

Seaman's Pharmacopeia Chirurgica of 1811

Chirurgica of 1811

EARLIEST FORMULARY FOR A CIVILIAN HOSPITAL, U.S.A.

Seaman's Pharmacopeia Chirurgica of 1811

by Glenn Sonnedecker

THE CIVILIAN STRAND OF A TRADITION OF HOSPITAL formularies on American soil begins in the New York Hospital. That is agreed; but which book, and what date? So much attention historically to the military formulary of 1778 ("Lititz pharmacopeia") and the civilian formulary of 1816 (*Pharmacopoeia* of the New York Hospital) obscures the still earlier and extremely rare civilian formulary printed at New York in 1811, the *Pharmacopeia* [sic] *Chirurgica in usum Nosocomii Novi Eboracensis; Being an Account of the Applications and Formulae of the Remedies Employed in the Clinical Practice of the Surgical Department of the New-York Hospital*, by Valentine Seaman, M. D.

At least ten historical writers over a sixty-year period, for example, fasten attention exclusively on the 1816 formulary of the New York Hospital as the beginning.¹ That this view tends to prevail is exemplified by the best among these historical writers, who states that the "Pharmacopoeia Nosocomii Neo-Eboracensis of the Pharmacopoeia of the New York Hospital (1816) by Drs.

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For cooperation: I thank especially the staff of the Malloch Rare Book Room at the New York Academy of Medicine, where I found unusual resources and courtesies; I am also grateful to the Society of the New York Hospital for permission to reproduce the oil portrait of Valentine Seaman, and to the National Library of Medicine and the University of Wisconsin Library for their helpfulness.

Mitchill and Seaman, was as far as can be determined the only formulary for a non-military hospital published before the Civil War."

The present purpose is to redress the historical balance by characterizing the earlier publication of 1811 and sketching its context in terms of the institution in which it arose and of the author who compiled it. The little book is not unknown—merely submerged. For example, in discussing the formulary of 1816, Kremers and Urdang already in 1940 gave incidental recognition (in two sentences) that another formulary appeared five years earlier. But Urdang never saw a copy, and never discussed it further. More recently, David L. Cowen came upon the 1811 book independently; and his half-page commentary is the most extensive and explicit heretofore published—although its significance has been obscured and overlooked because of its incidental place amid a broad survey of *America's Pre-Pharmacopoeial Literature*² My own acquaintanceship with the *Pharmacopeia Chirurgica* . . . arises also from having stumbled upon it among publications by Valentine Seaman listed in Robert B. Austin's bibliography *Early American Medical Imprints 1668-1820*.³ In Austin's survey of sixty-seven libraries, only the New York Academy of Medicine reported having a copy.⁴

While this modest volume may be the oldest civilian formulary published in the United States, the genre it represents goes back at least 4000 years. To ask what we mean by a "formulary" is relevant here, since some definitions seem over-elaborate for historical utility. A



Figure 1. The New York Hospital as it appeared when its first formulary was published in 1811. The central building, grey stone in simple Doric style, was about 124 feet across the front, and 86 feet deep at the ward wings. The hospital faced on Broadway, at Duane Street. The hospital pharmacy was just to the right of the front entrance, on the main floor. A coach house abuts the sidewalk in one corner of the yard. (Reproduced from *An Account of the New York Hospital*, New York, 1811, frontispiece and pp. 7 and 10f, with the cooperation of the National Library of Medicine.)

pharmaceutical formulary is a compilation of written formulas for medications. And a hospital formulary is one primarily intended for use in one or more hospitals. Minor supplements may be made to this simple, basic character before we are obliged to call it something else, such as dispensatory, pharmacopeia, or textbook. Some hybrid forms are typed at the risk of seeming either arbitrary or misleading; but that the earliest known pharmaceutical document may be called a "formulary" seems beyond argument. This Sumerian clay tablet, probably made toward the end of the third millennium B.C., comes from Nippur.⁵ An early example of a formulary written by a hospital official and widely used in hospitals, is the *Kitāb al-Aqrābādhin*, consisting principally of formulas and techniques for preparing medications, arranged according to the forms of administration. The author, a 9th-century physician, became director of the hospital at Jundi-Shapur.⁶ The earliest formularies known in Europe are likewise manuscript compilations from medieval institutions. The concept of adapting such a formulary specifically to surgical needs also has a long tradition, as exemplified in a manuscript work by Roland of Parma already in the 13th century.^{6a}

The tradition of printed hospital formularies can be traced back at least to the 17th century.⁷ And by the end of the 18th century, civilian hospital formularies had become commonplace in the more urbanized parts

of Europe. Formularies for the armies already formed a special category of this type of pharmaceutical literature. Indeed, the first two hospital formularies published on American soil appeared already in the late 18th century for military use in the Revolution—one by the American patriots, the other by the French auxiliary troops.⁸

After the Revolution, efforts to establish a national pharmacopeia proved to be premature. Instead, a *Pharmacopoeia of the Massachusetts Medical Society* appeared in 1808, but was not intended as a hospital formulary. That was the intent of the *Pharmacopoeia Chirurgica* . . . three years later. Deformed in name and atrophied in body, it was a modest manual that the student of clinical surgery, walking the wards of New York Hospital, could readily slip into his pocket: 47 pages plus blank interleaves, 6¼ by 3¾ inches, bound in brown leather.

Character of the Formulary

How should we characterize this earliest known antecedent of a type of literature that still today is "considered the cornerstone to good pharmacy practice in the hospital"?⁹ At the outset it should be admitted that the formulary is limited in scope, defectively organized, and poorly edited. Even its title (as emblazoned on the title page, see page 431), must have seemed a soiled banner for the vanguard of American hospital formularies: Both the first and last words are misspelled "Pharmacopoeia" and "Eboracensis."

The Title.—The book of 1811 will be called hereafter by a short-title, *Pharmacopoeia Chirurgica* . . . , with corrected spelling (to be charitable), since it is correct in the book itself except on the title page.

The term "pharmacopoeia" at this time does not yet imply compulsory drug standards. In the literal etymologic sense (from the Greek), meaning a book "to make remedies," this term has appeared in the title of a variety of pharmaceutical books since the 16th century, both for hospital use and otherwise. In qualifying both the term and concept for his book as a "Surgical" Pharmacopoeia, Valentine Seaman probably followed consciously the precedents of 18th-century authors. For example, the British surgeon-apothecary George Smith appended a "Chirurgical Dispensatory" to his *Institutiones Chirurgicae* . . . (London, 1732). An elaborate book by Robert Dossie was the *Theory and Practice of Chirurgical Pharmacy* . . . ; *Comprehending a Dispensatory for the Use of Surgeons* . . . (Dublin, 1761). The Austrian surgeon Joseph J. von Plenck published *Materia Chirurgica* . . . (Vienna, 1771) and *Pharmacia Chirurgica* (Vienna, 1775), the former on the basic drugs (simples), and the latter complementary volume on formulas and processes for medicinal preparations. Similar books continued to appear both before and after Seaman's *Pharmacopoeia Chirurgica*, in Europe and the United States. This reflects the separate status of surgery in medicine and the special scope of pharmaceutical needs in clinical surgery (possibly also the fact that in some areas, such as Scotland and Ireland, before this time there had been a certain amalgamation of the practice of surgery and pharmacy). The term surgical pharmacopoeia (or surgical pharmacy) in a title therefore categorizes a book such as Seaman's as part of a special strand of the tradition of pharmaceutical formularies, sometimes for use in specific hospitals, sometimes not.

Purposes and Auspices.—There is no reason to believe that Seaman looked beyond the surgical wards of the New York Hospital for the *raison d'être* of his little formulary. He had the students of clinical surgery particularly in mind, and he had recently initiated a lecture course on the subject. His *Pharmacopoeia Chirurgica* provides an early American version of a concept expressed earlier

in Britain: that such a work should provide formulas, with or without commentary, for "those substances of external use, which are, or lately have been received into the *Materia Medica* in regular and sound practice; adding to them, such of those, administered internally, as are peculiarly necessary in the cure of topical diseases."¹⁰

During the five years before Seaman's formulary, three other drug books were published in the United States, each with a far wider scope and broader purpose.¹¹ The *Pharmacopoeia Chirurgica* itself states in a prefatory note the limited intent and circumstances of publication:

To facilitate the Clinical Practice in the Surgical department of the New York Hospital; to fix the standard of compounds employed therein; to lessen the labours of the Surgeon; and to save the students a portion of time, which would otherwise be necessarily expended in noting down prescriptions, at the bedside of the sick; the following Pharmacopoeia was drawn up. It was printed by the students attending the Surgical Wards, for their particular benefit and convenience.

These are valid purposes of a hospital formulary throughout time. But they are fulfilled in such an unpretentious and even defective way—perhaps controlled and approved more by Seaman's students than by his colleagues—that we discern little influence from the formulary in its own time; and as previously noted, it almost drops from sight in the history of American hospital pharmacy in later time.

Arrangement and Content.—In *Pharmacopoeia Chirurgica*, Seaman takes a practical approach to meet average needs, without attempting to display the greater knowledge that he unquestionably had at his command.

The arrangement of the drugs follows an old pattern for formularies: There are two parts, for external medications and for internal medications. The external medi-

Figure 2. The handwriting of Valentine Seaman as it appeared two years before publication of his *Pharmacopoeia Chirurgica*. Excerpt from a note recommending that a patient be exempted from military service. (From the Gilbert Collection, V. 4, p. 13, in the College of Physicians of Philadelphia.)

To Whom it may Concern.

His Attending Physician.

New York Jan 10. 1809.

cations are further subdivided as wet, dry, or unctuous.¹² The internal medications are classified into nine different forms of administration, a small number for the time. These are presented in alphabetic sequence (Decoctions, Infusions, &c).

Under each form of administration the individual preparations are alphabetized in a peculiarly imperfect way. Lacking an index, the formulary escapes confusion only because of the relatively small number of medicinal preparations within each form of administration.

As we expect in a surgical pharmacopeia, the external medications predominate (83, consisting of 13 dry, 40 wet, 30 unctuous) over the internal medications (62), and are especially numerous in such dosage forms as injections, liniments, powders, and ointments.¹³ In addition, the section for "External Applications" devotes nine pages to various types of bandages, compresses, ligatures and splints.

The dichotomous classification of external applications and internal remedies is not unusual in surgical formularies; for example, we see it in Dossie's *Theory and Practice of Chirurgical Pharmacy* . . . and in Joseph von Plenck's *Selectus Materiae Chirurgicae* There were likewise precedents for including bandages and compresses (e.g., von Plenck, 1775), especially when an instructional purpose was to be served.

Like most formularies, the *Pharmacopoeia Chirurgica* provides a table of weights (based on the Troy pound) and measures (based on the wine gallon). It specifies measure by volume, whereas the Massachusetts pharmacopeia three years earlier had specified liquid measure by weight. Unlike most pharmacopeias and formularies of its time, the language of this one is entirely in the vernacular. In the later general formulary (1816) a small bow is made toward the traditional language of the learned when Latin titles are put in first place, following the pattern of the Massachusetts pharmacopeia of 1808 (with English for secondary titles and text).

Simple and spare for a formulary of its time, the *Pharmacopoeia Chirurgica* not only is selective in the number of drugs and dosage forms, but it lists no dosages, no therapeutic indications, and even the compounding instructions are sparse.

In scope the hospital and surgical formularies of the late 18th and early 19th centuries varied widely; and it has not been established which works influenced Seaman directly. At the time the *Pharmacopoeia Chirurgica* was being prepared, he could consult a library of about 1230 titles (perhaps as many as 3000 volumes) at the New York Hospital. That collection is impressive for an American institution of the early 19th century; but it included few drug books—fewer than a half dozen formularies, and I saw only four pharmacopeias cataloged that would have been of current interest (two London pharmacopeias in translation, one Edinburgh pharmacopeia, and the Massachusetts pharmacopeia).¹⁴

To put the size of the *Pharmacopoeia Chirurgica* in some perspective, it may be mentioned that the number of printed pages is comparable to the formulary of 1768 for St. George's Hospital in London, and a bit more than we find in the formulary of 1787 for St. Thomas' Hos-

pital, the scope of neither being limited to the needs of clinical surgery.¹⁵ On the other hand, the 1811 surgical formulary bulks only about a fourth as large as the 1816 general formulary for the New York Hospital, and only about a fifth as large as James Wilson's *Pharmacopoeia Chirurgica* (London, 1810. 235 pp.).

In the number of drugs listed, Seaman's book likewise has a modest scope, 145 drugs, as compared with the British formularies mentioned.¹⁶ For example, in the formulary at St. George's (including both simple and compound drugs), we find 332 items; at St. Thomas', 247; in Wilson's formulary, 280. Moreover, Seaman's surgical formulary lists only about a third as many drugs as would New York Hospital's general formulary in 1816.¹⁷

Reception Accorded.—The few reactions to Seaman's formulary known are not enthusiastic; and several reasons might be inferred: The medical staff did not authorize or approve publication in advance. The range of medications specified seemed limited in comparison to similar contemporary literature. The formulary did not represent an exemplary standard of editing, whether because Seaman was hurried, or just careless in letting others see it through the press. Moreover, some of the nomenclature employed must have seemed oldfashioned to many physicians and pharmacists. For example, what Seaman terms the Decoction of the Woods the Massachusetts pharmacopeia (published three years earlier) calls Compound Decoction of Guaiacum; Infusion of Bark is in the Massachusetts book as Infusion of Cinchona. "Plaster" is used after others are spelling it "plaster"; "rheubarb" after the spelling "rhubarb" is common; "acetite" after "acetate" is becoming popular.

While some might gloss over the defects, the *American Medical and Philosophical Register* finds in Valentine Seaman, M. D., an example of when "dulness and incompetence, led on by the instigation of vanity, are induced to usurp the prerogatives which exclusively belong to genius and ability, to assume first the dignified station of teacher, and next the still more commanding rank of author."

" . . . Until at this time," the reviewer continues, "we could not have supposed there was any man having the least regard for his profession, who would have offered to the public a work so destitute of merit and so abounding in errors . . . errors in science of which we could not suppose any man who had ever received the degree of *medicinae doctor* to have been guilty."¹⁸

The *Medical Repository*, a journal of stature, took a more reserved if unenthusiastic tack. Characterizing the formulary as a "remarkably condensed compendium" the reviewer observes that "a well classed and arranged collection of prescriptions or receipts is praiseworthy, and might, with some alteration, become a model for other hospitals. But we apprehend that, like many other abridged elementary works, pocket dictionaries, *vade mecums*, &c, this is apt to render instruction a short and easy business, as limited as the pages that contain it; and, with all, exposing professional beginners to too much confidence in the sufficiency of their acquisitions."¹⁹

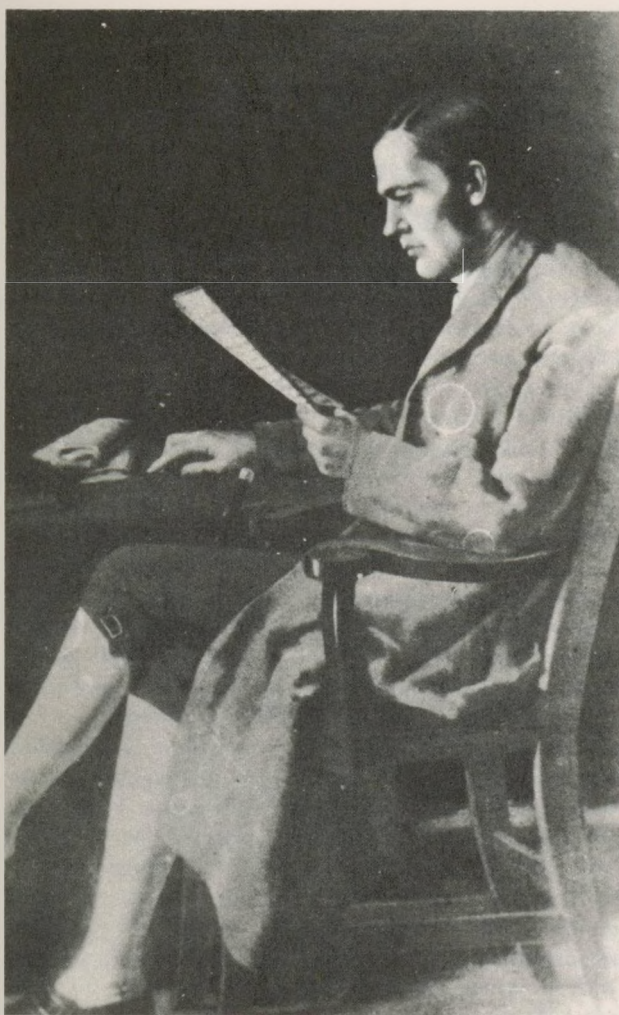


Figure 3. Valentine Seaman (1770-1817), author of the first civilian hospital formulary known to have been published in America. Seaman was averse to having "a likeness taken of himself," according to his son, and this may be the only one extant, other than a silhouette. (Reproduced by the New York Academy of Medicine, with permission, from an oil portrait owned by the Society of the New York Hospital.)*

*The portrait was painted by Lewis T. Ives, perhaps copied from an original attributed to Rembrandt Peale (1816), although such a painting is unknown to the Peale Museum in Baltimore (John A. Mahey to G.S., n.d.). The portrait here reproduced hangs in the office of the Dean, Cornell University Medical College, 525 East 68th Street. (On the painting, see exchange of correspondence under "Seaman" in office of the Librarian, New York Academy of Medicine, S. Bayne Jones and Gertrude L. Annan, June 23 and July 2, 1952; also *The Memorial History of the City of New York* . . . , James G. Wilson, ed. V. 4, 1893, p. 399; on the silhouette, see Valentine Seaman [Jr.] to Wm. H. Macy, March 29, 1887 (photostat in Library, New York Academy of Medicine)

As one reviewer pointed out, it is highly probable that the 1811 formulary never received authorization or approbation from either the medical staff or board of governors of the New York Hospital from whence it arose.

The Institution

The hospital with which the *Pharmacopoeia Chirurgica* is identified has been considered the first of its kind in the New York colony and the second in the United States. King George III chartered "The Society of the Hospital in the City of New York in America" in 1771, twenty years after the organizing of the Pennsylvania Hospital was initiated at Philadelphia. Hospital buildings erected at Broadway and Pearl Street²⁰ on five acres of land (see illustration) did not open for patients until 1791, however, first because of their use as barracks by British forces occupying New York City, then because of a disastrous fire.

The Hospital had about 500 beds during the first half of the 19th century for "chirurgical," medical, and "lunatic" cases. During the year 1811, when the *Pharmacopoeia Chirurgica* appeared, 1657 patients were admitted.²¹

To serve these patients, a hospital pharmacy was located just to the right of the front entrance at ground level (20 feet wide and 16½ feet deep). After a separate asylum was built for the "lunatics," medicines were "sent from the apothecary's shop to the asylum, in like manner as they are sent to the [hospital] wards . . ." ²² An "Apothecary," although authorized already in the charter of the Hospital,²³ could not have gone on duty until sometime after 1790. Nevertheless, the New York Hospital provides one of our earliest records of hospital pharmacy in this country. The only pharmacist was Richard Sadleir when the *Pharmacopoeia Chirurgica* appeared.²⁴ The other members of the professional staff at this time were six attending physicians (including Samuel Latham Mitchill) and four attending surgeons (including Valentine Seaman), plus one house physician and one house surgeon. Whether Apothecary Sadleir played a significant role in editing the formulary remains unknown, but that does not seem probable.

Possibly under British influence, the apothecary customarily (*e.g.*, 1804) made rounds with the house surgeon every morning and evening; and they had to "be prepared to report on the state of the patients to the visiting physicians and surgeons." This duty of the apothecary disappeared from the 1811 revision of the Hospital's by-laws. Thereafter it was a physician who accompanied the surgeon on rounds.²⁵ Another point that required change involved out-patient dispensing. The apothecary had been prohibited from permitting "any medicine to be carried out of the house," to which was added in 1811 the phrase: "except to out-door patients."²⁶

At the time the formulary was in use, the apothecary's duties were stated officially as follows:

I. The Apothecary shall compound and make up all medicines prescribed, agreeably to the formulae

from time to time directed by the physicians and surgeons of the hospital. He shall deliver no medicines which are not ordered by the attending physicians or surgeons, and shall permit no medicines to be carried out of the house, except to out-door patients. He shall put up the medicines intended for each ward separately and shall annex to them labels, containing the names of the patients for whom they are respectively prescribed; and, when necessary, directions for taking them. And he shall send them to each ward by the orderly man, to be by him distributed to the patients.

II. He shall regularly attend the shop, and never be absent, without the superintendent's permission. He shall keep the shop, and everything appertaining to it, clean and in perfect order. He shall carefully observe economy in every thing relating to his department; be particularly prudent and careful in the delivery of medicines, and permit no patient to enter the shop unnecessarily.

III. He shall cause all articles purchased by his department, to be immediately entered, by the persons of whom they are purchased in the pass-book provided for that purpose, with the date, quantity, kind and price of the articles.

IV. He shall keep a book in which the attending physician or surgeon shall enter his directions for the purchase of medicines, &c with the date and quantity to be purchased, and signed with the initials of his name. And the apothecary shall purchase of the persons appointed for that purpose, and of none other, the articles so ordered; but he is strictly forbidden to purchase any thing, except in pursuance of such directions previously entered as aforesaid.²⁷

An Inspecting Committee from the Board of Governors for the New York Hospital was obligated to check "whether they [the patients] are regularly attended by the physicians and surgeons, and whether the apothecary's shop is kept neat and in good order." Moreover, the attending physician and surgeon were to inspect the apothecary shop on the first Monday of each month and to report any impropriety, "whether in the persons furnishing the medicines [to the hospital] or in the apothecary"²⁸

We do not know the qualifications of the apothecaries during these years (no school of pharmacy yet existed); but before appointment as resident apothecary (or as resident physician or surgeon) the candidate had to be at least 21 years old, examined by the physicians and surgeons, and produce testimonials of good character.²⁹

The attending surgeon who lectured to students on clinical surgery had some special interest in drugs since his own years as a medical student, when he wrote *An Inaugural Dissertation on Opium*.³⁰ When his *Pharmacopoeia Chirurgica* went to press, he had been on the staff of the New York Hospital for five years, and would remain there until he died.

The Author

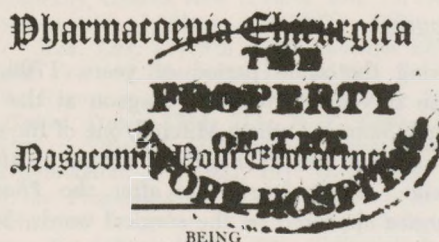
The formularies of 1811 and 1816 are only one reflection of an innovative physician who merits better remembrance in history. He was born into a Quaker family, fourth son of Martha (Valentine) and Willett Seaman, on April 2, 1770, at North Hempstead, Long Island. His great grandfather, Capt. John Seaman, had reached the American colonies from England in 1660.

Seaman's first medical preceptor was Nicholas Romaine of New York, a physician of strong personality and intellect who had graduated in medicine from Edinburgh and who studied also two years in London, Paris, and Leyden. After serving as a resident physician in the City Almshouse of New York, young Seaman went to Philadelphia to study medicine (1791) at the University of Pennsylvania, which awarded him the M. D. degree in 1792. He dedicated his thesis jointly to the commissioners of the Almshouse back in New York and to Adam Kuhn and Benjamin Rush, two renowned professors with whom he had studied.³¹

Only a year after receiving the M. D. degree, Seaman published *A Dissertation on the Mineral Waters of Saratoga; Containing a topographical description of the country, and the situation of the several springs; an analysis of the waters, as made upon the spot together with remarks on their use in medicine, and a conjecture respecting their natural mode of formation; also, a method of making an artificial mineral water, resembling that of Saratoga, both in sensible qualities and in medical virtue* (New York, 1793. 40 pp.). The author claims, probably correctly, that this was the "first production of the kind, that has yet appeared in the state" Indeed, his study is an early example of independent investigation of native products of this country. In revealing here also his interest in drugs and in a centuries-old concept for thus attacking diseases, he proclaims "our duty to search out weapons for their destruction . . . for it is not consistent with our ideas of the goodness of the Deity to suppose that He would have permitted the favourites of his creation to be inflicted with diseases, without having formed [in nature] remedies for their relief."³² This work precipitated an acrid controversy and what Seaman termed a "pompous parade" of opponents "in hostile array against him. . . ."³³

Two years after his work on the Saratoga springs, a yellow-fever epidemic struck New York; and Seaman was soon in print with a tract giving his views on etiology and prevention, and opposing the idea that yellow fever is contagious (in the sense of William Cullen's "contagion"). He believed, from his observations in New York, that yellow-fever foci occur where "refuse water and offal substances, are left to stagnate and putrefy"³⁴ Although as unclear about the etiology as some leading contemporaries were, Seaman was one of the pioneers in using "spot maps" as a modest contribution to modern epidemiology (plotting on a map the dated incidence of epidemic disease).³⁵

Figure 4. (Page 431) Representative pages from the *Surgical Pharmacopoeia* of 1811, reproduced (reduced size) from the rare copy preserved in the Malloch rare Book Room of the New York Academy of Medicine. Shown above is the titlepage and a page from the section on bandages, compresses and splints. Below are the pages illustrative of the character and format of the formulary



AN ACCOUNT OF

THE

APPLICATIONS

AND

FORMULÆ OF THE REMEDIES

EMPLOYED IN THE CLINICAL PRACTICE OF
THE SURGICAL DEPARTMENT OF THE
NEW-YORK HOSPITAL,

BY VALENTINE SEAMAN, M. D.

Lecturer on Clinical Surgery in the New-York Hospital, &c.

NEW YORK:

PRINTED BY SAMUEL WOOD,
No 337, PEARL STREET.

1811.

8 Pharmacopœia Chirurgica.

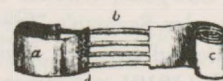
EXTERNAL APPLICATIONS.

Dry.

BANDAGES.

The Four Headed Roller,

should not be more than 3 inches wide and 8 feet long; it should be slit from each end to within $1\frac{1}{2}$ inches of the middle, so as to leave the single space about 3 inches long; this should generally have a hole cut in the center of it.

Issue Fillet.

Part *a*, 3 inches wide and 8 long. The tapes *b*, 8 inches long, and the tail *c*, 18 inches. The eylet holes *d*, when made, must have the tapes passed through them, before they are attached to the tail of the bandage, thereby forming a bow, through which a person may pass his hand, and thus be enabled to draw upon it with the other, so as to dress an issue on his own arm without any one to assist him: on which consideration alone the peculiar advantage of this bandage depends.

22 Pharmacopœia Chirurgica.

INTERNAL REMEDIES.

Wet.

INJECTIONS.

Saturnine Anodyne Injection.

R—Acetite of lead, ℥j.
Distilled water, ℥viij.
Tinct. of opium, ℥ij. M.

Tea Injection.

R—Hyson tea, ℥j.
Boiling water, ℥iv.
Infuse for fifteen minutes and strain.

Vinous Injection.

R—Good port wine, ℥xij.
Water, ℥iv. M.

Sulphated Zinc Injection.

R—Sulphate of zinc, ℥j.
Rain water, ℥viij. *olve.*

Sulphated Zinc Anodyne Injection.

R—Sulphate of zinc, ℥j.
Water, ℥viij. *olve.*
Add tinct. of opium, ℥ij. M.

34 Pharmacopœia Chirurgica.

INTERNAL REMEDIES.

INFUSIONS.

Infusion of Bark.

R—Peruvian bark powdered, ℥j.
Magnesia, ℥j.
Distilled water, Oj.

Add the water gradually and rub them well together for 15 minutes. Let it stand an hour and filter.

Infusion of Bark in Lime Water.

R—Peruvian bark in powder, ℥j.
Lime water, Oj.
Rub them together, &c. as above directed.

Infusion of Quassia.

R—Quassia wood, finely shaved, ℥ij.
Boiling water, Oj.
Infuse for six hours.

Infusion of Horse Radish with Iron.

R—Horse radish root, shaved, 3ss.
Mustard seed, ℥j.
Rust of iron, 3ss.
Cider, Oiv.

Infuse three days.

An innovative bent again was demonstrated when Seaman became an early exponent of cowpox vaccination. The *Medical Repository* had republished in 1798 a British account of Edward Jenner's work on "variola Vaccina." However, vaccination "was not successfully introduced amongst us until the Spring of 1801," about which Seaman reported in the same journal.³⁶ In a manuscript that survives at the New York Academy of Medicine we read in Seaman's own hand that, "With infection fresh from the arm of Governor Sergents domestic, who had been inoculated in Boston by Dr. [Benjamin] Waterhouse and who arrived here on 22nd of 5 mo (May) in due season for his pustule to contain active matter, I succeeded in vaccinating a number of persons, in this City." By December 22 (1801) he had inoculated 53. As to other New York physicians, Seaman remarks bitterly that he had "not yet got a single cooperator among them . . ."³⁷ The resident surgeon of the New-York Institution for the Inoculation of the Cowpock, Samuel Scofield—acknowledging "pupilage" under Seaman's "friendly and instructive guidance"—dedicated his own *Practical Treatise on Vaccina or Cowpock* (1810) to Seaman as the one "who first implanted the germ of vaccination in our metropolis . . . who nobly persevered to establish the reputation of the new inoculation at the hazard of your own . . ."

Besides launching lectures (1811?) in clinical surgery that were reportedly the first systematic instruction of the kind at the New York Hospital, Seaman had opened a pioneering course (1798-99?) in midwifery at the Almshouse of the City of New York.³⁸ For the students of midwifery he published a book containing a syllabus of his course (26 lectures) and the substance of the last three lectures.³⁹ This bold foray, in still another field where many physicians were reluctant to follow, reportedly came more than a decade before the art of delivery was separated from anatomy at the University of Pennsylvania, where "there appears to have been a grudging assent to the propriety of elevating midwifery to an independent and fully acknowledged status . . ."⁴⁰

In the same year that the *Pharmacopoeia Chirurgica* appeared, Seaman joined with his former preceptor, Nicholas Romayne, and others to open a short-lived medical school not far from the New York Hospital.⁴¹

Seaman remained in private practice, despite his other ventures. His professional life at this time can be intimately viewed through a manuscript "Daybook" for May 1, 1808, to January 29, 1811, that he kept while in partnership with Thomas Cock, a fellow instructor in the new medical school abovementioned. It includes a record of the drugs and medicinal supplies purchased for their medical practice from well-known pharmacies, and entries often show what was prescribed for individual patients.⁴² Among medical papers published by Seaman is one that has been considered the earliest contribution to the literature of surgical case-reporting in this country.⁴³

A productive and innovating medical career showed no sign of becoming quietly routine as Seaman reached middle age. Then, while he and Mitchill were preparing the general formulary for the New York Hospital, Sea-

man experienced an "inflammation of the lungs." In June 1817 he died, at age 47.

Epilogue

During the same period of years, 1796-1817, that Seaman served as attending surgeon at the New York Hospital, Samuel Latham Mitchill, one of the most prominent medical men of his time, served as an attending physician. About four years after the *Pharmacopoeia Chirurgica* appeared on the surgical wards, Seaman and Mitchill were to collaborate in preparing a new general formulary for the Hospital.

The *Pharmacopoeia Nosocomii Neo-Eboracensis; or, Pharmacopoeia of the New York Hospital* (New York, 1816, 181 pp.) came off the press just a year before Seaman died. Clearly quite a different book from the earlier one we have examined, it is almost four times larger, contains 430 drugs (if we include the materia medica list), and triples the number of dosage forms. Consistency and clarity are improved, nomenclature modernized, compounding procedures more uniformly included.

Yet, in collaborating on the new book, Seaman did not ignore entirely his earlier work. Old formulas occasionally were absorbed into the more comprehensive formulary, although even these testify by numerous small refinements that in the later book a higher level of professional maturity has been the goal,⁴⁴ as well as a greater comprehensiveness (even after allowing for the broader purpose of the 1816 formulary). Unlike its predecessor, the *Pharmacopoeia of the New-York Hospital* proclaimed that it carried "the Authority of the Physicians and Surgeons of that Institution."⁴⁵

Though this respected and better known formulary of 1816 has obscured its predecessor, the rare little "Surgical Pharmacopoeia" of 1811 no longer can be denied its niche in the history of American hospital pharmacy.

References

1. Chronologically, Charles Rice (*Pharm. Era*, 13(1895): 70); M. I. Wilbert (*Am. J. Pharm.*, 79(1907): 405); Otto Raubenheimer (*Med. Life*, 33(1926): 70); Charles LaWall (*Four Thousand Years of Pharmacy*, 1927, 484); Frank S. McGinnis (*The History of the Development of Drug Standards in the United States*, 1944, 21); E. F. Cook (*FDC Law Q.*, 1(1946): 520); J. Volckringer (*Contribution a l'etude . . . des formulaires . . .*, 1953, 23); G. D. Beal (In: *Founding of the Pharmacopeia*, 1957, 16); Alex Berman (" . . . The Hospital Formulary in the United States," *J. Mondial Pharm.*, No. 1(Sept. 1957): 26); [Editorial] *J. Am. Med. Assoc.*, 174 (1960): 67.
2. (Madison, 1961) 25 f.; for Kremers and Urdang's earlier comment, see *History of Pharmacy* (Philadelphia, 1940), 236. Similarly in my revision of the book (1963), out of a full page devoted to the *Pharmacopoeia of the New York Hospital* (p. 231), only eight lines are allotted to the 1811 book.
3. (Washington, D.C., 1961), 181. It is not listed in the earlier bibliography by Joseph Sabin, *A Dictionary of Books Relating to America from Its Discovery to the Present Time* (28 vols., New York, 1891).
4. I am told that another copy is preserved among archival materials at the Office of the Corporation in the New York Hospital-Cornell Medical Center, 525 East 68th Street, New York, N.Y. This collection is uncataloged and unavailable for public consultation. The copy in the Library of the New York Academy of Medicine (2 East 103rd Street, New York, N.Y.) may be inspected by interested hospital pharmacists.
5. The original is in the University of Pennsylvania Museum. See Martin Levey, *Chemistry and Chemical Technology in Ancient Mesopotamia* (Amsterdam, 1959), 149 ff., or S. N. Kramer, "First Pharmacopeia [sic!] in Man's Recorded History," *Am. J. Pharm.*, 126(1954): 76.
6. The text of the formulary is known only from an abridged Arabic copy (written in 979 A.D. from a manuscript at the Adudi Hospital), which is preserved at the Bayerische Staatsbibliothek (cataloged: Cod. Arab. 808), Munich. See: Sami Hamarneh, "Sabur's Abridged Formulary, The First of Its Kind in Islam," *Sudhoffs Archiv Gesch. d. Med.*, 45(1961): 249 and 255.
- 6a. An illuminated, 14th-century copy of Roland's "La Chirurgia" is preserved in the Bibliotheca Casanatense in Rome. Umberto Tergolina, "La Farmacopea chirurgica di Rolando da Parma detto di Capezzutti," *Revista di Arte e di Storia della Farmacia*; Galeno, 14(1966), No. 3, pp. 14-32. (through Georg E. Dann)
7. For example: Pietri. Paul Pisani, *Antidotarium speciale hospitalis nobilis urbis Messanae* (Messina, 1642) and Pierre Garnier, *Nouvelles formules de médecine, latines et françoises pour le grand Hôtel-dieu de Lion . . .* (Lyon, 1693)—called to my attention by Alex Berman in *Bull. Am. Soc. Hosp. Pharm.* 13(1956), 216. Volckringer is not correct in implying that the physician Garnier first issued his formulary in 1716.
8. *Pharmacopoeia simpliciorum et efficaciorum, in usum nosocomii militaris . . .* (Philadelphia, 1778), attributed to the Physician-General William Brown; and the *Compendium pharmaceuticum, militaribus Gallorum nosocomis, in orbo novo boreali adscriptum . . .* (Newport, R. I., 1780), by the Chief-Physician Jean François Coste. Both are extremely rare. For facsimiles and further information, see especially Edward Kremers, *Documents Pertaining to the Medicinal Supplies within the North American Colonies from 1643 to 1780* (Madison, 1944; republished from the *Badger Pharmacist*, 1937-40).
9. Peter P. Lamy and Herbert L. Flack, "The Hospital Formulary System," *Am. J. Hosp. Pharm.*, 23(1966): 664.
10. [Robert Dossie], *Theory and Practice of Chirurgial Pharmacy . . .* (Dublin, 1761), 53.
11. These were *The American Dispensatory* (1806) by the Philadelphia physician John Redman Coxe; the *Pharmacopoeia of the Massachusetts Medical Society* (1808); and the *American New Dispensatory* (1810) by the Plymouth physician James Thacher. More analogous in character and scope to Seaman's work, although no hospital formulary, is a "pharmacopoeia" (79 pp.) appended to the *Vade-Mecum Medicum . . .* by the Virginia physician William Tazewell (Paris/Philadelphia/Edinburgh, 1798); called to my attention by David Cowen. It consists of a materia-medica list (34 pp.) followed by formulas for preparations thereof (43 pp.).
12. While the author classifies Enemas and Injections (meaning at this time, injections into body cavities), as "External Applications" in the table of contents, he apparently had second thoughts; for we are startled to find that on the pages bearing the formulas for these forms of administration the running-head has been changed on four pages (pp. 19, 21, 22, 23) to read "Internal Remedies."
13. Such necessities on the surgical wards are as numerous or even more numerous in the 1811 formulary as in some general formularies, such as the 1816 formulary of the New York Hospital or Richard Reece's *Medical and Chirurgial Pharmacopoeia for the Use of Hospital Dispensaries, &c.* (Bristol, 1800), 88 pp.
14. *The Catalogue of Books Belonging to the New-York Hospital Library* (74 pp.; bound with: *An Account of the New-York Hospital*, New York, 1811). Other editions provide unusual opportunity to view the amount and direction of the library's growth. In 1811 all foreign books predominantly pharmaceutical appear to have been from the British Isles, except for an old *Pharmacopoeia Augustana Reformata* (Rotterdam, 1653). Authors of some drug books in the library that are not abovementioned include Thomas Fuller, Edw. Fox, Richard Pearson, John Radcliffe, and James Wilson. American books, such as the dispensatories, are not here taken into account.
15. *Pharmacopoeia in usum Nosocomii Londinensis Sancti Georgii* (London, 1768), 48 pp., and *Pharmacopoeia in usum Nosocomii Londinensis Sancti Thomae* (London, 1787), 38 pp.
16. The number of items is exclusive of medical supplies and devices, such as bandages. Comparisons remain hazardous, however. For example, Seaman apparently does not list basic drugs unless they enter directly into therapy; while other formularies often include numerous items of materia medica (simples) that cannot be administered before processing into other forms. Moreover, some British formularies cover a large number of drugs within few pages by listing only the title of a drug, then referring the reader to the London, the Edinburgh, or the Dublin pharmacopoeia for the formula and procedure.
17. Of the 430 items in the 1816 formulary, 170 were simples or other basic substances, and 260 were medicinal preparations.
18. [Anon., review], "Art. XI. *Pharmacopoeia Chirurgica . . .*," *Am. Med. & Philos. Register*, 4(1814): 602 f.
19. [Anon., review], *Med. Repos.* 2(1815): 308 f.
20. To publish the *Pharmacopoeia Chirurgica*, Seaman and his students later went to a printer nearby, Samuel Wood at 357 Pearl Street.
21. During 1816 when the *Pharmacopoeia of the New-York Hospital* appeared, about the same number were admitted. (*An Account of the New-York Hospital* (New York, 1820), 52). For further information on the Hospital, see: *An Account . . .* in other editions (especially 1811, 7 and 14); Eugene H. Pool and F. J. McGowan, "Surgery at the New York Hospital 100 Years Ago," *Ann. Med. Hist.*, 1(1929): 489 and 506; C. T. Olcott, "Pathology at the New York Hospital, 1810-1932," *Bull. Hist. Med.*, 34(1960): 137-147; *The Memorial History of the City of New-York . . .*, James G. Wilson, ed., Vol. IV (New York, 1893), 407; D. Hosack, "Sketch of the Origin and Progress of the Medical Schools of New York and Philadelphia," *Am. Med. & Philos. Reg.*, (Jan. 1812): 231.
22. *An Account . . .* (1820), 34.

23. *An Account* . . . (1811), 24.
24. *Ibid.*, 59. He was succeeded by Hersey Baylies, Apothecary (*ibid.*, 1820 ed., 57).
25. *A Brief Account* . . . (1804), 30; cf., *ibid.* (1811), 41.
26. *Bye-Laws and Regulations Ordained and Established by the Governors of the New-York Hospital* . . . (New York, 1809), 15; cf., *An Account* . . . (1811), 43.
27. "Chap. XIII. Of the Apothecary," *An Account* . . . (1811), 43. The Orderly Man, abovementioned, was to "assist in the Apothecary's shop, in all things appertaining to that department . . .," and when he has leisure, then is at the call of others. (*Bye-Laws and Regulations Ordained* . . . (1809), 19.
28. *An Account* . . . (1811), 37 and 39.
29. *Ibid.*, 9f.
30. . . . Submitted to the Examination . . . University of Pennsylvania for the Degree of Doctor of Medicine . . . (Philadelphia, 1792), 32 pp.
31. A definitive biography of Valentine Seaman has not yet been published. The foregoing information is drawn from J. W. Francis in *American Medical Biography* . . . , Stephen W. Williams, ed. (Greenfield, Mass., 1845), 509-512; Howard A. Kelly and W. L. Burrage, *Dictionary of American Medical Biography* (New York, 1928), 1088; *The Memorial History of the City* . . . , 398 f.; "Obituary Notice of Dr. Valentine Seaman," n.p., June 27, 1817 (1-p. separate, in New York Academy of Medicine Library at "RB124S13"); *Biographical Catalogue Descriptive of Portraits Belonging to the Society of the New York Hospital* ([New York], 1909), 31.
32. . . . *On the Mineral Waters* . . . , v and vi; see also iii and vii.
33. Valentine Seaman, "A Partial View of the Operations of the Combined Powers . . . by the Marked Object of Their Terrible Attack," n.p., [1810]. 8 pp.
34. V. Seaman, *An Account of the Epidemic Yellow Fever as it appeared in the City of New-York in the Year 1795* . . . (New York, 1796. 52 pp.), 14 and 26.
35. Lloyd G. Stevenson, "Putting Disease on the Map . . .," *J. Hist. Med.*, 20(1965): 234 ff.
36. "A Report on the Vaccine or Kinepox Inoculation [sic] in N York Communicated by Valentine Seaman MD," *Med. Repos.*, 5(1802): 236. He later published *A Discourse Upon Vaccination* . . . (New York, 1816). 58 pp.
37. V. Seaman, "An Account of the Introduction of Vaccination or Kine-Pock Inoculation in N. York," holograph (n.p., n.d., 5 x 7 5/8"). 63 pp. This ms. originally had been placed by the author, as the flyleaf indicates, in the library of the New York Hospital.
38. *Memorial History of the City* . . . , IV, 399. At the New York Hospital also, later regulations indicate, "female pupils may be admitted in midwifery (*An Account* . . . , 1811 ed., 50). Seaman's role in early nursing education, going beyond this course for midwives, could be assessed only by further investigation. It is said that, "In 1798 he organized in the New York Hospital the first regular School for Trained Nurses" (*Biographical Catalogue* . . . , 31). And histories of nursing record that there he gave "America's first course of lectures for nurses" (Stevenson, *J. Hist. Med.*, 20(1965): 234). E.g., see Minnie Goodnow, *Nursing History in Brief* (2nd ed., Philadelphia, 1943), 92 and 135 f.
39. V. Seaman, *The Midwives Monitor, and Mothers Mirror* . . . (New York, 1800) 123 pp. In Europe and especially France instruction had been offered for midwives, said Seaman, but "no plan of the kind, as far as I can learn, has heretofore been established in America . . . [So] in the fore part of the last winter, I proposed to the female practitioners in this city, and such other women as wished information in the art of midwifery, to deliver them a course of instruction in that business, connected with the privilege of their attending the practice of the lying-in ward in the Alms-House." (*Ibid.*, vii and x).
40. Manuscript labeled "Jos. Carson," an historian of the medical department of the University of Pennsylvania (n.p.,

n.d.), 53 f., uncataloged in Wood Room, College of Physicians of Philadelphia.

41. The Medical Institution of the State of New York, associated with Queen's College in New Brunswick. See David L. Cowen, *Medical Education: The Queen's-Rutgers Experience 1792-1830* (New Brunswick, 1966), v and 8.

42. The Seaman-Cock Daybook is preserved in the Library of the New York Academy of Medicine and would repay study (on drug purchases, see, e.g., fol. 271v and 272r-v).

43. J. M. Phalen, "Valentine Seaman, Pioneer Surgical Case Report," *Military Surgeon*, 86(1940): 594 f.

44. Cf., e.g., entries for Common Cataplasm, Fermenting Cataplasm and Camphorated Liniment.

45. *Pharmacopoeia Nosocomii* . . . , titlepage; see p. iii as to the instruction for Seaman and Mitchell "to prepare a Pharmacopoeia for this institution, and to call a meeting to take the same into consideration, when they may be ready to report."

