

AMERICA'S PRE-PHARMACOPOEIAL LITERATURE*

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SUMMARY

The pharmacopoeia, whether official or quasi-official, represents a noteworthy responsibility and maturity in medical and pharmaceutical professional development. The absence of a high level of development in the British American colonies therefore accounts for the absence of any indigenous American pharmaceutical literature in the colonial period. By the same token, as medical education and science improved and as pharmacy developed autonomy in the early national period, there followed a burst of publications that preceded the issuance of the first Pharmacopoeia of the United States of America in 1820.

The pharmacopoeias, and especially their robust offspring, the dispensatories, were important works of reference for the physician and the pharmacist. Indeed, the medicaments the general practitioner prescribed were perhaps of more immediate concern to him than theories of disease and niceties of anatomical discoveries.

This study will present the pre-pharmacopoeial literature in use in America, both imported and domestic, and present something of scope and significance of these works. In the term *pre-pharmacopoeial literature* (that is, works that appeared before the advent of the first *Pharmacopoeia of the United States* in 1820) are included¹ pharmacopoeias authorized by organized medical bodies, in America and abroad²; dispensatories, i.e., commentaries by one or more men, based on pharmacopoeias, including lengthy descriptions of the materia medica and phar-

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maceutical instructions; and³ works that used the title *pharmacopoeia* or *dispensatory* without carrying the force of either organizational or governmental authority. This leaves out herbals and recipe books that were primarily for non-pharmacists, scientific original treatises on the materia medica or medical botany, and similar books.

BOOK IMPORTS FROM EUROPE

It could hardly be expected that sixteenth and seventeenth century European pharmacopoeias would be common in the American colonies, yet not a few were to be found. For example, the *Enchiridion medicum* which contained an *Antdoterie* of 50 pages, was one of the first medical books mentioned in colonial records¹. Among others mentioned in the records were J.J. Wecker's *Antidotarium*, Schroeder's *Pharmacopoeia medico-chymica*, Valerius Cordus's *Dispensatorium*, and the *Pharmacopoeia Augustana*.

More common than these, in the eighteenth century, was the *Pharmacopoeia Londinensis* and the *Pharmacopoeia Edinburgensis*. Although the former had been issued in 1618, no record of its use in the colonies in the seventeenth century, in the original Latin, has come to light. In the next century, however, there is frequent mention of both these works in the hands of physicians and libraries throughout the colonies.

But a pharmacopoeia in Latin was not the handiest of tools for the average rough-hewn colonial practitioner. Much more useful was the translation of the pharmacopoeia and the amalgamation of such translations into the *dispensatory* a class of pharmaco-medical literature for which the British were noted. Works by Culpeper, Salmon, Quincy, Fuller, Bate, Lewis, Healde, James, and Shaw, and a dozen other authors, were in use in the colonies. Most important were John Quincy's *Pharmacopoeia officinalis & extemporanea: or, a complete English dispensatory* and William Lewis's *The new dispensatory* and its successor *The Edinburgh new dispensatory*.

Contemporary pharmacopoeias and dispensatories (it must be noted that the terms were often used interchangeably in those days) from non British sources were also in use. The list, in libraries and in bookseller's offerings, includes Lémery's *Dictionnaire universelle des drogues simples* and his *Pharmacopée universelle*, Baumé's *Elémens de Pharmacie*, Renou's *Pharmacopoeia*, Poterius's *Pharmacopoea spagyrica*, Bauderon's *Pharmacopée*, Gaubius's *Libellus de methodo concinnandi formulas medicamentorum*, Triller's *Dispensatorium pharmaceuticum universale*, the *Pharmacopoea Amstelredamus*, the *Pharmacopoeia Hagiensis*, and the *Pharmacopoea Leidensis*.

Several specialized British formularies were also to be found in America before 1820. These included Banyer's *Pharmacopoeia pauperum*, the *Pharmacopoeia* of Guy's Hospital, the *Pharmacopoeia* of the Royal Hospital at Edinburgh, and Wilson's *Pharmacopoeia chirurgica*.

The library holdings of such titles are not extensive but they appeared in a variety of collections: the libraries of physicians, of hospitals, of academic institutions and of library companies, and of private libraries of men of letters and substance. Thomas Jefferson, for example, had no fewer than fourteen items that fit into this discussion. There was obviously a place for such works in medical practice. In Philadelphia, John Morgan's lectures, late in the eighteenth century, included *some critical lectures upon the chief preparations contained in the Dispensatories of the Royal Colleges at London and Edinburgh*. Such works most certainly have served as handbooks for pharmacists as well. The shelves of the Pasteur-Galt Apothecary Shop in Williamsburg, Virginia, for example, contained Shipton's *Pharmacopoeia Bateana*, Baumé's *Elémens de Pharmacie*, *The Edinburgh new dispensatory*, the *Pharmacopoeia Edinburgensis* and Tazewell's *Vade-mecum medicum*.

It is not surprising that John Redman Coxe referred, in 1806, to *Dispensatories in common use in America*; that the Massachusetts Medical Society said, in 1808, that *foreign works of this nature were in the hands of every physician and*

apothecary; and that the pharmacopoeia committee of the New York Hospital spoke, in 1816, of the *numerous and varied Pharmacopoeias and Dispensatories in common use*². There was, indeed, considerable interest in developing American pharmacopoeias. The College of Physicians of Philadelphia indicated an interest as early as 1787, the Connecticut Medical Society in 1796 and 1815, and the Medical Society of South Carolina in 1798³. None was successful, but the Massachusetts Medical Society was successful in 1808, as will be seen, and the New Hampshire Medical Society adopted the Massachusetts Pharmacopoeia as its own. The *Medical repository* commented in 1808 that *An American Pharmacopoeia has long been considered a desideratum in our medical literature* — the term *desideratum* had already been used by Dr. Benjamin Smith Barton in this connection, and was to be used again by Dr. James Thacher⁴.

AMERICAN PUBLICATIONS, 1720-1820

American publications having the character of a pharmacopoeia or dispensatory, or self-characterized as such by their titles, fall into three categories: (1) German-American *Arzneybücher*, mainly veterinarian, (2) home medical books, for laymen primarily, and (3) professional compilations primarily for professional use.

Veterinary Drug Books. German-American Style

The earliest book of its kind to appear in North America was the *Nachrichters oder nützliches und aufrichtiges Ross-Arzneybüchlein* by the executioner-veterinarian Johannes Deigendesch, printed at Germantown, Pennsylvania in 1770. It provided remedies for various diseases for cattle, fowl, and other farm animals as well as horses. It apparently was as popular in America, where it was printed at least four times, as it seems

to have been in Germany, where the first edition had appeared in Freiburg in 1716, and not a few other editions followed as late as 1857⁵.

This popularity, nineteenth-century critics pointed out, was a result of the superstitions it contained⁶, but its popularity helped bring forth a series of similar publications. It was soon followed by the *Wohleingerichtetes Vieh-Arzney Buch*, published anonymously, first in Philadelphia in 1771. It was less prone to bizarre cures and polypharmacy than was Deigendesch, but it too was full of absurdities (to the twentieth-century observer) and crudities. In 1790 a long series was begun under the title *Kurzgefasstes Arznei-Büchlein für Menschen und Vieh* first published at Ephrata and later elsewhere in Pennsylvania. It copied a work that purportedly was published originally in Vienna and its frequent appearance—thirteen imprints of it appeared between 1790 and 1803—attested to its considerable popularity.

There also appeared at Ephrata, again anonymously, a *Kurzgefasstes Ross-Arney Büchlein* in 1802. It too gained considerable popularity and appeared under its own title, and appropriated by other authors, under other titles, at least four times thereafter.

The last of these books to call themselves *Arzneybücher* were Heinrich Neff's *Das durch viele Curen bestaetigte und sicher befundene Pferdartzney-Büchlein* (Ephrata, 1804) and Johann A. Zeller's *Durch viele Curen bestaetigtes Ross-Arzney-Büchlein* (Harrisburg, 1806). As similar as their titles, these two were both more substantial than their contemporaries, and represent an advance from the folk remedies that characterized these contemporaries.

Domestic Medicine

The *Kurzgefasstes Arznei-büchlein* noted above was for people as well as for animals, but the many similar works, and

works that were essentially intended as domestic medicine guides, produced by the Pennsylvania Germans, although they usually included *Mittel* and *Recepten*, did not name themselves *Arzneybücher*⁷.

The first work in English on domestic medicine (or related works on shipboard medicine) to include what was called a *dispensatory* was the ubiquitous *Domestic medicine* of William Buchan. This work had been published in the British colonies at least three times before the American Revolution⁸ and at least 25 issues appeared between 1784 and 1820 (and many thereafter, as well). Included, as noted on their title pages was a *Dispensatory for the Use of Private Practitioners*. This Buchan added to his work in his third British edition (London, 1774).

The dispensatory appeared as an appendix of 35 to 55 pages. It was divided into a catalogue of simples, listing more than 180 items and numerous preparations for *private practice*. The preparations were classified into about thirty categories and covered the whole gamut of dosage forms. There were directions for preparing and compounding, and instructions on dosage and the application of remedies. The keynote of his work was simplification: chemical and complicated preparations were omitted, coloring ingredients were omitted, and what he considered needless ingredients were eliminated. He opposed complicated formulas when a *few grains* of a simple might be effective⁹.

Buchan apparently intended his book for *the ladies, gentlemen and clergy who reside in the country and those well disposed people...who are willing to supply... medical advice to the poor*¹⁰, but it seems unlikely that the layman could stock all of the medicines that were included and perhaps even more unlikely that he could follow some of the directions called for by the formulas.

Although Buchan was hardly alone in the field of domestic medicine, no other such work that included a *dispensatory* appeared until James Ewell published *The Planter's and mariner's medical companion...to which is subjoined a dispensatory*

(Philadelphia, 1807). His *dispensatory* covered twelve pages and the book was similar to many others issued for use on shipboard and plantations. The book received harsh criticism, and some praise from medical journals¹¹, but it became popular enough to justify eleven editions, with varying titles, five of them before 1820.

In 1808 there appeared, also in Philadelphia, the *first American from the fourth London edition* of Richard Reece's *Medical guide*. Reece, known in Britain as something of a quack¹², offered a *Family Dispensatory* of 60 *prepared remedies*, including magnesia, castor oil, paregoric, ether, emetic tartar, and such, with directions and dosages, and 53 *family prescriptions*.

In 1813 there was published in Cincinnati *The Indian doctor's dispensatory, being Father Smith's advice respecting diseases and their cures* by Peter Smith. The author, a medical practitioner with no academic training, tried his fortune in Virginia, the Carolinas, Georgia, Tennessee and Kentucky, before settling in Ohio. He believed that *nature [had] made him a physician*, and that he had been *somehow providentially prevented* from becoming a regular practitioner¹³. His *Dispensatory* reflected this belief. It purported to tell the secrets he had learned from his father who was a *home old man or Indian doctor*, and to disclose certain old German recipes¹⁴. Perhaps Smith's greatest claim to fame was that Rafinesque quoted him¹⁵.

Finally, in 1817 and again in 1818, there appeared in Baltimore *The American domestic medicine...containing...a dispensatory* by Dr. Horatio G. Jameson. It contained a *Dispensatory or Materia medica* of 72 pages, including a five-page list of vegetable, mineral and chemical remedies obviously selected by a professional. (Dr. Jameson was a noted surgeon who wrote widely on surgical topics)¹⁶. Reminiscent of Thacher (see below) Jameson classified remedies by function, and, like Buchan, his pharmaceutical procedures were sometimes beyond the capacities of the domestic consumer for whom the book was intended.

As was to be expected, such works in domestic medicine drew considerable professional criticism. They *are in the highest degree pernicious to society* wrote the *Baltimore medical and*

Physical recorder, when commenting on Ewell's work¹⁷. The *Edinburgh medical and surgical journal* deemed it inexpedient to take notice of [Reece's] publication...so long as [he] confined himself to everyman who would be his own doctor¹⁸. When Reece's work was translated into German, it was said to have been carefully edited so as to prevent *bungling [and] harmful self-medication*¹⁹.

Yet Buchan's work enjoyed a professional acceptance, if we can judge from autographs and from copious notations found in copies of the work. Certainly the work gained prestige in the 1790s when two eminent Philadelphia physicians, Isaac Cathrall and Samuel Griffitts²⁰ each edited issues of *Domestic medicine*²¹. Both purported to adopt the book to American climate and diseases and their editing offered additions, deletions and annotations. Most important, Griffitts, who was Professor of Materia Medica at the University of Pennsylvania at the time of his first edition, was later to be active in the preliminary explorations for the *United States Pharmacopoeia*. He thus provides a link between works on popular medicine and the development of the *United States Pharmacopoeia*.

Professional Publications

The history of pharmacopoeial literature either published in America or written by Americans begins with the first full-scale medical book published in British North America. This was Nicholas Culpeper's *Pharmacopoeia Londinensis or the London Dispensatory* published in Boston in 1720²². Originally a product of the Puritan Revolution in which *the spleen of a roundhead* is splattered throughout, the book is noteworthy as a giant step by which a homely version of classical medicine crossed the Atlantic. Culpeper took many liberties with the London *Pharmacopoeia*, particularly with regard to his treatment and arrangement of medicines in Galenic terms. He appended to his work *A Key to Galen and Hippocrates, their System of Physic*.

The influence of this edition of Culpeper's work on medical practice is difficult to assess. There is good reason to suppose that it became a housewife's handbook²³, but since its basis was the second edition of the official London *Pharmacopoeia*, it may be classified with professional works. It appeared only in the catalogue of Bowdoin College²⁴ and in none of the medical libraries in the period under discussion.

The next works for professional use were brought forth by the American Revolution. These were two original hospital formularies, both in Latin. One was for the American forces, the other for the French forces. The first is now known as the *Lititz Pharmacopoeia* from the town of Lititz, Pennsylvania, noted in the date-line of the preface, where an army hospital was located. The booklet was published in Philadelphia in 1778 and although its author is not named on the title page, he is known to be Dr. William Brown, Physician General of the Middle Section of the American Army. The title of this small pocket manual is worth presenting in detail (in translation): *Pharmacopoeia of simples and efficacious remedies for the military hospital belonging to the United States of America especially adapted to our present poverty and straitened circumstances, due to the ferocious inhumanity of the enemy and cruel war brought upon our fatherland*. The *Pharmacopoeia* did indeed reflect poverty: the book was much shorter than the hospital formularies of Great Britain; it provided for such *universal potions* as barley water, rice water, and toasted bread water and it allowed not a few *quid pro quos*, linseed oil for olive oil, for example.

Dr. William Brown had taken his M.D. at Edinburgh in 1770 and the *Lititz Pharmacopoeia* reflected this background. His sources were the *Pharmacopoeia Edinburgensis* of 1756, the *Pharmacopoeia of the Royal Hospital of Edinburgh*, the *Pharmacopoeia Londinensis* of 1746, and *Pharmacopoeia contracta* of the Beth Holim, the Portuguese hospital in London²⁵.

The *Lititz Pharmacopoeia* was important and useful enough for Dr. Benjamin Rush to use it, and to warrant reprinting in 1781, this time with Dr. Brown's name on the title page.

The second Revolutionary formulary was the *Compendium pharmaceuticum written for the French military hospitals in North America* by Jean Francois Coste, Chief Physician to the French army under Rochambeau. Compiled and printed at Newport, Rhode Island in 1780, it was even smaller than the Lititz *Pharmacopoeia*, containing but 16 pages. There is internal evidence that Coste made use of the *Codex Parisiensis*, but he obviously wanted to make the formulary as simple as possible. The title page thus pointedly carried a quotation from Horace reading, *Whatever you prescribe, let it be brief*, and the preface, reflecting the ideology of the times, recommend that *the more simple the medicament, the better and more productive of results it is apt to be. Simple medication is particularly appropriate to men guided by the idea and hope of liberty and who aspire to and attempt to accomplish heroic actions.* An American army physician was sharply critical of the abbreviated materia medica and later Coste, in response to such criticism, stated that *Nevertheless, we did not use a tenth part, perchance, of the approximately 100 formulae which it contained*²⁶.

The first professional work published in America that attained a wide circulation and influence was the *Edinburgh new dispensatory*, a work that enjoyed an international reputation and was to be copied on the continent in at least five languages and that was to be heavily plagiarized in Britain²⁷. In 1791 printer Thomas Dobson in Philadelphia issued what he termed a *new edition* of the work, copying the second edition put out by Andrew Duncan, Sr. in Edinburgh in 1789. In 1796 he reprinted the fourth edition put out by John Rotheram in Edinburgh in 1794. In Walpole, New Hampshire, D. Carlisle, Jr. reprinted the same edition, also in 1796, calling his the *third American from the fourth Edinburgh edition*. When Dobson printed the *Encyclopedia or a dictionary of the arts, sciences and miscellaneous literature*, in 1798, it, like the *Encyclopedia Britannica* it reproduced, included under *Pharmacy* a reprint of the third edition of the *Edinburgh new dispensatory* (without the *Materia Medica*) and under *Materia Medica* a reprint of the pertinent

portion of the earlier *New dispensatory*. In 1805, printer Isaiah Thomas Jr. republished, at Worcester, Massachusetts, the first edition of the *Edinburgh new dispensatory* under Andrew Duncan Jr.'s authorship (Edinburgh, 1803), calling it *The first Worcester edition*. Later, Dr. Jacob Dyckman edited an edition of the *Edinburgh new dispensatory* (New York, 1818) based on the eighth Edinburgh edition and bearing the half-title: *The American Edition of the Edinburgh New Dispensatory. Enlarged and Adopted to the Materia Medica of the United States*. Dr. Dyckman carefully noted his own contributions to the text and index. In the index he starred more than 200 items that he had contributed or altered.

Thus there appeared in the United States from 1791 to 1818 no fewer than five works bearing the title *Edinburgh new dispensatory*.

They were all relatively up-to-date books and contained the materia medica and compositions of the latest London, Edinburgh, and Dublin pharmacopoeias. They were in the forefront of bringing new botanical and new chemical knowledge to North America. Moreover, the *Edinburgh new dispensatory* is important in the history of medical literature not only *Per se*, but as a progenitor of American dispensaries.

In 1790 there appeared the first *general* (as distinguished from *hospital*) *pharmacopoeia* compiled by an American. It was a section of the little known *Vade-mecum medicum* by Dr. William Tazewell of Virginia and published in Paris with a title page bearing also Edinburgh and Philadelphia imprints. In 1800 an *edition altera*, with no textual difference, appeared in Leiden. The *pharmacopoeia* portion of the book covered 79 pages and Tazewell acknowledged that they were derived from his notes as a student at Edinburgh, and from the work of the Reverend Joseph Townsend called *The Physician's vade mecum*. But Tazewell was subject to French as well as British influences. He was in Paris in 1798 and some copies of his work are dedicated to *his dearest classmates in the Parisian Academy*. Thus there were in the book references to French authorities

and the new names of chemical preparations were translated into French as well as English.

The Medical Repository, after a few references to a lack of originality and a criticism, not of Tazewell's nosology, but of nosology in general, went on to compliment the formulae as illustrating *the greater exactness, neatness, and ease of, making up the prescriptions now in use*²⁸. A German critic thought the author displayed little learning and that the book's chief service, referring to the pharmaceutical portion, was its introduction of the new chemical nomenclature²⁹.

The next publication was an American printing of the second edition of Robert Graves's reputable *A Pocket conspectus of the London and Edinburgh pharmacopoeias* (Philadelphia, 1803). *The Medical repository* welcomed it as *a book of reference when works of more detail are not within reach of the practitioner*, and commended particularly *the marks of accentuation to those who are studious of propriety in the pronunciation of medical terms*³⁰.

The first dispensatory of American authorship was the *American dispensatory* of John Redman Coxe, then editor of the *Philadelphia medical museum* and later a member of the faculty of the University of Pennsylvania. Coxe announced the new publication (Philadelphia, 1806) by publishing extracts from the *Edinburgh new dispensatory* and stating that they were to be included in the new work which, *though founded on the basis of the Edinburgh Dispensatory, yet as it is on an entirely new plan, the American editor has ventured to call it the American Dispensatory*. He went on to say that *it was of little consequence which set of formulae is assumed as a standard, provided it be in general acceptance*. He hoped that his work would meet the need for such a standard³¹. Coxe committed [his first edition] *to the public with little deviation from the Edinburgh copy* and included a *Preface to Dr. Duncan's edition of the Edinburgh Dispensatory*. Dr. Duncan, however, referred to Coxe's work as a reprint, but Coxe insisted that his was *a new work inasmuch as the arrangement differs from every other work of the kind*³².

Coxe was later to have a similar exchange with Dr. James Thacher when Coxe introduced into his third edition (1814) *a considerable addition to the Materia Medica, for which he is indebted to Dr. Thacher's very excellent Dispensatory*³³. The latter had been disturbed by some 40 pages *not designated by the customary marks of quotation*³⁴. Coxe indeed appropriated much of the substance of the *Edinburgh new dispensatory*, but he did a great deal of rearranging, added American materials, and provided synonyms for certain drugs in ten languages³⁵. His work enjoyed a considerable popularity and went through four editions before the first *Pharmacopoeia of the United States* appeared in 1820, and five thereafter.

In 1807 the *Philadelphia medical museum* introduced with a view to the future advantage of the American Navy, extracts from Turnbull's *Naval Surgeon*. These included portions of a *pharmacopoeia or dispensatory*, a nine-page section that included 63 *pharmaceutical articles* and eight *local remedies* in quantities to supply 100 men for a year³⁶.

A most important step in the development of pharmacopoeial literature in America was taken with the publication in Boston in 1808 of the *Pharmacopoeia of the Massachusetts Medical Society*. A committee consisting of Drs. James Jackson and John C. Warren worked on this pharmacopoeia for over two years, and when completed it was proudly presented as the *first work of its kind...published in the United States*³⁷. It was in fact the first work by an organized medical group, following the practice of similar bodies of men in Europe. Although the Massachusetts Society acknowledged that it adopted the *Edinburgh Pharmacopoeia as the basis of their own*³⁸, the work was substantially an American document. First, it was eclectic enough to use a variety of sources. Second, it entered indigenous American botanicals into the *Pharmacopoeia* even though some had not been generally accepted into medical practice overseas (e.g. common dogwood and red willow). Third, it did not use all the new names adopted by the British Colleges *because the greater part of them have never been employed by our physi-*

cians³⁹. Fourth, it was printed in English since apothecaries *were not necessarily instructed in Latin* and Latin was not *perfectly suited* to American medical practice⁴⁰. And fifth, it recognized the voluntary basis upon which its acceptance depended in the United States. *The Medical Society*, it stated, is not empowered to require the apothecary's compliance with this Pharmacopoeia, nor does such power seem requisite⁴¹. The Massachusetts *Pharmacopoeia* was said to bear *the marks of great care and accuracy, [to be] executed with singular neatness... [and to do] much honor to the respectable Society from which it proceeds*⁴². However, attempts to have it accepted as a national pharmacopoeia met with failure. (The concept of a national pharmacopoeia then embraced only a national standard accepted and sponsored by the various medical societies. No thought of giving it legal status was voiced, and indeed none was possible in the American social and constitutional milieu of the time.) As already noted, only New Hampshire agreed and apparently only South Carolina troubled to decline, expressing disagreement with the *selection and arrangement*⁴³. Yet the Massachusetts *Pharmacopoeia* not only succeeded in enhancing the interest in a national pharmacopoeia, it was to have a great influence on the substance of that national pharmacopoeia when it came into existence in 1820.

If Coxe's *American dispensatory* was the first of its kind by an American author, James Thacher's *American New dispensatory* (Boston, 1810) was the first to be based to any extent upon an American pharmacopoeia; it was based on the Massachusetts *Pharmacopoeia*. It also acknowledged debts to Manasseh Cutler's and Benjamin Smith Barton's botanical contributions⁴⁴, and to Duncan's *Edinburgh new dispensatory* as well⁴⁵. The book was well received, and its first edition sold a thousand copies *in the short space of two years*⁴⁶. Reviews of it were usually flattering⁴⁷, with special praise reserved for the more than fifty native articles *of real or inputed medical efficacy*⁴⁸. The work reached four editions and the later editions published a favorable report on the work by Massachusetts

Medical Society and an unusual array of testimonials from ten of the leading medical practitioners in New York and four from Philadelphia⁴⁹.

Thacher's *America new dispensatory* presented an arrangement of the materia medica quite different from preceding dispensatories, for he classified medicines on the basis of function, using the nomenclature of William Cullen. In addition, he added an appendix that included sections on the medical use of gases, on galvanism, and on the cultivation of *Papaver somniferum* and the method of preparing opium.

In 1811 appeared a quaint hospital formulary - the *earliest formulary for a civilian hospital* in the United States⁵⁰ - the *Pharmacopoeia [sic] chirurgica in usum Nosocomii Novi Eboracensis* by Valentine Seaman, Lecturer in Clinical Surgery at the New York Hospital. This small work was published, according to its preface, to *facilitate the Clinical practice...to fix the standards of compounds, to lessen the labours of the Surgeon; and to save the students a portion of time*. The book's most interesting feature was its illustrations of bandages, compresses and splints. It contained a list of numerous remedies, some of them without accompanying formulae.

Seaman's booklet was politely received as *praiseworthy* by the *Medical repository*, edited by the author's colleague, Samuel L. Mitchell. Perhaps *with some alteration [it might] become a model for other hospitals*. The reviewer feared, however, that like all abridgments, it would misleadingly *render instruction a short and easy business*⁵¹. But the *American medical and Philosophical register* gave the book a review that must be a classic in personal vilification. The author was accused of *dulness and incompetence...led on by vanity...to usurp the prerogatives of genius and ability*. For his errors in grammar--pharmacopoeia was misspelled on the title page--the author was compared to the *dullest tyro of three months standing at a grammar school*⁵².

Seaman's chief crime, apparently, was daring to publish such a work as an individual project, *for no system had as yet been*

agreed upon by the physicians and surgeons generally⁵³. In 1815, therefore, the physicians and surgeons of the New York Hospital decided to prepare another formulary and appointed Samuel L. Mitchell and Valentine Seaman a committee for that purpose⁵⁴. The work, published in New York as the *Pharmacopoeia Nosocomii Neo-Eboracensis or the Pharmacopoeia of the New York Hospital* was more like a pharmacopoeia than its predecessor. A review in the *Medical repository* (of which co-author Mitchell was senior editor) praised the book for avoiding the *farrago, the superfluity, the factitiousnes* of certain remedies. It was hoped that the book would find a *place on the table of the apothecary and in the library of the practitioner*, but it was intended essentially as a *manual of instruction for the students*⁵⁵. Its sources were given as the pharmacopoeias of the London, Edinburgh and Dublin Colleges⁵⁶. Not a word was said about the Massachusetts *Pharmacopoeia*; however it contained items not found in the *Edinburgh new dispensatory*, but in the Massachusetts *Pharmacopoeia*.

In 1818 Dr. William Meade of Philadelphia edited and translated the *First American from the Third London Edition* of James Wilson's *Pharmacopoeia chirurgica*. Meade restricted his editing to footnote comments for Wilson's work was highly regarded⁵⁷. The *Pharmacopoeia chirurgica* was a substantial book with ample evidence of a critical and selective attitude. Wilson, surgeon and apothecary at Guy's Hospital made use of the pharmacopoeias of the Royal Colleges and of the hospitals of London and Edinburgh, and at least twenty other authorities⁵⁸.

In a revealing comment concerning the history of American medicine, Meade accounted for the presence of many formulae ordinarily considered within the province of the physician alone by explaining that *it should be recollected how difficult it is to draw the line of distinction; surgery and physic are, particularly in this country, so closely connected, that an attendance on the lectures of the professors of Surgery, is very properly a prerequisite for a degree in Medicine*⁵⁹.

The United States Pharmacopoeia

The first Pharmacopoeia of the United States of America (1820) was not unrelated to the past. More than 90 percent of the Massachusetts *Pharmacopoeia* found its way into the newer work⁶⁰. But the advent of the *United States Pharmacopoeia* (as it became known) ended an era. Particularism was implicit in the studied disregard of the Massachusetts *Pharmacopoeia* by the New York Hospital committee, and in the absence of the latter's *Pharmacopoeia* from the library of the Pennsylvania Hospital. The attitude this reflects finally gave way to the emerging spirit of American nationalism. In 1810, the *Medical repository* had pointed out that *Almost every civilized country now has its own pharmacopoeia*⁶¹. (This was an exaggeration: only Spain Portugal, Switzerland, Denmark and Prussia had pharmacopoeias that were operational nation-wide; France's *Codex* dates from 1818 and the three pharmacopoeias in Great Britain were not replaced by a national pharmacopoeia until 1864; German and Italian pharmacopoeias had to await the unification of their countries⁶². *A national Pharmacopoeia*, Dr. James Thacher had written in 1817, *is highly important to our national character*⁶³. One can sense the pride of new nationhood in the statement, after the publication of the *United States Pharmacopoeia*, that it was *the first performance of the kind...compiled by the authority of the faculty throughout a nation, and that it embodied the whole Corpus Medicum, in these free, independent, and United States*⁶⁴. *Let our materia medica, like our government, be simple, but energetic*, pleaded John Redman Coxe. The new pharmacopoeia, he hoped, would set the *example to the world as our country has in politics, which sooner or later will be followed*⁶⁵.

THE PLACE OF PRE-PHARMACOPOEIAL LITERATURE IN MEDICINE AND SCIENCE

The development of pharmacopoeial literature in America is one measure of the development of the medical profession itself. By its nature a pharmacopoeia may be considered to represent an advanced state of medical organization and an expression of professional accomplishment. Thus the publication of Thacher's *American new dispensatory*, for example, was said to be *one of the numerous proofs of the progress of medicine in the United States*⁶⁶.

The desire of attaining status equal to that of European practitioners was motivated by more than pride. There was an undercurrent of desire to improve the materia medica and place it on a more scientific basis. Thatcher's *Dispensatory* was said to make up for the deficiency in Barton's *Collections for an essay towards a materia medica of the United-States* that lacked the *indispensable caution in not specifying more particularly the various circumstances which govern the administration of medicines*⁶⁷. In the same vein, the Massachusetts *Pharmacopoeia* called for the *aid of all scientific men in effecting a revolution...[to replace] all obsolete terms and varying forms of preparation ...with intelligible prescriptions and uniform preparations of medicine*⁶⁸. Similar sentiments were expressed in New York and in Philadelphia⁶⁹.

Another motive behind the development of pharmacopoeial literature was the desire to bring order and uniformity out of a great diversity in prescribing. The absence of a standard pharmacopoeia could mean inferior medicines. Coxe, in presenting his work as an attempt to *form a standard Dispensatory for the United States*, pointed out that the antimonial wine of the London *Pharmacopoeia* was twice the strength of the Edinburgh work⁷⁰. Similarly, the Massachusetts Medical Society hoped its *Pharmacopoeia* would provide needed standards of preparations and language⁷¹, and the *Pharmacopoeia* of the New York Hospital hoped their formulary would *render the physician's*

prescriptions more familiar to each other and provide pharmacists with a uniform standard⁷².

There is also ample evidence that the medical profession believed that the pharmacopoeia would serve as vehicle to improve the practice of pharmacy and to get the pharmacist to more readily accept his role as a compounder (and not a prescriber). The Massachusetts Society expounded upon this idea at some length and contended that it was not only in the interest of the pharmacist to refrain from prescribing, but his *duty to the public* to do so⁷³. In 1817, the *Medical repository* turned its review of the *Pharmacopoeia of the New York Hospital* into an essay on the need for pharmaceutical education, competent pharmacists, and the need for a standard pharmacopoeia⁷⁴. Coxe, too, claiming that many Philadelphia pharmacists were inadequately trained, incompetent and used secret formulas, saw a national pharmacopoeia as bringing unity and sanity⁷⁵.

In conclusion, it is worth having a deeper look into the role and significance of this pre-pharmacopoeial literature. It is quite evident that the works that have been described were well-thumbed books of reference of immediate and practical value to physicians and pharmacists. But the literature also reflected the scientific knowledge and aspirations of the health professions. Thus, not only does the literature document the intimate and creative involvement of the health professions on the advancement of science, but is itself a record of that scientific advance. This was particularly true in chemistry and botany, two sciences that were beginning to bring order and reason to the puzzling maze of drug therapy.

To illustrate, as early as 1770, and again in 1774 and 1783, Benjamin Rush's *A Syllabus of a Course of Lectures on Chemistry* referred the student to the London and Edinburgh pharmacopoeias for details of a long list of preparations that Rush merely named. Dispensatories of necessity included sections on chemistry and in Coxe's advertisement of his forthcoming *American dispensatory* that he published in his *Philadelphia*

medical museum, tables on thermometers and temperatures were included that he was lifting from the *Edinburgh new dispensatory*. The Massachusetts *Pharmacopoeia* conformed with *modern chemical nomenclature*⁷⁶ and had the *Edinburgh Pharmacopoeia* to fall back upon, for that work had introduced the terminology of Lavoisier to replace that of Bergmann in 1803⁷⁷.

New Chemical Doctrines published by Mr. Lavoisier likewise appeared as part of the third to sixth editions of the *Edinburgh new dispensatory*⁷⁸. This meant that in the United States the two 1796 printings likewise included a fifteen-page summary of Lavoisier's doctrines. Thus were *reached a wide body of pharmacists and physicians* and thus were *popularized the new nomenclature [and the new concepts]; the number of individuals and institutions reached by this pharmaceutical work was considerably more than those who received the special monographs on the nomenclature of the new chemistry*⁷⁹.

A similar situation prevailed with regard to botany, for the pharmacopoeia had been in large part a botanical catalogue for centuries. John Bartram, writing to Sir Hans Sloane in 1743, said that *The first authors I ever read were Salmon, Culpeper, and Turner. These James Logan gave me*⁸⁰. Salamon and Culpeper were noted for their pharmacopoeial works. Manasseh Cutler made a number of references to the *Edinburgh* and *London pharmacopoeias*, as in his 1783 *Account of some vegetable productions naturally growing in this part of America botanically arranged*⁸¹.

Jacob Bigelow, in his *American medical botany* had occasion to refer to Thacher's *Dispensatory*⁸² Rafinesque, in his *Medical flora*, not only referred to Peter Smith's *Dispensatory* but also to a number of contemporary British and American pharmacopoeias and dispensaries⁸³. Nathaniel Chapman, in his work on therapeutics, was *Content to refer to any one of the common dispensaries* for information on *trite or subordinate medicines*, but nevertheless mentioned Quincy's and James's dispensaries⁸⁴.

The pharmacopoeia also introduced the new botanical nomenclature. The *Edinburgh Pharmacopoeia* introduced

Linné's morphological characteristics in 1774 and his species and genus names in 1792⁸⁵. Perhaps more important, it was the pharmacopoeia or dispensatory through which the practitioner could be introduced to the new work in medical botany. As has been noted, both the Massachusetts *Pharmacopoeia* and Thacher's *American new dispensatory* used Cutler and Barton as sources for indigenous drugs, and Coxe acknowledged that he too went to Barton for them⁸⁶.

There is a temptation here to recall that some have called the pharmacopoeia a mirror of its time⁸⁷. Specifically, one can find the rancor of the Puritan Revolution in Culpeper's *Pharmacopoeia*, the dire straits of the American Revolutionary Army in the *Lititz Pharmacopoeia*, and the emerging nationalism of the United States in the first *United States Pharmacopoeia*. And in the literature as it emerged we can perceive pharmacopoeial reflections of the parlous state of medicine in the American colonies, and the quickening pace of American medicine after the United States won a life of its own.

NOTES AND BIBLIOGRAPHY

1. For bibliographic details of the works mentioned in this section on *Books from Europe*, the distribution of their use, and documentation for both, see, Cowen D.L., *America's Pre-Pharmacopoeial literature*, Madison, 1961.
2. *Philadelphia medical museum*, 1806, 2, p. 443; *Pharmacopoeia of the Medical Society of Massachusetts*, Boston, 1808, p. vi; *Pharmacopoeia Nosocomii Neo-Eboracensis*, New York, 1816, pp. vi-vii.
3. SONNEDECKER G., Kremers and Urdanás History of Pharmacy, Philadelphia, 1976, pp.255-256; J.C. CLARK, *The famous Dr. Stearns*, Proceedings of the American Antiquarian Society, 1935, 45, p. 370.
4. *Medical repository* 2nd Hex. 5, 1808, 396; BARTON B.S., *Collections for an essay towards a materia medica of the United States*, Philadelphia, 1798, p. 32; THACHER J., *American new dispensatory* 3rd ed., Boston, 1817, p.xviii.
5. Bibliographic details and documentation for the German American books mentioned in this section can be found in COWEN D.L., *Zum Dienst des gemeinen Mannes, insondern für die Landsleute*, in DRESSENDÖRFER W. and MÜLLER-JAHNCKE W.-D., *Orbus Pictus: Kultur- und Pharmaziehistorische Studien. Festschrift für Wolfgang-Hagen Hein zum 65. Geburtstag*, Frankfurt / M, 1985, pp. 43-66.
6. SCHRADER G.W. and HERING E., *Biographisch-literarisches Lexicon der Tierärzte aller Zeiten und Länder*, Stuttgart, 1863, p.98.
7. These books are listed in Cowen, *Zum Dienst des gemeinen Mannes*. loc. cit. [supra] fn. 5] pp.62-65.
8. Philadelphia, 1771, 1772, 1774.
9. BUCHAN W., *Domestic medicine*, Philadelphia, 1784, pp.477-479.
10. BUCHAN W., *idem.*, Philadelphia, 1772, p. vi; Philadelphia, 1784, p.xviii.
11. The *Philadelphia medical museum* 5, 1808, [190]-[196] and the *New York medical and Philosophical journal and review*, 1809, 1, 118 were both critical. The latter commented on one recommendation in the book, *can any directions be more plain, more simple, or more erroneous?* The *medical repository* 2nd Hex., 1808, 5, 389, on the other hand, thought the author *manifested a careful and discriminating mind in condensing so much information in such a moderate compass*.
12. See the *Edinburgh medical and surgical journal* 7 (1811) 101105.
13. SMITH P., *The Indian doctor's dispensatory*, Cincinnati, 1813, p.iv. The *Dispensatory* s reproduced in the *Bulletin of the Lloyd Library*, 1901. Reproduction Series No. 2. *Ibid.*, pp. v-vi.
14. RAFINESQUE C.S., *Medical flora*, Philadelphia, 1828, p. 21.
15. See the list of Jameson's publications in CALLISEN A., *Medizinisches Schriftsteller-Lexicon*, Copenhagen, 1834
16. *Baltimore medical and Physical recorder*, 1809, 1, p.74.
17. *Edinburgh medical and surgical journal*, 1811, 7, p.101.
18. *Allaemeine medizinische Annalen*, 1818, p. 1135.
19. The biographies of both are to be found in THACHER J., *American medical Biography*, Boston, 1828, Vol. 1, pp. 214-216, 275-285.
20. Griffiths's editions were published in Philadelphia in 1794, 1797. 1805 and 1806; Cathrall's editions appeared, also in Philadelphia, in 1797, 1799, and 1801.
21. COWEN D.L., *The Boston editions of Nicholas Culpeper, Journal of the history of medicine and allied sciences*, 1956, 11:156-165.

22. *Ibid.*, p. 165.
23. *Catalogue Library Bowdoin 1821*, p. 61.
24. URDANG G., *Addenda to the 'Lititz Pharmacopoeia* in KREMERS E., *Documents Pertaining to the medical supplies within the North American colonies*, Madison, 1944, pp. [5][22]; Berman A., *The Beth Holim formulary of London (1746)*, *American Journal of hospital pharmacy*, 1960, 17, p. 24.
25. LANE J.E., *Jean Francois Coste, Americana*, 1928, 22, pp. 56, 59.
26. COWEN D.L., *The Edinburgh dispensaries, Papers of the Bibliographical Society of America*, 1951, 45:85-96.
27. *Medical repository*, 1800, 3:54-58.
28. *Medizinisch-chirurgische Zeitung*, 1799, 3, p. 136.
29. *Medical repository* 2nd Hex., 1804, 1, p. 284.
30. *Philadelphia medical museum*, 1806, 2:443-444.
31. COXE J.R., *American dispensatory* 2nd ed., Philadelphia, 1810, p. vii.
32. *Idem* 3rd ed., Philadelphia, 1814, p. 111.
33. THACHER J., *American new dispensatory* 4th ed., Boston, 1821, p. 10.
34. He derived the synonyms from *The dictionary of merchandise*, Philadelphia, 1805.
35. *Philadelphia medical museum*, 1807, 3, cxxix-cxli.
36. *Massachusetts Pharmacopoeia* [supra fn.2] pp. [iii], v.
37. *Ibid.*, p. vii.
38. *Ibid.*, p. 211.
39. *Ibid.*, p. vii.
40. *Ibid.*, p. vi.
41. *Medical repository* 2nd Hex., 1908, 5 396.
42. SONNEDECKER, *op. cit.* [supra fn. 3] p.257; WARING J.J. (ed.) *Excerpts from the minutes of the Medical Society of South Carolina 1789-1820*. (n.p.,n.d.) p.45.
43. *American medical and Philosophical register*, 1814, 4, p.416.
44. THACHER J., *American new dispensatory*, Boston, 1810, pp.7-8.
45. *New England journal of medicine and surgery*, 1813, 2, p. 290.
46. *Ibid.* Also, *Medical repository* 3rd Hex. 2 77-78 (1811) and *American medical and Philosophical register*, 1814, 4, pp. 412-416. The *New England journal of medicine and surgery*, 1813, 2, p. 291, did believe, however, that sometimes European descriptions were used for American plants and might lead to considerable error in the *uniformed and incautious*.
47. *New England journal of medicine and surgery*, 1813, 2, p. 290.
48. THACHER J. *American new dispensatory* 4th ed., Boston, 1821, pp. 3-6.
49. For an extended study of this work, see, SONNEDECKER G., *Earliest formulary for a civilian hospital, U.S.A. Drug intelligence and clinical Pharmacy*, 1972, 6: 425-434.
50. *Medical repository* N.S., 1815, 2, p. 309.
51. *American medical and Philosophical register*, 1814, 4: 602-603,
52. *Pharmacopoeia* of the New York Hospital [supra fn.2], p.vi.
53. *Ibid.*, p. [iii]. See also, COWEN D.L., *The New York Hospital and its pharmacopoeia, New York journal of medicine*, 1973, 73: 900-901.
54. *Medical repository* N.S., 1817, 3: 271-173.
55. *Pharmacopoeia* of the New York Hospital [supra fn.2], p.ix.
56. See, for example, *Edinburgh medical and surgical journal*, 1813, 9, p. 488.
57. WILSON J., *Pharmacopoeia chirurgica*, Meade W.ed., Philadelphia, 1818, Title page, and p.v.

59. Ibid., p. xii.
60. SONNEDECKER G., *Kremers and Urdang's History of Pharmacy* [supra fn.3], p.258. *repository* 3rd Hex., 1810, 1 p. 178.
62. COWEN D.L. and HELFAND W.H., *Pharmacy: an illustrated history*, New York, 1990, p. 137.
63. THACHER J., *American new dispensatory* 3rd ed., Boston, 1817, p. xviii .
64. *Medical repository* N.S., 1821, 6, p. 427.
65. *Philadelphia journal of medical and Physical sciences*, 1820, 1, p.38.
66. *Medical repository* 3rd Hex., 1811, 2, p.74.
67. *American medical and Philosophical register*, 1814, 4, p.416.
68. *Massachusetts Pharmacopoeia* [supra fn.2] p.x.
69. *Medical repository* N.S.3, 1817, 272-273; *Philadelphia journal of medical and Physical sciences*, 1820, 1: 35-36.
70. *Philadelphia medical museum*, 1806, 2 p.443.
71. *Massachusetts Pharmacopoeia* [supra fn.2] p. vi.
72. *Pharmacopoeia of the New York Hospital* [supra fn.2] pp.iv, VIII .
73. *Massachusetts Pharmacopoeia* [supra fn.2] pp. v, vi.
74. *Medical repository* N.S., 1817, 3:268-274.
75. *Philadelphia journal of medical and Physical sciences*, 1820, 1: 35-36, 40.
76. THACHER J., *American medical biography* [supra fn.20] Vol 1, pp.41-42.
77. COWEN D.L., *The Edinburgh Pharmacopoeia, Medical history*, 1957, 1, p. 132.
78. COWEN D.L., *Edinburgh dispensaries* [supra fn.27] p. 92.
79. DUVEEN D. and KLICKSTEIN H., *The introduction of Lavoisier's chemical nomenclature into America*. *Isis*, 1954, 45 p. 278.
80. DARLINGTON W., *Memorials of John Bartram and Humphrey Marshall*, Philadelphia, 1849, p. 304.
81. *Memoirs of the American Academy of Arts and Sciences*. 1783, Boston, 1785, 1: 419, 420, 446, 451
82. *New England journal of medicine and surgery*, 1818, 7 p. 70.
83. Rafinesaue, op. cit. [supra fn. 15] pp.18-21.
84. CHAPMAN N., *Discourses on the elements of therapeutics and materia medica*, Philadelphia, 1817, vol. 1 pp. x, 116-117, 196; vol. 2 pp. 22, 221, 232, 489
85. COWEN D.L., *Edinburgh Pharmacopoeia* [supra fn. 77] p.131.
86. COXE J.R., *American dispensatory* 2nd ed., Philadelphia, 1810, p. 111.
87. URDANG G., *Pharmacopoeias as witnesses of world history*, *Journal of the history of medicine and allied sciences* 1 (1946) 46-70; A. Tschirch, *Die Pharmakopöe ein Spiegel ihrer Zeit*, *Janus*, 1905, 10, p. 281 et seq.

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THE EUROPEAN PHARMACOPOEIA

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SUMMARY

In defining a pharmacopoeia as an instrument for the quality control of medicines in the public health field, the Author illustrates the origin, history and development of the European Pharmacopoeia since the Brussels Treaty in 1948. 20 countries are now applying the European Pharmacopoeia standards; they are based on an international Convention, which is a sort of law-making and institutional treaty.

A pharmacopoeia is a set of standards for ensuring the proper quality of medicinal substances, auxiliary substances, pharmaceutical preparations and other articles, the specifications of which are mandatory in a defined political area. This applies also to the European Pharmacopoeia. A pharmacopoeia is therefore an instrument for the quality control of medicines in the public health field, aimed at ensuring the proper quality of medicines which reach the consumer and patient for the prevention and cure of illness.

Within the framework of 1948 Brussels Treaty the idea of the harmonization of pharmacopoeial standards was discussed by representatives of Belgium, France, Luxembourg, the Netherlands and the United Kingdom, who proposed to establish a common standard for medicinal substances that would be useful and needed in times of war or following catastrophes.

Parole chiave/Key words: Europe - Pharmacopoeia