

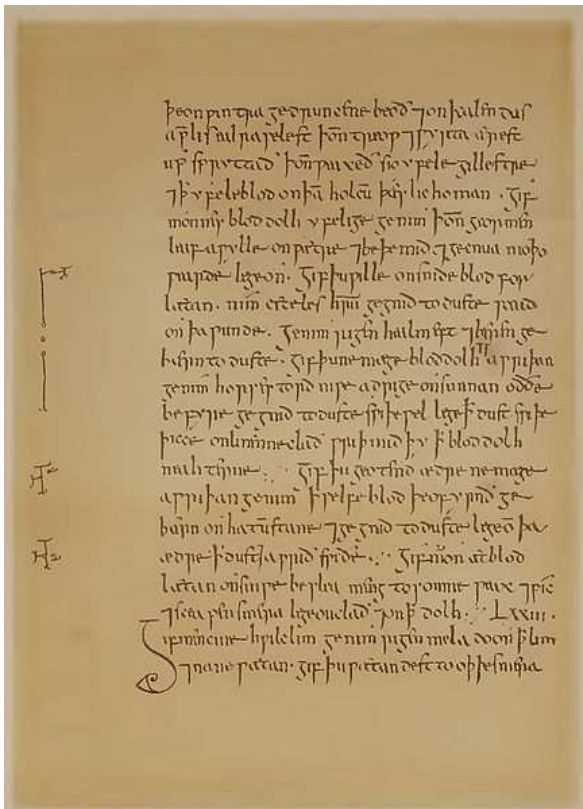
Pharmacopoeias of Great Britain

Stuart Anderson

Early English pharmacopoeias before 1618

The origin of pharmacopoeias in England can be traced at least to the Roman invasion. The Roman military had agreed lists of medicines when they came to England. Scribonius Largus, court physician to the emperor Claudius, brought with him his *Compositiones Medicamentorum*, a list of 271 prescriptions for use by the army medical service. On the departure of the Romans in the fifth century the keeping of such compendia fell mainly to the monasteries.

Medical texts in the local language appeared earlier in Anglo-Saxon England than elsewhere in Europe. The oldest surviving text in Old English is the ninth-century *Bald's Leechbook*, also known as *Medicinale Anglicum*, probably compiled at the time of Alfred the Great's educational reforms. Others include translations of a pseudo-Apuleius, *De herbarum virtutibus*, a medical herbal of the 5th century.



Facsimile page from *Bald's Leechbook*, ninth century

Two 11th century versions of the herbal are held at Oxford University. There is also a pseudo-Dioscorides, the *Liber medicinae ex herbis feminis*, a collection of 71 plants derived mainly from a translation of Dioscorides, and the *Medicina de quadrupedibus*, a compilation of animal cures found in a large number of Latin manuscripts. These appear in three 11th century Old English manuscripts and a later 12th century copy. These compilations remained the basis of treatment with drugs up to the Late Medieval period in the mid-16th century.

Progress was greatly facilitated by the invention of printing; William Caxton set up the first printing press in England in 1476, which meant that copies of English compilations could be widely distributed, and also that compilations from abroad could find their way to England.

The London Pharmacopoeia 1618 to 1851

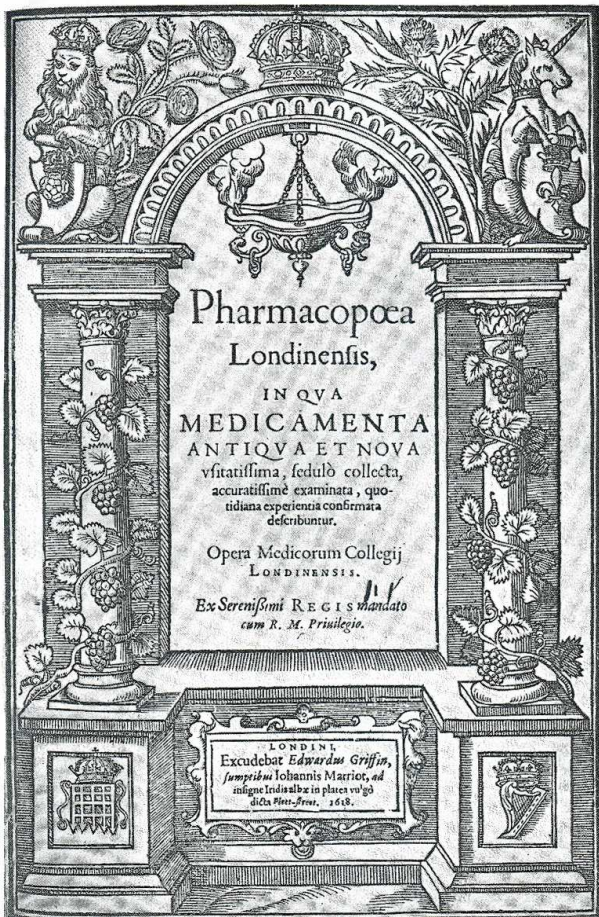
The College of Physicians, founded in London in 1518 by a royal charter from King Henry VIII, first discussed publication of a pharmacopoeia in 1585, but as it 'seemed a toilsome task' the idea was deferred for further discussion. It was re-considered again four years later, in 1589, when it was 'proposed, considered and resolved that there shall be constituted one definite public and uniform dispensatory or formulary of medical prescriptions obligatory for apothecary shops'. Again the College was very slow; but eventually a first edition of the *London Pharmacopoeia*, entirely in Latin, was issued on 7 May 1618.

The *London Pharmacopoeia* was intended to be a standard not only for London but for the whole of England; it was declared obligatory by the King. Practitioners of both medicine and pharmacy throughout western Europe awaited its publication with interest, despite the fact that official European pharmacopoeias already existed in a number of city states or republics. But the first edition, a small book of 200 pages, was full of mistakes and carelessly printed. The College quickly withdrew it.

Within four months arrangements were made for a second edition, which was published on 7 December 1618. There appear to have been serious differences of opinion within the College,

with one group wanting to keep the pharmacopoeia simple, and the other wanting it to be a more substantial combination of formulary and text book. The latter view prevailed; the second edition combines a formulary with detailed text, and is remarkably free of typographical errors.

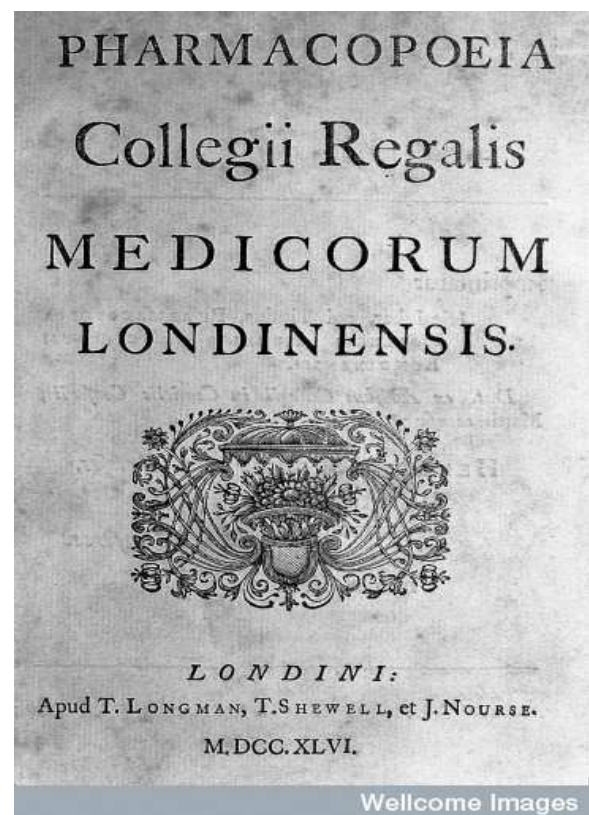
PLATE VIII



First edition of the *London Pharmacopoeia* 1618

The pharmacopoeias were a mixture of classical and new preparations. The preface stated: ‘anxious as we are to walk in the footsteps of the old masters, we do not refrain from adding new matters which we ourselves have had on hand. Not all the remedies in our book are transcripts.. we append some new drugs of our own which have proved effectual in frequent use, and are now published for the first time’. Thus began a central feature of pharmacopoeias in Britain; a conservative reliance on the traditional whilst introducing a degree of innovation.

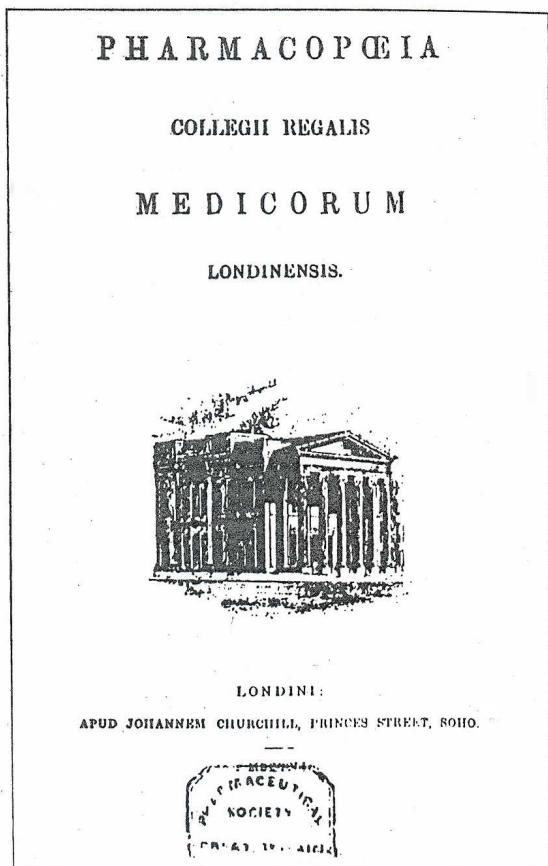
Whilst the first edition of the *London Pharmacopoeia* contained some 680 items, the second some months later contained 1,190 ingredients. The largest category, 292, consisted of leaves; the second largest, of 162 items, consisted of animal parts or excrements. In addition to the ingredients the *London Pharmacopoeia* also contained large numbers of prescriptions. One dates from a few years before Christ; 32 date from the first 500 years AD, mostly taken from Galen; 12 come from the second 500 years, 500 to 1,000 AD; 241 come from the third 500 years, 1,000 to 1500 AD; and 63 were compounded in the sixteenth century.



The *London Pharmacopoeia* 1746

A third edition of the *London Pharmacopoeia* took two years to prepare and was published, again in Latin, in 1650, 32 years after the first. It differed little from the earlier edition, except for one or two additions and some variations in the prescriptions. After another 27 years a fourth edition appeared, again in Latin, in 1677; it was dedicated to Charles II. It seems to have been hurriedly prepared, and was little more

than a reprint of the earlier edition with a few additional formulae. This edition remained in force for 44 years, until the fifth edition appeared in 1721. The sixth edition appeared in 1746, the seventh in 1788, the eighth in 1809, the ninth in 1824, and the tenth in 1836. The final edition, prepared by a Richard Phillips, appeared in 1851.



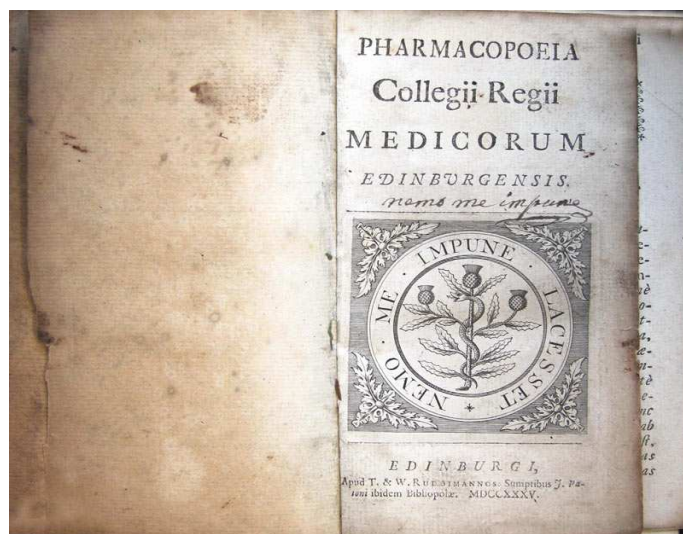
Title page of the *London Pharmacopoeia* 1851

The *London pharmacopoeia* was not without its critics; it promoted more complex and expensive items at the expense of cheaper and simpler ones. The most notable critics were Nicholas Culpeper and William Salmon. Culpeper published books including *The English Physician* in 1652 and the *Complete Herbal* in 1653. He questioned many of the traditional methods and knowledge of the time, and tried to make medical treatments more accessible to ordinary people by educating them about their health. In 1698 Salmon attacked the apothecaries in his *Rebuke to the Authors of a Blew Book written on behalf of the Apothecaries and Chirurgeons of the City of London*.

The Edinburgh Pharmacopoeia 1699 to 1841

The first edition of the *Edinburgh Pharmacopoeia* was issued by the Royal College of Physicians of Edinburgh in 1699, although it made a first unsuccessful attempt to do so in 1683. It was produced partly in order to meet the need that developed as the apothecary increasingly confined himself to the preparation and composition of medicines which the physician prescribed, but also as part of the ongoing dispute between the physicians and surgeon-apothecaries of Edinburgh.

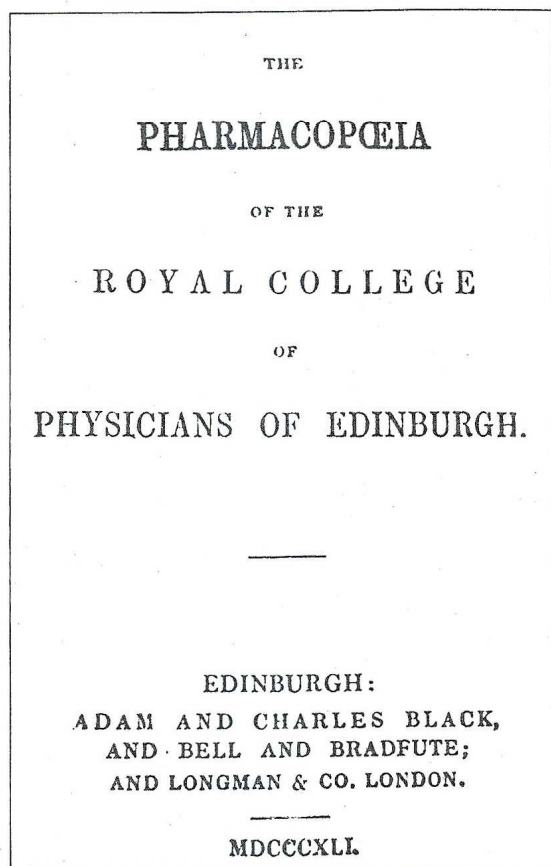
In contrast with the London College, the Edinburgh College issued revised editions every ten or twelve years, until the last one was published in 1841. A second followed in 1722, a third in 1735, a fourth in 1744 and a fifth in 1756. A sixth followed in 1774, a seventh in 1783 and an eighth in 1792. This trend continued into the nineteenth century; a ninth edition appeared in 1803, a tenth followed in 1805, an eleventh in 1817, a twelfth in 1839; and the thirteenth and final edition appeared in 1841.



First edition of the *Edinburgh Pharmacopoeia* 1699

The early editions of the *Edinburgh Pharmacopoeia* followed a traditional format and were arranged in three sections. Part 1 was a list of simples, about 50 pages long, subdivided into those of animal, vegetable and mineral origin. Part 2 contained about 150 pages of preparations, subdivided into 17 or 18 categories. Part 3

contained about 50 pages of chemical medicines, again subdivided by source. Successive editions illustrate the gradual evolution of therapeutics. In the 1774 edition the term simple was discarded in favour of materia medica, and the subdivisions discarded. Parts 2 and 3 were merged into a single one called preparations and compositions.



Title page of the *Edinburgh Pharmacopoeia* 1841

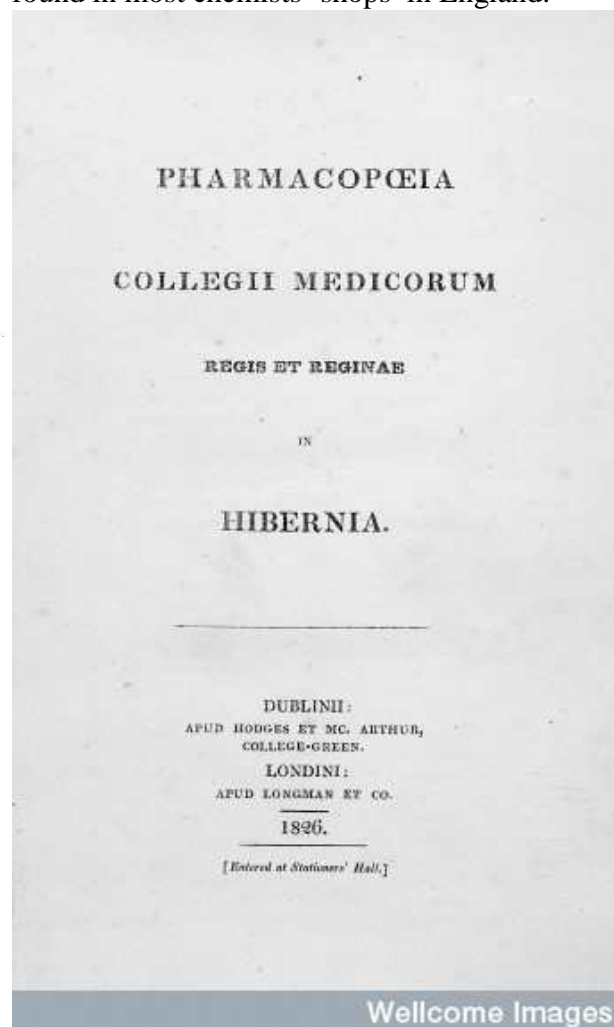
The Dublin Pharmacopoeia 1807 to 1856

The Dublin College of Physicians was younger than both the London and Edinburgh Colleges. A Specimen Pharmacopoeia was published in 1794, and another in 1805. These were circulated only amongst members of the College. A first edition of a *Dublin Pharmacopoeia* was printed in 1807. It had been several years in its preparation, and was chiefly compiled by a Dr Percival, who was professor of chemistry in the university, who acted under the surveillance of a committee of the College.

About six years later, in 1813, Dr Percival started a series of experiments preparatory to the

production of a new edition. He was assisted by a Mr Donovan, who later went on to be a professor in Dublin, but after two years he found the task too onerous at his advanced stage of life and abandoned it.

He was succeeded by Dr Barker, who had taken up the chair in chemistry. A committee was appointed to assist Dr Barker, and the second edition eventually appeared in 1826, in Latin. Shortly afterwards, Dr Barker published an English translation, with notes and commentaries, on the various chemical processes. A second part relating to the galenicals, or natural products, was produced by Dr Montgomery. It was noted that the *Dublin Pharmacopoeia* was little if at all circulated in England, although the chemical processes were quoted in other publications such as *Thomson's Dispensatory*, which was to be found in most chemists' shops in England.



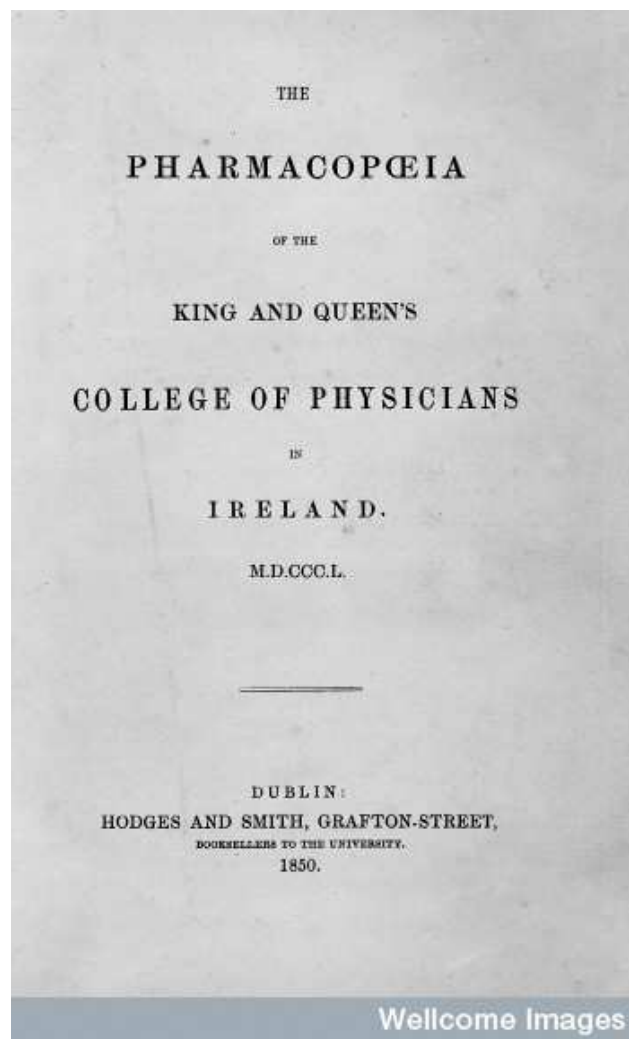
First edition of the *Dublin Pharmacopoeia* 1826

The period between publication of the 1824 and 1836 editions of the *London Pharmacopoeia* respectively was one of some confusion amongst those compiling them. The 1824 *London Pharmacopoeia* rapidly became out of date as a result of rapid progress in the science of chemistry; a new edition was anxiously anticipated. Some delay occurred as a result of plans to compile 'not as before a *London Pharmacopoeia* but one which should include Scotland and Ireland with England.' For this purpose 'it was requisite to consult with the Fellows of both colleges, and as, on account of the great distance, this was with difficulty accomplished', the college was 'constrained to abandon the negotiation which had been commenced'.

There was however another obstacle to the project which added to the delay. There was a considerable stock of the *Dublin Pharmacopoeia* which would have to be disposed of at great loss to the publisher or the college, if amalgamation of the three Pharmacopoeias had taken place at that time. The great distances between Ireland and both Scotland and England was considered an insurmountable barrier to union as neither railways nor a postal service were in existence.

A third edition of the *Dublin Pharmacopoeia* was published in 1850. The first two editions were issued in Latin; the third in English. There was another important innovation in the third edition; a new system of weights was introduced. In place of the long-established apothecaries' weights, the Imperial system was adopted. It consisted of the troy grain, the avoirdupois ounce and pound, and a new scruple and drachm differed in value from those previously in use. However, it was later shown that these changes were unauthorised by the law, and that the use of such weights would be illegal.

The third edition was reprinted in September 1856. It was issued with a supplement, aimed at guarding against accidents in dealing with poisonous substances. It was ordered that 'angular bottles or vessels, and none others, be employed in the dispensing of all medicines intended for external use' and that 'round bottles or vessels, and none others, be employed in the dispensing of all medicines intended for internal use'.



Last edition of the *Dublin Pharmacopoeia* 1850

A list was appended comprising 33 articles of materia medica and 130 preparations to which the order was to apply. These regulations were to apply only to Ireland, but were enunciated with the apparent authority of an Imperial law. The appearance of the Irish poison regulations attracted a lot of attention amongst English pharmacists, and the matter was discussed at length at a meeting of the Pharmaceutical Society of Great Britain in London. All speakers concurred in disapproving of the scheme, which they agreed was both visionary and impracticable.

By 1850 there was widespread recognition of the problems resulting from differences between the London, Edinburgh and Dublin Pharmacopoeias. Peter Squire had long tried to get agreement on the strength and

composition of all medicines ordered under the same names in the three pharmacopoeias. He had also proposed the equalisation of the neutralising power of the diluted acids. This was adopted in the third edition of the *Dublin Pharmacopoeia*. But other discrepancies between the different pharmacopoeias were increased rather than diminished. There was a clear need for standardisation across the three pharmacopoeias.

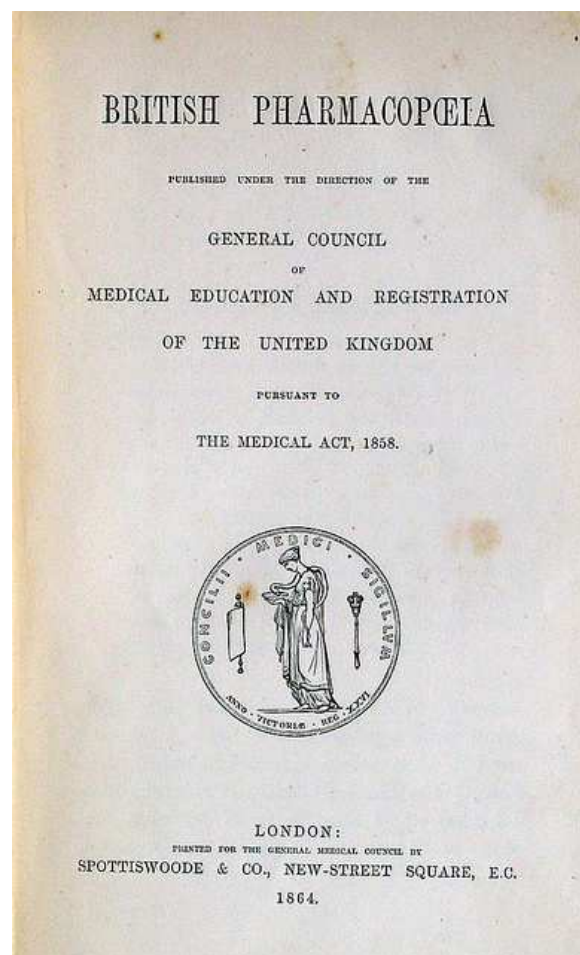
The British Pharmacopoeia 1864 to present

The idea of a *British Pharmacopoeia* was first suggested in the Medical Act of 1858, which established a pharmacopoeia committee to compile it. The later Medical Act of 1862 declared that the new pharmacopoeia was to 'supersede the London, Edinburgh and Dublin pharmacopoeias'. The task of the pharmacopoeia committee was to come up with something suitable for the whole of Britain. In the mid-nineteenth century selection of drugs was largely subjective, being based mainly on the experience and opinions of prescribers and users.

The committee submitted its draft manuscript to the full General Medical Council on 20 May 1862. The Council appointed an Executive Committee to carry out the printing and publication of the new work, and the first edition of the *British Pharmacopoeia* was published in 1864, with 28,000 copies being printed. However, the first edition contained a large number of errors, and work on a second edition began almost immediately. This work was undertaken by a committee of four members of the General Medical Council. This time they accepted help from a Mr Warrington of the Society of Apothecaries and Dr Theophilus Redwood of the Pharmaceutical Society to do the editorial work under the committee's direction. The second edition of the BP appeared in 1867; 40,000 copies were produced.

An Addendum to the *British Pharmacopoeia* 1867 was published in 1874, and work began almost immediately on a third edition. The work was again undertaken by a committee composed of eight members of the General Medical Council, supported by three distinguished pharmacists as editors. This time a clear policy was established to determine which

new medicines and compounds should be included, and the committee also received suggestions from several medical bodies, medical practitioners, and pharmacists. The third edition of the BP was published in 1885. Nearly 45,000 copies were sold, more than the second edition.

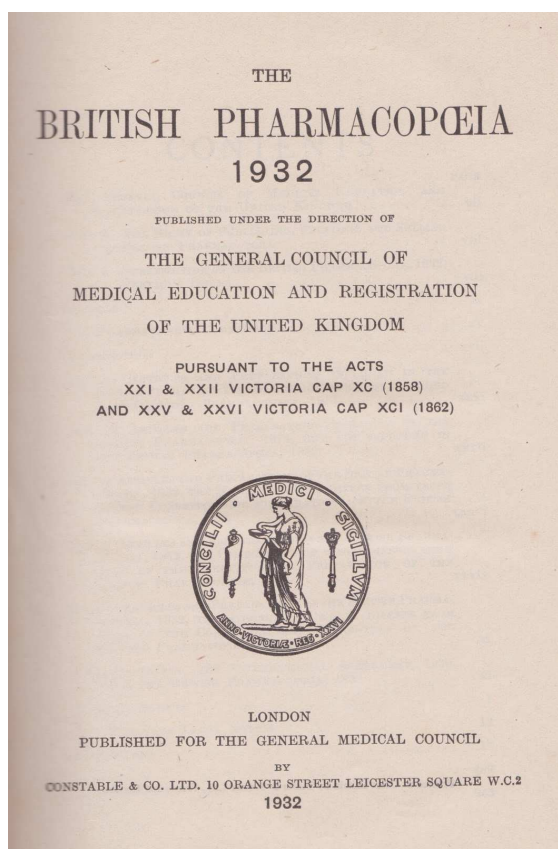


First edition of the *British Pharmacopoeia* 1864

An addendum appeared in 1890, containing an additional thirty-four items. These followed an invitation to several medical authorities to send in 'a list of such new medicines and compounds as possessed or appeared to possess well-recognised medicinal value, and which had received the general approval of the medical profession'.

Developments in pharmacy in Britain later in the century were increasingly influenced by developments in science more generally. Adulteration Acts in 1860 and 1872 had raised awareness of the need to bring chemical,

biological and bacteriological, as well as medical, expertise to the analysis of food and drugs. One of the pharmacists working on the BP, John Attfield, presented nine annual reports to the pharmacopoeia committee of the General Medical Council between 1886 and 1894, documenting evidence to be considered in its revision. Censuses of prescriptions were made, to provide statistical information about the use of drugs to assist selection for the new edition. All this information was drawn together by Attfield, who was by now its editor. The fourth edition of the *British Pharmacopoeia* was published in 1898. References to it started to appear in advertisements for popular medicines, confirming its status as a means of conveying to the public confidence in the quality and reliability of drugs.



Sixth edition of *British Pharmacopoeia* 1932

By 1898 the *British Pharmacopoeia* was being used not only in Great Britain and Ireland but also throughout the burgeoning British Empire. But the products it contained were not always suitable for tropical climates or in places where religious sensibilities meant that products

from animals such as cows and pigs could not be freely used. As a result an *Indian and Colonial Addendum to the BP* was published in 1900, and a Government of India edition of the addendum appeared in 1901 with yet further amendments.

In September 1904 the General Medical Council wrote to the India Office inviting suggestions from India for additions, deletions, and other modifications to be taken into account in preparing a new edition of the BP. The chairman of the British Pharmacopoeia Committee drew the attention of the Secretary of State for India to the preface of the *Indian and Colonial Addendum* of 1900, in which it was stated that this publication was 'preparatory to the ultimate production of a complete imperial pharmacopoeia.' The next edition was just that.

For the first time the General Medical Council entrusted the general supervision of the pharmacopoeia entirely to its Pharmacopoeia Committee. It was produced under the joint editorship of a doctor and a pharmacist. Its content reflected the growth of organic chemistry and manufacturing processes during the previous decade, by including aspirin, barbitone, heroin and chloral, amongst others. Those items in the *Indian and Colonial Addendum* that had stood the test of time were included in the general body of the fifth edition of the *British Pharmacopoeia*, in 1914. It thus included a wide range of drugs of Indian origin, and was now considered as 'suitable for the whole British Empire.' The BP 1914 became official throughout the empire.

After the First World War all aspects of public life came under scrutiny, including the workings of the BP. A Committee of Enquiry, under the chairmanship of H P Macmillan, was set up to advise on what changes were needed. The Macmillan Report appeared in May 1928. It recommended the formation of a Pharmacopoeia Commission, responsible for producing the BP. The first meeting was held in November 1928, and the sixth edition of the BP was published in September 1932. It was another sixteen years before the next edition in 1948, although seven addenda appeared between 1936 and 1945.

Subsequent editions of the *British Pharmacopoeia* were published at five yearly intervals between 1953 and 2008. Since 2008 it has been updated annually.

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