

possible, we must begin immediately not to reinvent the library but to capitalize on this achievement and to fashion it to the needs which have overtaken us in recent years. The challenge before us cannot be met by legislation alone or by the National Library of Medicine alone, or by the private sector of the economy alone. The challenge calls for a wholehearted cooperative effort by everyone concerned. What Dr. Billings started in 1865 must be further supported in 1965. The future well-being of this nation depends on it.

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THE MEDICAL LIBRARY CRISIS: BILLINGS TO MEDLARS

LISTER HILL

United States Senator from Alabama

"An institution is the lengthened shadow of one man," Ralph Waldo Emerson observed more than a century ago.

In a very real sense this great National Library of Medicine, whose Centennial we observe here today, was woven out of the shadow and the substance of the vision and imagination of Dr. John Shaw Billings.

The man whose name and good works we honor here today was no pale academician. He started his career as a battlefield surgeon in the Civil War; some of his most moving letters describe the hardships and agonies associated with the crude surgery of that day and time.

After a particularly fierce battle in 1863, he wrote his wife (1), "I am utterly exhausted mentally and physically, have been operating night and day and still hard at work. I have been left here in charge of 700 wounded with no supplies."

Upon completion of his Civil War duties, he was assigned to the Office of the

Surgeon General of the Army. Among his duties was the supervision of the Surgeon General's library. As a senior administrator, he had many other tasks to perform and the library itself, then located in Ford's Theater, seemed of relatively low priority to his fellow officers. But not to Billings. Early in his stewardship, he outlined the crisis then facing the library in these prophetic words (2):

That there is need in this country of a medical library of this character is sufficiently evident from the fact that, in all the public medical libraries of the United States put together, it would not be possible to verify from the original authorities the references given by standard English or German authors, such as Hennen, Reynolds, or Virchow. No complete collection of American medical literature is in existence; and the most complete, if in this country, is in private hands, and not accessible to the public; while every year adds to the difficulty of forming such a collection as the Government should possess.

In the three decades he headed the library, he spoke unceasingly both here and abroad of the importance of a medical library in preserving the hard-won knowledge of the past and making it accessible to the medical practitioners of his day. Continually pressing for financial support, he wrote an endless stream of letters seeking donations of books to the collection. The extent of his success is illustrated by the fact that the library had only 2,200 volumes when he took over; when he retired thirty years later, it consisted of 116,000 volumes and 191,000 additional reference works.

Dr. Billings was not content to merely accumulate.—Having himself been through the frustrations of digging through literally thousands of indices to locate the material he wanted, he boldly proclaimed the need for one comprehensive catalogue listing, under author and subject, all materials contained in the growing collection of the library. Thus the famous *Index-Catalogue* came into being. The first volume was not completed until 1880. The second volume was started in 1880, but not finished until his retirement fifteen years later.

Not content with the production of these massive catalogues, Dr. Billings also established the *Index Medicus*, the forerunner of the monthly publication which today keeps medical practitioners in all parts of the world abreast of the latest research knowledge.

Time permits but a brief mention of the many other contributions of John Shaw Billings.

He carried out a survey of the then Marine Hospital Service leading to the establishment of the U.S. Public Health Service as we know it today.

He influenced Andrew Carnegie in the establishment of the New York library system, and was the first director of the New York Public Library.

He designed John Hopkins Hospital and the Peter Bent Brigham Hospital, among others; he was influential in the revolutionary curriculum changes pioneered by Johns Hopkins in the 1890's, and he recruited Drs. William Osler and William H. Welch to the faculty of that great medical school in Baltimore.

As the most influential member of the National Board of Health, he launched the first federal grants for medical research.

However, in his own time, he was most celebrated for his work in the development of medical libraries. In a speech dedicating a new building for the

Boston Medical Library Association, Oliver Wendell Holmes, that great physician and man of letters, paid Dr. Billings the following tribute in 1878 (3):

But it is from the National Medical Library in Washington [notice what he called the Library even then] that we have the best promise and the largest expectations. That great and growing collection of 50 thousand volumes [this was 13 years after Billings had begun his work] is under the eye and hand of a librarian who knows books and how to manage them. For libraries are the standing armies of civilization, and an army is but a mob without a general who can organize and marshal it so as to make it effective.

Judging from the remarks of Holmes and many others, it is fair to conclude that the tremendous importance of medical libraries was better recognized in the last century than it has been in the present one. Most of you here today know of the critical condition that the Armed Forces Medical Library was in after World War II. Existing on inadequate appropriations and housed in antiquated facilities, susceptible to damage from the elements, the very existence of this great collection was threatened.

Here today, I cannot pay sufficient tribute to the many leaders of American medicine who, deeply aware of this crisis, gave of themselves unstintingly to acquaint the Congress and the American people with the situation. Dr. Alan Gregg, that great statesman of American medicine, was tireless in his efforts; I very warmly remember many conversations we had about the future of the Library. I wish that time would permit an adequate tribute to the many doctors who served as Chairmen of the Board of Regents of the National Library of Medicine after it was transferred to the U.S. Public Health Service. Dr. Worth B. Daniels of Washington, D.C. served as its first Chairman, and he was succeeded in the office by such distinguished practitioners of medicine as Dr. L. S. Ravdin, Dr. Champ Lyons, Dr. Michael E. DeBakey, Dr. William B. Bean, Dr. Warner L. Wells, Dr. William L. Valk, and its present Chairman, Dr. Norman O. Brill.

Equally important in achieving the goal of a truly great medical library were the 2 post-war directors of the Library—Dr. Joseph McNinch, who served from 1946 to 1949, and Dr. Frank Rogers, who succeeded Dr. McNinch and carried on the battle which culminated in the dedication of this beautiful new National Library of Medicine in 1961.

CRISIS IN COMMUNICATION

While justifiably proud of this magnificent institution here in Bethesda, we cannot ignore overwhelming evidence to the effect that medical libraries in other parts of the country have neither the financing, the equipment, nor the personnel to disseminate quickly to the practitioner of medicine the life-saving bounty of newly acquired research knowledge. We are not talking now of books and journals for future reference—we are talking of medical findings whose worth is meaningless unless they are applied to the disease problems of our time.

This gap in communications is one of the most serious crises confronting American medicine today. In 1962 the famous Dryer report (4), *Lifetime Learning for Physicians*, observed that the gulf between what is known in medicine and what is transmitted to the average practitioner is alarmingly wide. The

report concluded that postgraduate medical education, the essential communications line between the medical center and the frequently isolated physician, was fifty years behind the time in terms of innovation and the use of new techniques.

The report of the President's Commission on Heart Disease, Cancer and Stroke (5), released two years after the Dryer report, reinforced its major conclusions. Noting the crucial importance of medical libraries in the continuing education of the physician, the Commission report was highly critical of the less than \$1 million spent in 1964 by the Public Health Service for grants-in-aid to medical libraries in various parts of the country.

"Communication of information to scientists and practitioners is critically important to progress in research and application of medical knowledge," the Commission report observes. "Medical libraries are the primary vehicle for accomplishing the communications process."

MEDICAL LIBRARY ASSISTANCE ACT

On the basis of substantial evidence contained in the Dryer report and the report of the President's Commission on Heart Disease, Cancer and Stroke, and on the basis of an enormous amount of additional evidence obtained in Senate hearings over the years on our national medical education and research effort, I introduced the Medical Library Assistance Act of 1965 to provide federal grants to assist both in the operation of regional medical libraries and in the training of library personnel. I am happy that I have been joined in the sponsorship of this legislation by Congressmen Harris and Fogarty.

In essence, this measure is designed to close the gap between the scientific break-through and the more important clinical follow-through. In a recent talk, the Surgeon General of the Public Health Service estimated that a minimum of 150,000 American lives could be saved each year, and another 1,000,000 people rescued from permanent disability, if we developed an effective communications system through which the fruits of our medical research could be quickly transmitted to every doctor out on the firing line.

In this noble endeavor to bring the blessings of medical research to the sick, the halt, and the maimed, we must be ever daring in our aspirations. We must be worthy of the heritage of John Shaw Billings, who, in his famous London speech, "Our Medical Literature," told the International Medical Congress (6):

This evidence of discontent and tendency to change is a good sign. In these matters stillness means sleep or death—and the fact that a stream is continually changing its bed shows that its course lies through fertile alluvium and not through sterile lava or granite.

In consecrating ourselves to the great task of preserving and transmitting our great medical heritage, we can draw needed strength from George Stewart's beautiful tribute at the opening of the Yale Medical Library a quarter of a century ago (7):

Here, silent, speak the great of other years, the story of their steep ascent from the unknown to the known, erring perchance in their best endeavor, succeeding often, where to their fellows they seemed most to fail.

Here, the distilled wisdom of the years, the slow deposit of knowledge gained and writ by weak, yet valorous men, who shirked not the difficult empire;

Here is offered you the record of their days and deeds, their struggle to attain that light which God sheds on the mind of man, and which we know as Truth.

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MEDICAL LIBRARIES AND MEDICAL EDUCATION*

OREN HARRIS

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I can think of no occasion in which I am happier to participate than this Centennial to honor Dr. John Shaw Billings who founded this Library. Dr. Billings achieved international fame as a librarian, physician, bibliographer, statistician, educator, hospital planner, and sanitarian. But above all, perhaps, Dr. Billings was an inspired educator. And so much of his life was devoted to medicine that I think that if he could be with us here, he might prefer that we talk about medicine rather than only about his accomplishments.

When we look at the role of medicine in this nation today, we find that it is difficult, in the historical perspective at least, to examine this field without frequent mention of Dr. Billings' name, and particularly in the fundamental area of medical education. By providing students, scholars, and researchers with the key to the stored knowledge of the medical profession, he did as much for medical education as he did for any other area of medicine—and none is more important than education.

Plato said, "The direction in which education starts a man will determine his future life." This is certainly true of medicine and all of the health sciences. The things which young medical students learn in their formal educational courses in medicine set the courses of their future lives as physicians and scientists. The character of their instruction more often than not determines the quality and productivity of their future work. At no point do we have a better opportunity to shape the character and skill of the medical sciences, so important

* Delivered by Representative Leo O'Brien of New York.