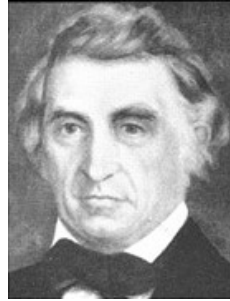


Beginnings of Physiology in the US (1820-1892)

Physiology at the University of Arizona was developed here by faculty trained in physiology programs elsewhere. Its roots may be traced to the development of physiology in other institutions in this country.

With respect to the development of physiology in this country, many would say that it began with **William Beaumont**, an Army surgeon who had the opportunity in the 1820's to study human gastric function after treating an itinerant French trapper, Alexis St. Martin, who was left with an opening into the stomach after a gunshot wound had healed. Beaumont's work was done at an army post on Mackinac Island in Michigan where a museum commemorates the event and displays scenes depicting this early work.

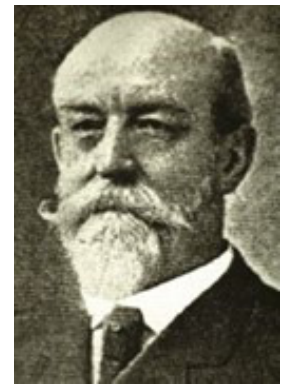


William Beaumont.



Museum at Mackinac Island

In Beaumont's time in the early 1800's, medical training was by apprenticeship with little didactic instruction. Formal training in medical physiology began at Harvard in the 1870's where **Henry Bowditch** was not only the first physiologist, he was also the first full time faculty member hired in the College of Medicine. The appointment of Bowditch at Harvard was the first step in upgrading medical training in this country from an apprenticeship to a rigorous program of instruction. But these changes did not come without resistance. It is worth noting that one of the leading lights of Harvard Medical School, Dr. Henry J. Bigelow, commented on the role of science in medical education as it was seen in 1870, I quote:



Henry Bowditch

"We justly honor the patient and learned worker in the remote and exact sciences but should not for that reason encourage the medical student to while away his time in the labyrinth of chemistry and physiology when he ought to be learning the difference between hernia and hydrocele."

While this argument against science in medicine was cleverly put, others were convinced that it was criminal to send medical practitioners out who lacked even the basic scientific knowledge to administer correct dosage of the drugs they used and thus caused the untimely deaths of the people placed in their care.

President **Charles Eliot** at Harvard, played a leading role in the 1870s in setting up a formal medical curriculum at Harvard which became a model for others in the U.S. to follow. It was Eliot who hired Bowditch.



Harvard President
Charles Eliot

After the appointment of Bowditch at Harvard, **William Howell** was chosen as Professor of Physiology at Michigan and at Johns Hopkins subsequently. Hopkins at that time was embarked on a radical experiment under President Gilman, namely an emphasis on graduate education which otherwise hardly existed in this country, being at that time largely confined to Europe. Appointments of physiologists in other universities followed. By 1887, the fledgling field of physiology had gained sufficient strength that the **American Physiological Society** (APS) was organized with Bowditch as its first president. Walter B. Cannon at Harvard and Warren P. Lombard at Michigan were two of the greats in physiology at the turn of the century.



William Howell

It is interesting in retrospect to realize that the research and formal advanced degree programs which are the lifeblood of major universities in this country today were only becoming established a hundred years ago at the time that the University of Arizona opened its doors.