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The Alumni—"In a very just sense and in a very large degree the fortunes of the University are committed to your hands"—Dr. James B. Angell.

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Instruction in Science in the University's First Years

Michigan was a Pioneer in this Field as well as in Scientific Instruction in Medicine

*Another Chapter from Doctor Vaughan's "A Doctor's Memories" which gives some Interesting Sidelights on Development of the Medical School**

THAT the original Board of Regents which was appointed by Governor Mason and began to function in 1837 had a distinct appreciation of science is shown by their first appointment to a professorship in this University. The man selected was Doctor Asa Gray, a graduate of the medical school founded by the Board of Regents in the State of New York and located in the village of Fairfield, Herkimer County, in 1812. Doctor Gray was appointed Professor of Botany and Zoology in 1838, and was commissioned by the Regents to go to Europe and collect scientific books and an herbarium. In 1842 he resigned this position without ever giving instruction in this University and became Professor of Botany in Harvard and won for himself the distinction of being the supreme authority on this subject in this country, a position which he maintained throughout his life. When he resigned from this University in 1842 Doctor Abram Sager was selected to fill his place. Before this Doctor Sager had served as chief in the botanical and zoological department of the Michigan State Geological Survey.

The second appointment to a professorship in this University showed the same appreciation of scientific work indicated by the first. Doctor Douglas Houghton, at that time head of the Michigan State Geological Survey, was in 1839 made Professor of Chemistry, Mineralogy, and Geology. Like Gray, Houghton never gave instruction in the University but made collections for the Museum. He was drowned in Lake Superior while exploring the copper region, October 13, 1845. A broken shaft still stands on the Campus in commemoration of the life and work of this brilliant young scientist. In 1844 Silas H. Douglas, who was to build up the chemical laboratory, was made Houghton's assistant and subsequently became his successor.

To what influence may we attribute this marked tendency towards science on the part of the Regents who launched Michigan University at a time when classical and humanistic studies still dominated New England Universities? To me the source of this influence is plainly visible, though, as far as I know, no university historian has perceived it.

Scientific Interest of First Regents

THERE were two real scientists on that Board, and while the majority of them may have been, as one historian says, without special fitness for the work before them, these two evidently knew what they were doing. These men were Henry R. Schoolcraft, the great explorer and naturalist as well as the best versed student of Indian lore in the region of the Great Lakes, and his companion and fellow student, Doctor Zina Pitcher. Furthermore, behind the Regents were the Governor and the Superintendent of Public Instruction, since all important acts of the Board required the approval of these officials before becoming effective. Indeed, the Regents were named by the Governor and he was the President of the Board. Stevens T. Mason was Governor of the territory and State of Michigan practically all the time from 1831 to 1840, and had much to do with the foundation and inauguration of the University. The Superintendent of Public Instruction, the Reverend John D. Pierce, a graduate of Brown University, was an appointee of Governor Mason and the two seem to have been in agreement on educational matters, in which both were deeply interested. Mason was a Virginian and it is not probable that he was unacquainted with the scientific activities and ideals of Thomas Jefferson. Hinsdale and Demmon, in their history of the University, say: "Ex-President Jefferson had founded the University of Virginia on new lines in 1825, but

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MOSES GUNN, M. D.

Professor of Surgery 1849-1867. This Picture and the Others on this Page Were Taken from an Old Photograph of the Faculty of the Medical School, Taken About 1860, now in the Possession of the Alumni Association. The Pictures are Badly Faded

SILAS H. DOUGLASS, A. M.

Who Became Lecturer on Chemistry and Geology in 1845 and Professor of Chemistry in 1846, a Position he Held Until 1877. He Established one of the First Chemical Laboratories in the Country. The Signature on the Old Photograph is Spelled as Above

that excellent institution was at the time practically unknown in the West."

It is undoubtedly true that to the mass of the people in the Northwest at that time the work of Thomas Jefferson in founding the University of Virginia was unknown; but that Schoolcraft, Pitcher, and above all, Governor Mason, himself a Virginian, were ignorant of it is highly improbable. The details followed in the development of the two universities are too similar to have been accidental. Both provided preparatory schools and both stressed scientific training. The claim that the ideals of a State university as developed in Michigan in 1837 came from a study of the Prussian system of education seems to me to have been unduly stressed. Indeed, when Thomas Jefferson committed to writing his plan for the organization of the University of Virginia in 1812, Prussia had no system of education. The first Professor of Modern Language in Michigan University (1846) was Louis Fasquelle; and French, Italian, and Spanish were taught in this University before any provision was made for the teaching of German.

ABRAM SAGER, A. M., M. D.

After Serving as Professor of Zoology and Botany from 1842 to 1850, he Became the First Professor of Diseases of Women and Children in the Medical School, a Position he Held until 1874. He also Acted as the First President, or Dean, of the School

Still another evidence of the scientific spirit of the original Board of Regents lies in the fact that one of their first appropriations was the sum of ten thousand dollars for the purchase of scientific apparatus and books. This is exactly what one would expect of such men as Mason, Schoolcraft, and Pitcher.

The First Medical Faculty

IT will be seen from what I have said that during the forties two of the strongest men on the University Faculty had been trained scientifically and had medical degrees. These were Abram Sager and Silas H. Douglas, and they constituted the leaven in the Faculty which led to the development of the Medical School. The Department of Literature, Science, and the Arts had been organized in 1837 and the charter indicated that the Law Department should be the first professional school provided for, but this did not happen. The Law School was not organized until 1859 and I at least can see plainly the reason why the Medical School took precedence. One cold, snowy February day in the late forties there arrived in Ann

Arbor a young man who was to become a tower of strength to Sager and Douglas in their efforts to provide for a Medical School. This newcomer, in my opinion, was inferior to both Sager and Douglas, certainly to the former, in both native and acquired ability in scientific work. But he had a strong personality and a genius for organization and constructive work. While a student in a medical school at Geneva, New York, he read about the organization of the University of Michigan and the istry in the Michigan Agricultural College, and Edmund Andrews, who, in later life, became the leading surgeon of Chicago, one of the founders of the first graded medical school in this country, the Chicago Medical College (now the Medical School of Northwestern University), and recognized as an authority here and abroad on the geology of the Great Lakes. This newly arrived ally to Sager and Douglas in their attempts to hasten the organization of the Medical School was Moses Gunn.

THE OLD MEDICAL BUILDING

The Front Portion was Built in 1849 and was the Third University Building to be Erected

provision that a medical department would, sooner or later, be attached to this institution. Immediately on receiving his medical diploma he started for Ann Arbor, carrying in his grip several dissecting cases and, among his grosser impedimenta, a box of suspicious shape and size and unmarked content.

On arriving in Ann Arbor he hung out a shingle offering his surgical skill to the public and more discreetly he let it be known to the University students that, in his back office after a certain hour, he was prepared to initiate any of them who might have the profession of medicine in view, into the mysteries of the structure of the human body. He was soon recognized as a most desirable addition to the small group of intellectuals then constituting the Faculty and student body of the University. There is no record of his surgical success as a private practitioner but his class in anatomy was soon in a flourishing condition. His best students in his back office were Robert Kedzie, who later became the distinguished Professor of Chem-

Moses Gunn, Professor of Surgery

PERSONALLY, I did not know Moses Gunn until some thirty years after his coming to Ann Arbor. However, it was his custom in his later years to come to Ann Arbor on the anniversary of his first coming in the forties. On these occasions I, as his host, listened attentively to the stories of his early manhood. He told me that when he read about the prospective Medical School in connection with the University of Michigan he and Corydon L. Ford were roommates at the Medical School in Geneva; that they talked over the possibilities that might lie in the West; that he said to Ford that he would come to Ann Arbor, aid in founding the School and that he would become Professor of Surgery and Ford should be Professor of Anatomy. As I knew him, Moses Gunn was a most striking figure, one which would attract attention on the street, in an assembly, or at a social function. He was more than six feet tall, square and muscular, with deep

blue eyes, snowy hair and beard, which he wore *a la* Burnside. He wore a Prince Albert coat, a high hat, generally a white vest, and striped trousers. Pending from his neck was a long, slender, gold watch chain. His hair hung about his neck in curls. In fact, as I once sat in an assembly hall beside one of the most eminent medical men of the time, Moses Gunn appeared on the stage. My companion asked, as he leaned toward me, "What old mountebank is that?" That his peculiarity in person and dress was not a foible of his old age is shown by a description of him by the late Doctor Norman Bridge, of Los Angeles, California, who entered the Medical School in 1866. "Doctor Gunn, the Professor of Surgery, was an inspiring man; tall, erect, with a reddish beard which he wore *a la* Burnside and which was being tinged with gray. His graying hair was very long, and hung in large depending ringlets, each of which every morning was wound around the moist finger of his adoring wife. This gave him a fantastic appearance and a reputation for foppishness that he hardly deserved. He was a rapid and elegant operator and had made some striking addition to his art."

THE CHEMISTRY BUILDING NOW AND IN 1860

The Little Building at the Right is a Reproduction, on the Same Scale, of the First College Chemistry Laboratory in the United States.

Organizing a Medical School

URGED, no doubt, by Sager and Douglas, with Gunn's outside help, the Board of Regents, in 1847, appointed a Committee with Doctor Pitcher as Chairman whose duty it became to consider the expediency of organizing a medical department and to ascertain the expense that would be incurred should such a step be taken. In January, 1848, this Committee made a favorable report which was supplemented by a more detailed communication to the Board of Regents in January, 1849. The last mentioned report went into detail concerning needed buildings, equipment, the selection of a Faculty, entrance requirements for students, length and character of course, and other matters, Doctors Sager and Douglas were transferred to the embryo Medical School, and Sager made Dean, or, as the title was, President, and continued in this office for twenty-five years, or until he resigned in 1875. In July, 1849, Moses Gunn was made Professor of Anatomy and Surgery, and in January, 1850, J. Adams Allen was appointed Professor of Physiology and Pathology, and Samuel Denton, Professor of the Theory and Practice of Medicine. On the first Wednesday in October, 1850, the first session was opened by addresses by Doctor Sager and Regent Pitcher. Thus the School was begun with nothing to occupy the time and energy of the students save lectures, quizzes and a short course in anatomy. In fact this schedule constituted the curricula of all medical schools in this country at that time. Fortunately there were two men on the original Faculty whose foresight and wisdom did not permit the School to remain long in this primitive condition. These were Doctors Douglas and Gunn. The former began laboratory instruction on his appointment in 1844 and soon secured from the Regents a fund sufficient to erect a small, one-story laboratory and in this the students were soon busy in a field hitherto unknown and unvisited by medical students in this country at least. This small laboratory, well equipped for the times, grew year by year until it soon became the largest and best equipped chemical laboratory open to students in this country.

Early Difficulties of the School

THE University of Michigan Medical School was from its start a scientific, in contradistinction to a practical or clinical, institution. This was not altogether due to preference on the part of its founders and professors, but was a necessity. For twenty-five years it had no hospital—not a building which by any stretch of courtesy could be so denominated. The task of developing clinical facilities fell upon Doctor Gunn and was heavier than that resting upon the shoulders of Doctor Douglas. Indeed, for many years the criticism of the School of most weight was that it had no hospital connection. This deficiency was urged against the School even by some of its best graduates, who, while students, had felt it and had established themselves in large cities after graduation. As late as the eighties one of these urged me to leave Ann Arbor, urging that the School must fail on account of its lack of clinical opportunities, and I did not deny the weight of his argument, but I saw the matter from another angle—the deficiencies in the city schools at that time in scientific training.

Another argument against the School was that it is supported by the State. It was held that it is not a State function to provide a professional education. In the eighties I spent many an hour discussing this point with some of my most esteemed friends who were serving on the faculties of city schools. My reply to this criticism ran along the line that formerly universities had been

founded and supported in the interest of some theological dogma. More recently and often in connection with this purpose wealthy men have built and endowed universities in order to perpetuate their names. I acknowledged that both of these motives have been honorable, but I held that the State university owes its origin and secures its maintenance because the people believe that higher education improves its citizenship and therefore should be available to all at a small cost. The State needs wise lawyers to enact and enforce its laws, intelligent physicans to prevent and cure disease, skillful engineers to build roads and bridges and otherwise to develop transportation, and intelligent agriculturists to improve the fertility of its soil; therefore it offers professional training. Now State education along professional lines is not questioned by anyone; forty years ago it was most earnestly and honestly contested by many wise men. Then the State university medical school was founded upon simple resources and inadequately supported. In fact, for many years Michigan University Medical School was the only successfully managed institution of its kind supported by the State. The University of Pennsylvania was a State institution in name only and for many years received no grants from the State. Now State university medical schools are many, and some of them at least compare favorably with the best in the country, and indeed all of the best medical schools now have some connection with either State or endowed universities. In short, medical education is unanimously admitted to be a university function and an important one. Every medical school is seeking or has found university connection and every great university is seeking or has found a medical department. Forty years ago all my best and most esteemed friends and colleagues in medical education, outside of my own Faculty, were teaching in proprietary schools, a few at their financial advantage, most of them at financial sacrifice. The proprietary medical school was a step in the evolution of medical education; it was a vast improvement on the old apprentice system. It had the services of the best in the profession; it made many contributions to science; and it supplied the people with thousands of capable physicians, but, like Troy, it belongs to the past.

Hot Air for the University

Heating Plant Consuming 45,000 Tons of Coal Annually Plays Important Part in University Life

HIDDEN in the little valley behind the College of Dental Surgery, the University Heating and Power Plant performs its duties almost unnoticed by the students whom it serves. Although frankly snubbed by its more academic brother buildings, the big smoky plant shares the former "cat hole" cheerfully with the equally prosaic University Laundry across the road. Even though it is so uninviting the heating plant is an extremely vital part of the University throughout the entire year. Entering from East Washington Street the visitor is received in an immense, red-tiled room; very impressive with shining turbines and engines.

The building and equipment were added to about two years ago to care for the additional buildings which have been constructed upon the Campus, and it now heats and lights every building of the University except the athletic buildings on Ferry Field. The old hospital formerly had its own heating plant but was connected to the central heating plant in 1925. When the new Hospital, Medical, Engineering, University High School, and Literary Buildings were constructed an addition was built to the heating plant, and two 1,000 horsepower boilers, a water softener, a switch room (given by the Detroit Edison Company), and an additional smoke stack were added.

The twelve boilers, developing thirty-five thousand horsepower, consume from forty to forty-five thousand tons of coal each year. Twenty-two thousand five hundred and forty-eight tons were used in 1922-23, which total has been increased by new buildings to 42,613 tons in 1925-26. The space area heated today is twice that of 1920. The coal bill for the University is over one hundred and seventy-five thousand dollars annually. In the winter months one hundred and thirty to one hundred and ninety-five tons of coal have to be fed into the boilers every twenty-four hours (the largest amount used in any one month was 5,844 tons in January, 1926), and yet, only three firemen are on duty at any single period. There are, in fact, only twenty-two men on the payroll of the whole plant, for machinery replaced men wherever possible. By means of the big three and one-half ton electric crane, one man handles every ton of coal which comes into the storage yard. This pit is located at the west side of the building and is of concrete on all sides and bottom and has a capacity of fifty thousand tons of coal. The traveling crane is so constructed that it can reach every part of the bin. High above the level of the roof of the building is a little glass cage in which the operator manipulates levers which lower and raise the iron bucket which handles the coal.