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WILLIAM THOMAS COUNCILMAN

JANUARY 1, 1854–MAY 26, 1933

By Dr. HARVEY CUSHING

THROUGHOUT his long life Councilman was a man of ardent and generous enthusiasms. It was this quality, combined with his utter informality, which made him such an inspiring teacher for the young and such a delightful companion both for young and old. There was a picturesque ruggedness in his personal appearance, an unexpectedness in his turn of thought, a shrewdness and independence in his observations concerning people, things and events that set him apart from the common mould. He had escaped from early educational and environmental inhibitions by which many persons come to be afflicted and subdued. Combined with an utter unconsciousness of self, there was about him a certain sturdiness of mind, frankness of opinion and honesty of purpose which were no less disconcerting to the self-complacent than refreshing to those who appreciated his outspoken sincerity.

He was born on a busy farm which straddled the Reistertown turnpike not far from Baltimore, and he always regarded it as fortunate that his early years were passed in such an environment. There he learned to plow, to swing a cradle, to bind sheaves of grain and do other things that were unforgettable, like the gathering of Spring simples.

The very earliest thing I can remember [he wrote in one of later-year addresses] is being taken by my grandfather when he set out in the first warm days of early spring with a grubbing hoe (we called it mattock) on his shoulder to seek the plants, the barks and roots from which the spring medicine for the household was prepared. If I could but remember all that went into that mysterious decoction and the exact method of preparation, and with judicious advertisement put the product upon the market, I would shortly be possessed of wealth which might be made to serve the useful purpose of increasing the salaries of all pathologists. . . . But, alas! I remember only that the basic ingredients were dogwood bark and sassafras root, and to these were added *qu. s.* bloodroot, poke and yellow dock. That the medicine benefited my grandfather I have every reason to

believe, for he was a hale, strong old man, firm in body and mind until the infection came against which even spring medicine was of no avail. That the medicine did me good I well know, for I can see before me even now the green on the south hillside of the old pasture, the sunlight in the strip of wood where the dogwood grew, the bright blossoms and the delicate pale green of the leaf of the sanguinaria, and the even lighter green of the tender buds of the sassafras in the hedgrow, and it is good to have such pictures deeply engraved in the memory.

Sent off to school at St. John's College, Annapolis, he left there at the age of sixteen and for the next six years 'led an independent existence, raised side whiskers, considered himself a very ripe individual and did pretty much as he chose.' That he was always something of a rebel and disinclined to do anything which did not interest him, he in after years frequently confessed. But at the age of twenty-two, the determination struck him to follow in the footsteps of his father, a country doctor "who had never lost the childish desire to find things out by observation and the test of experiment."

He entered the Medical School of the University of Maryland which was no better nor worse than most schools of the period, the two-year course consisting largely of a series of lectures. The dissecting room, however, provided the contact with Nature for which he yearned, and the form and structure of the body soon fired his curiosity. Fully to satisfy this, the farm provided an excellent opportunity and, beginning with the mole, he proceeded to make a comparative study of the skulls of all available animals until the collection finally threatened to crowd him out of his bedroom. So engrossed did he become in this occupation he largely neglected his second-year course of lectures; and it was not wholly a misfortune that one day during his absence a little nephew 'with a good business head' sold the whole collection for a few cents to an itinerant bone merchant. This grievous episode, by driving him back to his lectures, made it possible for him to attain, in March of 1878, the degree 'qualifying him to exercise the art of medicine which he had so laboriously learned for the advantage of the public.'

Then something notable happened and what this was can be best told fragmentarily in his own words, though properly to do so the scene must be shifted and the calendar advanced to 1921, a full forty-three years.

As the Christmas recess drew near, it was noised about in the Harvard Medical School that on December 19th Professor Councilman was for the last time to conclude his course of lectures on pathology for the second-year class. Entering the large amphitheater to find it packed to the doors by members of all classes, his face became suffused at the burst of applause and then, abandoning his intended discourse, with his engaging hesitancy of speech slightly more pronounced than usual, he said in effect:

"It is plain to see that you regard this as an occasion marking an epoch in my life, and there is a tendency to regard an epoch as an excuse for remarks. The three great epochs of life are birth, marriage and death, and they are often accompanied by certain remarks. At the wedding breakfast many have suffered from these remarks and some of us have made them. The present is a sort of intermediate epoch and though my talk is usually desultory I may take advantage of the occasion to be even more vague and desultory than usual."

By good fortune someone wrote down his impromptu ruminations and though they can not be quoted in full, interesting as that would be, some excerpts will serve to show what it was that happened after his graduation in March of 1878.

> . . . I heard that there was at the Johns Hopkins University a new sort of institution called a laboratory. I vaguely knew of the Johns Hopkins University but not a great deal about it. It had opened in 1876 and Huxley came on to give the opening address; my father drove in from the country and heard this address and he came back and told us what an impression it had made on him. . . . There seems something remarkable about the opening of this University. . . . The men, Martin, Rowland, Brooks, and Remsen, were young men, and as young men they felt no hampering traditions. Traditions may be very important, but they can be extremely hampering as well, and whether or not tradition is of really much value I have never been certain. Of course when they are very fine, they do good, but it is very difficult of course ever to repeat the conditions under which good traditions are formed, so they may be and are often injurious and I think the greatest progress is made outside of traditions. So the Johns Hopkins University started without traditions, and started with young men, full of vigor and enthusiasm, as its leaders. The University at its beginning made provision for twenty fellowships, each fellow being paid five hundred dollars; and *the idea of going to a university and being paid for it* made an impression!

He then went on to tell of Martin's permitting him to join his small class in the biological laboratory for the next three months and how thrilled he was with the informal spirit of the place and with the method of teaching through observation and experiment. That summer he became assistant to the quarantine officer, bought a cheap microscope with his first small earnings, and began with its aid to study such histological preparations as he could find time to make in the intervals of his routine work. And when that autumn Martin offered him the assistantship in

physiology for the following year his cup was overflowing.

For the first paper he ever wrote (an experimental study of inflammation of the cornea) he was given a prize of one hundred dollars and with this encouragement he might well enough have been tempted to take up biology as a career. But something else proved a greater lure: for during the summer months of the three years since his graduation he had been at work, partly at the Marine Hospital and partly at the Bayview Asylum (the city almshouse and hospital) meanwhile becoming ardently interested in histological pathology. Properly to pursue this subject further, he decided that he must go abroad, which his frugal savings permitted him inexpensively to do.

He could scarcely have gone at a more fortunate time, for almost daily new discoveries were being made and new methods developed. In 1880 German medicine was approaching its heyday, under the stimulus of the new cellular pathology and the cultivation of pathogenic bacteria, both greatly aided by the increasing use of analine dyes in the study of tissues and micro-organisms. His longest sojourn was passed in Vienna under men who had been brought up in the tradition of Rokitansky. For a considerable time he was with Recklinghausen in the new school at Strassburg. He was working under Cohnheim and Weigert in their active laboratory at Leipzig when in April 1882 the exciting news was brought of Koch's discovery of the tubercle bacillus. And a year later he is found with Hanns Chiari, a man of his own age, whom he had first known in Vienna but who now held the chair of pathology in Prague. From this place under the date of July 16, 1883 a certain "correspondent," W.T.C., sent off to the *Medical News* an entertaining letter largely given over to a vivid description of the ordinary mid-day meal served in that part of the world.

So in his final lecture—to which, from this digression we may again turn—he went on to say:

> I came back from Europe very full of all the things which I had learned and with a more or less definite idea of . . . practising medicine. But I put off later and later the putting up of a sign showing that I was willing to serve, and finally never put it out, because it seemed to me there were so many other interesting things to do. And as long as one saw the possibility of doing these interesting things without actual starvation, there was no question of the choice, and there should never be a question of the choice. I reasoned that if worse came to worst I had a few acres of good land on which I could raise all the food I required and something over, . . . but I never had to resort to agriculture for a living. I speak of this because at that time there seemed to be no possibility of earning a living by teaching pathology, and Welch in New York and I were probably the first two men in the country who tried it. I rather think Dr. Welch took the greater risk because he had not my agricultural resources, though a training and mental capacity far greater than mine.

For the next few years after his return from abroad in 1883 he engaged in various tasks, doing the autopsies at Bayview, teaching in the two local medical schools, helping John S. Billings prepare his National Medical Dictionary, writing articles for encyclopoedias, and for a year serving as Coroner's physician to the City. This position paid him three hundred dollars, but it 'tied him down too much to places and dates' and 'being of a rather roving disposition' he 'did not care to be at a certain place at a certain time,' so he surrendered the job to another physician who had a greater political pull.

Meanwhile, in 1886 he had joined Welch and the early group of workers in the newly erected pathological laboratory which was to form part of a great hospital still in slow process of erection. And with the opening of the Johns Hopkins Hospital three years later there came another period as remarkable, he believed, as the first period, that of the opening of the University. To prepare himself for this event, in which he was slated to take part, he had gone abroad in 1888 for another year of study; and then for the two years prior to the establishment of the Medical School, in close intimacy—

> There lived together in the hospital a group of men, all young, all very good fellows, all working very hard, and all having a very good time. It is an important thing that people should be happy in their work, and if work does not bring happiness there is something wrong; and both at the University and at the Hospital there was that wonderful happiness in work.

All others who shared in that cloistered, carefree, hard-working and stimulating life in the Johns Hopkins Hospital during those two early years have expressed themselves in similar vein and there may never be anything quite like it again. Of this 'mutual admiration society,' as it was dubbed by visitors who had enjoyed its warm hospitality, the acting resident pathologist with the title of Associate Professor was one of the conspicuously unique figures. And it is natural that he should have been among the first of many to be called away by other institutions which were eager to capture something of the local spirit, hoping that it might prove transplantable.

Accustomed as a second-year student to the formal lectures then in vogue at the Harvard Medical School, the writer well remembers what an impression was made by the addition in 1892 to a somewhat austere faculty of this breezy informal pipe-smoking man, unmistakably sloping toward the sunny side, who was

said to have been the first 'outsider' ever appointed to a professorial chair in the School. Accustomed to work elbow to elbow with others, those of us who cared to do so and knew enough to take advantage of the opportunity were welcome to a chair and a desk and a problem in his laboratory.

Indelible pictures of him must remain etched on the memory of all who had even casual contact with him in those early days in Boston when mayhap target practice was being held in the laboratory on a Sunday morning. He was a deadly shot for a thumbtack in a plank at twenty paces; and could swear at a golf ball as could few others. He was one of those rare people able without giving offence to punctuate quiet speech with oaths (even when talking to himself); and he depended upon and made considerable fuss over his occasional tipple preferably of Maryland rye. The growing up, later on, of his devoted children hampered him considerably in the first of these diversions—at least when at home; and what he thought of the Volstead Act and its necessary subterfuge does not bear repeating.

As can be seen from some of the quotations that have been given, he did not always necessarily expect to be taken seriously, particularly when in one of his pessimistic moods usually precipitated by examples of human selfishness he had happened to observe. But even these occasional outbursts had their amusing aspects, which would make him laugh (and swear) both at himself and the world. Someone has said that his attitude toward life and its varied experiences was more like that of Mark Twain than of anyone else he had ever known. And not to misjudge the lessening optimism and buoyancy of his later days, it may without impropriety be said that for sixteen years before his sudden end he had been victimized by increasingly severe attacks of angina pectoris.

But let us return again to the valedictory remarks of the retiring Professor of Pathological Anatomy on that December day of 1921, and we find him saying in conclusion:

> It seems to me that the most important thing for the teacher is to awaken interest and enthusiasm in his students and to provide them with opportunities of following the interest which is aroused, for in this way we progress. Knowledge can not be given, it must grow and be slowly formed through one's own efforts. It is of no importance whatever to be talked to. I have always rather enjoyed lecturing, I like to talk, and I have gotten I am sure more out of the lectures than any of my listeners, because a lecture is often an important discipline to the teacher. It enables him to classify things in his mind; through the lecture he often acquires new ideas. I know that sometimes as I have been lecturing I have seen an unscalable wall rising before the trend of my argument, and I have realized that if I said the next two or three sentences I would run against that wall, and one acquires a nimbleness of wit in finding a way around to the other side. I have enjoyed all that, and I think lecturing is an intellectual stimulus and comparatively harmless to the audience . . . it does not really very much matter what the lecturer says.

During those thirty years of consecutive teaching in a school which profited greatly by his ferment, he engaged in many time-consuming researches; and much as he loved to play, when once on a scientific quest he pursued it relentlessly and lived with his problem. While his independent papers deal with a large number of significant and timely subjects, he was more interested in fostering the work of his associates and pupils than in communicating the results of studies carried out by himself alone. Hence, the names of one or more collaborators appear on most of his major publications. Thus his early work on malaria (1885) was shared with A. C. Abbott; his monograph on amoebic dysentery (1891) with H. A. Lafleur; that on epidemic cerebrospinal meningitis (1898) with F. B. Mallory and J. H. Wright; the studies of 220 fatal cases of diphtheria (1901) with F. B. Mallory and R. M. Pearce; a syllabus of pathology for students (1904) with F. B. Mallory; and the several important studies on variola and vaccinia (1891–92) were subsequently brought together (1904) in a monograph under the names of his several coworkers, G. B. Magrath, W. R. Brinckerhoff, E. E. Tyzzer, E. E. Southard, R. L. Thompson, I. R. Bancroft, and G. M. Calkins.

Obviously what fostered the making of the larger number of these conjoint investigations was the opportunity, which contemporary epidemics afforded, of intensively studying the several diseases with which these papers deal; but at the same time sight was not lost of the opportunity for public service to the community in which the epidemics were causing alarm.

On the opening in 1913 of the Brigham Hospital to which he was appointed pathologist, the scope of his work was greatly enlarged though at the same time his responsibilities were doubled. The larger part of his time came to be passed in the hospital and the departmental protocols of the day are models in their thoroughness of detail. The lengthened number of hours he was obliged to spend in the microscopical study of dead tissues may possibly have served to accentuate—if anything could—his love of the outdoors and his interest in growing things.

Disturbed by the architecturally unadorned exterior of the new hospital, he personally selected, planted and during his odd hours cultivated the well chosen varieties of rambler roses that still surround it; and

when so engaged, nothing gave him greater delight than for passers-by to mistake him for the official gardener. He had a gift for making things grow and was forever planting and tending shrubs and flowers somewhere. One of his chief joys was the Arnold Arboretum and his knowledge of every shrub and tree in that marvellous place was scarcely exceeded by that of his greatly admired friend, Charles S. Sargent, the Director. The horticultural interests now shown by certain members of the hospital staff of those days can probably be traced to the Sunday morning rambles in the Arboretum or elsewhere through the country in company with Councilman and Pasco, his devoted bulldog, who scarcely ever left his side.

By nature a close observer, this quality was further developed by the exercise of his profession and it was inevitable that he should look about him with greater keenness and more curiosity than most persons. Though a wide and discriminating reader, what he saw with his own eyes he questioned and interpreted in his own terms. He was, in its broad sense, a naturalist, and all things interested him. Two unusual opportunities came to him to gratify his fondness for travel and desire at first hand to study the unfamiliar flora of other regions. In 1916, he accompanied the Rice Expedition to the Amazon; and two years after his retirement at Harvard, having been invited temporarily to join the staff of the Pekin Union Medical College, he took advantage of this to go around the world. He had a gift of description and was a most facile writer of highly entertaining letters which, usually undated, he would dash off on the sheets of ruled yellow paper which he kept ready at hand.

It might be supposed, by the unthinking, that those whose chosen occupation is the study of disease and death would in time become callous and indifferent to life. On the contrary, it is more apt to lead to an abhorrence of suffering of any kind and to a peculiar tenderness toward living things. In his difficult and often baffling search for the cause of disease by the examination of the dead body, by the microscopic study of the tissues and by the experimental reproduction of its processes in lower animals, the pathologist is laying the foundation on which its recognition, alleviation or possible cure by physician or surgeon during life is alone possible. It is a task requiring optimism, patience, intelligence and self-sacrifice of unusual degree. And to show what outlet a pathologist may have, this inadequate tribute to one of them may well close with an allusion to something else.

On relinquishing his chair and with it his hospital position, Councilman merely shifted his attention from the diseases of man to those of plants, and his last printed paper, issued from the Arnold Arboretum, was the result of a microscopic study of the relation of the fungi of its essential humus to the root-system of *Epigaea repens*. As befitted its place of publication in the *Proceedings of the National Academy of Sciences,* it was a detailed presentation of a novel and little studied subject couched in scientific terms. But it was characteristic of him that he could not leave the trailing arbutus without unburdening himself in regard to its "fatal gift of conspicuous beauty" even though his feelings must be relegated to the footnote in which he says:

> The Epigaea repens is one of the most beautiful and interesting of plants. Its blossoms which are among the earliest of the spring flowers are white or pink with a waxy texture and a delicious spicy odor and are borne at the extremities of the stems. The pale green hairy leaves and the pale pink or green stems streaming from the centre close upon the surface of the soil add to the attractiveness. The environment of dead brown leaves, mosses and low plants give a perfect setting. It is unfortunate that these wonderful qualities should be those which are ensuring the destruction of the plant. Large quantities are gathered in the spring and hawked around the city streets, the unfortunate city dwellers seeking to satisfy atavistic and misunderstood yearnings for woods and green dales by purchasing the bunches. . . . The automobile by rendering remote places easily accessible has contributed greatly to its destruction, but the most powerful agency is the commercial exploitation which is ruthless and the traffic of great extent. Where the plants are abundant a family even selling them at wholesale can often earn $25.00 a day . . . but the plant is of slow growth and the relation of leaf and root is so finely adjusted that recovery after considerable loss does not take place and the stimulation to effect new growth cannot act on the plant and the fungus at the same time. By great care and skill plants can be transferred to other suitable localities and may even be propagated by seed but there is little prospect of its ever becoming a garden habitant. . . . I have known it to disappear completely from localities where formerly common and probably no plants can now be found within a dozen miles of any of the large cities. This desire to save the plant is not a mere matter of sentiment. No plant is more suitable for . . . the awakening in children through its study the all important wonder and curiosity. . . .. Apparently like all wild beautiful things which man covets it must go but the loss of such things is a serious loss for man.

Thus Councilman went through life observing, studying, recording and speculating on things small and on things large, but always with consuming interest in the quest that engaged him and living up to his maxim that the chief happiness lies in work. When uprooted from his warm and fertile Maryland soil and transplanted to the rugged shores of Puritan New England, there must have clung to him some of

the 'essential native humus' which guaranteed more than a precarious foothold. Though 'deeply engraved on his memory' was the bursting springtime of his boyhood home, he came to appreciate no less the beauties of a slower year's awakening. So it is suitable to leave him—engrossed in the study of the tiny Mayflower and vigorously championing its right to survive.

A HISTORY OF THE NATIONAL RESEARCH COUNCIL 1919--1933

V. DIVISION OF GEOLOGY AND GEOGRAPHY[1]

By Professor W. H. TWENHOFEL
CHAIRMAN

THE Division of Geology and Geography was organized in 1918 for the purpose of assisting in the prosecution of the war and was reorganized in 1919 to serve the interests of the sciences in time of peace. The membership of the division at first was placed at twenty-six and later twenty-seven, of which nine members were to be elected at large, one as the representative of the Division of Federal Relations of the National Research Council, and the others chosen by the national societies of geology and geography. Experience soon demonstrated that a large membership was too expensive for the work of the division and also too large for efficient work, and in 1928 steps were taken to reduce the membership gradually to nineteen, which was completely effected by 1932. Since this reduction it has seemed that still greater efficiency and less expense would be attained by further reduction, and this view coincided with the recommendations of the Committee on Policies of the National Research Council, which urged that the executive members of the divisions be reduced to a number not greater than twelve. This reduction in membership is now in process and it is planned, beginning July 1, 1933, to have three members-at-large and nine members chosen by the national societies. It is felt that this reduction will permit centering more responsibility upon the members of the division and thus, in turn, lead to greater interest on the part of the membership.

The division does its work very largely through committees, but there is also much work done through personal contacts of the officers and members of the division with other geologists and geographers. The committees are concerned with a wide range of objectives. The number has varied through the years and at the present time there are twenty-four, the membership of a committee ranging from four to twenty. The motive prompting the appointment of a committee is one of hope of development of a neglected or backward branch of geology or geography through having a group of students interest itself with the branch of geology or geography concerned. In this way advance to a notable degree has been made in several fields of geology and geography, among which are: batholithic problems, studies of the clay minerals, isostasy, measurement of geologic time, micropaleontology, oceanography, paleobotany, petroleum geology, processes of ore deposition, sedimentation, shore-line investigations and tectonic geology. Two recently appointed committees are those on stratigraphy and the accessory minerals of crystalline rocks, and it is confidently expected that substantial advances will be made in those fields. At the present time over 200 geologists and geographers are centering attention on the work of the twenty-four committees, and great credit is due to the chairmen and members who give time and energy to the work of the division.

The roster of chairmen since the organization of the division is as follows:

1918 —John C. Merriam
1919–1922—E. B. Mathews
1922–1923—Nevin M. Fenneman
1923–1924—Andrew C. Lawson
1924–1927—David White
1927–1928—Waldemar Lindren
1928–1931—Arthur Keith
1931–1933—W. H. Twenhofel

The extent of the advance in the work of a committee rests on several factors, among which are, first and most important, the initiative, leadership and industry of the chairman, and, second, the nature of the problem. A committee is discontinued when its work has been concluded through solution of the problems upon which its attention was centered or through development of interest on the part of another organization prepared to assume responsibility for continuation of the work. The division does not attempt duplication of work, and when it is found that a competent organization is prepared to assume responsibility for further development of a project the division willingly retires from the field.

[1] This is the fifth of a series of ten articles prepared to describe briefly the nature of the activities with which the National Research Council has been engaged during the past fourteen years.