

The Morgagni Anatomical Theatre: 100 Years of Pathological Anatomy Education at the University of Padua (1924-2024)

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Summary

Between the 15th and 16th centuries, the medical school in Padua revolutionised the field of anatomy through a series of scientific discoveries and educational innovations, culminating in the construction of the world's first stable anatomical theatre. This theatre was inaugurated in 1595 within Bo Palace by Hieronymus Fabricius (1533-1619).

The anatomical theatre was used for lectures until March 7, 1874, and the structure was preserved as a museum at the request of Giampaolo Vlacovich (1825-1899), the last anatomy professor to use it. Soon after, new theatres were built under the direction of Lodovico Brunetti (1813-1899) at the former convent of San Mattia, where many disciplines relocated to stay close to the new Giustiniano Hospital. Subsequently, in the early 20th century, under the leadership of Augusto Bonome (1857-1922) and Vittorio Rossi (1865-1938), the Rector of the University of Padua, it was decided to construct a new building for anatomical studies to replace the inadequate facilities at San Mattia. Construction of this ambitious project began in July 1920, starting with the autopsy room, called the Morgagni Theatre, which was completed in December 1922. Today, the theatre commissioned by Bonome just re-opened after a respectful restoration, with the aim of continuing the important educational activities in anatomical pathology as in the past.

Key words: history of medicine, anatomical theatre, medical school, autopsy, pathological anatomy education

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After many years of non-practicability due to the need to bring the structure up to standard and to find the appropriate project in agreement with the superintendence of fine arts, the University of Padua gave us back the renewed “Morgagni” Anatomical Theatre in its splendour. And the gift to the students and medical teachers happens exactly 100 years after the inauguration of the anatomical building complex held in 1924.

The medical school of Padua has always had a strong connection and a long tradition linked to the use of the anatomical theatre. Already a hundred years before the famous anatomical theatre commissioned by Hieronymus Fabricius (1533-1619), Alessandro Benedetti (1450-1512), professor of practical medicine and considered the founder of the Paduan anatomical school, mentioned for the first time the concept of an anatomical theatre. In his *Anatomicae, sive de historia corporis humani* from 1493, he wrote:

“For this purpose, a spacious and well-ventilated environment is necessary, inside which a temporary theatre must be erected, with seats arranged all around in a circle (similar to those visible in Rome and Verona), large enough to accommodate the number of spectators. The cadaver should be placed in the middle of the theatre, on a rather high

*platform, in a well-lit and convenient place for the dissector”*¹.

Benedetti supported the importance of the anatomical study of the corpse, to the extent that he had the first dismantlable wooden anatomical theatre built in Padua. Furthermore, to increase the number of available cadavers for teaching purposes, he proposed extending the practice of autopsy, which at that time was only performed on executed individuals and to the bodies of those who died from illness².

Andreas Vesalius (1514-1564), professor of Anatomy in Padua, founded modern anatomy, definitively freeing it from the classical medical tradition thanks to his *De humani corporis fabrica*, published in Basel in 1543³. It is precisely from this masterpiece that you can have an idea of the dismantlable theatre and the terraced structure that Vesalius himself had built both in Padua and Bologna:

*“When a carpenter has constructed an elegant theatre capable of accommodating up to five hundred spectators and installed a table suitable for the purpose in the centre, I arranged the bones of several cadavers.... I obtained a theatre like this dismantlable. in Padua and Bologna, similar to the one of which the frontispiece of this book shows half”*⁴.

Thanks to Fabricius, the first stable anatomical theatre in the world was inaugurated in 1595, inside Bo Palace, the historic headquarters of the University of Padua. In reality, the theatre commissioned by Fabricius was preceded by another permanent theatre in 1583, which however was demolished in 1592 because it was small⁵.

For many centuries, the anatomical theatre became a “laboratory classroom”, the place of fundamental discoveries in the medical field. William Harvey (1578-1657), a pupil of Hieronymus Fabricius, witnessed his master’s discovery of vein valves⁶. A discovery that will be fundamental for him to understand, describe and demonstrate the systemic circulation of the blood. In the same theatre, Giovanni Battista Morgagni (1682-1771) taught anatomy for almost 60 years, laying the foundations of pathological anatomy, a discipline at the basis of modern medicine⁷.

In the first half of the 19th century, the medical courses were scattered throughout the city: some schools were in the former convent of San Francesco (the site of the old hospital), others were in the new Giustiniano hospital, built in 1798. In contrast, the anatomy lessons continued to be held in the old anatomical theatre of Bo Palace. In 1869, Rector Gian Paolo Tolomei (1814-1893) therefore decided to bring together all medical teachings in a single building separate from the headquarters of Bo Palace, identifying the ideal location in the former convent of San Mattia, close to the new

Giustiniano hospital. On March 7, 1874, Giampaolo Vlacovich (1825-1899), professor of anatomy and later Rector of the University of Padua (1885-1891), conducted the last anatomy lesson at the anatomical theatre of Bo Palace. This marked the definitive shift of lessons from the central headquarters to the restored San Mattia⁸.

In May 1874, Lodovico Brunetti (1813-1899), first professor of pathological anatomy at the University of Padua (1855), inaugurated the section theatre at San Mattia, dedicating it to Giovanni Battista Morgagni⁹. Inside the new “Morgagni Amphitheatre”, Brunetti placed a bust of the great anatomist, crafted by Pietro Danieletti in 1768, donated by Morgagni’s students, along with a plaque bearing their dedication. Today, both the bust and plaque are back inside Fabricius’ anatomical theatre in Bo Palace⁹.

On August 17, 1874, the final rooms of San Mattia were officially inaugurated. The establishment of the new “Royal School of Medicine in Padua” within the former convent of San Mattia proved to be strategically advantageous, situated adjacent to the Giustiniano Hospital. This proximity facilitated the availability of cadavers essential for both clinical development and medical education.

The adjacency of the hospital and school was deemed crucial for a more comprehensive understanding of pathological anatomy, as noted by professor Brunetti in his proslution:

*“The clinical doctors of this hospital will be with us and will provide us with the necessary information, so that the study of pathological anatomy does not become sterile and remains limited to a section and experiment room. With this they also will benefit from the complete compilation of clinical histories, to be able to draw useful conclusions, which become lessons for those who know how to profit most from them”*⁸.

Brunetti, mentored by Karl von Rokitansky (1804-1878) in Vienna, epitomized the classical tradition of pathological anatomy, focusing on morphological organ studies and macroscopic lesion analysis. As both a teacher and director of the Institute of Pathological Anatomy, Brunetti imported his Austrian expertise to Padua, initiating two crucial practices for medical education: firstly, requiring students to consistently observe autopsies conducted by Brunetti himself, and secondly, involving them in the establishment of a museum of pathological anatomy¹⁰.

Brunetti was succeeded by Augusto Bonome (1857-1922), professor of Bacteriology, who held the position from 1889 to 1922. Bonome, pupil of Rudolf Virchow (1821-1902) in Berlin, introduced in Padua the study of the role of infectious agents in the determination of histological and cellular lesions. This innovation in

pathological anatomy had been partly delayed, in Italy, by the distrust towards this emerging discipline¹¹. In the early decades of the 20th century, under the direction of Bonome and through the initiative of Vittorio Rossi (Rector from 1910 to 1913), a new building for various medical disciplines including normal anatomy, pathological anatomy, forensic medicine, histology, and embryology was planned. The decision to construct this new facility stemmed from the inadequacy of the old spaces at San Mattia, which no longer met the requirements for effective teaching. Scarcity and deterioration of scientific laboratories in the late 19th to early 20th centuries were identified as major factors contributing to declining student numbers, particularly in the sciences and medicine. Bonome played a crucial role in advocating for the construction of the new institute, emphasising its necessity to be located near the hospital, as evidenced by the 14 testimonies from

directors of Pathological Anatomy Institutes across the Kingdom of Italy collected in his “Considerations and Proposals” of 1913¹².

In 1913, following Rector Rossi’s initiative, a consortium was formed, which became fully active between 1919 and 1920 after state funding was secured to proceed with pre-war plans. The ambitious project involved demolishing the old building of the San Mattia convent and erecting a monumental new complex for anatomical institutes, based on a project by the drawing professor Guido Fondelli (1873-nd) and according to the indications of the professors Attilio Cevidalli (1877-1926) of forensic medicine and Dante Bertelli (1858-1846) of anatomy¹³.

On February 21, 1919, Bonome proposed to the medical faculty the construction of new buildings on the site of the former San Mattia convent (Fig. 1). Demolition of the former convent began in August 1919, clearing

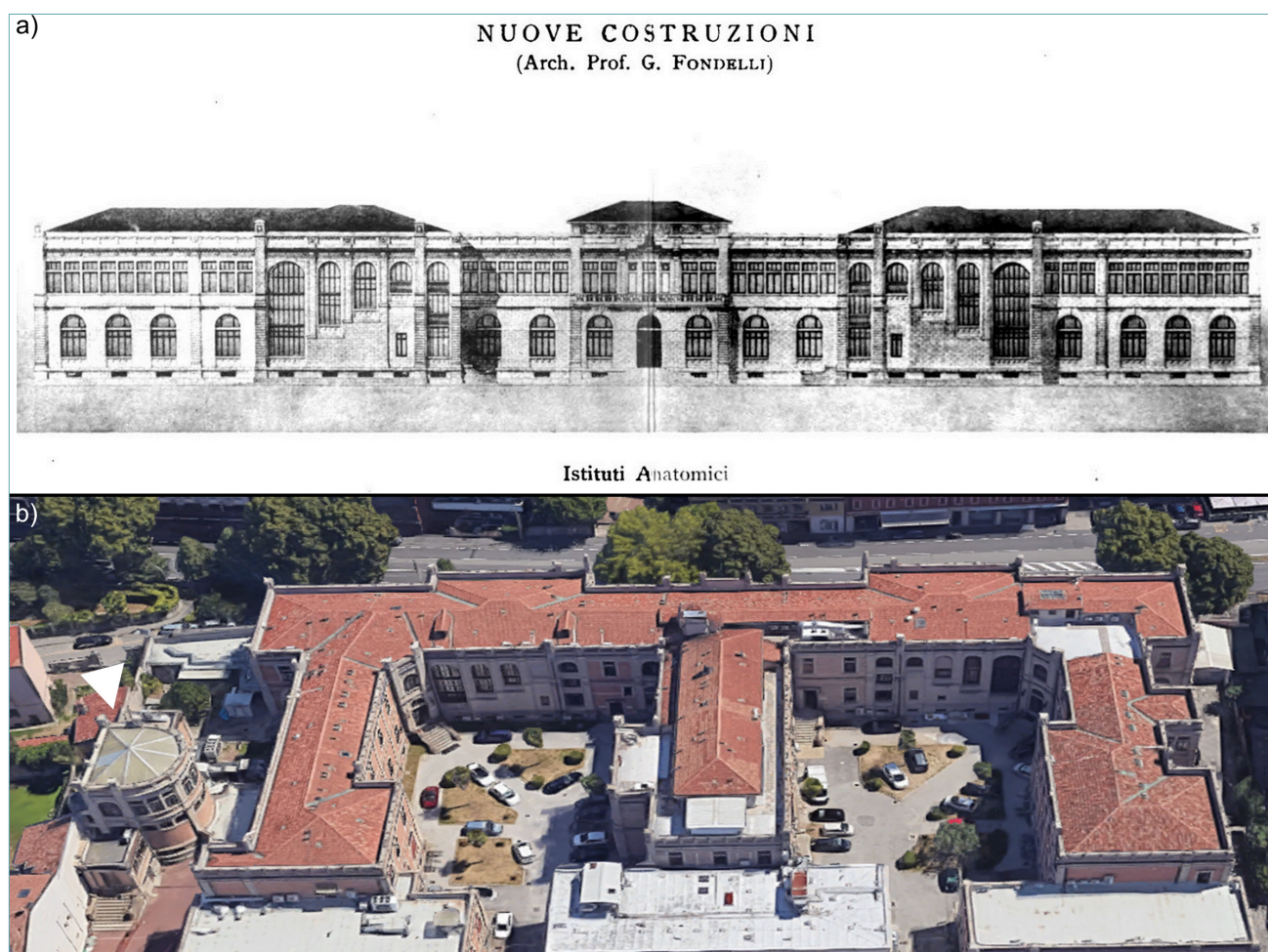


Figure 1. New anatomy buildings: (a) Facade of the buildings from the architectural project of the early twentieth century. (Archives of the University of Padua). (b) Aerial view of modern anatomical buildings. (Map data ©2024 Google).

the way for construction, which commenced with the Morgagni Theatre, the autopsy room, on July 17, 1920, and concluded on December 30, 1922 (Fig. 2). The building for normal human anatomy (south wing) was completed from July 1, 1922, to December 1, 1923. Subsequently, the north wing dedicated to pathological anatomy was constructed from July 12, 1926, to July 23, 1927. Institutes for forensic medicine, histology, and embryology were built in two phases, the first from October 6, 1927, to December 31, 1931, and the second from November 29, 1928, to December 22, 1929¹³.

Thanks to Bonome, therefore, the new complex was built in place of the former convent and was definitively completed when, after the brief period of Ignazio Salvioli, Bonome's pupil, Giovanni Cagnetto (1874-1943) who maintained the direction from 1923 to 1943 and officially inaugurated the new institutes on the February 1, 1924^{14,15}.

The new Morgagni theatre, characterised by its semi-circular configuration and featuring five tiers of

seating oriented towards a central autopsy table, constituted an architecturally significant space. Boasting internal dimensions of 9 m and an external height of approximately 16 m, the theatre offered a conducive environment for anatomical investigations. The tiered seating comfortably accommodated up to 95 attendees in the foremost rows, complemented by standing observers within the upper balcony, thereby attesting to its considerable audience capacity. The incorporation of both natural illumination and an efficient heating system further augmented the theatre's operational functionality. Moreover, the lower floors of the theatre originally housed an exercise room tailored for student activities, alongside refrigerated storage facilities intended for the preservation of cadavers designated for autopsy (Fig. 3).

The distinguishing features of the Fabricius' Anatomical Theatre were rooted in its architectural design, meticulously tailored to address the visual and auditory requirements of the public. Its historical significance was further underscored by the practice of public dissections, known as "*publica notomia*", encompassing the considerations of diverse corpse types, autopsy techniques, and the legal frameworks governing such procedures. Moreover, the social structure was intricately woven into the theatre's fabric, manifesting itself in distinct spaces that reflected societal roles and positions.

In contrast to its predecessor, the Morgagni Anatomical Theatre embodied a distinct set of principles. Functionally designed for both instruction and diagnosis, it integrated modern equipment to enrich educational experiences. Unlike the former theatre, it operated with a limited audience, primarily serving students in specialised spaces. The focus shifted from public spectacle to laboratory analysis, reflecting advancements in pathological anatomy education and research, focusing on the miniaturisation of observations and the creation of nearby specialised structures to accommodate the evolving demands of education and research.

Cagnetto later formally dedicated the theatre to his mentor, Augusto Bonome. Its original name has recently been restored, being still known as the Morgagni Anatomical Theatre and is again active today, after a respectful renovation and modernisation (Fig. 4).

In fact, in medical education, the active participation of medical students in autopsy rooms during the university period emerges as a crucial element for their training, fostering early interest not only for those attracted by pathological anatomy but also for all future physicians who need to know the structural basis of the human diseases, providing a holistic perspective on patient understanding. Autopsies are indispensa-



Figure 2. The new “Morgagni Theatre” for dissections: (a) Architectural project from the early twentieth century. (Archives of the University of Padua). (b-c) Photos from 1924/1925 showing the completion of the construction of the “Morgagni Theatre” before the construction of the anatomical buildings. (Archives of the University of Padua)



Figure 3. Interiors of the “Morgagni Theatre”: (a-b) Anatomical table and seating areas before educational activities. (Archives of the University of Padua). (c) Pathology lesson by Professor Cagnetto in the anatomical theatre Morgagni dedicated to Bonome (May 20th, 1941). (Archives of the University of Padua). (d) Commemorative plaque to Professor Bonome located inside the “Morgagni Theatre”.



Figure 4. Interiors of the “Morgagni Theatre” at the end of the renovation in 2024. In image b) you can see the commemorative plaque to Professor Bonome still in place.

ble for the comprehensive training of pathologists, serving as a cornerstone for transforming medical students into practitioners capable of accurate diagnostic synthesis. The implementation of contemporary approaches holds the potential for a renaissance in autopsy practices, contributing to improved healthcare quality, education, and research. Furthermore, autopsies serve as a wellspring of precious material for advancing medical research, offering a unique lens into the pathogenesis of diverse disease processes and their systemic impact¹⁶.

Thus, the recent renovation of the Morgagni Anatomical Theatre holds significant importance for autopsy practice in various dimensions. The incorporation of updated facilities, advanced technological infrastructure, and multimedia apparatus aligns with current medical standards, offering medical students and practitioners an enhanced learning experience. Renovations can also address spatial considerations, accommodating the evolving demands of didactic dissections and facilitating the seamless integration of innovative approaches, such as molecular pathology and advanced imaging techniques. By revitalising the Morgagni Anatomical Theatre, this initiative contributes to the preservation and elevation of autopsy practice, ensuring its continued relevance, efficiency, and alignment with the contemporary landscape of medical education and research. The Clinic-pathologic method founded by Giovanni Battista Morgagni, with his “*De sedibus et causis morborum per anathomen indagatis*,” is still alive at the University of Padua.

CONFLICTS OF INTEREST STATEMENT

The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTIONS

A.Z.: Conceptualization; Formal analysis & Investigation; Writing – original draft; Writing – review & editing. G.M.: Formal analysis & Investigation; Writing – original draft; Writing – review & editing. C.B.: Conceptualization; Supervision; Validation; Writing – original draft; Writing – review & editing

ETHICAL CONSIDERATION

Not applicable.

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