

MSA SC 5881-1-149

MARYLAND
HISTORICAL MAGAZINE

PUBLISHED UNDER THE AUTHORITY OF
THE MARYLAND HISTORICAL SOCIETY



VOLUME XXXVIII

BALTIMORE

1943

CONTENTS OF VOLUME XXXVIII

	PAGE
THE EARLY DAYS OF THE JOHNS HOPKINS HOSPITAL. <i>By Lewellys F. Barker,</i>	1
"SWEET AIR" OR "QUINN," BALTIMORE COUNTY. <i>By Ronald T. Abercrombie,</i>	19
READING AND OTHER RECREATIONS OF MARYLANDERS, 1700-1776. <i>By Joseph Towne Wheeler,</i>	37, 167
AN ARCHAEOLOGICAL FIND NEAR THE LEONARD CALVERT HOUSE. <i>By Henry Chandlee Forman,</i>	65
THE WEDNESDAY CLUB: A BRIEF SKETCH FROM AUTHENTIC SOURCES. <i>By Otilie Sutro,</i>	60
THE WARDEN PAPERS, <i>continued. By William D. Hoyt, Jr.,</i>	69
BOOK REVIEWS,	86, 192, 287, 370
NOTES AND QUERIES,	90, 198, 297, 376
PROCEEDINGS OF THE SOCIETY,	92
THE REFUGEES FROM THE ISLAND OF ST. DOMINGO IN MARYLAND. <i>By Walter Charlton Hartridge,</i>	103
THE CALVERT-STIER CORRESPONDENCE: LETTERS FROM AMERICA TO THE LOW COUNTRIES, 1797-1828. <i>Edited by William D. Hoyt, Jr.,</i>	123, 261, 337
THE REVEREND JOHN BOWIE, TORY. <i>By Lucy Leigh Bowie,</i>	141
NOTES ON THE PRIMITIVE HISTORY OF WESTERN MARYLAND. <i>By William B. Marye,</i>	161
LETTERS OF CHARLES CARROLL, BARRISTER, <i>continued,</i>	181, 362
MARYLAND'S FIRST WARSHIP. <i>By Hamilton Owens,</i>	199
CIVIL WAR SONG SHEETS: ONE OF THE COLLECTIONS OF THE MARYLAND HISTORICAL SOCIETY. <i>By Raphael Semmes,</i>	205
POLITICS IN MARYLAND DURING THE CIVIL WAR, <i>continued. By Charles Branch Clark,</i>	230
LITERARY CULTURE IN EIGHTEENTH CENTURY MARYLAND, 1700-1776. <i>By Joseph Towne Wheeler,</i>	273
LIGHT ON THE FAMILY OF GOV. JOSIAS FENDALL. <i>By Nannie Ball Nimmo and William B. Marye,</i>	277
BENNET ALLEN, FIGHTING PARSON. <i>By Josephine Fisher,</i>	299
MAGIC IN EARLY BALTIMORE. <i>By Milbourne Christopher,</i>	323
CAPT. ROBERT MORRIS OF RATCLIFFE MANOR. <i>By Louis Dow Scisco,</i>	331
LETTERS OF THE HAYNIE FAMILY. <i>Edited by Doris Mastin Cohn,</i>	345

ILLUSTRATIONS

	PAGE
"Quinn" or "Sweet Air," from an Early Photograph,	opp. 19
Part of Maryland Geological Survey Map (Baltimore County)	opp. 22
"Quinn" or "Sweet Air" Dwelling House as It Now Stands,	25
Details of Brick Patterns at "Sweet Air,"	28
Stairway at "Sweet Air,"	opp. 30
Artifacts Found near Leonard Calvert House at St. Mary's,	opp. 56
Artifacts from St. Mary's,	58
Mrs. George Calvert (Rosalie Eugenia Stier) (1778-1821),	opp. 123
George Calvert (1768-1838),	opp. 132
"War Park" or "Rylie's Discovery,"	opp. 141
The <i>Defence</i> , a Reconstruction,	opp. 199
Typical Song Sheet Issued by Confederate Sympathizers,	211
Pledge to the Fair by a Confederate	226

MARYLAND HISTORICAL MAGAZINE

VOL. XXXVIII

MARCH, 1943

No. 1

THE EARLY DAYS OF THE JOHNS HOPKINS HOSPITAL¹

By LEWELLYS F. BARKER, M. D.

When Mr. Griswold invited me to address you tonight, he suggested that I speak either on "The History of the Quakers in Maryland" or on "The Early Days of the Johns Hopkins Hospital." Owing to pressure of circumstances, it was not possible, at this time, for me to prepare carefully the kind of paper that would befit the former topic so I decided to choose the second. It was my good fortune to live in the Johns Hopkins Hospital for nine years (from 1891 to 1900); I therefore saw much of it and of its personnel in its earlier days, and I am hopeful that my memories of that period, even if recounted in a somewhat randomish manner, may not be wholly uninteresting to you.

The founder of the Johns Hopkins University and of the Johns Hopkins Hospital was, as you know, a member of the Society of Friends (Quakers). I was brought up in Canada as a Quaker myself and have known from earliest life the special interest shown by Quakers in education on the one hand and in the mitigation of illness and pain on the other. It is said that a friend of Johns Hopkins once told him that "two things are sure to live—a university to train youth and a hospital to relieve suffering."

Two of Baltimore's greatest benefactors—Johns Hopkins and George Peabody—were rich merchants. Johns Hopkins made his money in this city, George Peabody in Georgetown, District of

¹ Remarks made at a meeting of the Maryland Historical Society, May 11, 1942.

Columbia (though he later became a banker in London, England). At a dinner given by John W. Garrett, George Peabody talked with Johns Hopkins and told him that though he had enjoyed the accumulation of money he had found higher pleasure and greater happiness in giving it away for good and humane purposes. You will recall that Mr. Peabody gave this city about a million dollars for the endowment of the Peabody Institute and that Johns Hopkins left his fortune of seven millions to be divided after his death equally between the university and the hospital that were to bear his name.

It is said that the lawyer who wrote the will of Johns Hopkins was Charles J. M. Gwinn, one of the trustees he selected, a wise and cautious man. Though the University and the Hospital were incorporated separately, nine of the twelve trustees designated were trustees in both corporations and there has been close cooperation between the two institutions ever since. Francis T. King was made President of the Hospital Board of Trustees and exerted a powerful influence while he lived. After his death he was succeeded by William T. Dixon and still later by Judge Henry D. Harlan.

Though the University was incorporated as early as 1867, nothing was done until after the death of Johns Hopkins in 1873. Then the University Trustees, after consultation with President Eliot of Harvard, President White of Cornell and President Angell of Michigan, happily chose as President of the new University, Daniel C. Gilman, who was largely responsible for the selection of the faculty and for decisions as to the policy to be followed by the new institution. The story of how President Gilman went about it has been well told in the volume he wrote, entitled *The Launching of a University* (1906). Up to his time, American institutions of higher education had been based upon the idea of the English colleges. But Gilman and his wise board of trustees did not want simply another college to be a rival of those already in existence. They decided that, rather than merely a college, they wanted a university, an institution in which graduate studies would be emphasized.

Mr. Gilman, with the approval of his trustees, visited Great Britain, France and Germany in order to study educational conditions in those countries. In Great Britain he consulted James

Bryce regarding Oxford and Cambridge and he also interviewed Jowett, Lord Kelvin, Tyndall, Spencer and Huxley. In France he talked with the greater men of the Sorbonne and in Germany he gained an inside view of the universities there from von Holst. On his return to America he reported to his trustees and they decided to choose a faculty composed of the best men obtainable before deciding upon the courses to be given and the methods of teaching and examination to be adopted. The group selected as professors included Sylvester, Gildersleeve, Remsen, Newell Martin, Morris and Rowland, later on to be joined by Haupt, Brooks, Bloomfield, Adams, Ely and others—a truly remarkable list of names, many of them destined to become illustrious in the history of education in America.

Despite the prejudice against biology, Gilman invited Huxley to give the address at the formal opening of the University on Oct. 3rd, 1876. There was no prayer at this meeting and some of the Baltimore people who were on the alert for impiety were very critical; it was bad enough to have Huxley, but to have Huxley without prayer seemed to many to be intolerable!

During its first year, much time was spent in discussions by the faculty of the methods to be pursued. It was decided to lay most stress on seminar courses and upon instruction in laboratories, and to attract able students to study for the Ph. D. degree by providing for a number of fellowships. As everyone knows, the University thus became a pioneer in higher education through its success in the encouragement of original research. Many of the men trained here became teachers in other colleges and universities throughout the country.

The Johns Hopkins Hospital, built upon a site in East Baltimore chosen by Johns Hopkins himself before he died, was not opened until 1889. The Hospital trustees sought the advice of experts as to methods of construction and organization and the reports of these experts were studied carefully by Dr. John Shaw Billings of Washington who was the principal adviser of the trustees at this time. Billings deserves, I think, greater credit than he has ever received for the services he rendered to the Hospital and to the Medical School of which it was to be a part; many of the ideas and methods attributed to others in reality undoubtedly had their origin in the brain of Billings. It was

Billings and Gilman who decided that the Hospital should be organized in units, the work to be arranged in departments, each with a responsible head, and over all a director.

The long delay in the opening of the Hospital was due to the wise decision of the trustees to pay for the construction out of income without encroaching upon the capital endowment. Though Dr. William H. Welch, called from New York, was appointed as pathologist to the Hospital in 1884 and, after further work in Europe, entered upon his duties in the pathological laboratory in 1886, the chiefs of the clinical departments were not chosen until later. Dr. William Osler (one year older than Dr. Welch) was made Physician-in-Chief, Dr. William S. Halsted became Surgeon-in-Chief and Dr. Howard A. Kelly, Gynecologist-in-Chief. During the first few months President Gilman lived in the Hospital and acted as Director; later Dr. Henry M. Hurd was made Superintendent of the Hospital and with his family lived on the second floor of the central administration building; among the younger men he was often referred to as "Uncle Hank." Dr. Hurd was Superintendent until 1911 when he was succeeded by Dr. Winford H. Smith. Miss Rachel Bonner, a demure Quakeress, was Matron, Mr. L. Winder Emory was Purveyor and Mr. James D. Leake, Treasurer. The nursing was temporarily placed in charge of Miss Louisa Parsons but very soon Miss Isabel Hampton was called from the Illinois Training School in Chicago to be made Superintendent of Nurses.

The Johns Hopkins Medical Society was organized and held weekly meetings and a Journal Club was started for the discussion of recent medical literature. A little later the Historical Club was established, monthly meetings of which were held. Graduate courses of instruction for physicians were offered, courses in pathology and bacteriology being given by Welch, Councilman and Abbott, in medicine (in the wards and in the out-patient department) by Osler, in surgery by Halsted, in gynecology by Kelly, in psychiatry by Hurd, and in hygiene by Billings and Abbott.

Hospital publications were also immediately begun. The first number of the *Johns Hopkins Hospital Bulletin* is dated December, 1889. It contains a brief account of the hospital and of the opening of the Nurses' Home as well as scientific articles on the cause of hog cholera (by Welch) and on the organisms de-

scribed by Laveran as the cause of malaria (by Osler). It is interesting that to the *Bulletin* of February, 1890, Billings contributed an article on rare medical books, a subject on which he had become an authority as Librarian of the Surgeon-General's Library. As early as May, 1890, Osler was writing on the *Amoeba coli* as a cause of dysentery and of abscess of the liver. In addition to the *Bulletin*, the hospital published volumes of *Reports*. The first volume of these *Reports* was published in 1890 and was numbered Vol. II, as Vol. I which was supposed to precede it was to contain studies from the pathological laboratory. Those who knew Dr. Welch well and were acquainted with the dilatoriness of habits that great man sometimes exhibited were amused to find that Vol. I did not appear until 1897! It contained a number of researches that had been carried out by Mall in Welch's laboratory, some experimental studies by Halsted on the thyroid gland and reports of unusual diseases of the skin by Gilchrist.

My own personal experience at the Johns Hopkins Hospital began in the autumn of 1891. My friend Dr. Thomas S. Cullen and I had, after graduation at the University of Toronto Medical School, spent a year as internes in the Toronto General Hospital. While we were there both Osler and Kelly visited Toronto and on one occasion Kelly performed in that hospital one of his brilliant operations, Cullen acting as one of his assistants while I gave the anaesthetic to the patient. We were both so impressed with Dr. Osler and Dr. Kelly that we decided to seek the opportunity of working with them at the Johns Hopkins Hospital. Cullen wrote to Kelly and was made an assistant on the resident gynecological staff. I was not immediately so fortunate as there was no vacancy on Dr. Osler's resident staff. In reply to my application he suggested that I accept for the summer the residency at the Garrett Hospital for Sick Children at Mt. Airy, Md., and that in the autumn I could attend his ward visits at Johns Hopkins. I did so and enjoyed watching Osler work so greatly that I was sad-hearted when my money ran out except for about enough to pay the return railway fare to Canada. But, just at this juncture, Dr. Osler sent for me and told me that Dr. William T. Howard, who was to have had a place on his staff, could not take it and that therefore I could be one of his assistant resident physicians. I was, of course, overjoyed, entered the Hospital, and lived within it, in one position or another, for the next nine years.

It may be of interest to record some of my impressions of those who were working in the Hospital in the nineties. The "big four" were of course Welch, Osler, Halsted and Kelly. Their features have been permanently preserved in the celebrated portrait by Sargent that now hangs in the Welch Library at the Johns Hopkins Medical School.

Dr. Welch when I first knew him was 41 years old. Even then he was inclined to be obese, for he was of the rather short thick-set round-faced type that is constitutionally predisposed to become too heavy and he had the genial nature ("good-mixer type") that goes with that kind of constitution. By the younger members of the staff he was familiarly and affectionately spoken of as "Popsy" Welch. He had been profoundly influenced by his graduate studies in German universities and brought back to this country many of the German methods and ideals. His interests were in the promotion of the science of medicine, and he was destined to be most influential in this through the development of investigators, on the one hand, and, on the other, by inducing wealthy men like John D. Rockefeller and Henry Phipps or their representatives to make large gifts for medical education and research. He was patient in the accomplishment of what he set out to do and was a master in the art of diplomacy that led others to accept his opinions. One of the men who worked on a committee with him during the first World War has spoken of him as "smooth, placid, always the statesman, sometimes almost to the point of being a politician; the great professional manager of quiet tread, and always with great influence." As Pathologist to the Hospital he was succeeded in 1917 by the present incumbent, one of his former pupils, Dr. William G. MacCallum. An excellent account of Dr. Welch's life and work is to be found in the recent biography of him written by Dr. Simon Flexner and his son James (*William Henry Welch and the Heroic Age of American Medicine*, 1941).

Dr. Osler, whose parents (partly Anglo-Saxon, partly Celtic), had migrated from Cornwall to Canada, was of very different physical type. He was more slender in appearance and of dark complexion, with rather sparse hair but with a heavy mustache and a lively countenance. He was always immaculately dressed in English style; at consultations he usually wore a frock coat and top hat and drove to them in hansom cabs.

He had been well trained in medicine in Montreal, had worked for a long period at histology and pathology with Burdon-Sander-son in England and had been greatly impressed with the English system of teaching clinical medicine in which the essential feature was that the ward work was done by the students themselves. In his teaching later in Montreal, in Philadelphia and in Baltimore he applied what he had learned of British, French and German medicine.

The way Dr. Osler, or "the Chief," as everyone called him, went about the organization of his clinic in Baltimore has been well told by his first assistant, Dr. H. A. Lafleur. He had the opportunity "to blaze a perfectly new road, untrammelled by tradition, vested interests or medical 'dead wood'—best of all, backed by a board of management imbued with a fundamental and abiding respect for scientific opinion and commanding an ample budget."

We youngsters were fascinated by Osler's clinical teaching and by his generosity to his assistants, for he often gave credit to younger men for work that really belonged to himself. Dr. Osler had a good 'brain' but he had even a larger 'heart' and we were greatly impressed by his humanity and the appeal that he made to our sensibilities. It was the personality of Osler—his elusive and difficultly definable qualities—that made him so beloved. As one of his patients said of him: "As he passed about, gallant and debonair, with a whimsical wit that left the air sweet and gay, with an epigram here and a paradox there, tickling the ribs of his colleagues, none felt him frivolous."

He set an example of systematic steady work. When I entered the Hospital, I was assigned a bed-room next to his and I could with relative safety set my watch at 10 P. M. each night when I heard him place his boots on the floor outside his bed-room door. He was at that time writing the textbook *The Principles and Practices of Medicine*.² He rose at 7 A. M. From 8 A. M. to 1 P. M. on three mornings each week he dictated to his secretary, Miss Blanche Humpton; after lunch he made rounds in the private wards and saw special cases in the public wards, and then

² This book was read by Mr. F. T. Gates, a member of John D. Rockefeller's philanthropic staff and the frank disclosure by Dr. Osler of the narrow limitations of ascertained truth in medicine led later to the establishment of the Rockefeller Institute of Medical Research.

revised what his secretary had written. After 5 P. M. he saw cases in consultation with other physicians in the city, dined at the club at 6.30, and was in bed by 10. The textbook written at that time has had an enormous sale, going through a great many editions during his life time and more of them after his death (revised by Dr. Thomas McCrae).

Dr. Osler took a great interest in the Medical and Chirurgical Faculty of Maryland and its library (with Miss Marcia Noyes at its head), engaged in the fight against typhoid fever and tuberculosis in Maryland, and did many other public spirited things for the city and State. But I must not talk too long about this great man who was said to be, at the time of his death "probably the greatest figure in the medical world." Some of you who are present knew him personally and others doubtless have read Harvey Cushing's delightful biography, *The Life of Sir William Osler* (1925).

Dr. William S. Halsted, three years younger than Dr. Osler, was known to us as "the Professor." He had very high ideals of research and made important contributions to surgical knowledge and technique. I recall his introduction of rubber gloves to be worn at operations, his insistence upon the delicate handling of tissues, upon the control of hemorrhage and upon strict asepsis, his research work on the thyroid gland, and his operation for the radical cure of hernia. He was a modest retiring type of man who did not mix easily with people he did not know well. One of the Mayo brothers spoke, with admiration, of this "shy unapproachable perfectionist" and Dr. Alexis Carrel referred to him as "the greatest surgical thinker America has produced." Dr. W. G. MacCallum has written a brief account of his life and work in the volume entitled: *William Stewart Halsted: Surgeon* (1930).

Dr. Howard A. Kelly, brought to Johns Hopkins from Philadelphia (and nicknamed the "Kensington Colt"), was placed in charge of Gynecology and Obstetrics, though later on, in 1899, the latter subject became independent and was placed in charge if Dr. John Whitridge Williams, a very able man who, unfortunately, was fated to die all too soon (see the volume by Dr. J. M. Slemmons entitled *John Whitridge Williams: Academic Aspects and Bibliography*). Kelly was the youngest of the "big

four," being 6 years younger than Halsted. He is the only one of the four still living.³ I had a pleasant note from him a short time ago on the 84th anniversary of his birthday. Kelly's surgical technique has been greatly praised both for its precision and speed; two well-known Chicago surgeons spoke of him as "the greatest surgical technician of his time." Always a very religious man, Dr. Kelly has been interested also in political reforms and in anti-vice crusades. I recall that in the nineties—I think about 1895—a number of Johns Hopkins men under Dr. Kelly's leadership undertook as a reform party to police the polls at the Marsh Market (17th Ward) in order to prevent the packing of the ballot box by unscrupulous voters. Though a fight ensued, the grip of the political ring was broken. The event inspired Dr. Osler (under the pseudonym of Edgerton Y. Davis) to write a humorous poem entitled "The Marsh Market."

Dr. William T. Councilman, who stood next to Dr. Welch in the pathological laboratory, lived in the Hospital at this time. He was a most amusing person, who stuttered a little but had command of a choice line of expletives that he made use of freely in conversation. I recall, one hot summer day, walking into the laboratory where I found Councilman peering through a microscope, his bald head covered with a huge sheet of sticky fly-paper as a protection from flies! He left Baltimore early to become Professor of Pathology at Harvard. He died in 1933 at the age of 79.

Dr. John M. T. Finney came to John Hopkins from Harvard. He did not live in the Hospital but at once became Dr. Halsted's right-hand man in the Department of Surgery, taking charge of the surgical work in the dispensary and later becoming a leading surgeon in Baltimore. In the world war he was Chief Surgical Consultant to the American Expeditionary Force and, as you all know, is still living as Emeritus Professor and as one of the most highly-esteemed citizens of Baltimore.⁴ His autobiography (*A Surgeon's Life: The Autobiography of J. M. T. Finney*), published in 1940, is an engaging volume; doubtless many of you have already read it.

Dr. William Sydney Thayer, another Harvard man, lived within

³ Dr. Kelly's death occurred on January 12, 1943.

⁴ Dr. Finney died May 30, 1942.

the Hospital for several years, and (after Lafleur) became Resident Physician for Dr. Osler. He had worked with Ehrlich and others in Germany and on his return stimulated studies of the blood by Ehrlich's methods. He became one of the most distinguished internists in America, was Chief Medical Consultant to the A. E. F. in France, and was for a time (1919-1921) Professor of Medicine at Johns Hopkins and Physician-in-Chief to the Hospital. After his death, his friend Mrs. Harry Fielding Reid wrote a brief but excellent biography of him entitled *The Life and Convictions of William Sydney Thayer* (1936).

In the Out-Patient Department, several practitioners of the town collaborated. Thus, Drs. Samuel Theobald and Robert L. Randolph had charge of ophthalmology, Dr. William D. Booker was pediatrician, Dr. James Brown was urologist, Dr. Henry M. Thomas was neurologist, Dr. H. J. Berkley was psychiatrist, Dr. Caspar Gilchrist and Dr. J. Williams Lord were dermatologists, and Drs. Mackenzie, Warfield and Gamble had charge of the nose and throat department. Joseph Hopkins, a relative of the founder, had clerical supervision in the dispensary. All these men have since died except Dr. Cary B. Gamble who is still well and active as a successful internist in this city.

Living in the Hospital in the early nineties in addition to Lafleur (who later went to Montreal and became Professor of Medicine at McGill), and to Simon Flexner (who later became head of the Rockefeller Institute in New York), were Dr. George Blumer (who was to have a distinguished career in hygiene, pathology and internal medicine and is now Emeritus Professor at Yale), Dr. Joseph Bloodgood (who later became Associate Professor of Surgery at Johns Hopkins and Surgeon-in-Chief to St. Agnes Hospital, noted before his death as an authority on cancer), Dr. John Billings (son of the great librarian), Dr. Thomas S. Cullen (who wrote important volumes on surgical subjects and later succeeded Dr. Kelly as Professor of Gynecology and is now Emeritus Professor), Dr. John G. Clark (who was made Professor of Gynecology at the University of Pennsylvania in 1899), Dr. John Hewetson (much beloved by all but fated to die early from tuberculosis), Dr. James F. Mitchell (who became Clinical Professor of Surgery in George Washington University and is still active as Chief Surgeon at the Emergency Hospital in Wash-

ington, D. C.), Dr. Rupert Norton (a close friend of mine, a son of Charles Eliot Norton, who served as Assistant Superintendent of the Hospital for some seven years); Dr. Harold Parsons (who later entered practice in Toronto), Dr. Hunter Robb (who soon became Professor of Gynecology in Cleveland and who married our Superintendent of Nurses, Miss Hampton), Dr. W. W. Russell (who did excellent work in gynecology before his death from tuberculosis) and Dr. Frank R. Smith (an excellent English scholar who was helpful to those of us who wrote medical papers as he revised them for us, would not let us split our infinitives nor permit us to say that anything "centered around" anything else). Among the others who lived in the Hospital in those early days I remember A. A. Ghiskey, W. H. Baltzell, August Hoch, Harry Toulmin and Chauncey Smith.

In the corridors of the Hospital during the early years, I knew every nurse and every physician and could call each by name—so different from today when, owing to the enormous growth of the Hospital and its staff, I see many whose names I do not know at all. We were, in the early period, a small group in which seniors and juniors lived intimately together. We worked hard but we also knew how to play, and in the evenings many of us spent an hour or so over beer and pretzels at Hanselmann's (close to the pathological laboratory). Life was very congenial and the Hopkins men were spoken of as "a mutual admiration society." Certainly there was great happiness among us. One wonders if similar conditions can ever really exist again!

The Medical School, thanks to the gift of Miss Mary Garrett (advised by Miss M. Carey Thomas) was opened in 1893. It was a condition of her gift that women should be admitted on equal terms with men and that all students should, preliminary to admission, have the degree of Bachelor of Arts or of Science, have had training in physics, chemistry and biology, and possess a reading knowledge of French and German.

The Heads of the Clinics at once became the Professors in the clinical subjects in the Medical School. Important men were chosen as professors in the preclinical branches—F. P. Mall (Anatomy), W. H. Howell (Physiology), and J. J. Abel (Pharmacology). Dr. Welch was, of course, Professor of Pathology and the first Dean of the School.

John S. Billings had, years earlier, stated that the School, when it became established was "to aim at quality and not quantity" and that each of its graduates should not only be a well educated physician but also one who had learned to think and to be able to do original investigation of problems that were still unsolved. Billings had estimated that if the graduate of the School took a hospital internship and after that two years in travel and special studies he would be about twenty-eight years old when really ready to begin work and his education during the preceding eleven years would have cost him about \$8,000.00.

The new Medical School represented a sharp departure from former methods of medical education. From the beginning it was a success and it was not long before educators elsewhere realized that medical schools all over the country needed thorough-going reforms. The graduates of the Johns Hopkins Medical School were so outstanding that many of them were chosen for teaching positions elsewhere.

The first class at the Medical School contained three women students. At the end of the first year one of them became engaged to marry Dr. Mall and Dr. Osler gleefully wrote that since $33\frac{1}{3}\%$ of the lady students of the first class were to be married at the end of one short session, it was understandable why he regarded co-education as a failure. Later on, much to his chagrin, another $33\frac{1}{3}\%$ of these women espoused Christian Science—only one of the women continuing in orthodox medicine!

Flexner became associate in pathology and Mall took me as his associate to teach histology. At Mall's suggestion, I went to Leipzig for post-graduate work in 1895, doing a piece of research in Ludwig's laboratory under Professor von Frey and attending lectures given by Professor His on embryology, by Professor Flechsig on brain anatomy, and by Professor Wundt on psychology. Hewetson, who went with me to Leipzig, worked with Professor Spalteholz and prepared some beautiful sections of the brain stem. Unfortunately, he developed tuberculosis and had to give up his medical work. He presented his sections of the brain to me and on return to Baltimore I used them in my classes in histology. Among my students at that time was Miss Gertrude Stein and I have often wondered whether or not my attempts to teach her the course of the fibre tracts in the brain had anything to do with the peculiar style of writing that she later developed!

In 1899, President Gilman sent Flexner and me to the Philippine Islands as a commission to study tropical diseases. We were accompanied by two of the medical students (J. M. Flint and F. P. Gay) and by Mr. John W. Garrett. This was a fruitful experience as Flexner discovered in Manila the type of bacillus of dysentery that bears his name and we became well acquainted with a whole series of tropical diseases. On the way to Manila we visited some of the leading medical scientists in Japan and Hong Kong, and on the return voyage Flint and I went across British India where in Bombay and especially in Poona we saw a great deal of bubonic plague. This knowledge was helpful to me later when, with Dr. Flexner and Dr. Novy, I was sent by our Federal Government to determine the existence or non-existence of plague in San Francisco (1901).

During the nineties, the heads of the Hospital departments attracted many excellent men either as assistants or as research workers. Thus to Welch's department came Dr. George H. F. Nuttall (later hygienist of Cambridge, England), Dr. Walter Reed (who with Dr. Carroll and Dr. Lazear were later to solve the riddle of yellow fever in Cuba), Dr. Eugene L. Opie (well known for his work on hemochromatosis and on the histology of the islands of Langerhans in the pancreas from which insulin was later to be obtained) and Dr. W. G. MacCallum (who in 1897 made the important discovery of the part played by the free flagella in the process of fecundation of malarial parasites).

To Dr. Osler's department in the nineties a large group of eager young men were attracted, including, besides those already mentioned, Dr. Thomas B. Futcher (who took charge of the clinical laboratory), Dr. Thomas McCrae (who later on became Professor of Medicine at the University of Pennsylvania), Dr. Thomas R. Brown (who later became Associate Professor of Medicine and the gastroenterologist of the Hospital), Dr. C. N. B. Camac (who was to become a Professor of Medicine in New York City), Dr. J. Hall Pleasants (now one of the University trustees here), Dr. J. H. Mason Knox (so well known in this State in connection with child-welfare), Dr. Louis P. Hamburger (one of Baltimore's best known practitioners), Dr. Walter R. Steiner (who became an outstanding physician in Hartford, Connecticut), Dr. Henry M. Christian (who later became Hersey

Professor of the Theory and Practice of Physic at Harvard and Physician-in-Chief to the Peter Bent Brigham Hospital), Dr. Thomas R. Boggs (who became Associate Professor of Medicine at Johns Hopkins and Physician-in-Chief to the City Hospital at Bay View), Dr. Warfield T. Longcope (who was to have a distinguished career in pathology and internal medicine in Philadelphia and in New York and in 1922 was appointed to the chair at Johns Hopkins that Dr. Osler himself had held), and Dr. Louis V. Hamman (now one of Baltimore's most active consulting internists as well as Associate Professor of Medicine at Johns Hopkins).

To Dr. Halsted's department, equally important men were drawn. Among them, besides those already mentioned, I would refer especially to Dr. Harvey Cushing (who was to become one of the world's most skilful brain surgeons and was made Professor of Surgery at Harvard), Dr. F. H. Baetjer (who became roentgenologist to the hospital and was one of the first martyrs to that specialty), Dr. George Walker (who was to be so helpful to Dr. Finney in France during the World War), Dr. Richard H. Follis (who became Associate Professor of Surgery at Johns Hopkins), Dr. Hugh Young (who was to become Professor of Urology and head of the Brady Clinic at Johns Hopkins and who last year wrote an autobiography that many of you have read), Dr. John Staige Davis (who developed especial skill as a plastic surgeon and became Associate Professor of Surgery at Johns Hopkins), Dr. Harvey B. Stone (who became a Visiting Surgeon (Rectal) at Johns Hopkins), Dr. George Heuer (who has had a distinguished career in surgery in Cincinnati and in New York City), Dr. S. J. Crowe (who became head of the Nose and Throat Department), Dr. William S. Baer and Dr. George Bennett (who became Visiting Orthopedic Surgeons), and Dr. Walter E. Dandy (who has attained to professorial rank and is now in my opinion the greatest brain surgeon in the world). In addition to those mentioned, the excellent work of Dr. H. Hayward Streett, Dr. Louis D. Coriell, Dr. B. Lucien Brun and others in the department of Dental Surgery should not be overlooked.

To Dr. Kelly's department besides the men I have already referred to there were many others who came and have attained distinction. Among these I may mention especially Dr. Guy L.

Hunner (who has done important work in gynecology and in urology and is Adjunct Professor Emeritus in the department), Dr. Curtis F. Burnam (whose work with radium in the treatment of cancer and other conditions is outstanding and who has also become Associate Professor of Surgery at Johns Hopkins), Dr. Edward H. Richardson (who was to become Associate Professor of Gynecology at Johns Hopkins), and Dr. Dewitt B. Casler (who was to become one of the visiting Gynecologists to the hospital and Associate in Gynecology). The present incumbent of the chair of Gynecology (Dr. R. W. TeLinde) was a student in the Medical School when Dr. Kelly became emeritus professor. It was Dr. Kelly who brought to his department the brilliant medical illustrator, the late Max Broedel (from Germany) and thus led later on to the establishment of the department of "Art Applied to Medicine."

The training School for Nurses under Miss Hampton and Miss Nutting (and later under Miss Lawler) set up very high standards not only of nursing education but also of personal qualification of students. That these personal qualities did not pass unnoticed by the medical staff is shown by the number of the latter who married nurses; I recounted some twenty instances, recently, of physicians and surgeons at Johns Hopkins who had chosen nurses as their wives.

The work at the Johns Hopkins Hospital and Medical School during its early years made a profound impression not only in this country but throughout the world. There were some, of course, who were critical, maintaining that too much attention was paid to the cultivation of science. "Make doctors," they said; "don't try to make scientists." Such criticism revealed profound ignorance of what is really meant by the science of medicine and the use of the scientific method. For it is not enough to teach what is known of practical clinical work; it is also important to imbue medical students with the desire to solve problems of the unknown. Besides collecting facts by keen observation of patients, it is necessary to try to establish relations among the facts observed and to explain them by the process of reasoning. Hypotheses are formed regarding the meaning of the facts and these hypotheses are then subjected to the test of experiment. It is an endless chain—observation, reflection, hypothesis, experiment and then more observation.

Medical men who have made use of the method of science have greatly enlarged our methods of observation, for we are no longer dependent upon our naked sense organs. Our eyes are implemented by the microscope, the ophthalmoscope, the cystoscope and the bronchoscope, and our ears by the stethoscope. By means of the X-ray we can visualize the inside of the body (the heart, the lungs, the stomach and intestines, the bones and joints, and even the cavities of the brain). By means of electrocardiograms we can study very precisely the rate and rhythm of the heart beats, the conduction-apparatus within the heart upon which they depend, as well as evidence of changes in the heart muscle itself. Studies in the clinical laboratories reveal any existing abnormalities of the blood, the sputum, the stomach-juice, the faeces, and the cerebrospinal fluid. Determinations of the basal metabolic rate tell us of the rate of oxidation in the body and throw light upon the activity of the thyroid gland. Bacteriological studies demonstrate the causes of existing infectious diseases and point to the remedies that are likely to be efficacious. Autopsies made in the pathological laboratory are often revelatory of errors in clinical diagnosis and compel us to make ever more careful studies of our patients.

Advances in the treatment of disease are continually being made by the application of the same method of science. The older treatment by drugs gradually led to important discoveries—the use of opium and its derivatives for the relief of pain, the use of quinine in malaria, and the use of mercury and iodide of potassium in syphilis. But in recent years methods of treatment have been enormously advanced through the use of vaccines and immune sera in the infectious diseases, through the administration of hormones in diseases of the glands of internal secretion, through the application of the newer surgical methods and technique, and through the use of radium and X-ray in certain malignant diseases. Most astounding perhaps has been the discovery of certain magic bullets that can be shot into the body (by hypodermic or by intravenous injection) to kill off certain parasitic invaders. Beginning with Ehrlich's discovery of salvarsan (arsphenamine) for the treatment of syphilis, later years have seen a great extension of chemotherapeutic methods. I need only refer to the sulfonamide compounds—sulfanilamide, sulfapyridine, sulfathiazole,

sulfadiazine, and others—in which Dr. Perrin Long and Miss Eleanor Bliss at the Johns Hopkins Hospital have been so interested. Streptococcal, staphylococcal, pneumococcal, gonococcal, and meningococcal infections are cured by them as if by magic. Those of us who in the old days watched pneumonia patients gasping for breath for days, a large percentage of them dying within a week or so, are now astounded to find them at the end of 24 or 48 hours sitting up in bed, declaring that they are well and asking if they may go home! That the treatment of wounds and burns is also being revolutionized through the use of these sulfonamide drugs has recently been made clear by experiences at Pearl Harbor.

Those who in the early days at Johns Hopkins stood firmly for scientific medicine would be happy if they could return to the hospital today and see the justification of the attitude they took. The battle for the application of the method of science to medicine and for the training of students in the way that was followed by our teachers here has been won. Indeed, all the great medical schools and hospitals of the country now vie with one another not only in teaching their students the best practical methods of diagnosis and treatment but also in the inculcation of the spirit of original research. At one time the Johns Hopkins Hospital and the Johns Hopkins Medical School were unique in this country; they no longer stand alone for there are many institutions that are equally good now and in some respects better. For the reforms that have been made, Johns Hopkins set the example, but great credit is also due to Abraham Flexner of the Carnegie Institution who scathingly and devastatingly assailed the faulty conditions that existed elsewhere, as well as to the representatives of Rockefeller, Carnegie and other wealthy men who provided funds to bring about the changes that were desirable.

A few of us who were at the Johns Hopkins in the nineties are still living and we are glad that we could watch the fruitful work of our great masters who were the leaders at the time not only in medical science and in the medical art but also in medical education. It was our leaders who insisted upon preserving and utilizing all that was good in the medical knowledge of the past, but who also established workshops in which new wisdom was to be gained. Our clinics and laboratories were not merely institutes of

instruction; they were also important centres of original research. Those of us who were trained at the Johns Hopkins Hospital were inspired by our teachers with ideals of culture, of scholarship and of social service. Those teachers were exemplars of untiring work, of endless investigation and of a consuming thirst for truth. We are more than thankful to them; we cherish them affectionately in memory!