by the Society "found nothing contrary to reason, to religion, or to philosophy."[16]

The communication of news and ideas to the Royal Society and the wish to obtain its approbation were often linked to the implicit desire of authors to see their ideas printed in the *Philosophical Transactions*. Although the periodical did not formally become the official organ of the Society until 1752, contemporaries were fully cognizant that its publishers were invariably secretaries of the Society, whose imprimatur accompanied every issue. Consequently, many wrote with an eye toward publication (which, in itself, served as a form of accreditation), thus rendering the archives indispensable not only for the study of the evolution of the modern scientific paper, but for the politics of publication. Oldenburg, who conceived of the journal and whose vision of what a paper should look like shaped the format of the articles, insisted that authors should confine themselves to reporting "matters of fact." With this assumption in mind, he and his successors routinely excised sentences and even paragraphs that either did not conform to this stipulation or were potentially divisive or offensive. Thus the manuscript copies of the letters and papers that were published in the *Transactions*, which usually served as the printer copy, are indispensable in delineating the author's full intentions as well as editorial policies.

Instances of what Oldenburg considered divisive and derisive can be detected from his editorial changes in the first papers he published of Newton and Halley. From Newton's famous 1672 paper, Oldenburg deleted a paragraph in which Newton reflected somewhat disparagingly on Naturalists. Three years later, he deleted from Halley's first paper a short *ad hominem* criticism of Seth Ward, formerly Savilian Professor of Astronomy at Oxford and now Bishop of Salisbury, writing in the margin before

---

15 EL H.4.25.

16 EL C.3.44–46; Caspar Cuenz, *Essai d'un sistème nouveau concernant la nature des êtres spirituels, fondé en partie sue les principes du célèbre Mr. Locke, philosophe anglais dont l'auteur fait l'apologie*, 4 vols. (Neuchâtel, 1742); Ira O. Wade, "Notes on the Making of a *Philosophe*: Cuenz and Bouhier," in *Literature and History in the Age of Ideas*, ed. Charles G. S. Williams (Columbus, Ohio, 1975), pp. 97–123.

submitting the paper for the judgment of President Brouncker: "This paragraph may be omitted, not to give offence to a person in so eminent a station: the intelligent reader being like to find out thus much himself, by comparing both." The printed text appeared without Halley's original paragraph.[17]

At times, the contrasting of a printed text with its manuscript version may reveal its true authorship, both in the event of an anonymous publication, as was often the case with many of John Beale's communications, or when careful orchestration behind the scenes deliberately obfuscated the identity of the writer who published under another name. Such was the case in 1675 when a paper was published under the name of Lord Brouncker but was, in fact, penned by John Wallis.[18] More often, however, comparing a printed paper with its original version provides important biographical information about the author and his religious convictions, or intimates something about the author's perception of the Society and its goals that was deemed inappropriate within a "scientific " paper. For example, Sloane thought fit to delete in 1697 Robert Clarke's opening sentence: "Knowing yor curiosity to be acquainted with all things wch may seem supernaturall I thought it my duty to give you an acc[oun]t of such things wch within this week I have been an eye witnesse off an doe attest them for thruth upon [my] reputation." Cotton Mather's many discursive letters that hopelessly confused the domains of the sacred and profane were at first summarized and then ignored altogether.[19]

Finally, a counterpart of the peer review system that passed judgment on papers and books communicated to the Royal Society was the reviewing section of the *Philosophical Transactions*. Reviews, in fact, were an important feature of the journal, particularly before 1700, during which period no less than 600 book review—compared with 1,898 articles—were published. By way of contrast, during the following half century, the number of reviews decreased considerably; all in all less than 100 appeared.[20] Such a drastic reduction can be explained by the exponential rise in the number of specialized book reviewing journals that filled the desire of educated persons to be informed of the publication of new books and learn of the experts' opinion of their content. The *Transactions*' reviews were mostly anonymous and scholars often attributed them to the journal's publishers. However, a scrutiny of the letters and papers can help establish the true identity of quite a few of these reviewers as well as illuminate the process—and politics—through which books were selected for review. In 1668, for example, Oldenburg asked Wallis to contribute a review of René François de Sluse's *Mesolabum*. Wallis declined because of the uproar his sharp treatment of the works of Hobbes and

---

17 *The Correspondence of Isaac Newton*, eds. H. W. Turnbull, J. F. Scott, A. R. Hall, and L. Tilling, 7 vols. (Cambridge, 1959–77), i. 96–7; Oldenburg, *Correspondence*, xii. 379 and n.8; *Philosophical Transactions*, (1676), 638–86.

18 See Mayling Stubbs, "John Beale, philosophical gardener of Herefordshire part II. The improvement of agriculture and trade in the Royal Society (1663–1683)," *Annals of Science* 46 (1989), 323–63 and Oldenburg, *Correspondence, passim*, for Beale's public and private contributions. For the Brouncker-Wallis-Oldenburg complicity see, for example, EL B. 1. 13 in Oldenburg, *Correspondence*, x. 291–2; *Philosophical Transactions*, #98 6149–50.

19 EL C.2.31; EL M.2.21–57.

20 Philip George, "The Scientific Movement and the Development of Chemistry in England, as seen in the papers published in the *Philosophical Transactions* from 1664/5 until 1750," *Annals of Science*, 8 (1952), 305–6.

Dulaurens had elicited. As he wrote Oldenburg, "I shall be afraid of giving characters, having had so bad success in the last two." Instead, Oldenburg commissioned John Collins (who had just received André Tacquet's *Opera omnia* for Oldenburg), and Collins willingly complied with a very favorable review.[21]

Wallis's partisanship continued later as well. When asked by Aston in 1685 to review Hevelius's *Annus climactericus*, the Oxford professor complied with a laudatory review that, however, also included some spiteful upbraiding of Hevelius's great antagonist, Robert Hooke. Commenting early in the next year on this less than objective review, John Flamsteed advised William Molyneux to disregard much of it:

> Yu need not be concerned at Dr Wallis his account of Hevelius his booke hee is only minding to gratifie his old friend & speakes the better of him because hee is sensible with ye rest of the World of Mr Hookes intollerable boastes, as also by reason hee was never used to observations with great instruments & therefore understands not the advantages of telescope sights above plaine ones.

Aston, in fact, felt it necessary to commission another review of Hevelius's book, turning this time to Molyneux. Molyneux performed the task admirably, producing a detailed and balanced account, but by then the fury raised by the original review and the bickerings between Hevelius, Hooke, Flamsteed, and Halley were such that Aston felt it prudent not to publish it.[22] At times the initiative for reviewing a particular book came from outside as happened in 1698, when Samuel Buckley, who had just issued an English translation of Christopher D'Acugna's *Voyages and Discoveries in South America*, pleaded with Sloane to publish an abstract of it in the *Transactions*. Having obtained Sloane's permission, Buckley commission a friend to carry out the task; the account was published verbatim by Sloane.[23]

This sampling of the riches concealed in the archives of the Royal Society is aimed at highlighting the opportunities for further research that scrutiny of the early letters and classified papers offers. These documents should prove indispensable not only for historians of science and historians of the Society, but, in view of the range and scope of their material, for intellectual, social, and economic historians as well.

Mordechai Feingold
Professor of History
Virginia Polytechnic Institute

---

21 EL W.1.72, 73; Oldenburg, *Correspondence*, v. 218; *Philosophical Transactions*, iii (1668), 869–76; iv (1669), 903–9. For these and other reviews by Collins, see CP vol. xxiv.

22 *Philosophical Transactions*, 15 (1685), 1162–83; RS MS 243 fol. 67; EL M.1.92; K. Theodore Hoppen, *The Common Scientists in the Seventeenth Century* (London, 1970), 115; E. F. McPike, *Hevelius, Flamsteed, and Halley* (London, 1937), 94–7; J. G. Simms, *William Molyneux of Dublin* (Dublin, 1982), 25–7.

23 EL B.2.47; *Philosophical Transactions*, 20 (1698), 196–9.

BIBLIOGRAPHY

Birch, Thomas. *The History of the Royal Society of London*, 4 vols. (London, 1756–1757, repr. Bruxelles, 1967).

Hall, A. R. and M. B. Hall, eds., *The Correspondence of Henry Oldenburg*. 13 vols. (Madison, Milwaukee, and London, 1965–86).

Hall, Marie B. *Promoting Experimental Learning Experiments and the Royal Society 1660–1720*, (Cambridge, 1991).

Heilbron, John L. *Physics at the Royal Society during Newton's Presidency*, (Los Angeles, 1983).

Hunter, Michael. *Establishing the New Science*, (Woodbridge, 1989).

——, *The Royal Society and Its Fellows, 1660–1700: The Morphology of an Early Scientific Institution*, (Chalfont St. Giles, 1982).

——, *Science and Society in Restoration England*, (Cambridge, 1980).

Lyons, Henry. *The Royal Society 1660–1940*, (Cambridge, 1944).

Sprat, Thomas. *History of the Royal Society*, eds. Jackson I. Cope and Harold W. Jones, (St. Louis and London, 1959).

Weld, Charles R. *A History of the Royal Society*, (repr. New York, 1975).

SOURCE AND EDITORIAL NOTE

The two series of papers reproduced in this microfilm publication, *The Early Letters* and *The Classified Papers*, are located in the Archives of The Royal Society, 6 Carlton House Terrace, London, England.

University Publications of America has microfilmed these two series in their entirety. Every effort has been made to ensure the best possible reproduction of these historical documents.

REEL INDEX

Precise access to the Early Letters segment of *The Early Letters and Classified Papers* is provided at the beginning of the microfilm in the "Catalogue of the Manuscript Letters in the Possession of the Royal Society." The catalogue gives a complete list of the letters arranged in alphabetical order by the writer's name. The addressee, the place and date of the letter, language of the letter, remarks, and the letter's location in the collection are also indicated in this segment. The Classified Papers, arranged chronologically by subject in 39 volumes, follows the Early Letters. The tables of contents for all 39 volumes are reproduced on the microfilm in the "Classified Papers in the Archives" at the beginning of Reel 14 and individually at the beginning of each volume. Arranged chronologically by subject, these give the author's name, title or subject of the paper, pagination, date, language, and the *Philosophical Transactions* issue number if published by the Royal Society. The four-digit frame number to the left indicates where each volume begins on the microfilm.

Reel 1

Frame No.

Early Letters

Reel 2

Early Letters cont.

Reel 3

Early Letters cont.

Frame No.

Reel 4

Early Letters cont.

Reel 5

Early Letters cont.

Reel 6

Early Letters cont.

Reel 7

Early Letters cont.

Reel 8

Early Letters cont.

Frame No.

Reel 9

Early Letters cont.

0002 Volume M1. November 1662–November 1713. 367 frames.
0369 Volume M2. June 23, 1726–January 28, 1730. 289 frames.
0657 Volume M3. March 1730–October 1753. 321 frames.
0978 Volume N1. November 4, 1663–July 28, 1726. 245 frames.
1223 Volume N2. May 5, 1724–January 29, 1736. 53 frames.

Reel 10

Early Letters cont.

0002 Volume O1. January 1663–July 1669. 293 frames.
0295 Volume O2. June 30, 1669–October 18, 1736. 394 frames.
0689 Volume "Oldenburg Beale Letters." April 15, 1657–September 19, 1676. 454 frames.
1143 Volume 10B. October 31, 1666–July 8, 1682. 59 frames.

Reel 11

Early Letters cont.

0002 Volume P1. October 21, 1663–July 27, 1724. 318 frames.
0320 Volume P2. January 27, 1732–March 7, 1737. 82 frames.
0402 Volume Q. March 27, 1663–August 10, 1728. 286 frames.
0688 Volume R. August 20, 1728–November 23, 1737. 108 frames.
0796 Volume S1. December 1655–July 1686. 365 frames.

Reel 12

Early Letters cont.

0001 Volume S2. May 4, 1692–May 20, 1736. 337 frames.
0338 Volume T. May 22, 1661–July 10, 1736. 266 frames.
0604 Volume V. January 6, 1664–January 26, 1731. 118 frames.

Frame No.

Reel 13

Early Letters cont.

0001 Volume W1. August 13, 1662–October 4, 1672. 365 frames.
0366 Volume W2. October 5, 1672–September 21, 1699. 206 frames.
0574 Volume W3. October 9, 1661–June 3, 1736. 414 frames.
0998 Volume W4. December 22, 1737–January 22, 1743. 4 frames.
1062 Volume Y. Date not discernable. 9 frames.
1071 Volume Z. May 13, 1724–June 1, 1740. 34 frames.

Reel 14

Classified Papers

0001 Classified Papers in the Archives. 183 frames.
0183 Volume I. Arithmetick, Algebra, Geometry, Trigonometry. March 9, 1692–July 8, 1731. 186 frames.
0369 Volume II. Surveying Opticks, Perspective, Sculpture, Painting, Musick, Mechanicks. March 14, 1667–June 23, 1737. 171 frames.
0540 Volume III (1). Mechanicks, Trades. January 16, 1661–April 2, 1690. 231 frames.
0771 Volume III (2). Mechanicks, Trades. March 17, 1697–November 6, 1740. 158 frames.

Reel 15

Classified Papers cont.

0002 Volume IV (1). Physiology, Meteorology, Pneumaticks. December 11, 1661–December 5, 1725. 362 frames.
0364 Volume IV (2). Physiology, Meteorology, Pneumaticks. February 27, 1728–February 17, 1737. 157 frames.
0521 Volume V. Journals of the Weather. August 12, 1695–December 31, 1724. 376 frames.
0897 Volume VI. Staticks, Hydrostaticks, Hydraulicks, Hydrology. February 23, 1661–April 17, 1735. 272 frames.

Frame No.

Reel 16

Classified Papers cont.

0001 Volume VII (1). Architecture, Ship-building, Geography, Navigation, Voyages, Travels. March 13, 1661–July 12, 1699. 262 frames.
0263 Volume VII (2). Architecture, Ship-building, Geography, Navigation, Voyages, Travels. May 11, 1721–May 4, 1738. 148 frames.
0411 Volume VIII (1). Astronomy. July 10, 1661–May 13, 1725. 256 frames.
0667 Volume VIII (2). Astronomy. 1724–1735. 364 frames.

Reel 17

Classified Papers cont.

0001 Volume IX. Mineralogy, Magneticks. January 9, 1660–February 25, 1731. 380 frames.
0381 Volume X. Botany and Agriculture. January 23, 1660–May 24, 1722. 571 frames.

Reel 18

Classified Papers cont.

0001 Volume XI. Pharmacy and Chymistry. July 30, 1662–July 4, 1723. 498 frames.
0499 Volume XII. Anatomy and Surgery. October 15, 1661–April 29, 1714. 526 frames.

Reel 19

Classified Papers cont.

0001 Volume XIII. Monsters; Longevity. July 1, 1663–November 8, 1722. 73 frames.
0074 Volume XIV (1). Physick (1). May 31, 1665–February 8, 1710. 260 frames.
0334 Volume XIV (2). Physick (2). May 3, 1710–December 23, 1736. 308 frames.
0642 Volume XV (1). Zoology. March 9, 1661–January 23, 1724. 260 frames
0902 Volume XV (2). Zoology. November 12, 1724–March 12, 1731. 166 frames.

Frame No.

Reel 20

Classified Papers cont.

Reel 21

Classified Papers cont.

Reel 22

Classified Papers cont.

Reel 23

Classified Papers cont.

AUTHOR INDEX

The following is a list of the authors in the Classified Papers. The names in capital letters are members of the Royal Society. The roman numeral that follows the name is the volume where that author's material is located. The number in the parentheses that follows some volume numbers means there is more than one volume with the same number. The number indicates in which part of the volume the author's material is located. The number after the parentheses is the document number. All documents in a volume are numbered. For example, IV (2) 25 directs the researcher to the second part of volume 4, document number 25.

This list is adapted from *Some Account of the 'Classified Papers' in the Archives with an Index of Authors*, compiled by A. H. Church, D. Sc., F.R.S., Oxford, 1907.

Collections from the Royal Society

Book Catalogue of the Library of the Royal Society

Council Minutes, 1660–1800

The Early Letters and Classified Papers, 1660–1740

Journal Books of Scientific Meetings, 1660–1800

Letters and Papers of Robert Boyle

Letters and Papers of Sir John Herschel

Miscellaneous Manuscripts

UNIVERSITY PUBLICATIONS OF AMERICA