SCIENCE

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ADDRESS AT THE DEDICATION OF THE MITCHELL MEMORIAL BUILDING OF THE PHILADELPHIA ORTHOPÆDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES[1]

OBSERVE the title of the building we are assembled to dedicate—the Mitchell Memorial Building of the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases. It is not the *S. Weir* Mitchell or the *Weir* Mitchell Memorial, but simply the "*Mitchell* Memorial" Building.[2] As there are many Franklins but only one Franklin, so there are many Mitchells but only one Mitchell.

I first saw Weir Mitchell on the third of September, 1860, just as I was beginning the arduous study which has filled a long life time. The last time I saw him was at Christmas time in 1913, just before the shadow of death fell upon him. The interval covered fifty-three years and four months—a long time for an intimate friendship which never knew a cloud even as big as a man's hand.

He was my senior by only eight years, but, having graduated ten years before I began even to study medicine and having already an established reputation, I always looked up to him as my father in the profession rather than as an elder brother.

I first aided him in his experiments on the poison of snakes—a study which for almost half a century fascinated him and to which he, first alone, and later with

[1] By Dr. W. W. Keen, consulting surgeon to the hospital.

[2] This was the name then on the new building. Later it was replaced by the "Silas Weir Mitchell Memorial."

Reichert and Noguchi, made most valuable contributions.

During these experiments one incident was an excellent illustration of the mental alertness which was so striking an element in Mitchell's character. One hot July just after we had collected one or perhaps two teaspoonfuls of the liquid snake-poison in a small cup Mitchell was called out of town for three or four days. Usually we immediately spread out this liquid in a thin layer so that it would dry quickly before decomposition set in, but by an oversight on this occasion it was left in the cup in bulk and naturally in such weather underwent quick decomposition. On his return we went to the laboratory and on opening the door were almost knocked down by the horrible stench. Who of us here would not have sought the source of the smell and in all haste have thrown it away. Not so Mitchell. Instantly he turned to me and said, "I wonder if decomposition has destroyed its poisonous character. Let's try it." That was always his desire—to put everything to the test of experiment. A single experiment showed that for a pigeon it was as virulent as ever. How subtle and potent was the poison that even decomposition left intact! But not to every form of life was it even then a poison, for disporting themselves in the cup were a host of nimble little animalculæ having apparently the time of their lives.

Within a half year of our first meeting came on the sterner studies of the Civil War—studies which he again illuminated by his brilliant investigations and in which I again had the great good fortune to be his assistant, especially in the Turner's Lane Army Hospital for Diseases and Injuries of the Nervous System in this city. This was only one of several special army hospitals for which science and the American soldiers were indebted to Mitchell, for it was he who suggested the idea to Surgeon-General Hammond.

In fact I have always felt that my intimate acquaintance with Weir Mitchell was the first of three epochal events in my life. The stimulus and direction of my professional life began in those days with him as the dominant factor. I have always gladly acknowledged this great debt. I have met and known many of the best in medicine and surgery in America and in Europe and I say unhesitatingly that Weir Mitchell was the most original, fertile, stimulating medical man I have ever met either here or abroad.

Early in his professional life a vacancy occurred in the chair of physiology at his alma mater, the Jefferson Medical College, a position for which his studies in anatomy, physiology and toxicology had preeminently fitted him. But the trustees had not the vision, the imagination to discern the genius they might have obtained. A very few years later the University of Pennsylvania trustees also were equally blind and so he never became a "professor."

But years afterward he had the privilege as a trustee of the University of Pennsylvania to elect professors. The fight over his election to the board was one between the conservatives and the progressives and under the leadership of William Pepper, H. C. Wood, Tyson, Harrison Allen, and their valiant friends, Mitchell was elected, and a new University of Pennsylvania Medical School arose.

Calling on him after the election, Allen, by a happy quotation, well described Mitchell's status

Thou shall not be King but thou shalt beget Kings.

What discoveries he would have made, what a school of young experimental physiologists he would have created, had either of those two great schools but appreciated the genius they might have had we can only guess.

But these two, for him, fortunate defeats, and his experiences in the Civil War

decided his career. Thenceforward all his powers, all his energies, were devoted to neurology—then almost a new department of medicine with which we are now so familiar.

His very touch was vibrant with the restless mental forces within him. Every institution with which he was connected, every committee he was on, took on a new and vigorous life. The University of Pennsylvania, the College of Physicians, the Directory for Nurses, the Philadelphia Library, and in later life the Carnegie Institution and this hospital, all felt the throb of his genius.

Another evidence of Dr. Mitchell's wide influence and at the same time a beautiful tribute to his memory, so modestly done that I have only just heard of it, is the fully equipped Convalescent Home for Children established by Miss Anne Thomson near Devon. While other hospitals share in this bounty, Miss Thomson's first thought was for this hospital so dear to Dr. Mitchell's heart and therefore to her own. The same potent influence won for you the services of your invaluable president.

In 1871 his connection with the Orthopædic Hospital began. He had thirsted for several years for the wider circle of clinical opportunities which a hospital would give for the observation of neurological diseases. There was no hospital in Philadelphia which had even so much as a ward for these sorely suffering patients, often indeed derelicts on the sea of humanity. Indeed, there were then but six such hospitals in all Europe and only two others in the United States. Mitchell, with quick vision, recognized his opportunity. Many of the results of nervous diseases, especially of their palsies, resulted in deformities and disabilities which could only be remedied or alleviated by orthopædic surgery.

In 1867 on Ninth Street, between Market and Chestnut Streets, Thomas G. Morton, H. Earnest Goodman, Agnew and the two Grosses had founded a small "Orthopædic Hospital." Mitchell joined forces with them and from this little mustard seed has grown this great tree, whose branches have indeed been for the healing of the nations, for its patients drawn especially by Mitchell's great reputation came not only from all over the United States, but from foreign countries as well.

The name was lengthened in 1893 to "The Orthopædic Hospital and Infirmary for Nervous Diseases." If I may be allowed a linguistic license the tail began by being longer than the dog and it ended by its wagging the dog. As I was formerly on the active and am now on the consulting surgical staff this homely simile is perhaps permissible.

By 1873 their narrow quarters became too strait for the rapidly growing hospital and they removed to Seventeenth and Summer Streets, where an old residence was fitted up. Then the community recognized it. Funds began to be given and bequeathed and patients multiplied. A few years later (1887) a new hospital building on the site of the old residence was opened, Mr. Kuhn being the chairman of the building committee. This in turn was outgrown and successively adjoining lots were purchased until now the hospital owns seven lots with a front of 224 feet on Summer Street and 116 feet on Seventeenth Street, though the last lot (no. 1713), presented to the hospital as a memorial to his father by the liberal and energetic president, C. Hartman Kuhn, Esq., is as yet not physically incorporated into the hospital.

A live growing hospital, like a live growing baby, is always greedy for nourishment, but unlike the baby never suffers from indigestion. There is a hospital physiology which differs from that of animals and humans. Even a gorging Thanksgiving dinner followed by a dessert

up to the bursting point—in the case of the hospital a dessert of thousand-dollar checks —never "upsets" but actually "sets up" both its appetite and its digestion.

The above I give you notice is the most important paragraph in my whole address.

For eight years, from 1890 to 1898 I was so fortunate as to be Mitchell's colleague as one of the three orthopædic surgeons and I can testify, therefore, from my experience, both in the Civil War and in this hospital, to the wonderful stimulating influence which Dr. Mitchell exerted. This was manifested not only in the conduct of the hospital, but in his influence on the medical and surgical staff and especially on his own assistants, on the resident physicians, and on the many doctors who flocked to his weekly clinics and bore away with them an inspiration for good work all over the land.

These bright men of mature years sat at the feet of the master to be taught much that the best of them did not know, to catch glimpses of the guesses of genius which later grew into the certainties of science, to hear and repeat his many picturesque and impressive descriptions or happy or pungent phrases, struck like sparks off the anvil.

But while visiting strangers were welcomed and departed with many a sheaf, it was his regular assistants and the residents in the hospital who were indeed twice blessed. To begin with a new patient; to observe Mitchell's careful cross examination as to the earliest symptoms; his minute following up of even a stray hint which to an ordinary man would have meant little or nothing, but which to Mitchell was a veritable guide post to the right road; to hear him compare or contrast this case with other similar or opposite cases garnered by an accurate memory from the myriad cases seen one year, five years, ten or even twenty years before; to see how he inevitably put his finger on the exact central fundamental lesion which to others was obscured by the many surrounding minor symptoms; a diagnosis made often seemingly by intuition; to follow his treatment until betterment or cure or in rare cases death closed the scene; this was a liberal education in itself.

At my request a list of the men who have been his colleagues or assistants has been furnished to me. I find that they were nearly 160 in number. To call this notable roll in your hearing is of course impossible. But I can not refrain from mentioning a few of the more conspicuous—names known to most of you as leaders not only in this community but throughout this country and not a few of world-wide fame: Wharton Sinkler, Morris J. Lewis, William J. Taylor, J. Madison Taylor, John K. Mitchell, Charles W. Burr, G. G. Davis, F. X. Dercum, George E. deSchweinitz, Charles K. Mills, Barton C. Hirst, John H. W. Rhein, A. P. C. Ashhurst, D. J. McCarthy, Guy Hinsdale, of Hot Springs, Va., Edward B. Angell, of Rochester, N. Y.

I have only named one tenth of this ever-faithful cohort. We, the other 90 per cent., may well rest content, however, in the consciousness of daily duty well done. In the forum of one's own mind and conscience the ultimate and most cherished judgment seat is established.

One noteworthy fact demonstrates how stimulating was his influence. Twenty-five of the men who served this hospital in the eighteen years from 1889 to 1907 contributed 522 papers to medical and surgical literature. Not all, not even a majority of these were papers on neurology or orthopædics, but the incentive, the stimulus to writing, was largely the result of Mitchell's precept and example.

While I was on the active staff the daily out-patient service was constantly growing larger and larger. The noise and confu-

sion, the dirt, especially on rainy and muddy days, were increasing and the desire for separate quarters for this daily throng was constantly growing more insistent.

Up to the end of 1908 while the house patients totaled 10,936 there had been 180,555 patients cared for in the out-patient clinics. This is a large number, but it covers many years. For the last year, 1915, the number cared for in this clinic was only 150 less than 26,000, largely over 2,000 patients every month! For the seven years from 1909 to 1915 the total number was 156,385. This year, 1916, will bring up the number for the past eight years to more than had been treated in the 42 years after the little hospital was started on Ninth Street in 1867.

When Dr. Mitchell passed away early in 1914 the opportunity came for relieving the hospital itself from this burden and at the same time for founding a worthy and spontaneous memorial in the hospital to which he had given of his best for so many years of his busy life. A large committee, numbering fifty to sixty, consisting of the members of the board, the members of the medical and surgical staff and assistants and many women was formed with Dr. Charles W. Burr as chairman, Mr. Charles Sinkler as secretary, and Mr. John W. Brock as treasurer. Through their abounding efforts even in the depressing financial conditions preceding the Great War the money to erect the memorial was obtained.

Right opposite to the hospital, across Seventeenth Street, stood the parish house of the chapel of the Epiphany Episcopal Church, unused and for sale. The lot measures 80 feet, 9 inches on Seventeenth Street and is 107 feet deep. It was purchased for $40,000. The alterations, furnishings and equipment have cost about $20,000 additional, a total, therefore, of $60,000. It is away from and not physically a part of the hospital, yet is within a few steps; convenient of access yet keeping all noise, dirt and possibility of contagion away from the house patients, whose quiet comfort and speedy recovery are thereby greatly promoted.

Had Dr. Mitchell himself been consulted, no memorial more pleasing to him could have been devised. No stately mausoleum, useless alike to the living and the dead, would have appealed to him. A busy clinic where thousands upon thousands will be helped back to joyous life because it is a useful life—this I am sure he would have thought the most grateful homage from his many friends.

W. W. KEEN

A NOTE ON THE SERUM TREATMENT OF POLIOMYELITIS (INFANTILE PARALYSIS)[1]

THE epidemic of poliomyelitis that is prevailing at the present time so extensively in New York and in some degree widely throughout the United States has led to many inquiries being made regarding the serum treatment of the disease, and particularly of the stage to which the treatment has advanced. This brief paper is intended not only to answer such inquiries, but also to provide a basis for the wider employment of the treatment where the difficult conditions surrounding the obtaining of the immune human serum can be surmounted.

It was demonstrated by Flexner and Lewis,[2] and afterwards confirmed by several investigators, that monkeys which had recovered from an attack of poliomyelitis induced experimentally were not subject to successful reinoculation with the virus of the disease. This was followed by the detection by Römer and Joseph[3] and later by others in the blood of

[1] From The Rockefeller Institute for Medical Research, New York.

[2] Flexner, S., and Lewis, P. A., "Epidemic Poliomyelitis in Monkeys," fourth note, *J. A. M. A.*, 1910, LIV., 45.

[3] Römer, P. H., and Joseph, K., *Münch. med. Woch.*, 1910, LVII., 568. Levaditi and Landsteiner, *Comp. rend. Soc. de biol.*, 1910, LXVIII., 311. Flexner, S., and Lewis, P. A., "Experimental