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The Beginning of Indexing in the Library

BILLINGS STARTS TO INDEX JOURNALS

BY 1873 the Library had an author catalog in book form, a supplementary author catalog on index cards, and the nucleus of a subject catalog on cards. Those finding aids helped readers locate information in the tens of thousands of books, pamphlets, theses, and reports in the Library, but not in articles in the myriads of issues of journals. Billings now turned to the indexing of periodicals. This would be a monumental task, and presumably he thought about it long and hard before going ahead. He had to consider the length of time it would take, and the number of assistants that would be available. Undoubtedly he considered the alternative of directing readers to the annual indexes provided by many journal publishers. But having concluded that an index should be prepared, he had to consider the alternatives of author and/or subject and/or title indexes, and of printed or card catalogs.

In considering the indexing of journals Billings was not exploring new territory. In 1867 the Royal Society of London had begun to publish its *Catalogue of Scientific Papers*, a multivolume bibliography of articles that had appeared in American and European journals from 1800 to 1863, arranged alphabetically by author. The Library had obtained the first three volumes of the set in 1870, and it appears that the catalogue may have provided Billings with a model and perhaps stimulation.¹ Billings, however, felt that a subject index would be preferable to an author index (the Royal Society had considered compiling a subject index but had abandoned the idea because it would have been too expensive).²

Billings' preference for a *subject* index may have had roots in a time-consuming, disappointing literature search he had undertaken back in 1859 and '60 while preparing his thesis on the surgical treatment of epilepsy. He had discovered that it required "a vast amount of time and labour to search through a thousand volumes of medical books and journals for items on a particular subject. . . ." It was the memory of this experience that, according to Billings, led him to prepare "a comprehensive catalogue and index which should spare medical teachers and writers the drudgery of consulting ten thousand or more



Billings working in his home in the Georgetown section of Washington The caption was written by one of his children Number 84 Gay Street later became 3027 N Street

different indexes, or of turning over the leaves of as many volumes to find the dozen or so references of which they might be in search”³

Billings started to prepare the index on New Year’s Day, 1874 ⁴ One would assume that at the beginning he indexed several volumes to obtain an estimate of the time that it would take to index every volume of every journal Probably during the indexing he made the decision to include original articles only, not reprinted articles, editorials, news of medical events, book reviews, letters to the editor, and other material (occasionally in the future Billings was to violate this rule and select editorials and items of interest to him)

He decided to follow this method, he would scan journals and check, in pencil, the title of each article he wanted indexed His clerks would copy on a card a complete reference to each article checked, leaving the top line of the card blank for Billings to add a subject heading ⁵ Recent journals would be indexed before old journals, current journals would be indexed within 24 hours of arrival ⁶

Once started, Billings scanned journals in his office and at home “Almost

every day," said his future associate, Fielding Garrison, "a government van would leave a wagon load of bound periodicals at his residence in Georgetown and the next morning would find their principal articles, cases, and essays carefully checked, by lead-pencil markings, for the copyists in the office. This night work continued until the gigantic task of indexing all the bound periodicals was accomplished, but even in the later days, when he had only the current unbound periodicals to deal with, Billings still continued to take some of these home in his overcoat pocket, or to have them sent up in baskets, for checking."⁷ A visitor recalled seeing Billings " 'resting' in the evening after a long and arduous official day. He was lying on a couch, almost hidden by two mountains of medical periodicals in every language, one on either side of him. He was slowly, but without pause, steadily working through the mountain on his right, marking the items to be indexed, and transferring each journal, as finished, to the mountain on his left."⁸

The division of labor between Billings, medically trained, and his copyists, most of whom had no more than an elementary school education, worked well and continued into the future. The assistants learned to copy references carefully and legibly, leaving Billings free to concentrate on choosing subject headings.

Joseph Toner had been preparing an index to American medical journals, and Billings, seeing no reason to duplicate Toner's work, at first planned to index foreign journals only.⁹ Then Billings learned that Toner's method was different in that he included reprinted articles (Billings limited his index to original articles) and he abbreviated titles of articles (Billings used complete titles). Billings thereupon decided to index American journals as well as foreign.¹⁰

The trial indexing of several volumes at the start would have shown Billings that he needed more copyists if he hoped to prepare an index within a reasonable length of time. So Billings did again as he had done before when he needed assistance: he turned to his brother officers, who had garnered so many publications for the Library, and some of whom were still scouting for periodicals on Billings' want-lists. He wrote letters to Surgeon Blencowe Fryer, Fort Wood, New York Harbor; Surgeon Bernard Irwin and Assistant Surgeon Alfred C. Girard, West Point; Assistant Surgeon Robert H. White, Fort Porter, Buffalo; Surgeon Joseph Smith, Fort Wayne, Detroit; Surgeon William Spencer, Chicago; Surgeon Dallas Bache, Fort McHenry, and others, explaining his plan and asking for help.¹¹

Apparently he first asked his helpers to index the periodicals at their hospitals—some Army hospitals had runs of journals that extended back several years. When these were completed, he mailed volumes from Washington. To officers at posts sufficiently large to have hospital stewards, he suggested that the stewards be pressed into service as copyists. He sent instructions, index cards, and specimen cards; and officers replied, asking questions to clarify his guidelines.

Billings does not seem to have asked help from surgeons on the frontier, perhaps because of the uncertain communications, primitive conditions, and hard life. But Charles Smart, now at Fort Bridger, Wyoming Territory, learned of the undertaking and volunteered to assist. He told Billings:¹²

I have just looked over the files of Phila. Med. Times to ascertain completeness & find one or two numbers of 1st vol missing, but will index in manner you mention all I have, and notify you of absentees when I send on the finished packet. If you send me cards I shall have all finished in scroll by time they arrive and can return them with no delay but that of copying. I could have cards ruled & cut of size of samples but have not such nice paper as the S.G.O. makes use of.

Starting his index, Smart found himself puzzled and he wrote to Billings for instructions:¹³

I am getting along with your Phila Med Times, and expect packet of tickets or cards in a day or two from you. In making out scroll while waiting for cards I have taken note of all cases reported in hospital service or clinics, although many of these cases present nothing unusual, being in fact brought before the class to illustrate the characteristic type or usual operation. I have put them down as I am indexing the *original articles & cases* in the paper. I have also taken note of the cases, specimens & discussions in Trans. Path. Soc. Phila. but I am doubtful whether you want these or no. I am under the impression that the Society publishes its Trans in book form & if so it would remove these items from the indexing. *Please let me know if you want them indexed.* All these included will make about 1500 cards.

If you send me a slip of paper with a hint as to method of classification of subjects I would arrange them more satisfactorily to myself and might save you much trouble in changing the penciled headings. The two model cards you sent me gave me no clue as in one the subject runs "Kidney" and the other "Hernia," the one arranging by regions or organs and the other by the lesion.

A few days later Smart wrote again:¹⁴

Yours of 30 ult recd together with cards for Am. Journal of Medl Sciences. The files at this fort run from July 1863 (including it) to date. One number is missing however viz, that for Octr 1866. I shall fill the cards with great pleasure, regretting only that I cannot begin farther back. Anything else you may think of which I can do I will take pleasure in doing in the plenty of spare time I have here.

There is no other record of the titles and quantities of journals handled by Smart, but he cooperated with Billings on several occasions during his life in the Army, and he probably continued to index in the wilderness of Wyoming until Billings had no more periodicals to send.

Assistant Surgeon William R. Steinmetz began to index *Medicinische Annalen* while stationed at Fort McHenry, Baltimore. He took 13 volumes of the periodical along with him when he was transferred to the Cheyenne and Arapahoe Agency, Indian Territory. He wrote Billings:¹⁵

We are right amongst the Cheyennes & Arapahoes. The first tribe was very troublesome last year and this spring, giving our troops a skirmish about a mile

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from our camp on the 6th of April—they are quiet at present, but we can expect them to break out again at any moment on the slightest occasion.

Our command consists of three Cos. of Calvary and two of Infantry; all in tents on the south bank of the north fork of the Canadian river.

When Steinmetz completed the *Annalen*, he returned the journal and cards to Billings, along with the following letter:¹⁶

I return to you today per express the thirteen books, you sent me sometime ago, and hope that the indexing is done to your satisfaction. If there is anything you like to have done differently please let me know, so that I may avoid the error in the next lot. I got through with the indexing some two weeks ago, but hesitated to send the box off, as long as the rivers were as high as they have been between here and the nearest rail-road station, Wichita Kas, (distant 160 miles) for some time past. During the last six weeks, our mail which together with the express, is brought to our post by the Stage Co., frequently arrived here in a fearful condition, & thoroughly soaked owing to the high water and heavy rains, and I was under apprehension, that the books might share the same fate. One of the severest thunder showers & storms, I ever witnessed, passed over this section of the country last Monday night, the 9th inst. The wind was so strong, that within a few minutes, all the hospital tents and large Q. M.'s & Commissary tents, which were not framed, were blown down or torn to pieces. Several of my patients, sick in hospital with malarial fever, as also a large portion of my hospital property, were suddenly deprived of their shelter and exposed to a heavy rain and hail shower. No tents can withstand such fearful winds, as

Raynaud's Dis.

Burdach (R. N. Y.)

* *Ueber symmetrische Gangrän (Raynaudsche Krankheit).*

8. Halle a. S.,

1900.

A file card prepared for the Index-Catalogue. The citation was copied by a clerk, the heading was added by Robert Fletcher or Fielding Garrison. The citation was listed under *Raynaud's Disease* in Index-Catalogue, 2 series, volume 14, 1904, p. 317.

frequently prevail in this country, unless they are well framed and otherwise secured. Although this camp has been in existence for more than a year, the most of the hospital tents are not floored, although several applications for the necessary lumber have been forwarded to Hd Qrs. of the Dept. During last winter, in order to keep from freezing to death, this Command dug holes in the bank of the river, and I suppose, we will have to do the same thing, unless something is done before the cold season sets in.

During the early months of indexing, with thousands of cards being produced by his clerks and friends, Billings had to develop his system of classification in detail. Writing to Irwin at West Point in the summer of 1874 he explained it rather fully:¹⁷

I forward this day a box by express containing the journals & transactions shown on the enclosed list, also some more blank cards. Of these I would like the transactions of the Society of Biology indexed first, and returned separate. From a hasty examination of the cards made by yourself and Dr. Girard, I think they are nearly right. It is very rarely desirable to make two cards for one article for the reason that it would make the work so immense that it never could be completed. I have about 8000 volumes of journals and transactions to index which will average at least 50 cards per volume. You will readily see that I must abbreviate labor and space as much as possible. The classification for diseases which I shall use is mainly Anatomical. For instance,— Brain, Anatomy of:— Physiology of:— Inflammation of:— Abscess of:— Cancer of:— Hydatids in:— Tumours in, etc. Uterus,— Polypus of:— Cancer of: Prolapsus of: &c. Then under the head of Polypus,— I shall give a general reference “See” — Larynx, Heart, Intestine, rectum, Uterus, bladder, etc. Polypus of:—

The exceptions to this rule are as follows, Addison’s disease, Bright’s disease, Phthisis, fractures & dislocations. Cancer of a single organ is put under that organ, if of several organs, is put under Cancer. The majority of tumours are put under Tumours,— exceptions, Brain, Ovary, Uterus, tumours of. I use the English name of the disease, e.g. Pleurisy, Mumps, Scarlet Fever, Hooping Cough. An article on the effect of a certain remedy in a certain disease, goes under the disease, e.g. On the use of Perchloride of Iron in post-partum hæmorrhage, is indexed, Haemorrhage, post-partum, Perchloride of Iron in. Obituary notices which contain anything of a sketch of the life of a physician—*who has ever written anything Medical*—should be carded thus; Smith, John. Obituary of, or, Sketch of life of. An article on complications or sequelae of a disease should be indexed under that disease thus;— Fever Typhoid, Sequelae of, or, complicated. Labour— difficult, from tumour from contracted pelvis; from mal-position, &c. Cases of poisoning are indexed under the head of the Poison, e.g. Arsenic Poisoning. When it is probable that an article must come under two headings, it should be put under the first one in alphabetical order thus: Experiments on the effects of Salts of Soda & Potash, should go under Potassium-Salts of. When I come to print it will then be easy for me to transfer the same card forward to soda. When there are two authors it is not necessary to make two cards—The title of the journal must be given a little more fully than you have done, thus; instead of U. M. it should be Un. Méd. Tell Dr. Girard that it is not necessary to give the weekly number,—the number of the volume and year is [all] that is desired. I shall go over the cards made by yourself and Dr. Girard carefully within the next two or three days and may then write again. These cards will be sent to the printer, hence, they must be written plainly

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enough for him to decipher them. Would Dr. Girard like to have the *Annales d'hygiène* sent to him for indexing?

Medical officers assisted Billings for at least 2 years, 1874 and 1875. There is no record of the number of articles and journals they indexed, but judging from existing letters they contributed much. On occasions Irwin asked for 2,000 or 3,000 index cards, Assistant Surgeon Frank Meacham, Fortress Monroe, 300, and Smart 750. Irwin and Girard indexed all or parts of *Berliner Klinische Wochenschrift* and *Univers Médicale*; Assistant Surgeon Alfred A. Woodhull, McPherson Barracks, Atlanta, *Atlanta Medical and Surgical Journal* and *Philadelphia Medical Times*; White, *New York Medical Record*; Charles Smart, *Philadelphia Medical Times* and *American Journal of the Medical Sciences*; Fryer, *Edinburgh Medical Journal* and *Medical Gazette*; Surgeon William C. Spencer, Chicago, *Edinburgh Medical Journal*, assistant surgeon Daniel Weissel, Fort Johnston, North Carolina, *American Medical Recorder*, *Western Lancet* and the *Philadelphia Medical and Surgical Reporter*.¹⁸

Over the span of succeeding years Billings had other assistants, volunteers and paid. We know little about those outside the Library with the exception of one whom Billings treated kindly and helped pass the tedious, boring hours of invalidism. "I recall," wrote Fielding Garrison, "an old Confederate general who had to live supine in bed for years from spinal paralysis, a sequel of heat-stroke on service with Gordon in the Soudan, and to whom Billings charitably sent basket fulls of library work daily, which came back next day with never a blunder."¹⁹

THE LIBRARY'S FIRST MAJOR BIBLIOGRAPHY, ON CHOLERA

The first major test of the utility of Billings' subject index came in 1875 when he was asked to prepare a bibliography on cholera. Cholera was one of the most feared epidemic diseases in 19th century America. It killed, within a short time, a sizable proportion of persons whom it infected. Major epidemics had occurred in the United States during the periods from 1832 to 1834, 1848 to 1849, and 1865 to 1866, and minor outbreaks had happened in 1850, '51, '52, '53, '54 and perhaps other years.

The disease was not native to America, but came across the Atlantic from Europe after traveling all the way from India, where it smoldered perpetually. Presumably quarantine could have prevented cholera from entering the United States, but the country did not have a national quarantine system. Instead, a tug-of-war between States Rights and Federal Rights had caused quarantine to be left under the control of state and municipal governments. As a result the Atlantic, gulf, and Pacific coasts were dotted with quarantines controlled by local officials concerned only with the welfare of their own ports, not the welfare of the Nation.

In the spring of 1874, following a year in which cholera invaded at least 18 states, Congress resolved that the recent epidemic be studied by an Army

medical officer and the Supervising Surgeon General of the Marine Hospital Service (the agency which developed into the Public Health Service).²⁰ Officials hoped that this study would provide information for local, state, and national officials to use in preventing or containing future outbreaks.

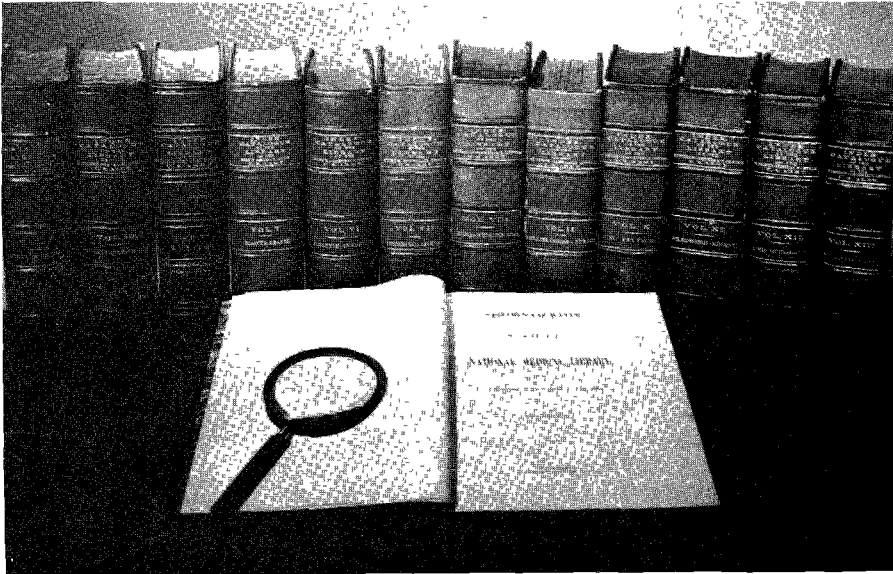
Surgeon General Joseph K. Barnes detailed Assistant Surgeon Ely McClellan to prepare the Army's report. Starting in May 1874 McClellan traveled through 14 states and 2 territories, visiting localities where cholera had been and talking with survivors, laymen, and physicians. Unable to visit every cholera site during the 9-month period allowed for the study, he sent blank forms to physicians in the neighborhood of known cholera cases, asking for detailed information. He had his voluminous report ready for the Surgeon General on January 1, 1875.

Within the Surgeon General's office a decision was made that a history of cholera epidemics and a bibliography of writings on the disease would be added to McClellan's report. McClellan collaborated with John C. Peters, a physician of New York City who had studied cholera, in writing the history and he asked Billings to provide a list of books, pamphlets, and articles on the disease.

McClellan's investigation of cholera was made during the period when medical officers at Army posts throughout the country were assisting Billings prepare a subject index of articles in medical journals. Billings wrote to his helpers, asking them to send index cards on cholera.²¹ At the Library he and his clerks wrote out cards for every book, report, thesis, and article dealing with the disease.

At this time there were many gaps in the Library's collection of periodicals, and Billings was unable to check cholera articles that he learned existed in at least one missing journal, *Gazette Médicale de Paris*; but John L. Vandervoort, New York Hospital library, offered to lend the hospital's set for indexing, and Fred B. Perkins, Boston Public Library, offered to prepare index cards for Billings from his set.²² Presumably the absence of certain journals required in compiling the bibliography of a disease underlined the need for a complete collection of periodicals, and reinforced Billings' determination to make the Library's holdings as full as possible.

All the reports were brought together and published during the summer of 1875 under the general title, *The Cholera Epidemic of 1873 in the United States*.²³ Billings' bibliography required 316 pages of the 1,025-page Medical Department report, and included more than 18,000 titles. It was the most voluminous bibliography on cholera produced up to that time and, to the best of my knowledge, the longest bibliography on a single disease made in the country up to that time. If any physician who had heard or read of the Library had doubts of its usefulness, this bibliography would have dispelled them. And the bibliography must certainly have convinced influential physicians that the Library was worth supporting—an extremely important consideration as periodic economy drives in Congress threatened the institution's appropriations and existence.



The Specimen Fasciculus, Billings' model of his proposed bibliography of medicine. At this time he was referring to the collection as the "National Medical Library," but when the Index-Catalogue appeared in 1880 the title page bore the name the collection carried for the next three-fourths of a century, "Surgeon General's Library." Behind the Specimen are early volumes of the Index-Catalogue, which continued to be published until 1961.

SPECIMEN OF THE *Index-Catalogue*

By the summer of 1875 Billings had accumulated tens of thousands of index cards. He estimated that the references, when printed, would fill at least five volumes each of 1,000 pages.²⁴ Billings wondered how he and Surgeon General Barnes could persuade Congress to provide funds for printing and binding the catalog. He decided to publish a sample showing how the index would look in print and mail copies to librarians, editors, and influential physicians. He would use the testimonials, which he expected would be favorable, to impress legislators and persuade them to appropriate funds for publication of the entire work.

During the summer and autumn of 1875 he alphabetized his cards and sent to the Public Printer those beginning with the subject Aabec and ending with Air. He lured a first-rate printer, Harry O. Hall, from the Government Printing Office to aid him in preparing and proofreading the work.²⁵ The product was a book which Billings titled, *Specimen Fasciculus of a Catalogue of the National Medical Library*, containing 72 pages of text and listing more than 4,000 references. Twelve hundred copies were printed, fifty of which Billings

had bound in half turkey for special presentation, the remainder in paper covers.²⁶

Billings began sending out copies of the *Specimen Fasciculus* in March 1876, reminding the recipients that the Library needed its customary \$10,000 appropriation from Congress as well as authorization to print the *Index-Catalogue*.²⁷ Among the persons who received volumes were Henry C. Lea, medical publisher; Abraham Jacobi of the College of Physicians and Surgeons, New York, and Mary Jacobi; Robert S. Newton, Eclectic Medical College, New York; Ezra M. Hunt, former president, New Jersey Medical Society; Hunter McGuire, Medical College of Virginia; Henry I. Bowditch, Harvard University; Henry Baker, Michigan Board of Health; Jerome Cochran, Medical College of Alabama; Jacob M. Da Costa, Jefferson Medical College; D. B. St. John Roosa, medical department of New York University; Galusha B. Balch, St. John's Riverside Hospital, New York; Francis H. Brown, former editor of *Boston Medical and Surgical Journal*; William H. Mussey, Miami Medical College; and Oliver Wendell Holmes.²⁸

Readers praised Billings' *Specimen Fasciculus* wholeheartedly. A few noted errors of one kind or another or suggested slight changes, but the response was overwhelmingly in favor of publication of the entire work. Oliver Wendell Holmes told Billings he was "helping to raise the whole standard of American scholarship by providing it with implements and a model."²⁹

Editorials applauding the proposed catalog soon appeared in periodicals. The *Boston Medical and Surgical Journal* reported:³⁰

A sample of the proposed work, entitled a *Specimen Fasciculus of a Catalogue of the National Medical Library*, under the direction of the Surgeon General U.S.A., at Washington, D.C., is now before us. It is but a specimen of what has already been done in manuscript, and which only awaits the proper appropriations to be put in print and placed in the hands of the medical men of the country.

Medical bibliography, we fear, can hardly be said to have made such gigantic strides in the past century as have been witnessed in the other branches of science and literature; but we have evidences all around us, in Germany, in England, and in our own country that it is taking a more important and honorable stand, and that writers and earnest, thorough students of medical lore are every year becoming more numerous and more persevering. Such men, and all who seek the true advance of medicine, must welcome the publication of a work which will lay open the field of medicine and the investigations which have already been made. It now becomes the duty of all medical men, the country over, to strengthen the hands of the surgeon-general and the librarian by assuring members of Congress, who will shortly be called on to make the appropriations, of the great value of the work which has already been done, and of the great advantage of opening more freely to the medical profession the stores of wealth which so important a collection as the National Medical Library offers.

The Medical Record of New York told its readers:³¹

With a laudable desire for receiving suggestions in regard to the arrangement of this prospective catalogue, Dr. Billings has issued the fasciculus in question.

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. . . We have said enough of the value of this great library to make it unnecessary to urge upon our medical brethren every effort to increase its usefulness and perpetuate its aims. The publication of the catalogue being one of the means to that end, it behooves the profession of the country to give its hearty endorsement to the project, and to use its influence, individually and collectively, to secure the necessary sanction from Congress for its publication.

Horatio C. Wood, Jr. was so pleased that he persuaded the American Medical Association to appoint a committee to petition Congress to appropriate funds to print the work.³²

Billings sent several copies of the *Specimen Fasciculus* to the Conference of Librarians held in Philadelphia as part of the 1876 Centennial Celebration. Unable to be there because he was obligated to attend a concurrent meeting of the American Public Health Association, Billings asked John Ashhurst, Jr., to take his place and answer all questions, particularly about medical subject headings. If there was any criticism it was not recorded. Charles A. Cutter placed his stamp of approval on the venture, telling his colleagues.³³

The physicians are the proper judges of this question [a single catalog vs. separate author and subject catalogs] those, that is, who are in the habit of consulting bibliographical works. There must be some such, although they have not had many medical catalogues to consult. It would be interesting to hear their experience. . . .

As to the nomenclature, I am sure every cataloguer will welcome with delight the prospect of having his choice of subject headings made for him by one who is thoroughly competent. Nothing is so puzzling in our work as this choice, in that matter at least I shall be glad to resign the right of private judgment, and pay the most abject deference to authority.

Justin Winsor of the great Boston Public Library told the meeting that he thought that Billings' work was "the most satisfactory effort at indexing medical knowledge which has yet been attempted, and quite worthy of the largest medical library in the country."³⁴ James L. Whitney, also of Boston Public, declared he was:³⁵

impressed with the excellence of its method, and with the important aid which it will render to the medical profession and to librarians . . . it is difficult to estimate the treasures it will unlock to the student of medicine. The cataloguer who, in books of all ages and languages, has wrestled with the nomenclature of diseases, will find a great burden lifted from his shoulders in being able to fall back upon work so thoroughly done by specialists.

Meanwhile in Boston Billings was persuading the American Public Health Association to appoint a committee to send a memorial to Congress requesting publication of the *Catalogue*.³⁶ The College of Physicians, Philadelphia, also sent a resolution on the subject to Representative Samuel Randall.³⁷

Another sponsorship that Billings sought was that of the International Medical Congress, meeting in Philadelphia as part of the Centennial. He explained to Samuel Gross, president of the congress, that the *Catalogue* would be useful to physicians everywhere:³⁸

A HISTORY OF THE NATIONAL LIBRARY OF MEDICINE

While the object in view in forming this Library has been to make a collection of sufficient extent and completeness to meet the wants of the physicians of the United States, an attempt is being made to prepare a catalogue and index of its contents whose practical usefulness shall not be confined to this country but shall be, so far as the material available will permit, international and cosmopolitan

The manuscript of the entire work is so nearly completed that the printing can be commenced next Spring, if Congress shall see fit to give the necessary authority.

After examining the copy that Gross showed them, the members of the Congress passed and sent to the President of the United States the following resolutions:³⁹

That the members of this International Congress regard with great interest the contribution of a national medical library, in the city of Washington, and respectfully petition the Congress of the United States to provide for additions to the number of volumes and periodical publications, until the library is made as complete as possible.

That in view of the necessity of what is known as a *catalogue raisonné* in order to render the library properly available for reference, this International Medical Congress urge the importance of an early completion and publication of such a catalogue.

That the Specimen Fasciculus of the catalogue, which is stated to be nearly ready for the press, affords evidence of great labor and care, and the arrangements for convenience of reference is believed will prove in all respects satisfactory.

That those of the delegates of this International Medical Congress who are citizens of the United States, and other members of the medical profession in this country, are urged individually to exert their influence to secure the enlargement of the library and the speedy publication of the catalogue.

ROBERT FLETCHER JOINS THE STAFF

During the period in 1875 and '76 when the *Specimen Fasciculus* was being printed and distributed, Billings continued to check journals, develop his system of classification, and insert headings on cards produced by his helpers. Cards were filed in trays kept in his crowded office. He permitted scholars to refer to cards, but only for brief periods of time so as not to interfere with his work.⁴⁰ He told Stanford Chaillé, a prominent New Orleans physician, "I average 14 hours work a day over books."⁴¹

Billings requested Assistant Surgeon General Crane to provide him with a helper. Crane asked Acting Assistant Surgeon Henry Crècy Yarrow if he would like to work in the Library. Yarrow went to Billings' office and inquired what his duties would be. Billings replied: "First of all you must move to Georgetown so as to be as near as possible. You must be willing to work week-ends and Sundays and even late into the night if it becomes necessary."⁴² Yarrow was a conscientious officer but this was too much. He went back and told Crane he preferred a different post. Crane had a good laugh and assigned him elsewhere.

Another person to whom Billings offered the job was George M. Kober, a

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young German immigrant medical student who would later become dean of Georgetown University School of Medicine. Hired as a hospital steward in 1870, Kober worked in the Surgeon General's office for 4 years. During most of this time he indexed the department's old manuscript letterbooks, which earned him the nickname "Index" from the clerks. Other times he copied titles of articles in German journals for Billings. After graduating from Georgetown, Kober stepped up to the rank of Acting Assistant Surgeon and was given the choice of helping Billings or going into the field. Apparently what he had seen of Billings' labors convinced him that service in the western wilderness was preferable and off he went.⁴³

Eventually there came to Billings a first-class aide. On September 1, 1876, Crane sent Acting Assistant Surgeon Robert Fletcher who accepted the job—although he did not move to Georgetown.⁴⁴ Fletcher, a tall, slender, well-groomed courtly man whose dignified appearance belied his friendliness, had emigrated from Great Britain to the United States in 1847 and settled in Ohio. When the Civil War began he joined the Ohio Volunteers as a surgeon. Subsequently he managed an Army hospital, was a medical purveyor, and performed other duties.

Billings made Fletcher his assistant in checking articles, classifying subject index cards,⁴⁵ and managing the Library. Fletcher was perfect for these tasks. He was scholarly and conscientious, he worked long hours, and he got along well with Billings, his other associates, and with readers. William Osler never forgot his first visit to the Library and his reception by Fletcher, "an elderly gentleman, who very quickly put at my disposal the resources of the library, and for two days did everything in his power to further my wishes "

The assignment of Fletcher to the Library was one of the most fortunate events that happened to Billings. Without Fletcher, or an associate of similar ability, personality, and character, Billings would have had to spend much more of his time on library affairs and not have been free to engage in the many other activities that helped bring him fame.

THE DEPARTMENT REQUESTS FUNDS TO PUBLISH THE *Index-Catalogue*

During the absence of Billings in Europe in 1876 clerks continued to prepare subject cards for books and articles, and Fletcher continued to classify and file the cards.⁴⁶ After Billings returned the two men labored over the index. By mid-January 1877 so many cards had been inserted into the files that the estimated number of volumes required to print the entire catalog had increased from five to eight.⁴⁷ Surgeon General Barnes asked Senator Henry B. Anthony of the Committee on Printing to use his influence in persuading Congress to appropriate funds for publication. Barnes and Billings first hoped that Congress would authorize an edition of 5,000 copies of each volume, sufficient to supply every library and physician here and abroad who might desire a copy. But when the Government Printing Office estimated the cost to be \$6 a volume, or \$30,000 for an edition of 5,000 copies, they quickly lowered their request

to 3,000 copies, suggesting that the books be stereotyped so that additional volumes could be printed if required. The printing of the eight volumes would take 4 years, since only two volumes could be produced each year, the bottleneck being the slow, careful proofreading that would be necessary for maximum accuracy.⁴⁸

On January 22 Representative Morton Saylor (a graduate of Miami University, Billings' alma mater) introduced into the House a joint resolution authorizing the printing of the catalog of the "National Medical Library."⁴⁹ A few days later Senator Anthony introduced a bill for the same purpose.⁵⁰ These pieces of legislation had practically no chance of being considered, for Congress was close to adjournment and more important bills were waiting to be debated.

On February 23 Representative Henry Pierce sought to enact legislation by means of a parliamentary maneuver: he offered an amendment to the Civil Appropriation Bill to provide funds for the catalog. Another Representative protested that the amendment was out of order because there was no law authorizing the catalog, and after a brief argument the Speaker agreed.⁵¹ Billings' opportunity for obtaining an appropriation during this Congress expired and he had to wait until the next Congress convened in December 1877. In the meantime he expressed his feelings about the debate in this statement:⁵²

The question for Congress to decide is whether the result would be worth the expenditure. What is the value of such an index to the people of the United States as compared with an expedition to the North Pole, five miles of subsidized railroad, one company of cavalry, or a small post-office building?

Notes

¹ The accession numbers 9726, 9727, 9728, of volumes 1, 2, 3, of the Royal Society's catalog show that they were received during 1870. Vocher No. 17 abstracts of disbursements, Medical and Hospital Appropriation SGO show they arrived in September 1870.

Billings said of his partly completed catalog in 1875: "This mode of indexing is on the plan pursued in the Catalogue of Scientific Papers by the Royal Society of London." Billings, "Medical Libraries in the United States" in *Public Libraries in the United States*, p. 177.

² The value of subject catalogs was apparent to anyone who had undertaken scholarly research. Bookseller James Campbell of Boston, one of the Library's suppliers, wrote to Billings on Aug. 22, 1872, "[I] would suggest that at the time when you print your new catalogue that some arrangement be adopted to make a classified *Index* which would make it exceeding valuable to the medical profession as a ready book of reference to find authorities of special subjects." Letter, Campbell to Billings, MS/C/81.

³ Billings, "The Medical College of Ohio before the War. Address to the Society of Alumni of the Ohio Medical College." *Cincinnati Lancet-Clinic* 20: 297-305 (1888).

⁴ Billings, "Medical Libraries in the United States," p. 176. Letter, Billings to John Ashhurst, Jr., Mar. 11, 1874, CPP.

⁵ These cards were slips of tough, white paper, approximately 5" x 7", the same apparently, as were used for the catalog of 1873-74 (see chap. 6).

⁶ Letter, Billings to J. Ashhurst, Jr., Mar. 11, 1874, CPP.

⁷ Garrison, *Billings*, p. 221.

⁸ J. Y. W. MacAlister, *Royal Soc. Med.*, quoted by Garrison, *Billings*, p. 334.

⁹ Letter, Billings to John Ashhurst, Jr., Mar. 11, 1874, CPP.

¹⁰ Billings, "Medical Libraries in the United States," p. 177. There may have been other reasons why Billings decided to parallel Toner's index. Perhaps Toner's index, being private, might not have been as accessible to readers as

THE BEGINNING OF INDEXING IN THE LIBRARY

the Library's Perhaps Toner was not looking forward to publishing his index, whereas Billings apparently was

¹¹ Letters, Fryer to Billings, Jan 20, 1874 Billings to Girard, June 20, 1874, White to Billings, July 20, 1874 MS/C/81 Billings acknowledged the assistance of these officers on p iv of the foreward to vol 16 of the *Index-Catalogue of the Library of the Surgeon-General's Office*, 1895

¹² Letter, Smart to Billings, July 23, 1874 MS/C/81

¹³ Letter, Smart to Billings, Aug 2, 1874 MS/C/81

¹⁴ Letter, Smart to Billings, Aug 4, 1874 MS/C/81

¹⁵ Letter, Steinmetz to Billings, July 5, 1875 MS/C/81

¹⁶ Letter, Steinmetz to Billings, Aug 14, 1875 MS/C/81

¹⁷ Letter, Billings to Irwin, Aug 13, 1874 MS/C/81

¹⁸ The earliest letter referring to indexing in Billings' correspondence is a letter from Surg Fryer, Fort Wood, Jan 20, 1874 MS/C/81 Letters, Irwin to Billings, July 8, 14, Aug 10, Sept 7, Oct 26, 1874, Feb 3, 1875, Billings to Irwin, Aug 13, 1874, Meacham to Billings, June 15, 1875, Smart to Billings, July 23, Aug 19, 1874, Woodhull to Billings, July 16, Sept 23, Oct 3, 1874, White to Billings, July 20, Aug 17, 1874, Mar 16, 1875, Fryer to Billings, May 14, July 14 1874, Mar 3, July 17, Sept 1, Nov 1875, Billings to Weisel, June 30, 1875, Weisel to Billings, Aug 16, Sept 11, 1875 MS/C/81 Smart to Billings, Apr 13, May 9, 1875, Spencer to Billings, Feb 11, June 22, 1874 NYPL

¹⁹ Letter, Garrison to W Welch, Aug 14 1932 JH

²⁰ 43 Cong , 1st sess , Joint Resolution authorizing the Secretary of War to detail a medical officer of the Army to inquire into and report upon the epidemic cholera, approved Mar 25, 1874

²¹ Letter, Fryer to Billings, Jan 27 1875 MS/C/81

²² Letters, Perkins to Billings, Jan 25, Vandervoort to Billings, Jan 29, 1875 MS/C/81

²³ 43 Cong , 2d sess , H R Ex Doc 95 The Army and Marine Hospital Service reports were printed separately but bound and issued in one volume Supervising Surgeon General Woodworth's report covered only 28 pages, whereas the Army report comprised 1,025 pages Because the M H S report was placed first, and Woodworth's name was on that report's title page, he is often listed in catalogs as the author of the complete volume, whereas he was re-

sponsible for only a minuscule portion of the work

²⁴ Billings estimated five volumes in 1875 As the years went by and he indexed more and more periodicals, his estimates grew larger

²⁵ Hall was the first person hired by Billings to assist with the *Catalogue* He transferred from the GPO on July 1, 1875 "The entire work of preparing the author bibliographies, verification of titles and authors, supplying the dates of birth and death, selection of type, establishing rules and precedents, alphabetical order, etc , was in my charge as a practical printer and proof-reader under the approval and decisions of doctors Billings and Fletcher," he recalled (memo, Hall to Col C C McCulloch, Sept 2, 1916 MS/C/137) He was such a superior assistant that Billings had him promoted to the highest grade, and in 1891 placed him in charge of the reading room Hall remained with the Library 46 years, retiring in 1921 when he was in his seventies

²⁶ Letter, Billings to Congressional Printer, Apr 19, 1876 NA

²⁷ The United States was still in the depression following the Panic of 1873 Billings feared that the "rage for economy" might cause the House to reduce the Library and museum appropriation, and he asked editors and physicians to influence Congress See letters, Billings to S Challé, Dec 13, 1875, to E McClellan, Jan 3, 1876, to L Waterman, Mar 24, 1876 MS/C/89 H C Lea to Billings, Mar 15, 1876 MS/C/1 *Boston Med Sur J* 94 407, 509 (1876)

A disagreement between the Senate and House committees delayed passage of the appropriation bill, and for a time Billings could not order books Letter, Billings to Flugel, July 3, 1876 NLM

²⁸ Letters, Billings to Lea, Mar 16, 1876, to Jacobi, Apr 16, to Newton, Apr 21, to McGuire, Apr 21, to Bowditch, Apr 21, to Baker, Apr 21, to Cochran, Apr 25, to Da Costa, May, to Balch, May 12, to Brown, May 17, to Mussey, June 2 MS/C/81 Holmes to Billings, May 12, 1876 MS/C/1

²⁹ Letter, Holmes to Billings, May 12, 1876 MS/C/1

³⁰ *Boston Med Surg J* , 94 547-9 (May 11, 1876) The editorial was probably written by Francis H Brown, a former editor of the journal and one of Billings' book scouts see postal card, Brown to Billings, May 13, 1876 MS/C/81

³¹ *New York Med Rec* , 11 447-8 (July 8, 1876) Letter, George H Shady, editor *Med Rec* , to Billings, June 1876 NYPL Among other favorable editorials were those in *Philadelphia Med Times*, 6 373-4, 422 (1876), *Atlanta Med*

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Surg J, 14 184-5 (1876), and *Nation*, May 18, 1876

³² *Trans A M A*, 27 49 (1876), 28 35 (1877), 30 41 (1879) The committee comprised Joseph Toner, H C Wood, and J R Chadwick

³³ *Amer Lib J*, 1 121-2 (1876) Letter, Billings to Winsor, advising Winsor that Ashhurst would substitute for Billings, Sept 13, 1876 MS/C/81

³⁴ *Amer Lib J* 1 122 (1876)

³⁵ *Amer Lib J*, 1 122 (1876)

³⁶ *Public Health Reports and Papers, American Public Health Association* 3 239 (1877) Joseph Toner, Lewis H Steiner, and J Foster Jenkins were on the committee

³⁷ Letter, J Ashhurst to Billings, Mar 24, 1876 MS/C/1

³⁸ Letter, Billings to Gross, July 31 1876 MS/C/81

³⁹ Copy of resolutions attached to letter of transmittal from Gross to the President, Dec 14, 1876 MS/C/81

Clipping from Philadelphia newspaper in scrapbook, International Medical Congress W3/In737/1876 NLM

William W Keen, Philadelphia, offered to present a resolution at the Congress if Billings would send him a draft letter Keen to Billings, July 22, 1876 MS/C/81

⁴⁰ Letter, T B Allen to Billings, Mar 21, 1876, with reply, Billings to Allen, attached MS/C/81

⁴¹ Letter, Billings to Challé, Apr 3, 1876 MS/C/81

⁴² Yarrow, "Personal Recollections of Some Old Medical Officers," *Military Surgeon* 60 173 (1927) Later Yarrow accepted an assignment to

act as a proofreader for Billings A biography of Yarrow is in Edgar E Hume, *Ornithologists of the United States Army Medical Corps*, pp 530-49

⁴³ Page proof 140, vol 2, part 13, unpublished reminiscences of Kober MS/C/315 F A Tondorf, *Anniversary Tribute to George Martin Kober in Celebration of his 70th Birthday* (Washington, 1920), pp 6-7 copy in MS/C/315

⁴⁴ Order, Crane to Fletcher, Sept 1, 1876 NA

Fletcher was at this time a contract surgeon Later, when Congress abolished the Medical Department's practice of contracting with physicians, he became a civil servant

⁴⁵ Billings wrote a brief memorandum of instructions for indexers The rule for heading index cards was, "Titles on author cards to be full On subject cards brief, but the briefing will be done by Dr Billings + Dr Fletcher" undated memo MS/C/81

⁴⁶ Letter, Fletcher to Chadwick, Nov 14, 1876 MS/C/81

⁴⁷ Letter, Surgeon General Barnes to Sen H B Anthony, Jan 17, 1877 NA

⁴⁸ Letter, Barnes to Sen H B Anthony, Jan 17, 1877 NA

⁴⁹ 44th Cong, 2d sess, H R Joint Resolution 185, introduced Jan 22, 1877

⁵⁰ 44th Cong, 2d sess, Bill S 1198, introduced Jan 29, 1877

⁵¹ *Congressional Record*, Feb 23, 1877 p 1876

⁵² Billings, "National Catalogue of Medical Literature," *Lib J* 3 107-8 (1878)