

## MEDICAL MUMMIES: THE HISTORY OF THE BURNS COLLECTION

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In 1820 the University of Maryland School of Medicine acquired the Burns Museum, a specimen collection of human anatomical structures. The extensive collection had been created by Allen Burns during the 18<sup>th</sup> century in order to study the complexities of the human body. After his death, the collection was passed on to an associate who then passed it to Granville Sharp Pattison who then sold it to the University of Maryland School of Medicine where it resides to this day.

**Key words:** Paleopathology, grave robbery, history of medicine.

*En 1820 la Escuela de Medicina de la Universidad de Maryland adquirió una colección de especímenes anatómicos llamada "Museo de Burns". Esta vasta colección fue la obra de Allen Burns quien estaba interesado en la complejidad del cuerpo humano. Después de su muerte la colección pasó por varios dueños, incluyendo a Granville Sharp Pattison quien la vendió a la Escuela de Medicina de la Universidad de Maryland, donde reside actualmente.*

**Palabras claves:** Paleopatología, saqueo de tumbas, historia de la medicina.

Maryland's College of Medicine was granted a charter by the Maryland legislature in December 1807 and was re-chartered as the University of Maryland in 1812. It opened in Baltimore in November 1812, making it the fifth oldest medical school in the United States. For many years Dr. John Beall Davidge, one of the schools founding fathers, held the Chair of Anatomy and the Chair of Surgery. At the request of Dr. Davidge because of failing sight and advancing age, a search began to find a suitable professor for the Chair of Surgery ([Cordell 1891: 39-40](#)).

Granville Sharp Pattison, a *protégé* of the eminent Scottish anatomist, Allen Burns at the Andersonian Institute in Glasgow, succeeded him in death. Pattison eventually left Scotland by way of London, and came to the United States to accept a position offered by the University of Pennsylvania. Upon his arrival in 1819 in Philadelphia, he learned that the position offered him had since been filled. In 1820, the University of Maryland, however, found a willing candidate for the Chair of Surgery in Pattison, who had brought with him esteemed letters of recommendation, and the attraction of a collection of anatomical preparations, which had been accumulated by Allen Burns. Pattison had a reputation as an articulate lecturer in surgery and anatomy, and he came complete with his own cadaver teaching aids making him unique ([Cordell 1891](#)). In that same year, 1820, Pattison sold the Burns Museum to the University of Maryland for the handsome sum of \$7,800 and plans were under way to build the "Museum Building", later known as Practice Hall to house the collection. That building, separate from anatomical hall and the student dissecting laboratory, has long since been demolished ([Pattison 1987](#)).

Much of the Burns Museum specimens survive today. For the past 25 years, the collection has been held in safe, secluded and secure storage within the anatomical facilities. For

decades prior to that, they rested in glass cabinets, viewed as an oddity and with some amazement to students as they entered the dissection lab.

As we look at what remains of this 18<sup>th</sup> century specimen collection, said to originally number in the hundreds, one can hardly imagine the time and great effort taken to detail the anatomical structure in less than the best of circumstances. Not only do we see the relationships and the complexity of the communicating bone, organ, muscle, nerve, tendon, and fiber of tissue, but we view the result of Burns, his skill as a dissector-preparator to artfully cast and add colors into areas of specific interest. Burns' special interest in the heart and vascular system is given emphasis in his preparations. Preservation meant desiccation, the removal of water from the tissue to prevent autolysis and accompanying putrefaction. The specimens were mummified by a salt and sugar cure process; the exact manner and method is unknown.

What do we know about the mummy specimens? Actually, very little is known about how they were procured, or prepared. How did Allen Burns with the help of his able assistant, Andrew Russel, acquire numerous bodies for dissection and demonstration thus amassing this anatomical collection?

In Scotland, as in England, criminals sent to the gallows were the only legal source of cadaver specimens. Hanging was not quick and, painfully, not easy; the execution involved slow strangulation. The criminal would mount a ladder or stand on a bucket and when the noose was secure, the ladder would be pushed away or the hangman would "kick the bucket". Condemned prisoners feared that they would not be dead, but alive just lifeless, when the anatomist would have them to their knife. Many times friends or relatives would try to "pull the legs" violently while suspended to hasten death.

In some European countries at the time, unclaimed bodies at hospitals or workhouses could be used for medical dissection, but not in Scotland. Because there was such a great need for bodies at the medical schools and there were no legal sources adequate, a lucrative, organized, profitable but risky business appeared- *grave robbing* and *body snatching*.

In 1828, William Burke and William Hare in Edinburgh became infamous. Known as the "sack em men", together they murdered 16 people and sold their bodies to Dr. Robert Knox, the anatomist. Hare was granted immunity from prosecution turning King's evidence at trial and William Burke was found guilty. He was hanged and probably made his one last trip to the anatomy lab.

Grave robbery is a part of the history of medicine and the study of human anatomy at a time when dissection of the body remained virtually illegal. Cemeteries of the rich were guarded. Family members would use cast iron or stone slabs to cover the burial site. Mortsafes were used to protect the graves and its bodily contents. An illicit import of bodies into Scotland from Ireland also helped to meet the medical school demand for corpses. Though not officially sanctioned by the schools, there is reason to believe that medical students were given special considerations, a prized free ticket into the dissection lab, if they assisted in the effort to procure specimens. Pattison, who later acquired the Burns Museum was an acknowledged leader of the student resurrectionists in Glasgow, and later as a senior lecture, like John Burns was indicted for *body snatching*. Though unlike Burns, Pattison was found innocent.

No doubt, Allen Burns found many, if not all of these sources for corpses avail to him, and he probably made a few late night trips to the graveyard himself to acquire specimens for his collection of mummy specimens.

Allen Burns was small and boyish looking, and who in 1797 at 16 years old was in charge of the dissecting rooms at the College Street Medical School in Glasgow, Scotland. The school was founded by his older brother, John, also an accomplished anatomist. The

school was not part of the University offering the medical degree and Allen did not have a qualification for surgery from Glasgow University. Burns was a skilled dissector. He developed special preparations on the bodies in the laboratory, paying special attention to the vascular system. *Burns' ligament*<sup>1</sup>, the *space of Burns*<sup>2</sup> and two classic anatomy textbooks<sup>3</sup> evidence other significant contributions by Allen Burns in this early era of medicine. Burns was invited by the Empress Catherine of Russia for a year to set up a hospital along the British design, upon his return he learned that his brother, John, had been prosecuted for his grave robbery and his teaching activities barred. Allen Burns gave lectures in anatomy and surgery. It was in 1809 that Pattison at age 18 joined Burns as his assistant and demonstrator, working with him until Burns' death in 1813. Burns died at age 32 of an abdominal abscess, the cause determined by an immediate autopsy by Pattison and Russel.

Burns bequeathed to Pattison the copyrights of all his works. Pattison, in time revised and expanded Burns' original texts and included a number of case histories.

Burns had bequeathed his anatomical specimens to his senior associate, Andrew Russel, a Glasgow surgeon, who had assisted in the preparations. As the sole proprietor, Russel had sold an interest in the collection to Pattison, who replaced Burns as the lecturer and demonstrator of anatomy and surgery at the College. In 1814 at age 22, Pattison acquired full title to the collection, when Russel sold his interest to Pattison and emigrated to the United States. Now, armed with the Burns Museum he could distinguish himself in Glasgow, London, Philadelphia and Baltimore, where in 1820 the remains of the specimen collection was given a permanent home at the University of Maryland, School of Medicine.

In the 1790's, Europe's medical profession was still in its infancy. The basic diagnostic tools of the trade, the stethoscope, the thermometer, and the hypodermics were absent. Anesthesia and antibiotics hadn't been developed. It was an occupation taken up by the aspiring young men from the middle and lower classes. It was the time of the Napoleonic

Wars, when there was a need by the armies for the skills of the physician and surgeon. In addition, it was one of the few careers that was open to youth of modest academic means. There were no entrance requirements per se, and the average medical student was 14-16 years of age.

In the early 1800's, similar conditions in this early era of medicine existed in the United States. Maryland medical students, usually 16-20 years old, lived in boarding houses close to the College. They frequently informally organized into small study groups, and may have had some cursory knowledge of Greek or Latin. The student paid the school dean a matriculation fee and the professors sold tickets to their lectures to earn an income. The physical degree was a climax of two years of course study. The curriculum included anatomy, theory and practice of medicine<sup>4</sup>, chemistry, surgery, medical institutes<sup>5</sup>, materia medica, and obstetrics. In 1820, Pattison was at his articulate best. Anatomy and surgery was the most popular, attendance was high. Practice Hall was built to house the Burns Museum, extensively used by Pattison for his demonstrations and the students for study.

There was an ample supply of cadavers. So ample in fact, that Maryland was sending bodies to out of state schools, who were in need<sup>6</sup>. Much of "hands on" training was apprenticed at almshouses, infirmaries and hospitals for the poor. Patients, who could afford a physician, were treated at home. Surgery was performed over the screams of the conscience patient- no anesthesia yet invented.

It was a time very different than we know today. Today, the University of Maryland's School of Medicine, like other medical schools are continuing to evolve, undergoing fundamental curriculum changes in their approach to teach the basic sciences, including anatomy. Traditional gross anatomy courses have been modified to reduce the time spent devoted to cadaver dissection. Cross sectional anatomy has been added as part of pre-

clinical training. Problem based learning has become the standard of a "model" integrated curriculum.

Technological advances in medicine have also brought some significant enhancements to help the student learn human anatomy both outside and inside of the dissection lab. The Visible Human Body ([Spitzer and Whitlock 1998](#)), a project sponsored by the National Library of Medicine, can be downloaded from the Internet. With the computer the student can manipulate digitized views of the body from superficial to deep, at any level or plane.

Plastination<sup>7</sup> was invented as an improved method of specimen preparation. Chemically fixed and fuming specimens can be impregnated with curable polymers, leaving the organs and tissues, dry, odorless, and biologically stable. In many schools, histology is now learned with the aid of the lap-top computer; the microscope has been replaced.

Some medical schools are today experiencing problems acquiring a sufficient number of cadavers to accommodate the student anatomy classes, but with the new tools and enhancements available, the history of *body snatching* and *grave robbery* of the past won't be repeated. Since the founding of the University of Maryland's School of Medicine, formally the Maryland College of Medicine, it has never faced this dilemma and we do have the Burns Museum specimens!

### Notes

- 1 *Burns' ligament* is the falciform margin of the saphenous opening of the thigh.
- 2 *Space of Burns'* is the jugular fossa in the temporal bone of the skull.
- 3 Surgical Anatomy of the Head and Neck. Observations on Diseases of the Heart.
- 4 Theory and practice of medicine included symptomatology and treatment of disease.
- 5 Medical institutes combined the study of physiology, pathology, and diagnosis.
- 6 University of Maryland, School of Medicine Archives.
- 7 Dr. Med Gunther von Hagens invented Plastination at the Anatomical Institute, Heidelberg, Germany in 1978.

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