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Innovation and Tradition in the Teaching of Medicine at the University of Michigan in 1900

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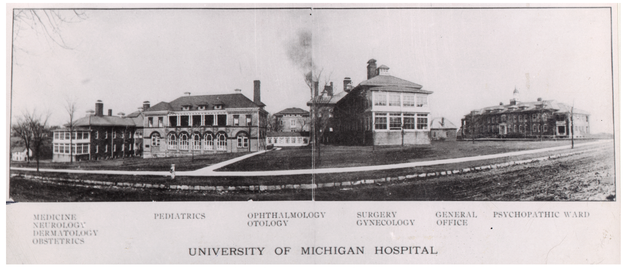
Introduction

The Medical School has long been at the forefront of innovation in medical care and the teaching of medicine, and that was as true at the turn of the last century as it is today. Yet older habits of thought and practice continued alongside the new. George Dock, one of the premier instructors of internal medicine in 1900, was quick to implement new discoveries—he brought the Tallquist hemoglobin scale to the attention of his students soon after it was published—he also clung to old ideas of medical practice, such as cupping.

Excerpts below are drawn from an extraordinary document of late 19th–early 20th century medical education, *George Dock Notebooks*, the 16-volume transcript of his 4th year medical clinics from 1899–1908.



University of Michigan Hospital 1906/1927 (ca.)**

Hospital and Medical School

By the time George Dock arrived at Michigan in 1891, the hospital and the medical school had changed dramatically. First established in 1869 in a former faculty house, the Catherine Street complex was by 1900 the largest teaching hospital in the country.

When the Medical School was established in 1850 students attended a series of lectures one year, then repeated them exactly the following year. There was no hands- on work. By the late 19th century, students participated in a graded curriculum of 4 years, which was first established at Michigan. They actively participated in laboratory work, were assigned patients in the hospital and, in Dr. Dock's 4th year internal medicine clinic held twice weekly, in the amphitheater of the hospital, learned the art of diagnosis by hands-on training and questioning.

George Dock

A graduate of the University of Pennsylvania in 1884, George Dock had already taken steps to place himself at the forefront of scientific medicine. He interned at a hospital (unusual at the time), sought out the eminent internist William Osler, and spent three years in Austria and Germany, studying in laboratories and clinics.

At Michigan, where he became professor of the theory and practice of medicine and of clinical medicine in 1891, Dr. Dock emphasized clinical instruction as the basic form of teaching in internal medicine. He established a course in percussion and auscultation and initiated the clinical clerkship, where for the first time, students were assigned to follow patients during their hospitalization.

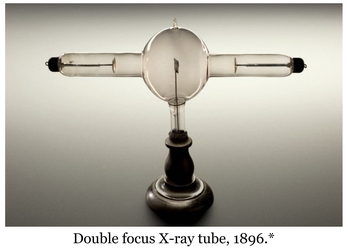
Dr. Dock's Clinic. Hospital Amphitheatre. Dec. 1897**

Innovations in Medical Practice

In clinic, Dr. Dock often exhorted his students to keep up with the medical literature; he brought up current articles for discussion. In a case presented 13 January 1900, an article from the latest edition of the Medical News (10 January 1900) was read as part of the differential diagnosis of a child brought in with an adenoidal growth on pharynx and other "conditions which are very interesting from a pediatric standpoint."

> *If you remember in infantile scurvy the child, as you approach it, feels and acts afraid—evidently has some tender points about it which it attempts to keep from you. If you touch the limbs, the child will cry out as if with pain. If you remember, the Author says if you leave the child alone and do not touch it, it will probably remain quiet. At first the limbs are drawn up and kept still. On examination the limbs in case of scurvy show enlargement of epiphysis, and along the bone, along the shafts of the tibia and femur. Here there is nothing of that nature. You can handle these limbs without causing pain. . .*
>
> *In infantile scurvy, besides the condition of the limbs, you remember the teeth come in very slowly, and after that there is spongy condition of the gums. In this child you do not find spongy condition of the gums, and the teeth have come out very well as you may see. . . . In this case the child is able to draw limbs up, but there is a spasmodic condition of the arms.* [Dr Arneill reads an extract] *The facts to keep in mind in infantile scurvy are that neuritis and also severe [ ] might follow, and it is necessary to e[x]clude these. In this case, however, we will exclude the infantile scurvy. (1899–1900, pp. 407–8).*

As elsewhere, the use of X-rays was adopted eagerly at Michigan. In Dr. Dock's practice, they were used often to diagnose aneurisms and kidney stones, but physical examination was of paramount importance. In the case of a patient with vocal paralysis and pain in the chest, X-rays are mentioned only after 2 pages of careful physical examination.



Double focus X-ray tube, 1896.*

> *On [au]sculting we find no murmurs over the heart or in the region of the great vessels. I should say signs of aneurism are not sufficiently marked to make a diagnosis of aneurism, but rather a growth of some kind which causes trouble at the sternum. Shyograph [x-ray] was taken of the case and did not show an aneurism. (1899–1900, pp. 414–16)*

Innovations in Medical Practice (cont.)

The Tallquist scale provided a new method to quickly and simply estimate hemoglobin. On 20 November 1900, a patient with suspected pernicious anemia was seen in clinic and the Tallquist scale, first published in May 1900, was discussed and demonstrated.

> *I will show a ready method of examining this that is worth while calling attention to. It is an old method that has been improved lately. . . . If you get into the habit of wiping the first drop of blood with a towel or filter paper you will notice that not all bloods color the towel or filter paper in the same way. . . . We will pass this around in a minute and along with them a scale we have here. You will notice a great difference in the color of the two drops. Recently a Finlander named Tallquist has devised this scale which can be used in connection with this. . . . Tallquist made a series of dyes, matching the haemoglobin, say from 10 on the ordinary color scales, running up to 100. He had an artist copy these colors, and then had them reproduced as accurately as he could. . . . You can see from the specimen I send around how evident the thing is. In the first place you get a striking difference that can occur in the blood drop, and you can easily realize that one can match those colors within a comparatively close margin. . . . The idea is to read the colors as soon as the blood has stopped running. (1900–01, pp. 224–25)*

Tradition

Somewhat surprisingly, older treatment methods with no apparent scientific basis, such as bloodletting and cupping and other counter-irritants, continued to be used occasionally. References to these treatments also can be found in Osler's *Principles and Practice of Medicine*. On 15 May 19000, a patient long in the hospital with paraplegia was seen in the clinic for uremia and suppresion of urine.

Set of cupping instruments by Lorberg, London, 19th century*

> *The most important thing is to produce sweating of patient; do this by a hot pack or wet pack; also at the same time see that the bowels are made active. . . . You might use drugs, but this is better than drugs. You might use hot applications to the lumbar regions, or even blister the lumbar region to have a counter irritating effect on the kidneys . . . mustard plaster slow painful method. What you probably had in mind was cupping. (1899–1900, p. 767–68).*

On 21 January 1901, a baby with suspected pneumonia was brought to the clinic and calomel was prescribed as the first part of treatment.

> *The first thing to do with a patient of that kind if you see it early is to give it a dose of calomel.... By giving calomel you get one point of advantage in the case. You start with an intestine fairly empty. The doctor never knows what condition the patient's abdomen is in. The patient is not likely to have a distention of the intestines or stomach and if it has respiratory disease, the respiration won[']t be embarrassed by the pressing upward of the diaphragm. An early dose of that kind does good in almost any acute disease. (1900–01, pp.449)*

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