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THE ROYAL SOCIETY AND THE APOTHECARIES
1660–1722

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THE influence of the Royal Society upon the apothecaries is an interesting, but unexplored, topic. Miss Syfret, discussing the relationship between the new philosophy and physic, recently remarked that the Royal Society 'could be regarded as likely to support the empirics and apothecaries against that ultra-conservative body, the Royal College of Physicians, and to interfere with the wonted courses of physic' (1).* An even more recent analysis by Dr Philip George of the papers published in the *Philosophical Transactions*, concludes that 'the paucity of apothecaries amongst the authors suggests that few by profession had any developed interest in science . . . A very different state of affairs existed on the Continent' (2).

This note offers some evidence for the contention that the apothecaries were influenced by, and in some cases associated with, the Royal Society: an association which undoubtedly energized their activities, and played some part in their attainment of professional status, which was marked by the famous *Rose Case* of 1703.

I

Before its formal charter, the Royal Society owed much to apothecaries. Thus Antony Wood wrote of the little group of men, Wilkins, Ward, Bathurst, Willis, Petty and Boyle, who used to meet at Oxford in an 'experimentall philosophical clubbe':

'1659: The Royall Societie at Oxon, and of Chemistry. They did in Clerk's house, an apothecary in St. Marie's parish, exercise themselves in some chemicall extracts, which were carried on and much improved before the king's restauration, in so much that severall scholars had privat elaboratories and did performe those things which the memory of man could not reach. But the one man that did publickly teach it to the scholars was one Peter Sthael . . . brought to Oxon by that eminent scholar Mr Robert Boyle . . . and by him setled in the same house wherein he lived viz in that house (owned by an

* Numbers in brackets refer to serially numbered notes at end of paper, p. 34.

apothecary) next on the west side of University Coll. sometimes knowne by the name of Deep hall' (3).

Their reasons for so meeting, and for Boyle's lodging with an apothecary, were 'because of the convenience of inspecting drugs and the like' (4). Petty at whose lodgings the group first met, also lived with an apothecary, and his subsequent manuscript notes showed that he respected their opinions. Thus in his statistical researches, he ranks 'Physicians, Apothecaries Chirugeons' in that order (5); and in his observations on sweetening sea-water, his first note ran '1. Take the opinions and experience of practicall Physicians, Apothecarys and Distillers' (6).

Indeed, we find that many distinguished fellows of the Royal Society numbered apothecaries amongst their friends and helpers. Thus Pepys records in his diary of 2 September 1661 'meeting with Mr Battersby, the apothecary in Fenchurch Street' and going to 'the King's Apothecary's chamber in Whitehall, and there drank a bottle or two of wine, and so he and I by water towards London' (7). It was his friend Battersby, too, who told him that his uncle had the 'emerods' (piles), who accompanied him to *Twelfth Night*, and who visited him. And when Pepys was ill, it was, he confessed, 'by the apothecary's advice I am to sweat soundly' (8). And significantly enough, it was Pepys who forwarded Richard Gibson's memorial to the king advocating the reorganization of the naval medical service, a reorganization which stressed the need of not allowing sailors to 'lie dispersed under cure in lewd alehouses', and urged that 'your Majesty will be pleased to give your orders to alter the present method of letting your sea surgeons provide (as they now do) their own medicines; but that it be done by a magazine chest from Apothecary's Hall of such sorts of medicines for each shipp as shal be settled by Surgeons Hall' (9). It was this supply of medicines to the Army and Navy which played such a part in the achievement of the professional status of an apothecary, and which itself stemmed from their scientific work (10).

The prestige which the apothecaries had gained after two generations of separation from the Grocers in 1617 is often forgotten. As a recent writer acknowledges: 'the status of the apothecary was rising, and the education at Apothecaries Hall, though not strictly medical, was fair by the standards of the time . . . many of the physicians of the seventeenth century were, despite their university qualifications, very ignorant of physic; thus there was not necessarily any real gulf between the average physicians and the apothecary, and this made the latter seem a dangerous competitor' (11).

This increased prestige was fostered by three inter-related factors operating in the decade after the Restoration. The first of these was the undoubted

weakening of the College of Physicians. As Munk, its most distinguished historian, acknowledged: 'to strengthen its position, and enlarge its depleted funds, seventy doctors were admitted who had practised but were without its qualification' (12). The second was the great plague of 1665-6, which revealed the sterling quality of many apothecaries. Most notable of these was Francis Bernard, the apothecary of St Bartholomew's Hospital, who stayed to tend patients when doctors like Micklethwaite and Tearne fled (13); and there were others, like William Boghurst of St Giles-in-the-Fields, who stayed to write an account of the plague; William Johnson, the apothecary and chemist of the College of Physicians, and Mr Slade, to whom the King gave a piece of silver plate for his work (14). The last, and not the least important, factor was the Royal Society, which stood for experiment and practice as against the old ways of learning, which Locke described as following a 'romance way of physic', adding 'I see it is easier and more natural for men to build castles in the air of their own than to survey well those that are found to be standing'. Indeed, one pamphleteer, Henry Stubbe, actually accused the Royal Society of instigating the quarrel between the physicians and the apothecaries 'so as they could aggrandize themselves upon the ruine of the Colledge' (15).

We know something of the attainments of two apothecaries of this early period which give us some indication of their calibre. Francis Bernard, who held the office of apothecary to St Bartholomew's Hospital from 1661 to 1678, when his merits caused him to be elected assistant physician, was reputed to have amassed the largest library of medical books ever made in England, and collected his books 'for Use and not for Ostentation or Ornament' (16). He was elected Fellow of the College of Physicians in 1687. Another apothecary, John Coniers, was collecting medicines and prescriptions of physicians (17), keeping meteorological journals (18), writing archaeological observations on Roman remains found when St Paul's was being rebuilt after the Great Fire (19), preparing an essence to make artificial Tunbridge Water (20), and in 1691 was proposing to open a museum of rarities to the public (21). He contributed to the *Philosophical Transactions* at least three papers, two of which show a decided technological character. One, contributed in June 1677, described a cheap pump which he had invented four years earlier when the New Canal of Fleet River was enlarged: this pump delivered 169 gallons a minute. A year later, in September 1678, he contributed a paper on an improved speaking trumpet (22).

2

The matrix of their scientific endeavour was Apothecaries Hall, rebuilt in 1668 in a site in Water Lane, Blackfriars, purchased thirty-six years before.

Here in 1671 was established, by the subscriptions of members, a special laboratory for the preparation of chemical products (23). This also offered instruction in chemistry for the members. This laboratory was an important centre of scientific endeavour, and though we do not know much about the first two 'operators' Samuel Stringer and a Mr Hull (24), we know at least that they were so busy that, six years after its foundation, tenants of the Society near the hall complained that the stench of the fumes arising from the preparation of 'sulphur bells' was so bad as 'to be ready to suffocate them, and makes them soe sicke they are not able to endure itt' (25). As a result of this, the nuisance was ordered to be abated without delay. Another indication of their feverish activity is afforded by the fact that the laboratory chimney became so overheated that it set fire to the wainscotting in the Great Hall (26).

In 1673, two years after their chemical laboratory was opened, the Society of Apothecaries leased some land in Chelsea from Charles Cheyne for sixty-one years at a rent of £5 per annum. Originally intended as a site for a barge house, several members of the Society agreed ten months later to enclose it with a wall, and the proprietors of the laboratory stock gave £50 towards the cost of the wall on condition that they were to be allowed a piece of ground in the garden where herbs might be cultivated. It seems to have been an attempt to systematize the collection of herbs which had long been a feature of the Society's activities, activities which had produced two of the foremost botanists of the early part of the century, John Parkinson and Thomas Johnson (27).

On 6 October 1681, the Society determined to 'contrive a library' for the use both of the laboratory and the garden (28), and the connexion between the two was further emphasized when, two years later, we find that Nicholas Staphorst was making a catalogue of the plants at his own expense (29). But he was not officially in charge of the garden. That honour had fallen in January 1680 to John Watts, who seems to have remained there for eleven years or more (30), teaching apprentices, notable amongst whom was James Sherard (later F.R.S.), the famous botanist. It was during Watts' administration that John Evelyn, F.R.S., visited the garden, and thus described it on 7 August 1685:

'I went to see Mr. Wats, keeper of the Apothecaries garden of simples at Chelsea, where there is a collection of innumerable varieties of that sort: particularly, besides many rare annuals, the tree bearing jesuit's bark, which had done such wonders in quartan agues. What was very ingenious was the subterranean heat, conveyed by a stove under the conservatory, all vaulted

with brick, so as he has the doors and windowes open in the hardest frosts, secluding only the snow' (31).

The resources of both laboratory and garden were admirably deployed by the third 'operator' of the Society of Apothecaries, Nicholas Staphorst.

Staphorst was a chemist, who, we are told, 'had learn'd that art under Mr. Stahl his kinsman' (32). Stahl's connexion with Oxford is better known, and he did, in fact, become 'operator' to the Royal Society in 1664. Staphorst's own activity was considerable. In 1683 he was engaged in making a catalogue of plants in the garden. Three years later, in 1686, he published his *Officina Chymica Londinensis, sive Exacta Notitia Medicamentorum Spagyricorum, quae apud Aulam Societatis Pharmaceuticae Londin. praeparantur, et venalia prostant. Consilio Pharmacopaeorum et approbatione Collegii Medicorum Londinensium exhibitum. Opera et Studio N. Staphorst* (33).

Staphorst's most distinguished pupil was Hans Sloane (34), who in 1680 lived in Water Lane, adjoining the Apothecary's laboratory, and when Sloane returned from the West Indies, Staphorst on 22 June 1689 was soliciting his patronage on behalf of his relative, Anna Orton, for a place in the household of the Duchess of Albemarle (35). From 1690 to 1692 he was translating Leonart Rauwolf's botanical travels in the Near East, to which John Ray was asked to write the preface (36). Sloane, after he became Secretary of the Royal Society in 1693, became busier than ever, and in 1701 Staphorst was recommending an assistant to help him:

'From ye enclosed you will understand, that Dr. Pragestus (how would faine be chosen undersecretary to ye Royal Society) desires mee to speack a good word to you for him, you being ye only gentleman that can help him to it. Hee is a very honest man & learned in languages, he is pretty well in years, & such a place would be baculis senectutis to him. I need not use any argument to persuade you to promote this kindnesse, well knowing, that naturaly you are enclined to doe good to these that want your assistance. As I have allways on my owne accompt sufficiently experienced, which although I can not thankfully acknowledge in deeds, as I ought to doe, yet shall I never forget, while I live. I hope you will favor mee in this my request & still heape up your good favours.

I am
your
servant at command
Nic: Staphorst

London Nov: 24 Ano 1701.
I thanck God I am pretty well recovered, & want nothing but straught.' (37)

As Secretary of the Royal Society, Hans Sloane was brought into intimate contact with most of the leading scientists of his day. One of these was James Petiver (38), another apothecary, whose collections and correspondence he later purchased. So it is not surprising that one finds more Staphorstiana among Petiver's letters in the Sloane MSS., and these tell us that Nicholas Staphorst had a son and namesake, who was one of Petiver's innumerable foragers. This Nicholas Staphorst, Junior, was absent in India at the time his father was soliciting Hans Sloane on Dr Pragestus's behalf, as the following letters show. The first, which can be found in Sloane MSS. 4063 f. 39, ran:

'Worthy Sir,

On Fryday the 2nd of August 1700 we arrived att the Cape of Good Hope Having a very Healthy voyage nott one man being sick since we came from England and delivered your things safely for to Mr. Starenburg (39) and was very civily entertained by him, butt before we put in here one of her. Olden [ ] bottles broke in my chest, my chest breaking its lashings butt the other I delivered very safely to him.

Sir I must desire to be excused in nott performing my promise in gathering a collection for you my time being very short on shore nott being above twelve hours otherwise I should have done my best but Mr. Staremburg has promised me to use all means to satisfy your curiosity during my stay on shore I have not seen above 12 English plants & them I desired him particularly to send to you. Sir I shall use all means to be serviceable to you or any of my brother simplers.

This being all at present, I remain
your devoted servant
N. Staphorst

From the Cape of Good Hope the 5 Day of August 1700.
Pray give my humble service to Mr. Doody (40) and all my brothers.'

The second, written some three months later, can be found at f. 51, and runs:

'Worthy Sir,

I make bold to trouble you with a line or 2 which is to let you know that I have not been unmindful of you and have made almost my whole business while I was ashore at Callicut to oblidge you with a collection both of shells and plants & had gott a very fine one, butt going on board att night was unfortunately oversett in a canner and was like to have been drowned nott only lose the collection butt other things which I had in the canner butt notwithstanding I shall not be forgetfull of you I can find no opportunity as yet to convey your things to Mr. Heardson (41) as yett, nor doubt I shall not

by reason of ye great disturbances between the old company and ye New, for which reason ye New will not suffer us to come on shore, this being all at present.

I remain your freind and servant
Nich: Staphorst.

From on board ye Tavistock now rideing in Swally Hole near Surat. Nov. ye 7 1700.'

3

After being elected Secretary of the Royal Society in 1693, Hans Sloane set about reviving its activities, and not unnaturally, brought in some apothecaries. Two were elected to fellowship in 1695, and others submitted papers. The two new Fellows were James Petiver and Samuel Doody. Petiver, then thirty-two, had been established in Aldersgate for the previous three years, and before that had been apprenticed to the chemist at St Bartholomew's Hospital. We have seen something of the correspondence which he maintained, and Ray declared that he had 'the greatest correspondence both in East and West Indies of any man in Europe'. He was an entomologist, a vocation which brought him into touch with John Ray, who in the nineties was turning his interest from plants to insects. As Ray was writing the *History of Insects*, the two men became intimate friends, and Petiver produced, in 1713 and 1715, two volumes of illustrations for Ray's *Historia Plantarum*. Hans Sloane valued Petiver's collections greatly, and bought them for himself. Sloane was also a pallbearer at Petiver's funeral in 1718 (42). Samuel Doody, elected F.R.S. in the same year as Petiver, was also associated with him, George Dare and A. Bromwich (43) in the management of the Apothecaries' Garden. Doody was described by de Jussieu as the Coryphaeus of the London botanists, and also helped Ray, both by sending specimens and lists (44).

Two other apothecaries who contributed to the *Philosophical Transactions* were Samuel Dale and James Sherard. Dale wrote prolifically, and rendered valuable assistance to Ray, while his own *Pharmacologia* (1693) in turn owed much to not only Ray, but Sloane, Doody and Petiver also (45). James Sherard, who after practice as an apothecary in Mark Lane, retired to Eltham to build up the excellent collection of plants catalogued by Dillenius, and became F.R.S. Sherard's elder brother William established the chair of botany at Oxford which still bears his name (46).

Both Petiver and Doody had, as we have seen, been connected with the Apothecaries' Garden at Chelsea: Petiver as Demonstrator of Plants from

1708 until 1718, and Doody as Curator from 1693 until 1706. So it is not surprising that Hans Sloane, as their friend, was responsible for the conveyance of the garden to the ownership of the Society of Apothecaries. In the deed of conveyance, signed in 1722, the apothecaries were obliged to 'render yearly to the President, Council, and Fellows of the Royal Society of London, fifty specimens of distinct plants, well dried and preserved, which grew in their garden in the same year, with their names or reputed names; and those presented in each year to be specifically different from (those of) every former year until the number of two thousand shall have been delivered'. The Demonstrator of Plants appointed was Isaac Rand (later F.R.S.) and the gardener appointed on Hans Sloane's nomination was Philip Miller (later F.R.S.). Well might the Apothecaries commission J. M. Rysbrack to make a statue of Sloane, which stands in the garden today.

It was from this garden that the first cotton seeds were sent out to Georgia in 1732 (47).

4

It was at the turn of the seventeenth century that the quarrel between the Society of Apothecaries and the College of Physicians reached its height. This quarrel arose partly from the Apothecaries' success, and partly from their natural affiliation with the 'new philosophy'. As George Wharton put it, when endeavouring to dissuade a young man from adopting the profession of physic:

'Because now there was more apparent cause of the ruine and destruction of Phisick than ever, by the swarms of quackes, mountebanks, chymists, apothecaries, surgeons, and especially this new upturned brood of "virtuosi", who are most likely by their Jesuitisme and policy, English books, experiments, and receipts in phisick, to fill all families of note in England with their stuff, to overthrow all our old settled and approved practice of physick, especially in London' (48).

Marchamont Needham, who turned from journalism to the practice of physic at the age of forty-one, and experienced the hostility of the College of Physicians, was moved to write *Medela Medicina—A Plea for the Free Profession of the Art of Physic* in 1665. In this, he pointed out that

'An Extream Affection to Antiquity [has] kept Physick, till of late years, as well as other sciences, low, at a stay and very heartless, without any notable Growth or Advancement. . . When Chymistry first came into play, the Professors and Operators were thought to be Mad-men; but afterwards (when they gained some ground and entertainment in the World) the

Aristotelians and *Galenists*, seeing that reproach and contempt would not do the work, began to raise a fierce persecution . . .'

and adding

'A Doctor bred up in the Contemplative Philosophy of the Schools, may be a scholar and a very fine gentleman, but what is that to the curing of a Disease, the rousing of a Heart-sick Man from his bed of Languisshment. This is to be executed rather from one that is qualified for the work by the acquaintance with Mechanick and *Experimental* Philosophy' (49).

The advantages which the apothecaries enjoyed by constant experiments with their medicaments was well appreciated by Jonathan Goddard, Gresham Professor of Physic and one of the first members of the Council of the Royal Society. As a good practical chemist himself, he lamented the 'dividing and separating' of the practice of medicine between the physicians who prescribed, and the apothecaries who made the prescriptions. The withdrawal of the physicians from 'frequent viewing, inspection, observation and . . . experimenting and exercising themselves in preparations' had been marked, in his opinion, by their tendency to regard such important duties as 'troublesome and inferior employments'. Goddard urged the physicians to recapture their initiative in, and to reconsider their attitude to, these things, by doing their own dispensing. For, as he reluctantly confessed:

'it cannot be denied, that in this course, some Empiricks have stumbled upon very considerable and effectual medicaments, wherewith in some particular cases, they have outdone learned physicians; and by these advantages of making their own Medicaments, they bear up, and will do, till they be outdone in the same kind, by such Physicians'.

Goddard was a very fair-minded man, and though he 'lamented the invasion of Physick by Apothecaries' he declared it was his intention not to 'hinder the Apothecaries' so much as to 'give accession to Physicians to consider how much it concerns them in this age to endeavour the invention of better than the shop-medicines' (50).

The attacks of another original member of the Royal Society, Christopher Merret, are worth some consideration. Merret was the curator of the Harveian Museum and Library at the College of Physicians, the friend of Harvey and Boyle, a geologist and metallurgist of repute (if his contributions to the *Philosophical Transactions* are any indication). He was responsible for the list of trades which the Royal Society commissioned in 1664. Canon Raven has declared that he 'was perhaps the first English writer on natural history to be

aware of the significance of the method of observation and experiment and of the outlook which this was producing' (51). His own collections perished in the great fire of London, and so did Harvey's Library and Museum. In 1669 he published *A Short View of the Frauds and Abuses Committed by Apothecaries, and of the only Remedy thereof by Physicians making their own Medicines.* This ran to a second edition in 1670, when he also published two other tracts on the evils of practising apothecaries. The Society took it up with the College, and the College pacifically replied that its own interests were closely bound up with those of the Society. The Society in the following year pressed ahead with the construction of its own laboratory. Merret, after a dispute with the College of Physicians about his salary as Curator of their Museum, was expelled. Merret's misfortune was to confuse the Apothecaries' claims with the pretensions of Henry Stubbe, the author of a number of attacks on the Royal Society. Stubbe had asserted, as we have seen, that the whole dispute between the Physicians and Apothecaries had been fomented by the Royal Society 'as a designe of theirs to aggrandize themselves on the ruine of the Colledge'.

There were hints of the formation of a 'New Society of Physicians' who would 'advance Physick by Chymical Medicaments and Practice', and Adrian Huyberts, who in 1675 was meeting strong opposition from the College of Physicians, published in that year *A Corner Stone towards the Building of New Colledge* (*that is to say a New Body of Physicians in London*). In this, he reveals his own loyalties:

'They say I am an *Apothecary*; 'tis well 'tis no worse; and it had been well for their *Worships* if they had at first been bred so to. . . The ablest Physicians that I ever met with abroad, were first bred Apothecaries or Chymists, or both.'

Huyberts' pamphlet was published four years after the establishment of the laboratory at the Apothecaries' Hall in Blackfriars, which he described as 'a grand laboratory and repository . . . for Chymick Medicaments'. ''Tis the glory of Chymistry', he went on, 'to have contributed in a few years, more to the manifestation of the vertues of Plants, Animals and Saltes, than all the Sectators of *Aristotle* and *Galen* have done from their times to this day.' Huyberts was obviously a disciple both of Bacon and of Boyle, quoting them (and Marchamont Needham) in support of his thesis that the Physicians of his day were, as he punningly put it, Leaden Doctors:

'many run loose from being Schoolmasters or Preachers in *England* to be made Doctors at Leyden, and the like places beyond-Sea, and by reading a

few Books and prating, intrude into a Calling, which is not to be acquired but by years of labour, and studie of *Experimental*, not *School* Philosophy. Such talking *Book-Doctors* the world is too full of' (52).

Huyberts' case called forth a reply from Charles Goodall, who was later to hold the presidency of the College of Physicians. But the College of Physicians did not take Goddard's and Merret's advice till 13 August 1688, when they decided to establish a laboratory of their own in order to prepare medicines for their patients. It has been said that they were finally stimulated to do this by the high prices which the apothecaries were charging for their medicaments, and certainly in the previous year, the College of Physicians had bound their fellows and licentiates to treat the sick poor of London and its environs free of charge. The apothecaries counter-charged that the physicians' laboratory was merely a money-making scheme, and when, in 1696, 53 influential physicians subscribed £10 each to establish dispensaries for supplying drugs to the poor at cost price, an open war broke out between them and the apothecaries. In this war, not all of the physicians were behind the College: Sir Richard Blackmore, Physician to the King, William Gibbons, who is said to have introduced mahogany into England, and George How were 'anti-Dispensarians'. So it is not surprising that when Samuel Garth published his famous satire on the controversy, a mock-heroic poem called *The Dispensary* (1699), the latter two should figure in it as Mirmillo and Querpo respectively. Yet even Garth acknowledged that the God of Sloth had made the College of Physicians his lair, and described the meeting of the Apothecaries summoned by Horoscope (Dr Barnard) as taking place in a room over their laboratory. Indeed, he makes great play with an explosion from the laboratory which disrupted the Apothecaries' assembly:

> 'But from below (while such resolves they took)
> Some Aurum fulminans the Fabrick shook.
> The Champions, daunted at the crack, retreat,
> Regard their safety and their rage forget' (53).

The victory of the apothecaries, and the vindication of their outlook, came with the celebrated *Rose case* of 1703, when the apothecaries obtained the right to prescribe, and so, to practice (54). In 1724 the College of Physicians closed their Dispensary.

5

Two examples might be adduced to illustrate the connexion between the Royal Society and the apothecaries in the second decade of the eighteenth

century. The first is the testimony of a foreign visitor, Zacharias Conrad von Uffenbach, who visited both the Apothecaries Hall and the Royal Society at Gresham College in 1710. He describes the Apothecaries Hall thus:

'The chemical laboratory is the largest and best but the Galenicum is very small and wretched, and so is the apothecary's shop. It is, however, excellent that they have here public laboratories, where not only are medicines prepared for ships and hospitals, but also most of the apothecaries obtain their preparations, afterwards mixing them and dispensing them; and often everything is prepared in such large doses that an apothecary need do nothing himself; but in the first place, if an honest man is set over such a laboratory, where nothing but these operations are carried out, all is done with greater care than in our apothecaries' shops' (55).

His description of the Royal Society is less flattering. Its instruments were 'not only in no sort of order or tidiness but covered with dust, filth and coal smoke, and many of them broken and utterly ruined'. He continued: 'if one enquires after anything the operator who shows strangers round . . . will usually say "A rogue had it stolen away", or he will show you pieces of it, saying "it is corrupted or broken"; and such is the care they take of things'.

Uffenbach was obviously seeing the Society in its last days at Gresham College:

'The present Secretary, Dr. Sloane, is certainly an honest fellow of great parts, but he is very much occupied by his own extensive praxi medica as well as with his great collection. The President, Newton, is an old man and is prevented both by his office as Director of the Mint and by the management of his own affairs from concerning himself much about the Society. For the rest, if one excepts Dr. Woodward and one or two other Englishmen as well as the foreign members, there are none but apothecaries and other such people who know scarce a word of Latin.'

It is worth recalling that Dr John Woodward was expelled from the Royal Society in this very year for unbecoming conduct.

The second example is the outlook of John Quincy, an apothecary who died in 1722 after publishing a number of quite notable works. His *Dispensatory* became, as Dr Howard-Jones has shown, the basis of later dispensatories, and, through them, of two of the most considerable works on the *materia medica* published in Britain during the first half of the nineteenth century (56). Quincy's friend and biographer, Dr Peter Shaw (himself a chemist of repute)

said of him that 'he vigorously applied himself to the study of mechanics and the *Newtonian* philosophy'. This mechanical reasoning he brought into his medical writings, beginning with his edition of Santorio's *Medicina Statica* 1712. In the preface to this work, he begged the reader not to 'slight the performance, because the author is not so happy to have any other distinction than that of an Apothecary'. Apothecary he might be, but he advanced a conception, Dr Howard-Jones has shown, of the accessibility of vital functions to scientific investigation and explanation that was not fully recognized for two centuries. Indeed, Quincy went so far as to say in 1720:

'a human Body as it comes under the Notices of a Physician, is merely a machine, and that whosoever goes any other way to enquire into its constitution . . . abuses his faculties'.

Quincy caught up and made current a number of the new terms used by what he called 'modern physical writers' in his *Lexicon Physico-Medicum* (1719) which he described as 'including all such parts of natural philosophy and Mechanic Laws as are necessary *Praecognita* to some practical rules of medicine'. A course of lectures on pharmacy was published in the year after his death by Peter Shaw.

After 1722, when the Apothecaries possessed their own garden, and John Quincy had died, the connexion with, and influence of, the Royal Society seems to wane. For the London Apothecaries were by now almost respectable though, as readers of Jane Austen's *Emma* will agree, they were not quite respectable in the provinces for another hundred years. Moreover, the foundation of the big London hospitals began at this very time (the Westminster was founded in 1719, Guy's in 1725, and St George's in 1730) and threw medical research on a new tack, while orthodox chemistry was being revived by writers and teachers like the very Peter Shaw who edited Quincy's works (57).

Notes

(1) Syfret, R. H. 1950 Some Early Reactions to the Royal Society. *Notes Rec. Roy. Soc.* **7**, 254.

(2) George, Philip. 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. *Ann. Sci.* **8**, 312-13.

(3) Clark, Andrew 1891 *The life and times of Anthony Wood.* Oxford University Press. i, 290.

(4) Gunter, R. T. 1923 *Early science at Oxford.* Oxford University Press. **1**, 9.

(5) *The Petty Papers.* ed. Marquis of Lansdowne. London: Constable. 1927. **1**, 200.

(6) *ibid.*, **2**, 144.

(7) Wheatley, H. B. 1904 *Diary of Samuel Pepys.* London: George Bell and Sons. **2**, 88.

(8) *ibid.*, **2**, 59; **3**, 6, 14, 34.

(9) Tanner, J. R. 1926 *Private correspondence and miscellaneous papers of Samuel Pepys.* London: George Bell and Sons. **1**, 24. Gibson's memorial was dated 5 October 1693.

(10) By December 1702, the Apothecaries were complaining that the Physicians were trying to intrude on this trade 'for private gain' and asking that the Government would allow 'this business to proceed in its antient channels' *Cal. Stat. Pap. Dom.* 1702-3, pp. 334-5.

(11) Hamilton, Bernice 1951 'The Medical Professions in the Eighteenth Century.' *Economic Hist. Rev.* **4**, 160. 'By 1700, middle-class people of substance were beginning to consider it as a career.'

(12) Munk, W. 1878 *Roll of the Royal College of Physicians of London.* London: Published by the College. **3**, 32.

(13) Moore, Norman 1918 *The history of St. Bartholomew's Hospital.* London: C. Arthur Pearson. **2**, 325.

(14) Bell, W. G. 1951 *The Great Plague in London.* London: John Lane, The Bodley Head. 14-15, 290.

(15) Syfret, R. H. *Notes Rec. Roy. Soc.* **7**, 254-5.

(16) Bernard, Francis (1627-1698). *D.N.B.* **4**, 380, Moore, N. *op. cit.* **2**, 512-16. For an alphabetical index to his catalogue of books see British Museum, Sloane MSS. 1058, and for the memorandum book of his library *ibid.* 502.

(17) British Museum, Sloane MSS. 1650.

(18) *ibid.*, 958 ff. 111-139.

(19) They were urns, and he made drawings of them *ibid.* 958 ff. 105-109b. He also made observations on Stonehenge *ibid.* 937 f. 179.

(20) *ibid.* 958 f. 2.

(21) Bather, F. A. 1931 'The Museums of London' in *London and the Advancement of Science.* London: British Association. p. 275. The notable museums of seventeenth century England were those of Sir Robert Cotton (1570-1631), made over by his great-great-grandson to the nation in 1700; Tradescant's Ark, acquired by Elias Ashmole and transferred to Oxford in 1682; Robert Hubbard's, which went partly to the Royal Society and partly to Sir Hans Sloane; Sir Hans Sloane's own collection, which was augmented by that of William Courten; and that of the Royal Society, initiated in 1666 by Robert Colwall's purchase of part of Robert Hubbard's collection.

(22) Lowthorp, John 1722 *The Philosophical Transactions and Collections to the end of the year 1700 abridged* . . . London: Knaplock, Wilkin and Clements. **1**, 505, 545.

(23) Wall, Cecil 1932 *The London Apothecaries.* London: Apothecaries Hall. pp. 8-9.

(24) Edward Cooke, an early stalwart of the Society, offered £500 to build a laboratory in 1641. On 29 Janaury 1671-2, Samuel Stringer was elected operator, and William Browne Treasurer. Stringer made a catalogue of contents and products and forwarded a copy to the College of Physicians in November. He was to have no salary, but be provided with half the working stock, half the salaries of the journeymen and labourers and a free house. He resigned, his successor, Mr Hull, was elected in April 1674 with a salary of £40 p.a. Barrett, C. R. B. 1905 *The History of the Society of Apothecaries.* London: Elliot Stock. pp. 86-91.

(25) *ibid.* p. 97.

(26) *ibid.* p. 95.

(27) Raven, C. E. 1947 *English Naturalists from Neckham to Ray*. Cambridge University Press. pp. 248–97.

(28) Barrett, C. R. B. 1905 *The History of the Society of Apothecaries*. London: Elliot Stock. p. 100.

(29) *ibid.* p. 104.

(30) He is described as John Watts by Henry Field and R. H. Semple 1878 *Memoirs of the Botanic Garden at Chelsea*. London: Gilbert and Rivington. pp. 14–17, but as Charles Watts thirty pages later, repeated in the *Dictionary of National Biography* **52**, 66 (article on James Sherard).

(31) *The Diary of John Evelyn* 1906 ed. W. Bray and H. B. Wheatley. London: Bickers and Son. **2**, 474.

(32) Brooks, St John 1952 in *Notes and Queries* **197**, 481.

(33) Three copies of this, with MS. notes, are in the British Museum, together with another work obviously derived from it, entitled *Metallorum et Mineralium Praeparationes*. In this connexion, it is worth commenting on the increasing changing character of the *London Pharmocopoeia*. From its first publication in 1618, when 1,028 of the 1,960 remedies prescribed were simples, it was expanded to include cochineal, antimonial wine, red and white mercurial precipitates by 1650 and jalap, cinchona bark, burnt alum, digitalis, benzoin, steel tonics and Irish Whisky by 1677. It was shamelessly plagiarized and bowdlerized by Nicholas Culpeper, who is often mistaken for an apothecary, whereas his real character was perceived by Marchamont Needham, who declared he had 'gallimawfried the Apothecaries Book into nonsense'. See Wootton, A. C. 1910 *Chronicles of pharmacy*. London: Macmillan. **2**, 2–31 and Garrison, F. H. 1921 *An introduction to the History of Medicine*. London: W. B. Saunders. p. 291. There are no grounds for asserting, as Schelenz does (*Geschichte der Pharmazie* 1904 pp. 528, 588) that he wrote the pamphlet *A Short View of the Frauds and Abuses committed by Apothecaries* which is now generally agreed to have been written by Christopher Merret (see n. 51).

(34) De Beer, G. R. 1953 *Sir Hans Sloane*. Oxford University Press. p. 16.

(35) B.M. Sloane MSS. 4036 f. 54.

(36) Raven, C. E. 1942 *John Ray*. Cambridge University Press. pp. 274–7.

(37) B.M. Sloane MSS. 4638 f. 269. Pragestus's letter to Staphorst was dated the same day (24 November 1701) asking 'Rogabis ut me commendet Regali Societati Greshamenti, ut me subsecretarium suum deligant'. Staphorst himself published a paper in the *Philosophical Transactions*: Lowthorp, J. *The Philosophical Transactions—abridged and disposed* (3rd Ed. London 1722) **3**, 370. Pragestus was the author of five literary works, published between 1675 and 1706 at Hamburg and listed in the British Museum Catalogue.

(38) Petiver, James (1663–1718) see *D.N.B.* **14**, 85.

(39) John Starrenburg's own letters to Petiver can be found in Sloane MSS. 4063 ff. 61, 71, 74, 84, 121, 122, 153, 161, 213, 215, 238; and 4064 ff. 105, 204.

(40) Samuel Doody (1656–1706), another apothecary. He assisted Ray in the preparation of the *Historia Plantarum* (**3**, 1704) and himself became a Fellow of the Royal Society. Young Staphorst's especial mention of him was due to the fact that Doody was curator of the Apothecaries Garden at Chelsea—a post he had held since 1693. Field, H. and Semple, R. H. 1878 *Memoirs of the Botanic Garden at Chelsea*. London: Gilbert

and Rivington, pp. 17-22. It is also worth noting that Staphorst's letter has been endorsed under the signature 'Son to ye Chymicall Operator to Apothecaries hall'.

(41) John Heardson of Surat, whose letters to Petiver can be found in Sloane MSS. 3321 ff. 62, 63.

(42) Petiver's extensive correspondence is available in the Sloane MSS. and his collections formed the nucleus of the British Museum. See also Raven, C. E. 1942 *John Ray.* Cambridge University Press. pp. 232-3.

(43) For letters from Dare see Sloane MSS. 4063 f. 152, and from Bromwich *ibid.* 4036 f. 207; 4064 ff. 230, 260; 4065 f. 139; 4066 f. 273.

(44) In the *Philosophical Transactions* for 1697 he wrote a paper on a case of Hydrops pectoris.

(45) This was first published in 1693 as an octavo volume, and was one of the earliest scientific works on the subject of drugs and medicinal preparations. It went through several editions in England and abroad. It was written in Latin, with English names for the substances. Hans Sloane had a hand in the execution of his will.

(46) James Sherard (1666-1738) sent the catalogue of his Eltham Plants to Sloane in December 1732.

(47) Bashford, H. H. 1931 'The Development of Medicine in London' in *London and the Advancement of Science* (for the British Association) p. 256. For papers relating to the Botanical Garden see Sloane MSS. 1968 f. 190b; 4020 f. 112; 4026 f. 396.

(48) Payne, J. F. 1900 *Thomas Sydenham.* London: T. Fisher Unwin, p. 165. For papers relating to disputes with the College of Physicians from 1618 to 1663 see Sloane MSS. 3914 ff. 71b-93b, f. 106b.

(49) See also Allen, P. 'Medical Education in Seventeenth Century England' *J. Hist. Med.* **1**, 140.

(50) Goddard, Jonathan 1670 *A Discourse Setting Forth the Unhappy Condition of the Practice of Physick in London and Offering some means to put it into a Better.* London: Martin and Allestry, pp. 35, 57.

(51) Raven, C. E. 1947 *English Naturalists from Neckham to Ray.* Cambridge Univ. Press. p. 311.

(52) *ibid.* pp. 16, 20, 32, 33, 34.

(53) Garth, S. 1699 *The Dispensary* canto 11. For Garth's part in this quarrel see Cushing, Harvey 1906 *Dr. Garth the Kit-Cat Poet.* Baltimore: Friedenwald Co.

(54) William Rose, an apothecary, treated a butcher, giving him free advice, but charging him for his drugs. When the butcher was faced, at the end of a year, with a bill for £50, and found himself no better, he went to a physician, who, he said, cured him in six weeks for forty shillings. The College of Physicians prosecuted Rose for unlicensed practice within seven miles of London. The Apothecaries took the case to the Queen's Bench, where they lost, and then appealed to the House of Lords, who reversed the decision.

(55) *London in 1710 from the Travels of Zacharias Conrad von Uffenbach.* Translated and edited by W. H. Quarrell and Margaret Mare 1934. London: Faber and Faber. p. 110.

(56) Howard-Jones, N. 1951 John Quincy M.D. Apothecary and Iatrophysical writer. *Hist. Med.* **6**, 149-75.

(57) Gibbs, F. W. 1951 Peter Shaw and the Revival of Chemistry. *Ann. Sci.* **7**, 211-37. It is worth noting Shaw's collaboration with Cockerill the Scarborough Apothecary on pp. 226-9.