

VOLUME 14 ISSUE 2 · SUMMER 2010



HAPS EDUCATOR



HUMAN ANATOMY & PHYSIOLOGY SOCIETY

ESTABLISHED IN 1989 BY HUMAN ANATOMY & PHYSIOLOGY TEACHERS



Promoting Excellence in the Teaching of Human Anatomy & Physiology

Anatomia Italiana

Kevin Petti, PhD
San Diego Miramar College
San Diego, CA
kpetti@sdccd.edu

Although we are life science professionals dedicated to teaching anatomy and physiology, many of us also have a great deal of interest in the arts. While at first blush these interests may seem polarized, the reality is that there is a natural connection between art and science. It is in the Medieval and Renaissance anatomy programs of Italy that this nexus is beautifully demonstrated. If you are planning a trip to the Italian peninsula, you can schedule a visit to several university museums that celebrate the rich cultural and artistic heritage of anatomy education.

In the summer of 2009 I had the opportunity to tour Italy and managed to arrange visits to several important venues in the history of anatomy education. It is the intention of this article to share my experience with the HAPS membership so that if any of you have an Italian adventure planned, you too can enjoy these sites. Incorporating these experiences into your lectures can add a dimension that engages your students in a unique fashion.



Wax anatomical collection, La Specola Museum, Florence, Italy
photo by K. Petti

Florence

The Museum of Zoology and Natural History at the University of Florence resides within a building that is just south of the Arno and adjacent to Pitti Palace. This museum, also referred to as La Specola, dates back to 1775 and claims to be the first scientific museum in the world created for the public. It is an extensive facility with over 30 rooms, ten of which are dedicated to anatomic waxes. While the entire museum is of interest to any biologist, it is the waxes that are of appeal to the anatomist.

Although the oldest of the wax anatomical pieces dates as far back as the late 17th century, most were

produced in the 18th century. The oldest and most important pieces were produced by Gaetano Giulio Zumbo (1656-1701), who is considered to be the pre-eminent anatomical wax artist. The vast majority of the specimens, however, were produced by Clemente Susini (1754-1814), who is regarded as the most famous and prolific anatomical wax sculptor of the Florentine school.

Over 500 wax anatomicals fill room after room with organs and limbs of incredible detail and accuracy. Most impressive, however, are the 26 whole body specimens. Many of the models can be dismantled and reassembled à la the modern plastic torsos in our present day laboratories. It is believed that due to the inability to preserve cadavers in that era, over 200 dissected human specimens were required to produce a single whole body figure.

Detailed knowledge of the exact process for the production of the wax figures has been lost. Historians believe, however, that the process started with dissected specimens that were sculpted as a crude model of wax or chalk. This model was cast in plaster, and these casts were used repeatedly as a kind of template for multiple models. Waxes, resins, and dyes of presently unknown composition, along with unique tools, were employed for the painstaking task of shaping the final product. The larger whole body figures were hollow and required supporting internal metal frames.

These anatomical waxes are an astonishing blend of art and science, and for those of you who enjoy an interest in both of these disciplines, you will find this collection to be visually arresting. The models are elegantly presented and scientifically accurate. Clearly they are the work of artisans who labored in concert with anatomists. This accuracy is rivaled only by the aesthetic beauty of the anatomical representation. The waxes at La Specola presently serve as testimony to the rich cultural heritage of our discipline, although they were initially produced for didactic purposes at medical schools in Florence and elsewhere in Europe.

Bologna

The University of Bologna, founded in 1088, is thought to be the oldest continually operating university in the world. Interestingly, the term “university” was coined at its foundation. From the perspective of the traveling anatomist, there are two locations of interest in Bologna: the Luigi Catatonia Anatomical Wax Museum and the historic Anatomy Theatre.

In a building within the university campus resides

(Continued on next page)



Wax anatomical collection, University of Bologna, Italy
photo by K. Petti

the Luigi Catatonia Anatomical Wax Museum. While not as extensive in its collection as La Specola of Florence, this museum is nonetheless stunning. What distinguishes it is its collection of waxes depicting various anatomical variations and pathologies. If you are traveling with your family be advised of the graphic models of conjoined twins, small pox, and a multitude of facial deformities. There are also many natural bone specimens of these same conditions. A comfortable hall is nearby for those in your party who are not inclined to view the museum.

As soon as you enter the building, be sure to take a few moments to survey the over 2,000 human skulls on display in the Luigi Calori collection. A long corridor lined on both sides with glass cases displays skulls from various races and eras, as well as skulls that demonstrate myriad pathologies. Indeed, there are even skulls that date back to the ancient Romans.

Perhaps the most breathtaking venue at the University of Bologna is the historic Anatomy Theatre. Several blocks from the wax museum, and proximal to downtown Bologna's Piazza Maggiore, is the magnificent Palazzo dell' Archiginnasio. This palace



Historic anatomy theatre, University of Bologna, Italy
photo by K. Petti

was built in 1563 and was the first unified seat of the university. An anatomical theatre was constructed here by 1639 and functioned for almost two centuries. It was remodeled on several occasions and achieved its final configuration in 1736. The theater was almost destroyed during a Second World War air raid. Fortunately, it was reconstructed using the original pieces recovered from the rubble.

This entirely spruce wood theatre is complete with a cathedra for the professor and tiered seating for medical students. Above the cathedra, carved wooden statues of skinned bodies hold a canopy aloft. Central to the room is a white marble table for the human and animal dissections. Surrounding the room are statues of important figures in medical and anatomic education such as Hippocrates, Galen, and Mondino de Luizzi.

It is in this room that today's anatomist can truly feel a connection to the early European anatomist. It is easy to envision yourself as a professor marching into this room about to perform a demonstration when it is filled with medical students and a fresh cadaver upon the marble slab. Imagine what it would be like to conduct a cadaveric dissection under the watchful eyes of not only your students, but of Galen.



Historic anatomy theatre, University of Padua, Italy
Photo by Matteo Danesin (m.danesin@), used by permission.

Padua

A brief train ride from Venice is the historic university town of Padua (Padova). The university, perhaps the sixth oldest in the world, was founded in 1222 by students who left the University of Bologna in pursuit of greater academic freedom. Its eminent faculty and alumni include the likes of Andreas Vesalius, Gabriele Falloppio, Galileo Galilei, and William Harvey. The Anatomy Theatre at the University of Padua, built in

(Continued on next page)

1594, is generally considered to be the oldest permanent anatomy theatre in the world. The Anatomy Theatre resides within the Palazzo Bo, the historic seat of the university.

A tour of the Anatomy Theatre should include a visit to several rooms and courtyards of historic importance at the Palazzo Bo. These include walls ornately decorated with the heraldic devices of alumni and faculty, as well as the Aula Magna (Great Hall). It is here that the university's academic senate convened from the 15th to 18th centuries, and it is also where Galileo taught. His lecture podium still stands there today.

It is the Anatomy Theatre that will certainly be the highlight of your visit. It is here that a century and a half of Galenic anatomy progressively crumbled and was eventually replaced with the modern era. Six steep concentric balcony-like tiers with ornately carved wooden banisters surround a single dissecting table. Upwards of 200 students holding candles would lean against the rails and gaze downward at the cadaver as the professor demonstrated the dissection. It is amazing to consider that this is a room that witnessed William Harvey as a student. Was it here that Harvey first considered his nascent thoughts regarding the heart and circulatory system?



Ossuary shrine, Capuchin Crypt, Rome, Italy. Scan of a postcard purchased at the site.

Rome

One final venue that bears mentioning is not associated with a university, but is likely to still be of interest to the anatomist who appreciates the connection between culture and science. Situated beneath the church of Santa Maria della Concezione die Cappuccini in a region of Rome between the Spanish Steps and Piazza Barberini is a surreal series of ossuary shrines.

The bones of over 4,000 Capuchin friars who died as long as 500 years ago are intricately arranged in a total of six small shrines. Construction of the shrines began in 1631 when the friars relocated to this site. The bones are those of friars who were exhumed from the previous friary's cemetery. In each of the shrines bones are piled high, nailed to the walls in elaborate patterns,

and are even fashioned into light fixtures. Several shrines contain articulated skeletons, each donned in a Franciscan's habit.

The Capuchin Crypt employs human anatomy to convey religious and cultural symbolism in a macabre artistic expression. The crypt however is more than just a morbid spectacle. It can be viewed through the prism of how the human body is a vehicle for expression on many levels: science, art, religion, and culture. Incorporating discussions of this remarkable catacomb into your presentations could initiate classroom conversations that go well beyond a normal anatomy lecture.

In Conclusion

A grand tour of Italy usually includes stops in Rome, Florence, and Venice, and involves visits to the most popular venues such as the Vatican, the Duomo, and Piazza San Marco. Exploring locations that go beyond the routine, however, can add a unique dimension to your experience. Anatomical wax museums, historic anatomy theaters, and artistic ossuary crypts are probably not of interest to the typical tourist, yet are intriguing to the traveling anatomist who has the inclination to connect art and science. These sites will speak to the many facets of your intellect, and could certainly be considered a professional development exercise. Consider incorporating the educational gems you will have mined from these places into your courses. It will add a deepness and richness to your classes in the way a fresco adorns a Renaissance cathedral.

Selected references for further study:

- Anatomy Theatre, University of Padua <http://www.unipd.it/esterni/visiteweb/english/pagine/scheda12.htm>
- Capuchin Crypt, Rome <http://www.cappucciniviavento.it/TheCrypt.htm>
- Ferrari G. 1987. Public anatomy lessons and the carnival: The anatomy theatre of Bologna. *Past & Present* No. 117: pp. 50-106.
- La Specola Museum, University of Florence http://www.museumsinflorence.com/musei/museum_of_natural_history.html
- Luigi Catatonia Anatomical Wax Museum, University of Bologna http://www.iguidez.com/Bologna/the_luigi_cattaneo_anatomical_wax_museum/
- Poggesi M, Didi-Huberman G, Düring MV. 1999. *Encyclopaedia Anatomica: A complete collection of anatomical waxes - Museo La Specola Florence.* Cologne, Germany: Taschen Publishers
- Riva A. 2007. *Flesh and Wax: Clemente Susini's anatomical models in the University of Cagliari.* Nuoro, Italy: Ilisso Edizioni