

History of Medicine

The Medical Repository: The first medical journal of the USA

SANJAY A. PAI

The first medical journal indigenous to the United States of America (USA) was published in 1797 and was named *The Medical Repository* (Fig. 1). It was the brainchild of three physicians, Dr Elihu Hubbard Smith, Dr Edward Miller and Dr Samuel Latham Mitchill.^{1,2}

This article explores the political, social, scientific and medical background, the journal itself, and the aftermath, so as to place the history of the journal in perspective. The article consists of parts that deal with the era before the launch of the journal, brief biographies of the three creators of the journal, some information about the journal itself, particularly the initial issues and concludes with the impact that the journal had on medical journalism in the USA.

HISTORICAL BACKGROUND

The first permanent English settlement in North America was at Jamestown, Virginia in 1607. The pilgrims and others landed in Plymouth, Massachusetts, in 1620 and were among those who established the early English colonies in North America. When Americans decided to become independent of Britain, they went to war in the mid-to-late 18th century. In 1776, the Declaration of Independence was signed and in 1787, the American constitution came into force. In 1789, George Washington became the first President of the USA.³

The print media in the USA began in 1690 with a 3-page publication *Publick occurrences, Both Forreign and Domestick*, which was promptly banned by the government after the first issue. The first daily newspaper was the *Pennsylvania Evening Post and Daily Advertiser*, in 1783.⁴

In the 18th century, American physicians had practically no forum to disseminate their views and findings in medical research and practice. This was unlike the situation in some other parts of the world. France had the *Journal des sçavans*, which was the first scientific journal and was published on 5 January 1665.⁵ The first journal to publish medical research was the *Philosophical Transactions*, of the Royal Society, in England which too began publication in 1665.^{5,6} France also established the first purely medical journal, *Nouvelles découvertes sur toutes les parties de la médecine* edited by Nicolas de Blegny, in Paris, from 1679 to 1681.⁵ Scotland had a journal, *Annals of Medicine*, established in 1796, which was a continuation of the *Medical Essays and Observations* (established in 1733). Over the past two centuries, further name and other changes—including a brief break in continuity—have resulted in today's avatar, the *Scottish Medical Journal*.^{7,8}

The year 1741 saw the first American magazine, Andrew Bradford's *The American Magazine*, which dealt largely with politics. Later magazines, including *The General Magazine* (edited by no less a person than Benjamin Franklin) included

both scientific articles as well as medical articles. The first purely medical journal published in America had selections and

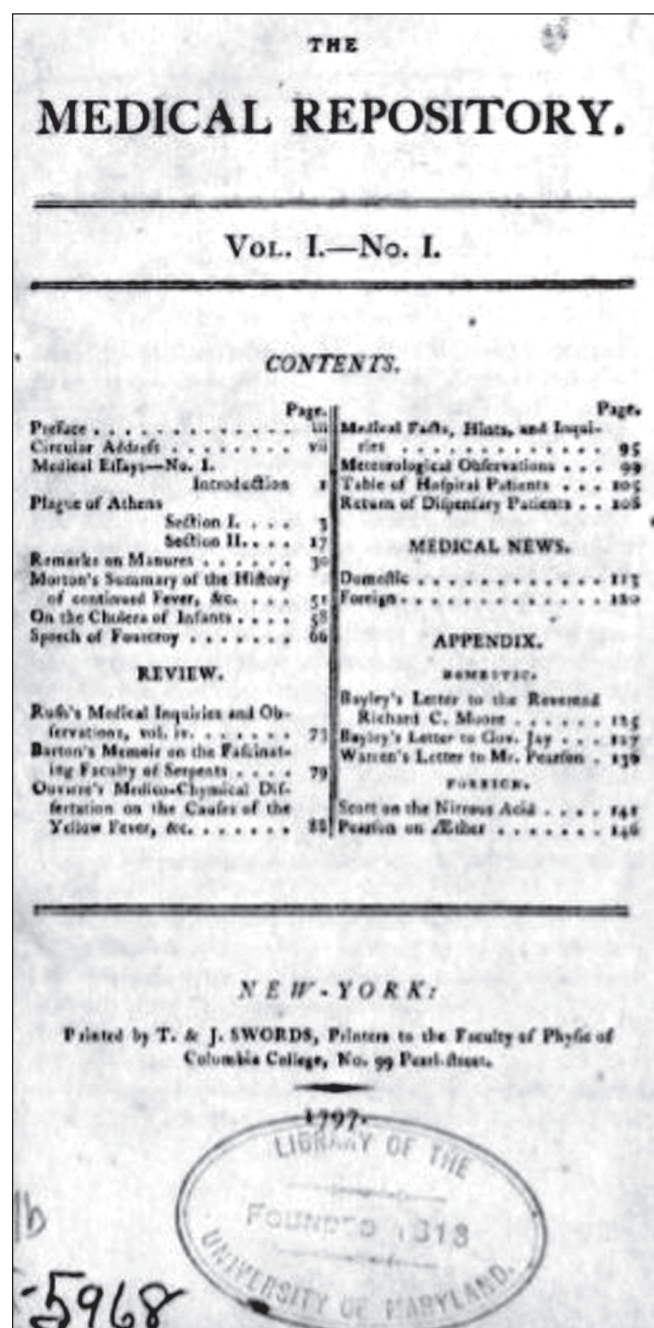


FIG 1. Cover page of Issue 1 (image courtesy University of Maryland, Baltimore Digital Archive)

translations of *Journal de Médecine militaire* (Paris, 1782 to 1788) in New York in 1790 and had 120 pages.⁹

If an American physician wished to send out a communication to his colleagues, he (note: it was always a *he* as there were no women physicians then) had to do so by publishing a pamphlet at his own expense or had to forward it to someone associated with a scientific society or a medical school and leave it to that person to publish the communication. Alternatively, they had to submit their manuscripts to European journals or to publish in non-medical journals such as the *Memoirs of the American Academy of Arts and Sciences*, *The American Museum*, *Philadelphia Monthly Magazine* and *Royal American Magazine*. Thus, there was clearly a need for a journal that was dedicated to the medical sciences and accessible to all physicians in the USA.^{5,10}

A couple of factors further precipitated the formation of the journal. First, the British blockade of the USA during the American revolutionary war (1775 to 1783) meant that even British medical literature could not reach American physicians. Further, as America had become independent, it sought to generate its own research and saw progress and independence in science to be as important as civil freedom. Finally, an epidemic of yellow fever raged along much of the Eastern coast of America in the 1790s. Physicians needed, desperately, to collect data, exchange ideas and discuss ways and means to combat the disease.¹

Noah Webster, in New York, published an appeal on 31 October 1795 to physicians in that region seeking their manuscripts on yellow fever. In 1796, he did succeed in publishing *A collection of papers on the subject of bilious fevers, prevalent in the United States for a few years past*, but declined to work on another edition.¹ It is worth noting that this was the Noah Webster, the legendary American lexicographer, who was to achieve fame for his Dictionary which would be published in 1828.

This precipitated the decision of the trio of Smith, Mitchill and Miller to publish a journal devoted to medicine in the USA. They published a *Circular address* on 15 November 1796 and circulated it among physicians along the East coast and subsequently, published it in the first issue of the *Medical Repository*.¹² Writing in the *Circular address*, they stated ‘The partial success of a late benevolent attempt, of the kind now referred to, is rather encouraging than disheartening; since its failure is attributable to causes not necessarily connected with the design and since there is good ground to believe, that a little perseverance would have given it stability and reputation’.^{2,11} The sequence of authors who signed the address is Mitchill–Miller–Smith. I am unable to determine why this particular sequence was used. The idea, clearly, was Smith’s and he could justifiably have been first author. The sequence is not alphabetical nor is it related to their ages (either in increasing sequence or decreasing sequence).

The Medical Repository succeeded in attracting articles on yellow fever and other relevant subjects over the next few years. It is possible that the *Medical Repository* was established by three people and all with a medical background, rather than by a single lay person, may have been the cause for its success.

The appearance of the *Medical Repository* was timely. *The Medical Repository* was probably inspired by the *Annals of Medicine* from Edinburgh.⁹ It cannot be a coincidence that Mitchill, as we shall see later, was educated in Edinburgh.¹²

While on the subject of early medical journals (as in this series of articles in this *Journal*), it is worth noting that the

earliest medical periodical indigenous to North America was not from the USA or Canada. It was in Mexico that North America produced its own first such journal—*Mercuria Volante*, edited by Josef Ignacio Bartolochi, on 17 October 1772. However, it was short-lived and ceased publication in February 1773.¹³

THE MEN BEHIND *THE MEDICAL REPOSITORY*

Dr Elihu Hubbard Smith was born in Litchfield, Connecticut on 4 September 1771. He graduated from Yale in 1786 and learnt medicine with his father and then with Dr Benjamin Rush in Philadelphia. He started practice in Wethersfield but later, moved to New York in 1793. He was a man ahead of his times as is evidenced by his anti-slavery views. In 1793, he published the first anthology of American poetry, *American poems* and in 1797, *Edwin and Angelina*, or *The Banditti: An opera*. Smith was on the staff of the New York Hospital.^{1,5,14}

He had been, in his Wethersfield days, a Hartford Wit (also called the Connecticut Wits—a late 18th-century group of writers initially from around Yale College and thence from Hartford, Connecticut) and a member of the Federalist party (the first political party in the USA). Interestingly, despite the fact that the Federalists generally favoured Britain over other nations (in contrast to the other political parties in America), Smith took issue with the views of Dr John Aikin, editor of the British magazine, *Monthly Magazine and British Register* who he believed published articles that showed America and Americans in a bad light. To redress this, he published many biographical articles on the Hartford Wits in the magazine.¹⁵

From September 1795 to four days before his death in September 1798, he maintained a Diary, a ‘history of myself’, which consisted of six notebooks of his ‘Life, studies, opinions and friends’. He was aware that his colleagues were fascinating people and thus, he presciently believed that his jottings would be ‘interesting... to the Historian & Philosopher’.¹⁶ The diary contained about 400 000 words with details of his personal and professional dealings, opinions of books and plays he had read and seen, and copies of most of his correspondence.¹⁴

In New York, Smith was a member of the Friendly Club, an informal group of writers which met on Tuesday evenings at a member’s residence, by turn, and discussed books and literature. It was at the Friendly Club that he broached the topic of starting a journal committed to medicine, to Edward Miller and on his approbation, to Dr Mitchill.^{11,14} Readers of the *Natl Med J India* may see a similarity between the Friendly Club and the Doctor’s Club (the members of which discussed almost only medical cases, however), started by Dr B.C. Rao of Bengaluru in the late 20th century and still continuing 35 years later, in the 21st century!¹⁷

Ironically, on 21 September 1798, Dr Smith himself died in New York City, of yellow fever, the disease he set out to address in the *Medical Repository*.

Dr Edward Miller was born in Dover, Delaware on 9 May 1760. He joined the army as surgeon’s mate and later on, became a surgeon on an army ship. After leaving the army, he graduated in medicine from University of Pennsylvania in 1785 and began practice after that in Somerset county, Maryland. In 1793, he published a paper on the domestic origin of yellow fever. This paper was praised by no less an authority than Dr Benjamin Rush, who believed that Dr Miller was ‘second to no physician in the United States’. Dr Rush, as readers may be aware, was considered the father of American medicine and of American medical literature—and a cosignatory of the Declaration of independence.^{1,11,18}

Dr Miller moved to New York City in 1796 and soon was part of the trio which created the *Medical Repository*. In New York City, Dr Miller was port physician of New York, professor of the practice of Physic in the College of Physicians and Surgeons and physician at New York Hospital (now New York-Presbyterian). He published his papers on cholera in the *Medical Repository*. Dr Miller was a polyglot who knew Latin, Greek and French fluently, apart from English. He was a modest man despite his many achievements, including being honorary or corresponding member of the medical societies of almost all the states in the USA, as well as being a gifted letter writer. He retired from practice in 1810 and died in 1812. In 1814, one volume of his works was published by his brother, Samuel Miller.^{1,11,13,18}

Dr Samuel Latham Mitchill was born on 20 August 1764 in North Hempstead, Queens, New York. He graduated in medicine from Edinburgh, Scotland in 1786.^{1,9,12} A genuine polymath, he was professor of chemistry and natural history in Columbia College and from 1820 to 1826 of *Materia medica* and botany. He was considered to be the Father of American Ichthyology because of his research on fish. He was a representative in US Congress from 1801 to 1804 and from 1810 to 1813 and was a senator from 1804 to 1809. He played an important role in the Louisiana purchase, the Lewis and Clarke expedition and the War of 1812. Not without reason was he termed a ‘chaos of knowledge’.^{6,8} Ebert, however points out that Dr Mitchill ‘distinctly disliked medical practice!’⁵

Mitchill, in 1796, published a paper in which he proposed that plague-like diseases were caused by exposure to the gaseous oxide of azole (nitrous oxide). In the elaboration of this theory, he described the effects of nitrous oxide inhalation and the anaesthetic state that followed. It has been suggested that he has not received credit for this early discovery.¹⁹

He died in New York City on 7 September 1831.¹²

Both, Dr Miller as well as Dr Mitchill, were students of Dr Benjamin Rush.¹⁰

THE MEDICAL REPOSITORY

The Medical Repository was a quarterly, published by T. and J. Swords, Printers to the Faculty of Physic of Columbia College, New York. In the first issue of the journal, the editors stated, ‘The design of the papers which will be presented in the public under this title, is to illustrate the connection substituting between climate, soil, temperature, diet, etc. and health’.²

The journal eschewed theory in favour of experimental and empirical data. To quote the circular ‘...facts are the only rational basis of theory...proceed by a rigid examination and cautious assemblage of particulars to every general inference. This laborious process of reasoning so favourable to truth, and so little flattering to indolence, to vanity, and to a creative fancy, requires the possession of an extensive mass of experiment, a various and judicious selection of facts; not only for him who would overthrow or construct a system, but for everyone who would rightly exercise the art to which they belong.’^{2,12}

Readers with a keen eye would have detected that the above paragraph contains the word ‘favourable’—not ‘favorable’. The reason for the usage of this particular spelling is that Noah Webster introduced the spellings that we recognise (recognize!) as American spellings, wherein the vowel *u* does not follow an *o*. Noah Webster’s magnum opus saw the light of day only in 1828, which explains the use of British English in this issue. (One wonders what Elihu Smith’s opinion on the new approach to spelling would have been, had he been alive then!)

They invited from potential authors,

- ‘1. Histories of such diseases as reign in your particular places of residence...
2. Histories of such diseases as appear among *Domestic Animals*....
3. Accounts of insects...
4. Histories of the progress and condition of *Vegetation*...
5. The state of the *Atmosphere*....’

The *Circular address* further added that the editors sought information on

- ‘1. Accurate and succinct accounts of the general diseases which have formerly prevailed in any part of the United States.
2. Useful histories of particular cases.
3. Histories of such complaints of professional men, mechanics, manufacturers, & c. as appear to originate from their peculiar employments, or the materials with, or about which they are employed.
4. New methods of curing diseases.
5. Accounts of new discovered or applied remedies, in rare or hitherto incurable diseases.
6. Extracts from rare, printed or manuscript, works, illustrative of the nature and cure of such diseases as now prevail in the United states.
7. Interesting information, relative of the minerals, plants, and animals of America.
8. American medical biography.
9. Accounts of former medical publications
10. Reviews of new American medical publications.
11. Medical news’

Clearly, this can act as sound advice for editors of general medical journals even today! Moreover, despite being an essentially American journal, the editors were clear that they chose to promote science from everywhere, irrespective of the origins and thus, they opted to publish material based on events abroad, especially in the ‘News section’.¹¹ This view, espoused by the editors of a journal in 1797, continues even today as editors still need to remind their readers that a good medical journal cannot afford to be parochial in its outlook and content.²⁰ For instance, in 1798, a commentary on Edward Jenner’s cowpox vaccine appears in *The Medical Repository*, soon after the paper was published in England (Fig. 2).¹¹

Volumes of the years 1797, 1800, 1802, 1803, 1804, 1809 and 1821 are available on the web (courtesy Hathi Trust) and can be accessed by all with relative ease. I comment on only a few of the salient features of some of these volumes, as a detailed analysis is out of the scope of this article and could well be the subject for an entire book. Aficionados of history of medicine will find that perusing these sites on the internet can be most instructive.

The first issue of volume 1 contained 148 pages and was launched on 26 July 1797, and contained a preface; the circular address; medical essays; reviews (Author’s note to readers of the *Natl Med J India*: the reviews referred to book reviews); Medical facts, Hints and inquiries; Meteorological data for New York, disease and patient data from Columbia Hospital New York; medical news; death notices, and an appendix (which contained letters). The first essay was a detailed historical article on the Plague of Athens in the 5th century BCE and was written by Smith.

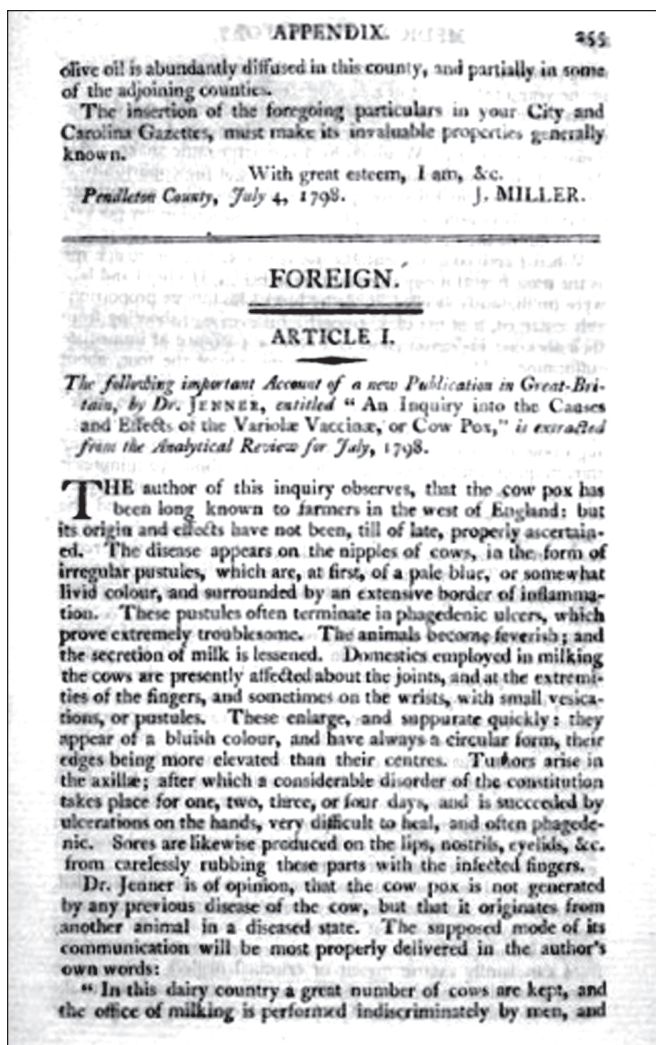


FIG 2. *The Medical Repository*, volume 2, number 2, 1798, showing the commentary on Jenner's discovery (image courtesy Center for the History of Medicine at Countway Library, Harvard University)

The second issue of 139 pages followed a similar pattern. Though Kahn and Kahn, in their splendid article on the history of the *Medical Repository* state that 'book reviews were frequently long extracts...rather than critical reviews',¹ Fig. 3 shows a brief but rather curt and decidedly opinionated book review! Figure 4 shows an article which is clearly optimistic (but, with the benefit of hindsight, we know that this belief was entirely misplaced) about conquering diabetes and reminds one of the similar optimism that Ernest Neve displayed over a century later when he predicted that the discovery of the cause of cancer was just around the corner!²¹

Issues 3 and 4 illustrate the diversity of subjects in the journal. Issue 3 contains an article on the mineralogical history of the state of New York, by Mitchill, as well as brief observations on the habits of wrens and robins. The news section has a reference to comets, including a mention of the great woman astronomer, Caroline Herschel (Fig. 5).

Issue 4 has the first of many articles that deal with the hottest controversy in chemistry at that time—the phlogiston theory. Joseph Priestley, a co-discoverer of oxygen, had emigrated to the USA. He believed in the phlogiston theory unlike his

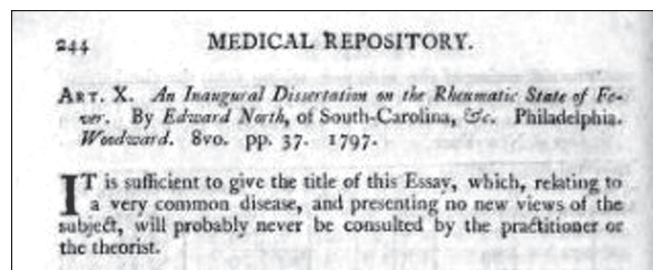


FIG 3. A book review (image courtesy University of Maryland, Baltimore Digital Archive)

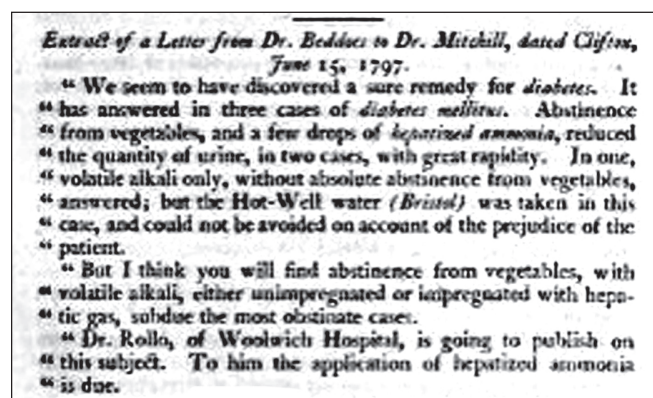


FIG 4. False hope in the journal! (image courtesy University of Maryland, Baltimore Digital Archive)

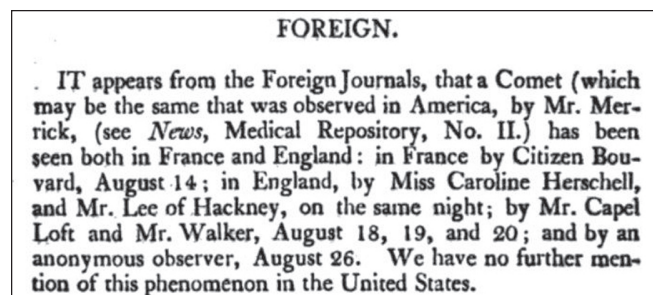


FIG 5. Astronomy news in the pages of the journal (image courtesy University of Maryland, Baltimore Digital Archive)

opponents, led by the French genius in chemistry, Antoine Lavoisier—who were eventually proved correct. On page 514, Mitchill writes an open letter to Joseph Priestley, trying to get the two warring factions to reconcile—Priestley then responds on page 521, thanking Mitchill, but fearing that his attempt will be in vain (Fig. 6).

Volume 1 included 584 pages while there were 502 pages in the volume (Volume 6, new series) of 1821. Even the 1821 volume contained articles on yellow fever (including manuscripts on the effect of turpentine and of sugar of lead on yellow fever as well as an account of an epidemic in New York City in 1819). For reasons that I am not clear about, the volumes were numbered from 1 to 6, after which a new series began, with the same pattern of numbering.

There were 266 subscribers for the first issue, of which 73% were physicians while people from other walks of life formed the rest. There were barely 300 subscribers for most of the lifespan

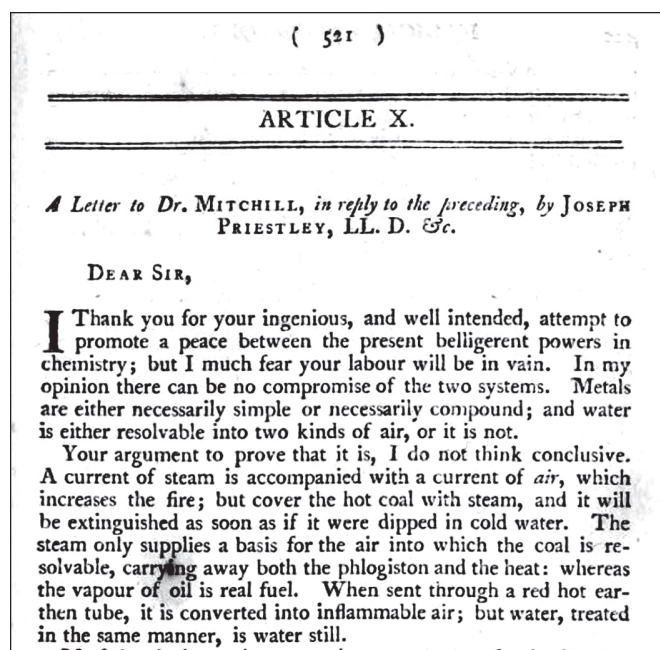


FIG 6. Chemistry makes its appearance in the journal (image courtesy University of Maryland, Baltimore Digital Archive)

of the journal.^{1,22} Smith remained one of the editors until his death in 1798 as also Miller until his death in 1812. The journal title had changed to *The Medical Repository and Review of American publications on Medicine, surgery, and the auxiliary branches of Philosophy* in 1801 (Fig. 7) and after 1812, it was changed to *Medical Repository of Original essays and intelligence* (Fig. 8). Mitchill was co-editor until 1821.¹ None of the editors, including the later ones, received remuneration for their work and editing was done purely for the love of the subject and the desire to propagate knowledge and conquer disease—a most worthy and laudable act.²²

Some of the authors who published in the journal included Benjamin Rush, Noah Webster, Joseph Priestley and Benjamin Waterhouse. (It must be noted that this is not the Waterhouse associated with Waterhouse–Friderichsen syndrome. The Dr Waterhouse of the syndrome fame was a British physician, Rupert Waterhouse, who published a case report of this in *The Lancet* in 1911.²³ Instead, Dr Benjamin Waterhouse was the first Hersey Professor of the theory and practice of physic, at Harvard Medical School, Boston. From 1800 onwards, he was also the first and most important champion of vaccination in the USA.²⁴) Kahn and Kahn state that there was probably no formal peer-review of the manuscripts and that the only article that they are aware of that was rejected was an article by Mitchill on nitrous oxide.¹ This is ironic because the *Medical Repository* could possibly have published an early paper related to anaesthesia!¹⁹

The importance of the journal is clear from the fact that a second edition of volumes 1 and 2 was published in 1800 and a third edition in 1804–05.⁹ The journal folded up in 1824 after production for 27 years.¹ When the *Medical Repository* ceased publication, its subscribers passed onto *New York Medical and Physical Journal*.⁹ The lifespan of the journal—27 years—must be seen in the context of other journals of that era: 5.4 years was the average lifespan of a medical journal then.¹

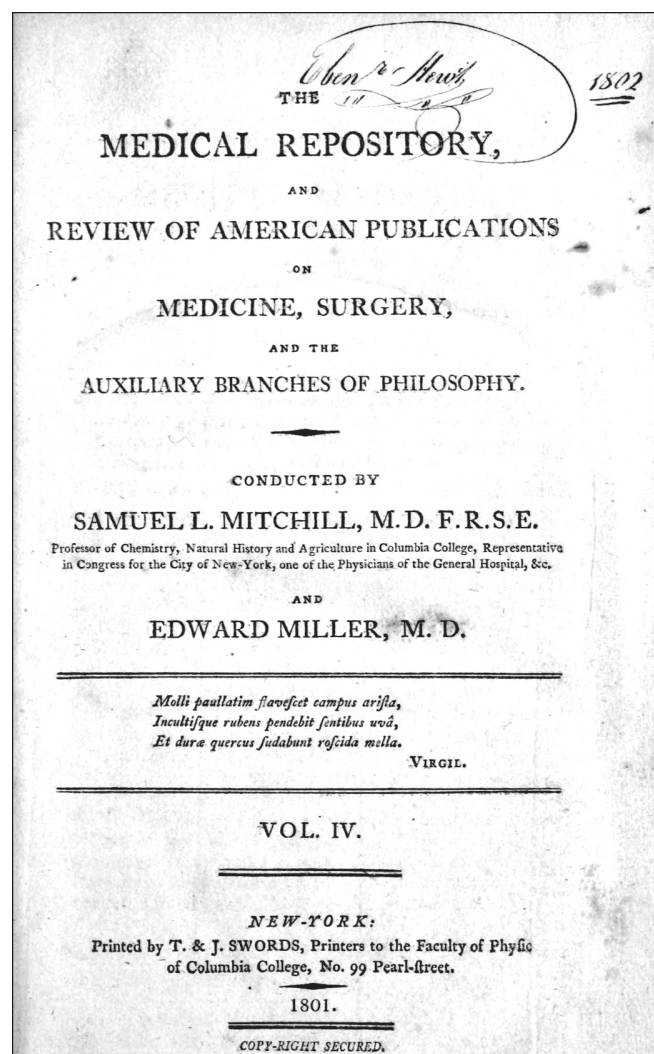


FIG 7. A new title for the journal (image courtesy University of Maryland, Baltimore Digital Archive)

Most journals did not survive because of the unhealthy competition between medical schools; most medical schools started their own journals and this resulted in feuding and jealousy. The difficulties and expenses involved in printing the journal, coupled with postage and transport, no doubt, were important factors.²²

POSTSCRIPT

The second medical journal in the USA was the *Philadelphia Medical Museum* (edited by Dr John Coxe, 1804–1811). Although Boston and Philadelphia were the hubs of medicine in the USA at that time, New York was the site of the first American medical journal.^{5,22}

There was a veritable explosion of medical journals after this, with 249 journals by 1850. These included medical, dental, homeopathic and related subjects. Most, however, died early deaths.^{1,5} A few of the surviving journals deserve special mention. The *Philadelphia Journal of the Medical and Physical Sciences* was established in 1820 and renamed as *The American Journal of the Medical Sciences* in 1827, and exists even today. Another journal of interest to present-day readers who eagerly peruse the medical literature is the *New England Journal of*

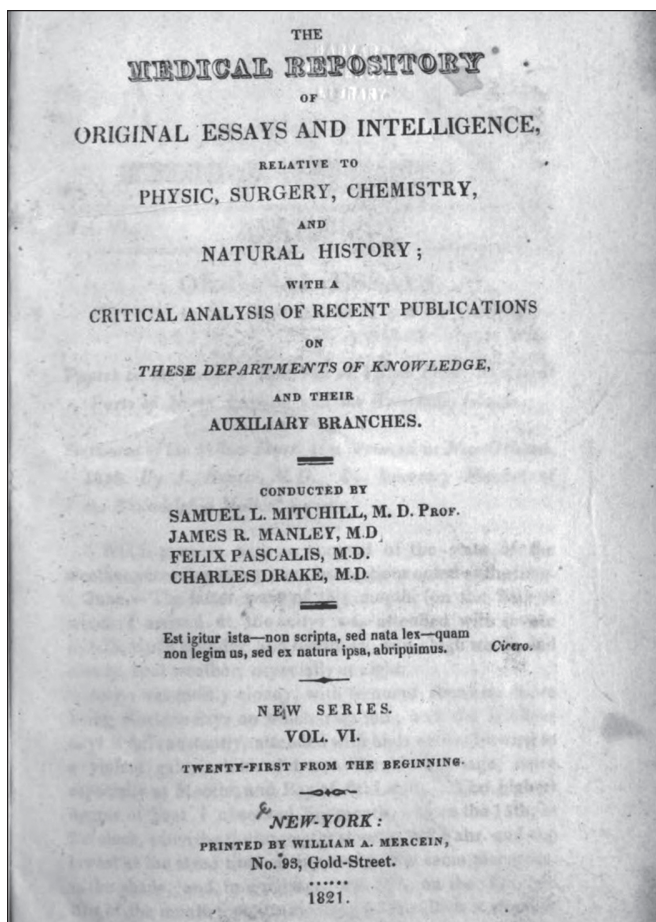


FIG 8. Yet another change in title (image courtesy Hathi Trust)

Medicine and Surgery and the Collateral Branches of Medical Science, which began as a quarterly in 1812, merged with the weekly *Boston Medical Intelligencer*, in 1828 and was converted to a weekly, called *The Boston Medical and Surgical Journal*.⁵ Despite—or perhaps because of—an early reputation that the editor, Dr J.V.C. Smith never rejected an article submitted to the journal,²² the journal survived and was renamed in 1928. That title has not changed since—and in 2012, the journal celebrated its bicentenary. The journal, of course, is the *New England Journal of Medicine*, which now has an enormously high rejection rate, prestige—and impact factor!

The *Medical Repository* was a worthy beginning to the spirit of medical and scientific enquiry that the USA has been famous for, for the past two centuries. This is fitting, because Dr Miller

had believed that there was ‘no science in which America has made more progress than that of medicine and none in which she holds a more complete independence of the European world’.¹¹

ACKNOWLEDGEMENTS

I am grateful to Ms Georgiaria Fernandes, Professors A. Raman and Sunil K. Pandya for their comments on the article. Hathi Trust, Center for the History of Medicine at Countway Library, Harvard provided permission for use of the images from the journal. Some images have been used courtesy of Historical Collections, Health Sciences and Human Services Library, University of Maryland, Baltimore.

REFERENCES

- 1 Kahn RJ, Kahn PG. The *Medical Repository*—The first U.S. Medical journal (1797–1824). *N Engl J Med* 1997;**337**:1926–9.
- 2 Archived journal available at <https://archive.org/details/medicalrepositor11unse/page/n9/mode/2up> (accessed on 14 March 2020).
- 3 Chronology of U.S. history. In: Wright JW (ed). *The universal almanac*. Kansas City:Andrews and McMeel (Universal Press); 1996:56.
- 4 The print media. In: Wright JW (ed). *The universal almanac*. Kansas City:Andrews and McMeel (Universal Press); 1996:227.
- 5 Ebert M. The rise and development of the American medical periodical 1797–1850. *Bull Med Libr Assoc* 1952;**40**:243–76.
- 6 Brake L, Demoor M (eds). *Dictionary of nineteenth-century journalism in Great Britain and Ireland*. Ghent:Academia Press and the British Library; 2009:190.
- 7 Booth CC. Medical communication: The old and the new. *BMJ* 1982;**285**:105–8.
- 8 Hamilton D. The Scottish Medical Journal—the first fifty years. *Scott Med J* 2006;**51**:8–12.
- 9 Billings JS. Literature and institutions. In:Clarke EH, Bigelow HJ, Gross SD, Thomas TG, Billings JS (eds). *A century of American medicine 1776–1876*. Philadelphia:Henry C Lea; 1876:329.
- 10 Coggins CC. Medical articles in eighteenth century American magazines. *Bull Med Libr Assoc* 1965;**53**:426–37.
- 11 Miller S. The medical works of Edward Miller M.D. Collected and accompanied with a biographical sketch of the author, by Samuel Miller. New York:Collins and Co; 1814:ix–cxi.
- 12 Sketch of Samuel Latham Mitchill. *The popular science monthly*. March 1891, 691–8.
- 13 Thornton JL. *Medical books, libraries and collectors*. 2nd ed. London:Deutsch; 1966:221
- 14 Thomas MH. Book review of *The Diary of Elihu Hubbard Smith (1771–1798)*. *PMHB (Penn Magazine of History and Biography)* 1974;**98**:394–6.
- 15 Cronin JE. Elihu Hubbard Smith and the New York Friendly Club, 1795–1798. *PMLA (Publications of the Modern Language Association of America)* 1949;**64**:471–9.
- 16 Kaplan C. Elihu Hubbard Smith’s ‘The institutions of the Republic of Utopia’. *Early American Literature* 2000;**35**:294–336.
- 17 Rao BC. Doctors’ club: An experiment in education. *Natl Med J India* 2019;**32**:242.
- 18 Edward Miller, MD. The Delaware Register and Farmer’s magazine. Ed William Huffington Vol 2: 114–179. July to January 1839.
- 19 Samuel Latham Mitchill (1764–1831). A neglected American pioneer of anesthesia. *JAMA* 1985;**253**:675–8.
- 20 Ana J. The role of a general medical journal. *BMJ* 2004;**328**:591.
- 21 Pai SA. The kangri cancer papers and their impact in India and elsewhere. *Natl Med J India* 2010;**23**:54.
- 22 Cassidy JH. The flourishing and character of early American medical journalism, 1797–1860. *J Hist Med Allied Sc* 1983;**38**:135–50.
- 23 Ferguson RP, Thomas D. Medical eponyms. *J Community Hosp Int Med Perspect*, 2014 July 31; 4. doi: 10.3402/jchimp.v4.25046
- 24 Schatzki SC. Benjamin Waterhouse. *AJR Am J Roentgenol* 2006;**187**:585.