tested must not have been kept under laboratory conditions for more than a month their use becomes restricted to those countries where fresh supplies can be quickly secured at regular intervals.

The bitterling (*Rhodeus amarus*) has also been employed as a test animal. This small fish is easily obtainable, but its maintenance under laboratory conditions demands a certain skill. The female (not in breeding condition) has a minute oviducal tube projecting from its ventral surface. If 5 c.cm. of pregnancy urine is added to 2 litres of aquarium water, and if the test is positive, there is a lengthening of this tube by 100 to 300 per cent. within seventy-two to one hundred hours. If a concentrate of urine is used the result can be gained after twelve to fourteen hours.

Accuracy

In these pregnancy diagnosis tests 90 or 95 per cent. accuracy is not sufficient. Errors there must be, for the hormone concentration during early pregnancy is not the same in all women, and it is possible by pure mischance to use in one and the same test a number of animals every one of which is refractory. Nevertheless the aim in these tests must be 100 per cent. accuracy, and no test which yields more than 1 per cent. of error can claim much support. It is for this reason that most of those who are carrying out these tests continue to rely upon the Aschheim-Zondek and Friedman tests, but everyone is waiting for the discovery of a new test animal, and for the elaboration of new techniques which will shorten the time required without affecting the reliability.

Chemical Tests

These biological tests are necessarily somewhat expensive. Animals must be bred or bought, fed, housed, and cared for; the work requires a Home Office licence and a degree of surgical skill. It is clear that if there could be devised some chemical test which could conveniently be performed in half an hour or so, and which would remove the necessity of maintaining and slaughtering thousands of animals and yet yield a degree of reliability equal to that of the biological tests, it would surely replace them. Several such chemical tests for the recognition of early pregnancy have been devised, but as yet none of them can compare in respect of trustworthiness and simplicity with the biological tests now in use. But recent work seems to show that it is not improbable that sooner or later a simple, inexpensive, and reliable chemical method of pregnancy diagnosis may be evolved.

Voge, six years ago, first suggested that Knoop's bromine water test for histidine might be used as a pregnancy test, in view of the fact that a connexion between the hypophyseal hormones and the compounds of the β -iminazoly type had been demonstrated. This suggestion provoked at the time a certain amount of experimental inquiry and a great deal more destructive criticism. However, Kapeller-Adler (1933) rescued this test from the limbo of forgotten things, and by introducing certain modifications, which obviated many of the difficulties and removed certain of the causes of error, succeeded in making the test much more reliable. Renton (1935), in reporting on a series of 100 tests, records that among them there were but seven false negatives. This, of course, though infinitely better than Voge's original figures, is not yet nearly good enough. Another chemical test is that devised by Visscher and Bowman (1934). This was critically discussed in a recent number of the *Journal* by Gladys H. Dodds (1936), who has completed the test on 100 pregnancy cases, obtaining a correct result in 90 per cent., and on eighty non-pregnancy cases with an 88.8 per cent. of accuracy. Again these figures make it impossible for the present to substitute this test for the

biological ones that are now employed, but they are encouraging, and it is to be hoped that they will stimulate further research in this subject.

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CENTENNIAL OF THE ARMY MEDICAL LIBRARY, WASHINGTON*

BY

SIR HUMPHRY ROLLESTON, BART., G.C.V.O.
 K.C.B., M.D.

EMERITUS REGIUS PROFESSOR OF PHYSIC, UNIVERSITY OF CAMBRIDGE; SOMETIME PRESIDENT, ROYAL COLLEGE OF PHYSICIANS OF LONDON

It is a very high honour as well as a most pleasant privilege to assist at the Centennial of the conception of the Library of the Surgeon-General's Office, United States Army, now containing more than a million items and the largest medical library in the world. George Adami (1914) described the *Index-Catalogue* and the *Index Medicus* as America's greatest gift to medicine, and in his admirable paper "The Centennial of the World's largest Medical Library: The Army Medical Library of Washington," from which I have freely drawn, Major E. Erskine Hume tells us that Professor William H. Welch not only expressed a similar considered opinion in 1921, but at his last visit to the Library placed it above America's services in connexion with anaesthesia, the insect transmission of disease, and the development of public health laboratories.

The transformation of medicine in America during the last twenty years of the nineteenth century and after was due to several causes: among others to the men of Billings's generation, especially Welch and Osler, to the example set by the Johns Hopkins University and Hospital, to the Library of the Surgeon-General's Office, its *Index-Catalogue*, and the *Index Medicus*. The Johns Hopkins Hospital, the Library, its *Index-Catalogue*, and the *Index Medicus* were largely the offspring of Billings's energetic initiative.

It is surely quite unnecessary to attempt to preach to the converted on the value and inspiring virtue of medical libraries, for this has been so conclusively set forth by Billings, by Oliver Wendell Holmes (1809-94) at the first opening of the Boston Medical Library in 1878, by Osler in "Books and Men," also at the Boston Medical Library when a new building was opened in 1901, and in 1926 at Cleveland in the charming address "The Doctor and his Books" by Professor Harvey Cushing, Osler's pupil and Boswell, who could so convincingly have shown here and now how that tradition survives.

The Army Medical Library

The layman in the street might be puzzled to explain why and how it came about that the Surgeon-General of an army, however great, should have such a library as this attached to his office, which is devoted more to active organization and orders than to medical bibliography ancient and modern. The answer, clear to everyone here, is the personality of John Shaw Billings of the Surgeon-General's Office and the creator of its library. Originally a small collection of reference books for the use of the Surgeon-General (Joseph Lovell) in his office at Washington—according to Billings (1880) some time before 1836—it long remained in a state of suspended animation. In 1840 a manuscript catalogue listed 135 works (228 volumes); at the outbreak of the Civil War (1861) the number of volumes was between three and four hundred.

Besides books, pamphlets, the valuable collections of 450 out of the estimated 600 medical incunabula (books

* Commemorative Oration (abridged) given at Washington, November 16th, 1936.

printed before 1500), and of Paris theses unrivalled even in their native city, the Library has five thousand portraits of medical men, and a collection of medical autographs to which Abraham Jacobi and Garrison made generous contributions. The Army Medical Library has stimulated beneficial imitation, which charitably began at home, for in 1929 there were 200 medical libraries in the United States as compared with 118 in Europe (Garrison).

The Army Medical Library (up till 1922 always called the Library of the Surgeon-General's Office) has now, as happens sooner or later to active libraries, been faced for some time with the impossibility of further expansion on its present site, which indeed is now wanted for the further building development of Washington. What better way of celebrating the commencement of the second century of the Library could there be than the erection of a new building so urgently needed and so thoroughly deserved?

The Index-Catalogue of the Library of the Surgeon-General's Office

A library is obviously a great and essential factor in the preservation of knowledge and history. It has, however, been rather pessimistically said that a library is a mausoleum where knowledge lies dead and mummified; this may be a real danger unless it is activated and kept alive by a guide to its contents. A library is not complete without a good catalogue—namely, one with the double entry of author and subject; and it is obvious that the larger the library the more fully will such a catalogue afford access to existing knowledge, especially when printed and distributed widely to other libraries. The Army Medical Library is the largest of its kind, and more current periodicals are devoted to medicine than to any other branch of science. As long ago as 1887 the Library of the Surgeon-General's Office obtained annually 700 published medical periodicals exclusive of those devoted to pharmacy and to dentistry. Since then they have become much more numerous; at the end of 1912 the total number of current periodicals was estimated at 1,654 (C. P. Fisher); the Library received 1,895 in the year 1916, the number fell to 1,240 in 1920, but rose to 1,925 in 1927 (Garrison, 1929), and now is about 2,000. Medical journals vary in their span of life; some are quite ephemeral, and there appears to have been a considerable mortality during the world war. Their fluctuating population is compatible with Bulloch's estimate that of the 23,000 items in the "World List of Scientific Periodicals," covering the years 1900–31, 5,000 were medical. The bibliographical scope of the *Index-Catalogue* is therefore phenomenal, and widespread appreciation of its help is graphically shown by the worn state of the original bindings, or by new bindings, of its volumes in the medical libraries of Europe.

Without in any way detracting from the services of the bibliographical fathers it is obvious that the life of a Government Department or public institution is potentially perpetual and not limited by the relatively short span of an individual life. Other medical bibliographies were described by Osler as Lilliputian as compared with the Gargantuan character of the *Index-Catalogue*.

Among bibliographies that of medicine now takes a very high, if not the highest, place. As so largely responsible for bringing this about, the *Index-Catalogue of the Library of the Surgeon-General's Office*, which is beyond any comparison the most exhaustive medical bibliography ever undertaken, and the *Index Medicus* have made the whole medical world, especially English-speaking readers, hopelessly insolvent debtors. This far-reaching obligation must be most gratefully, and humbly, acknowledged.

The history of the *Index-Catalogue* began in Billings's brain from his experience in 1860, when the need for such a bibliography was painfully forced on his notice, and it is probable that he began to form plans after being given in 1868 a practically free hand with the fund of eighty thousand dollars; the catalogue published in 1872 and 1873 led up to the definite proposals in 1876 contained in his "Specimen Fasciculus of the National Medical Library, under the Direction of the Surgeon-General,

United States Army." This was submitted widely to universities, libraries, and medical men for criticism and suggestions. It was arranged under both authors and subjects, and so far-seeing that its style and arrangement were practically those subsequently adopted in the *Index-Catalogue*. It was warmly welcomed in his dedicatory address at the opening of the Boston Medical Library in 1878 by Oliver Wendell Holmes, who correctly prophesied that a liberal appropriation by Congress to carry out such a work for this advancement of sound knowledge and the improvement of human conditions would greatly redound to the honour of the nation.

The first series of the *Index-Catalogue* (sixteen volumes) began in 1880, when Congress, then urged by Abraham Jacobi (1830–1919), made the first appropriation for this purpose, and its sixteen volumes came out yearly, closing in 1895; it indexed 85,663 author titles, 151,504 pamphlets, of subject titles 168,587 books, and 511,112 journal titles. It was edited by Billings, who in the last volume spoke of it as "a labour of love" with the co-operation of Fletcher, who supervised the proof-reading and devised the abbreviations of the periodicals.

The second series consisted of twenty-one volumes, which were issued between 1896 and 1916 and were edited by Robert Fletcher until his death in 1912, and was completed by Garrison and Allemann. The third series (1918–32) consisted of ten volumes, and indexed medical literature up to the end of 1925, under the direction of Albert Allemann, who was principal assistant librarian from 1922 to 1932.

At one time it was arranged that the *Index-Catalogue* should come to an end with the third series. This would have been a bibliographical catastrophe of the first magnitude and have required some corresponding substitute, such as a clearing-house of knowledge under the League of Nations, a suggestion made in the *British Medical Journal* in 1929. But fortunately in the following year anxiety was relieved by Surgeon-General M. W. Ireland, who, after receiving and considering opinions from various sources, announced that another series would at once be undertaken.

The "Index Medicus"

This famous and invaluable monthly bibliography of the world's medical publications, though long a close companion and immediate supplement of the *Index-Catalogue*, was never an official Government periodical, and therefore depended for financial support on its sales, thus causing its devoted editor, Fletcher, much business worry. In Garrison's words (1913) "the work of copying out the library cards for redaction was parcelled out, as the celebrated Haller did with his eighteenth century bibliographies of medicine, among the wives and daughters of the library force as private work." It became a sort of annual *Index-Catalogue en miniature* (Garrison, 1915) and, like the larger work, had a double entry of subject and author. Starting in January, 1879, a year before the first volume of the *Index-Catalogue* appeared, it came out monthly until May, 1899, when it sank in financial deep water; for, in spite of the help it gave medical writers, its subscription list was never large, much less sufficient to meet the expenses of publication. Many of us, it must be feared, regarded the *Index Medicus* and the *Index-Catalogue* as natural blessings, like fresh air and sunshine, and did not realize that gratitude should take a more practical form than passive expectation of their continuance. Three more volumes (1900–2) were brought out under the title *Bibliographia Medica (Index Medicus)* in Paris with the support of C. Potain (1825–1901), G. Debove (1845–1920), Charles Richet (1850–1935), with Marcel Baudouin (1860) as editor-in-chief. In 1903 the *Index Medicus* was given a fresh lease of life by the wise generosity of the Carnegie Institute of Washington, which had been incorporated in 1902 with Billings as vice-chairman of the Board of Trustees. The *Index Medicus* continued until 1927, when it was amalgamated with "The Quarterly Cumulative Index to Current Medical Literature," published since 1916 by the American Medical Association, under the title of the *Quarterly Cumulative Index Medicus*.

Librarians

Like many other lovers of literature, whole-time librarians usually lead secluded lives outside the ambit of the limelight. The ideal librarian is a saintly, self-denying character with a keen interest not only in books but in their would-be readers, whose time he saves, thereby helping them, rather than himself, into print and prominence.

The number of medical men who have been whole-time librarians of medical libraries is small; but in the United States what may have been lacking in quantity has been more than made good by quality. To three bibliographer-librarians of the Army Medical Library tribute is most justly due—Billings, Fletcher, and Garrison: for, like the history of the world, that of this great library is the biography of its great men (T. Carlyle).

John Shaw Billings

John Shaw Billings was born on April 12th, 1838, in Cotton Township, Switzerland County, Indiana, as the second of the five children, two only surviving infancy, of James Billings (1806–92) and Abby Shaw, a descendant of John Howland, one of the Pilgrims. His father's family, originally Billing, came from the village of Billing in the diocese of Peterborough in the county of Northampton, England. In the middle of the seventeenth century William Billing of Taunton, Somerset, who was a lineal descendant of Sir Thomas Bylling or Billing (ob. 1481?), chief justice of the King's Bench, emigrated to New England. He was a direct ancestor of John Shaw Billings, the final s having been added in the eighteenth century in America.

As a young boy Billings worked on a farm of which his father was in charge, but even then he was an omnivorous reader and was largely self-educated. By an arrangement, entailing resignation of any further financial help, he secured from his father the necessary payments for instruction at Miami University, Ohio, where in 1857 he took the degree of bachelor of arts with distinction in classics. He then entered the Medical College of Ohio at Cincinnati, and supported himself during a two-years course; each year lectures were given for five months, the lectures being precisely the same year after year. In a reminiscent address (1888) on the "Medical College of Ohio before the War" he remarked that "in those days they taught us medicine as you teach boys to swim—by throwing them into the water." The privations of these two years of medical education were the hardest of his life, and he believed that he had never recovered from the effects of one winter during which he lived on seventy-five cents a week. He looked after the care of the dissecting rooms, and before graduation held internships in two hospitals. A thesis was at that time demanded for the doctorate, and during the preparation of his essay on "The Surgical Treatment of Epilepsy" (published in 1861) Billings found that there was not any really efficient medical library in North America; this stimulated him later, when he made the opportunity, to provide these much-needed facilities—the Library of the Surgeon-General's Office, its *Index-Catalogue*, and the *Index Medicus*. Indirectly this thesis thus did an enormous service, probably far more than any other thesis has done, or ever will do, to medicine. After graduation in 1860 he became demonstrator of anatomy in the medical school, and the prospect of a surgical career appeared on the horizon. His life's work, however, was entirely changed by the outbreak of Civil War in 1861. When he joined the Army of the North he was exceptional in equipping himself with what were then considered as "new-fangled notions"—namely, a set of clinical thermometers and a hypodermic syringe. His services in the war, first as assistant surgeon and subsequently as acting medical inspector of the Army of the Potomac, were recognized by the brevet of lieutenant-colonel, March 13th, 1865, "for faithful and meritorious service." On August 22nd, 1864, Billings was relieved from duty in the field and posted to the Washington branch of the Medical Director of the Army of the Potomac, and on December 27th, 1864,

was transferred to the Surgeon-General's Office in the War Department, where among other duties he was in "nominal, though not official," charge of the Library. Here he remained for thirty years, until on October 1st, 1895, he retired at his own request. For the first ten years his official duties were of a somewhat dry, routine character, but this did not prevent him from working on his own account, especially on the microscopy of cryptogamic fungi. In 1875 Billings's plans for the Johns Hopkins Hospital were selected as the best by its trustees, and for a quarter of a century he played a dominant part in its organization; this was one of the three greatest of his many-sided activities, the other two being the Surgeon-General's Library with its *Index-Catalogue* and the *Index Medicus*, and the New York Public Library.

The next year was notable for the appearance of his "Specimen Fasciculus of the National Medical Library, under the Direction of the Surgeon-General of the United States Army," and also of his "A Century of American Medicine, 1776–1876: Literature and Institutions," which was described by Garrison (1929) as the most critical and useful account of American medical literature; it was also an antecedent of Abraham Flexner's report to the Carnegie Foundation for the Advancement of Teaching on "Medical Education in the United States and Canada" (1910). In 1889 overtures were made to Billings to induce him to move to Philadelphia as professor of hygiene, and in 1891, with the permission of the Surgeon-General, he began to lecture there on hygiene and vital statistics, and in 1895 left the Surgeon-General's Library and moved to Philadelphia to take up the professorial chair. On June 1st of the following year, however, he was released from this chair in order to take up the post of Superintendent-in-Chief of the New York Public Library, which on his death in 1913 contained two million volumes and had more than fifty branch libraries, with a staff of a thousand persons. In his last twenty years this forceful reserved man went through eight (four being major) operations, for cancer of the lip and calculi, and finally succumbed on March 11th, 1913. He was buried with military honours in Arlington National Cemetery.

In his time Billings played many parts, and with uniform success; a man of affairs, he thought and organized far ahead, on broad lines, and in many directions, as his output of 171 publications in the course of half a century (1861–1911) bear witness. As a bibliographer he has been compared with the encyclopaedic Albrecht von Haller of the eighteenth century, and was given the palm by Osler. From his eminence as a vital and medical statistician he was called in to take an active part in the reports of the tenth (1880) and eleventh (1890) censuses of the United States, and he was constantly giving advice on public health and hospitals. Extremely versatile he was a good judge of men—a faculty not always found in scholarly bibliophiles—and selected Fletcher and Garrison for the War Medical Library, and Welch, Osler, and Halsted for the Johns Hopkins. Garrison, from long association with his chief, drew the character of the strong, straight man who had the power of imposing his will on others, and sometimes employed the Napoleonic trait of simulating anger, but hardly ever was angry in reality. Welch regarded him as the wisest of men, and Halsted said that he "was too great a man to be fully appreciated in his time." One of his closest friends in London, Sir Lauder Brunton, wrote: "As his name shows, he was of Scandinavian ancestry, and he retained the overpowering strength and energy by which his Berserker forefathers carried everything before them."

Sir John MacAlister (1856–1925), the secretary and moving spirit in the transformation of the Royal Medical and Chirurgical Society of London into the Royal Society of Medicine in 1907, quoted the following response by Billings to a compliment about his success in getting work done:

"I'll let you into the secret—there's nothing really difficult if you only *begin*—some people contemplate a task until it looms so big it seems impossible, but I *just begin* and it gets done somehow. There would be no coral islands if the first bug sat down and began to wonder how the job was to be done."

Robert Fletcher

Robert Fletcher was born at Bristol on March 6th, 1823, as the son of Robert Fletcher, an attorney and accountant. For the two years 1837-9, before he entered on "the physic line" at the Bristol Medical School, he worked in his father's office, and this probably accounted for his later interest in medical jurisprudence, on which he lectured from 1884 to 1888 at Columbia University, Washington, of which he was made an honorary M.D. (1884), and at the Johns Hopkins University (1897-1903). In 1839 he was apprenticed to Henry Clark (1801-61), a well-known surgeon and one of the founders of the Bristol Medical School, for the usual term of five years; the last two of these years he spent at the London Hospital as a pupil of James Luke (1799-1881), who was twice president of the Royal College of Surgeons of England, and of a physician whose name Fletcher, when in reminiscent mood in the last year of his long life, confessed had faded from his memory. He married Hannah, daughter of John House of Bristol, in 1843, and in the following year obtained the Membership of the Royal College of Surgeons of England (M.R.C.S.) and the Licence of the Society of Apothecaries (L.S.A.), then the usual qualifications of general practitioners. In 1847 he emigrated to the United States and settled in practice at Cincinnati, where he may have met his junior in years and future friend and chief—Billings. He might have remained there indefinitely; but the Civil War changed both their lives. They certainly knew each other when surgeons in the Army of the North during the Civil War, after which they both were promoted, Fletcher to the rank of colonel "for faithful and meritorious service."

In 1871 he was called to the Provost-Marshall's office in the War Department at Washington to take part in the preparation of what became two volumes of medical and anthropological statistics derived from examination for military service of more than a million men. This work, in which he wrote the special section on anthropometry, was published in 1875, and on September 1st, 1876, he began his long association with the Surgeon-General's Library, of which he was the principal assistant librarian from 1876 to 1912. The work on the *Index-Catalogue* now went ahead under Billings and Fletcher who, as already mentioned, also launched the *Index Medicus*, which was mainly directed by Fletcher as associate editor (1879-99) and as editor-in-chief (1903-12); he has therefore been gratefully called "the Father of the *Index Medicus*."

Fletcher did not publish under his own name nearly so many papers as his colleagues Billings and Garrison. He was a dignified, extremely kindly, hospitable, and learned man, compared as a scholar to William Heberden the elder by Garrison, and described by Osler as looking like a courtly gentleman and student of the old school, and seeing life steadily and seeing it whole. He had a distinct physical resemblance to Sir David Ferrier (1843-1928), or so it seemed to me when he most pleasantly made me acquainted with the Library in 1907. Age preserved his best qualities, and he lived up to his favourite therapeutic motto "Treat any bodily ailment with contempt." Like Billings, with whom he was described as "working beautifully," he set a wonderful example of hard, honest work. Alike in character they differed in temperament; Fletcher preferred the quiet work of the Library to the outside activities so noteworthy a feature of his colleague's life. Rich in the affections of his professional colleagues, he received honours of the best kind; on January 11th, 1906, he was entertained at dinner in Washington and presented with a loving-cup by some leaders of the profession. In 1910 he received from the Royal College of Surgeons of England the honorary gold medal "for liberal acts of distinguished labours, researches, and discoveries eminently conducive to the improvement of natural knowledge and of the healing art." This medal, instituted in 1802, has been awarded on seventeen occasions only during a hundred and thirty-four years. On October 7th, 1912, the honorary degree of M.D. was conferred on him *in absentia* by the University of Bristol.

In 1911 he had an attack of diphtheria and recovered slowly, but returned to the Library and worked until

a few days before his death on November 6th, 1912, at Washington in his ninetieth year, as did Morgagni (1682-1771), and Clifford Allbutt (1836-1925). Like Billings he was laid to rest with military honours in Arlington National Cemetery.

Fielding Hudson Garrison

Fielding Hudson Garrison, born at Washington, D.C., on November 5th, 1870, was the son of John Rowzee and Jennie (Davis) Garrison. He took the degree of A.B. in 1890 at the Johns Hopkins University and that of M.D. at the University of Georgetown, Washington, D.C., in 1893, work for this being chiefly done at night after his duties at the Library were ended. In the *American Who's Who* it is stated that he was assistant librarian in the Surgeon-General's Library from 1889 to 1922, but the official records of the Surgeon-General's Office show that he was appointed a clerk on probation on March 4th, 1891. His natural ability in bibliography was developed by Billings and Fletcher. In 1917 on the outbreak of war he was commissioned as major in the Medical Reserve Corps, becoming Lieutenant-Colonel, Medical Corps, U.S.A., in 1918, and Lieutenant-Colonel, Medical Corps, Regular Army, on July 1st, 1920. He first served in several camps in America, and later was in the Philippine Islands, 1922-4. He was retired as colonel on May 19th, 1930, and was appointed librarian of the Welch Medical Library, Johns Hopkins University, and retained this post until his death.

Garrison was an indefatigable, and equally unobtrusive, worker for the *Index-Catalogue* and as editor of the *Index Medicus* (1903-27); in the earlier years of the latter responsibility he is said to have often spent eighteen out of the twenty-four hours in securing perfect accuracy. He continued to act as an associate editor of its successor the *Quarterly Cumulative Index Medicus* (1927-9). He will long be known for what he entitled *An Introduction to the History of Medicine* (1913, fourth edition 1929), which is the indispensable companion at the elbow of those who care to verify names, dates, and events. It would puzzle imagination to picture any work, short of a small library, which could correspond to such an introduction.

He was a graceful and allusive as well as a prolific writer on many aspects of medicine; thus during the last ten years of his life he wrote seventy-seven articles in the *Bulletin* of the New York Academy of Medicine, of which he had been consulting librarian since 1925. Of his full memoir of J. S. Billings (1915) he wrote nearly twenty years later "it took more vitality out of me than anything else I have done. I should never dream of undertaking anything of the kind again." In a letter six months before his death in reply to an inquiry when a new edition of his *Introduction to the History of Medicine* might be expected, he modestly wrote with a philosophy somewhat resembling that of Koheleth, the author of Ecclesiastes:

"Medical publishers, like other business men, have been under the ban of 'Old Man Depression' and are chary about new ventures—in this case, until the fourth edition is completely sold out, which may be *ad Graecas Kalendas*. I had two drawn contracts for new books and both went up in smoke. But, as the Spaniards say, 'I am glad,' as such things mean using up one's vitality over references and indexing, and often to no purpose."

A great correspondent, he thus had friends, such as Clifford Allbutt, though they had never met. He wrote a neat hand without a trace of writer's cramp, though in 1928 he admitted that he had "never had the luxury of a doctor's private secretary." I never saw him, but we had corresponded since 1926, and in the last letter from him, dated March 16th, 1935, he spoke of writing "a brief editorial on Fontana, shortly after which I suspend operations until the summer vacation, when I usually resume writing." Few medical men can have better deserved the honorary degree of Litt.D. which in 1932 the University of Yale honoured itself by conferring on him. With a wide and refined taste in literature the chief interest in his life was music; he was an accom-

plished pianist, and, perhaps unexpectedly, was well versed in thermodynamics. An extremely sensitive soul, he lived and laboured in a backwater while honours and promotions drifted by in other directions.

His health had long been poor, as may be suspected from some of the short quotations made above from his letters. A sudden emergency necessitated an abdominal operation from which he did not recover, dying in the Johns Hopkins Hospital on April 18th, 1935. The day before his operation he spoke of his work, of an iconography and bibliography of W. H. Welch, and of a volume of his own collected papers to be published under the title "Medicine in Space" (Sigerist). Like Billings and Fletcher he was buried in Arlington National Cemetery.

Major Erskine Hume has kindly sent me a copy of his full and sympathetic account of Garrison's association with the Library, which will appear in the forthcoming special Garrison number of the *Bulletin of the Institute of Medical History*.

TREATMENT OF G.P.I. AT LONDON MENTAL HOSPITALS

Up to the present most of the sufferers from general paralysis of the insane who receive treatment under the London County Council have been sent to Horton Mental Hospital, where there are special arrangements for controlled infection with, and treatment of, malaria in association with the malaria laboratory established by the Ministry of Health. Difficulties in respect of accommodation, however, have made it impossible to receive there all the cases for which this treatment would be desirable. Voluntary and certified patients of both sexes have received care during the acute and convalescent phases of their malaria in a special detached villa at Horton, but this provides room only for twenty-three patients. It is now proposed that patients shall be removed from this villa on the completion of the febrile stages of their treatment so that the unit can be used exclusively for patients during the time they are infected with malaria. It is expected that this new arrangement will permit of 180 treatments a year, an increase of 105 over the number given last year, and that it will suffice for the present, but that with wider publicity of the knowledge of the establishment of a special centre at Horton an increased number of voluntary patients will avail themselves of the facilities for early treatment, and make even this extended accommodation insufficient. It is stated that while a complete scheme of re-allocation of accommodation must be postponed, it is possible to contemplate at once the admission to the special malarial treatment unit at Horton of such early cases as are likely to respond rapidly and favourably, so that they may be discharged within a short period—not much more than two months—passing through the small number of beds available in the villa without silting up the accommodation for chronic cases provided elsewhere in the institution.

Prophylaxis and Research

It is also proposed to pursue investigations into aspects of general paralysis as yet imperfectly explored. An inquiry into family histories, which has been started already, will be followed up by careful investigation by specialist staff so that treatment can be arranged for persons in whom positive serological findings indicate hitherto unsuspected latent disorder. A matter of equal importance is the ascertainment of cases of asymptomatic neurosyphilis. As the investigation of family histories develops it is likely that the desirability of making liaison arrangements between the mental hospital and the venereal diseases departments of the general hospitals will become evident. It is proposed to institute extensive research on the following lines:

Clinical.—A thorough investigation will be made of records of cases admitted to the hospital not only since the advent of malarial therapy at Horton in 1925, but also in the period before malarial therapy was first employed in Vienna in 1917. Such an inquiry should help to settle many problems

regarding the severity of the disease and the question whether the type has altered.

Serological Tests.—More frequent examinations will be carried out, especially with regard to the cell-content of the cerebro-spinal fluid.

Pathological and Biochemical Investigations.—These will be conducted with greater completeness under new arrangements for sharing the necessary work.

Psychological Investigations.—No work of this nature has been carried out hitherto, but from the literature there appears to be need for inquiry.

Literature and Statistics.—Touch will be maintained with modern developments in other countries, and complete data in statistical form will be recorded.

With regard to medical staff, it is considered that the time has come when the officer responsible for malarial work should be additional to the present fixed staff and should devote whole time to it, with assistance from the ordinary medical staff of the hospital. The officer must be an experienced research worker, and as he (or she) will necessarily have to remain outside the scope of normal promotion because of the specialized nature of the post, which will not afford the opportunities for full administrative experience required for a potential first assistant or deputy medical superintendent, it is considered that the rank of second assistant medical officer should be attached to the position. In order to relieve the officer in charge of the malarial therapy work of general medical duties, when that officer has been appointed one of the three posts of assistant medical officer now included in the normal staff of Horton Mental Hospital will be filled by seconding, for not more than one year at a time, an assistant medical officer from some other unit in the London mental hospital service.

RED CROSS WORK AT HOME AND ABROAD

The Duke of York presided at the statutory meeting of the council of the British Red Cross Society held at 14, Grosvenor Crescent, S.W., on November 18th.

Reviewing the action taken in respect of air raid precautions Sir Harold Fawcus, Director-General, said that in accordance with the Society's agreement with the Home Office to enrol and train personnel for anti-gas services and air raid precautions forty-eight Voluntary Aid Detachment officers had qualified at the Civilian Anti-Gas School as first-class instructors recognized by the Home Office. The Society had now issued a total of over 17,500 certificates for first aid in chemical warfare to its successful examination candidates, and a further 720 proficiency badges and bars. The Society had recently decided to inaugurate an Air Raid Precautions Reserve of men and women holding Red Cross anti-gas certificates, and it was hoped that a large number of men and women would enrol, in order to be able to carry out the less technical duties connected with casualty services.

Sir Arthur Stanley, chairman of the Executive Committee, reported on Red Cross action in Spain. The International Red Cross Committee sent a delegate to visit both sides in the civil war, and subsequently appealed to all national Red Cross societies to send assistance in personnel, material, and money. The British Red Cross immediately sent a donation of £500 to the International Committee, which established a number of centres in Spain staffed with their own personnel, for the relief of soldiers and civilians of both sides in the conflict. An appeal was made in this country for additional funds, as a result of which a further £500 had been sent to the International Committee as well as a supply of bandages. The total reached by the relief fund now stood at £1,132.

Dame Beryl Oliver made a statement on the Society's detachments, which now number 1,072, an increase of thirty-three detachments in six months. The personnel numbers 26,103, being an increase of 621. During the summer the detachments had staffed a number of camp hospitals in connexion with the Territorial Army camps. Nursing and first-aid staff had been provided for thirty-four Girl Guide camps and for the Northern Boy Scouts jamboree, and 15,000 cases had received attention at Red Cross dispensaries in the Kent and Sussex hop fields.