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Articoli/*Articles*

THE ANATOMICAL COLLECTION OF THE CATALAN MUSEUM OF THE HISTORY OF MEDICINE IN BARCELONA

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SUMMARY

This paper deals with the anatomical collection of the Catalan Museum of the History of Medicine. It situates the origins of this collection in the institutions historically created for the teaching and training of surgeons and physicians in the city of Barcelona. Thus, it is analysed a period that started at the Royal College of Surgeons founded in 1760 and that continued at the restored Medical Faculty in the University of Barcelona at mid-nineteenth-century.

1. *Introduction*

An extraordinary, well-preserved and beautiful anatomical Venus was recently donated to the Catalan Museum of the History of Medicine in Barcelona (Fig. 1). Such a wonderful piece of medical art was accompanied by some fifty anatomical models, representing a variety of normal and pathological human anatomies, executed in various materials between the middle of the nineteenth century and the first third of the twentieth century. This outstanding donation came from the Faculty of Medicine of Barcelona University[1].

This was not the first time that the Department of Anatomy and Embryology of the Barcelona Medical Faculty had enriched the museum collection with material that originally was acquired or elaborated to improve and complement the teaching of anatomy on

Key words: Anatomical collection - Medical museum - Teaching institutions

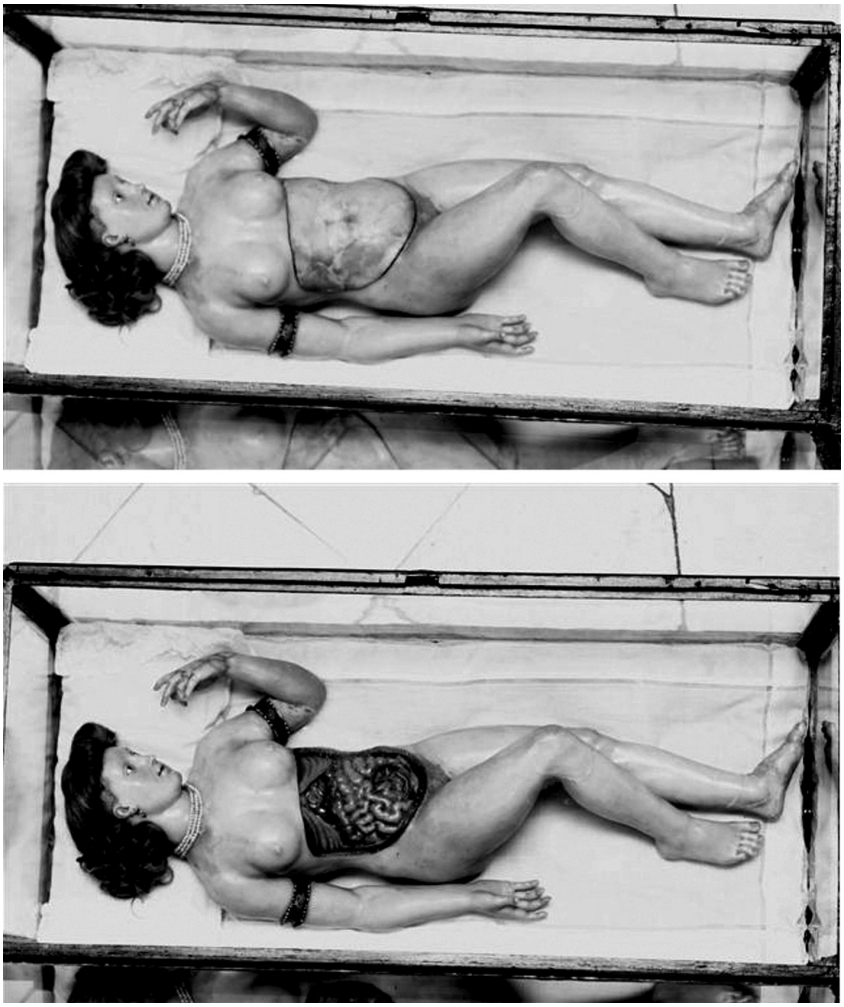

Fig. 1a/b - Anatomical model of a so-called Venus, representing a pregnant woman with foetus. Made in wax, in the second half of the 19th century, unknown fabric. From the Barcelona Medical Faculty. Courtesy of Museu d'Història de la Medicina de Catalunya

the premises devoted to the university's Anatomical Museum. Most of the anatomical items at the museum come from that institution. At present, the absence of a museum on the premises of the Barcelona University has resulted in the scattering of the remaining objects all over the Medical Faculty[2]. The fight for space or the transformation of medical departments together with a poor scientific heritage

awareness have turned the Catalan Museum of the History of Medicine into the only institution interested in the preservation of that cultural heritage. Suffice it to say that, as we can see in an early 20th-century picture from the Anatomy Department of the Barcelona Medical Faculty, there were at least two anatomical Venuses on those premises (Fig. 2). Unfortunately, only one of these Venuses remains still extant. As other European medical museums, this has resulted in the creation of a synthetic and fragmentary collection[3].

This essay will outline the historical roots of the anatomical collections kept in safety and protected from loss at the Catalan Museum of the History of Medicine. In order to achieve this aim this paper focuses on the changing university premises where these models were created, bought, transformed and used for didactic purposes. In the next sections I will tell a story that starts with the foundation of an eighteenth-century medical school and that ends with the gradual dismantling of such scientific heritage throughout the twentieth century[4].

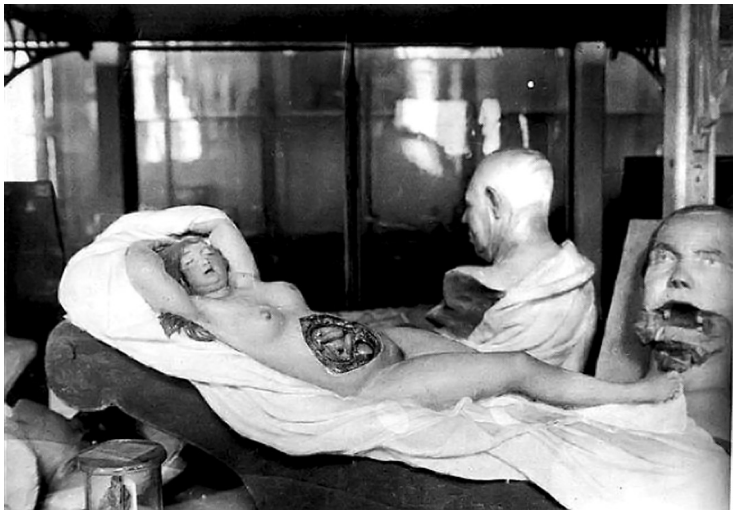

Fig. 2 - Anatomical models, wax and plaster, on the premises of the Barcelona Medical Faculty, 1919. Courtesy of Museu d'Història de la Medicina de Catalunya

2. *The Royal College of Surgeons in Barcelona*

In Barcelona, the city government - the *Consell de Cent* - established a permanent anatomical theatre in 1573. It was settled next to the Hospital General de Santa Creu, in a place known as *casa de anatomia* (house of anatomy), which was located beside the *corralet*-the hospital cemetery. Physicians and medical students of the Faculty of Medicine could perform there the anatomical dissections according to the University regulations. That location was justified by the fact that the Hospital had a royal authorization from 1488 allowing the use of the bodies of those who died in the hospital for anatomical dissections. The anatomical theatre of Barcelona was running until the University of Barcelona was forced to close it after the invasion of the city by the Bourbon troops of Philip V in 1714[5]. Unlike similar contemporary institutions, such as the Leiden Anatomy Theatre, the evolution of that institution in Barcelona was not associated with a collection of anatomical models or moulages[6]. This situation also happened in other anatomical theatres in the Crown of Aragon such as those of Valencia and Zaragoza. Only in the anatomical theatre of Madrid, early in the eighteenth century, it has been shown that the professor of anatomy had knowledge of wax anatomical preparations and its didactic uses in other countries[7].

The University of Barcelona and all high schools in Catalonia were suppressed by the Bourbon authorities as a result of the war of Succession in 1714. That political punishment was accompanied with the creation of a new university in the small town of Cervera, that was situated just enough far away from the threatening city of Barcelona[8]. For the rest of the century the city of Barcelona lost institutional authority to license physicians. Only surgeons and apothecaries were to be empowered to practice their skills as their professional guilds were still in force. Following this line, a great number of surgeon and apothecary apprentices were to be found practising at the Hospital

General de Santa Creu in Barcelona throughout the eighteenth century. It is hard to say that the former anatomical theatre was used in the training of those young learners. However, some evidences showed that the first surgeons of the Hospital General were allowed to practice anatomical dissections for the benefit of the training surgeons of that institution during the first half of the century[9].

The beginnings of the anatomical collections of the Barcelona medical faculty are to be found in the institution of the Royal College of Surgeons, founded in the city of Barcelona in 1760. This learning institution was established in the same place previously occupied by the ancient anatomical theatre. The director of the new military school in Barcelona was the surgeon Pere Virgili, who had been in charge of the Royal College of Surgeon of Cadis from its inception in 1748[10]. From the middle of the century, the military needs of the Spanish state were in part satisfied through the establishment of such kind of schools. Surgeons trained in Cadis were sent to the navy, while those in Barcelona were supposedly posted to the artillery. The state-

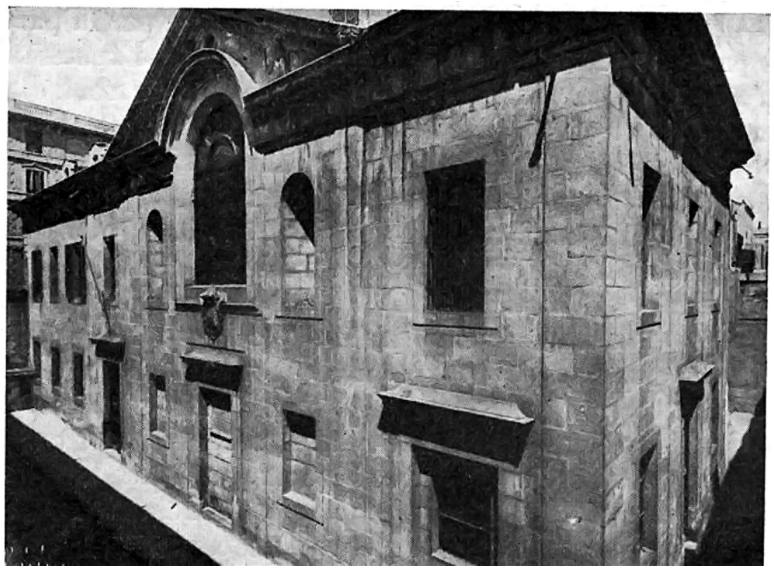

Fig. 3 - Facade of the Royal College of Surgeons of Barcelona. Courtesy of Museu d'Història de la Medicina de Catalunya

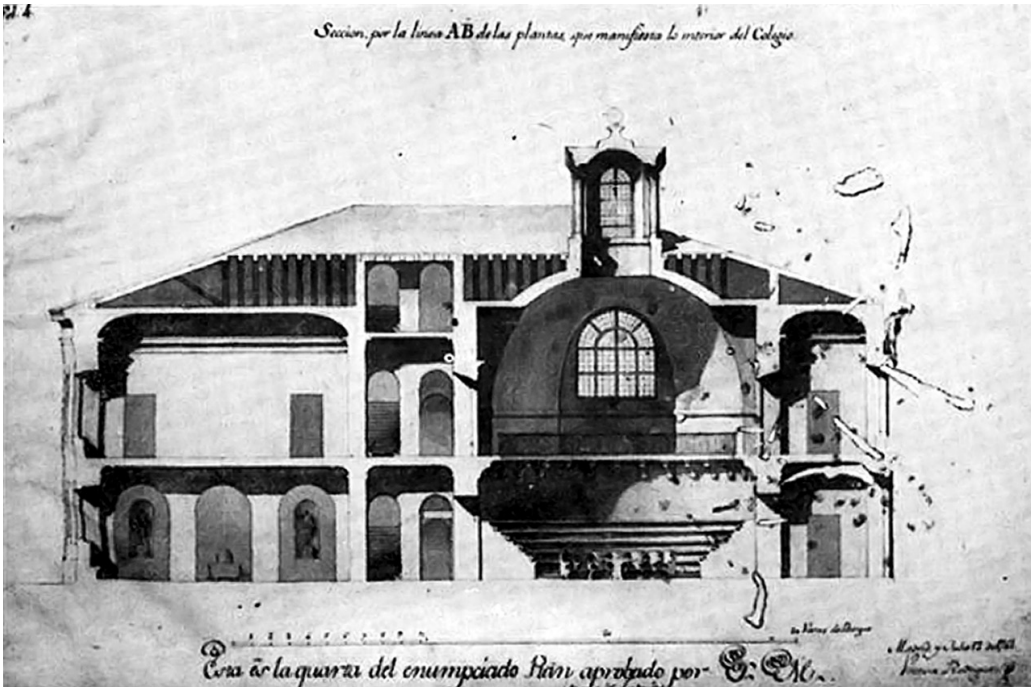

Fig. 4 - Section plan of the two-story building of the Royal College of Surgeons, according to the design planned by the architect Ventura Rodríguez in 1760. On the right, the great room devoted to the anatomical theatre. Courtesy of Museu d'Història de la Medicina de Catalunya

sponsored schools were established under a different, more practical pattern. A hospital-based training was consolidated together with the incorporation of basic sciences such as experimental physics to other traditional subjects such as botanic and natural history. As a result, a new kind of surgeon, educated in the contemporary rules of other European countries, was ready to compete, at least socially, with medical doctors[11].

Whereas the teaching of scholastic and theoretical medicine in Catalonia was restricted to the University of Cervera from the year 1720, the new surgery school in Barcelona meant the introduction of novelties regarding the instruction program for surgeons. The architecture of the building erected for the training of surgeons indi-

cates the new orientation. It was built from 1760 by the architect Ventura Rodríguez, who followed the directions of Pere Virgili. The official inauguration was in 1764. The following years of this institution were difficult because of the conflicts raised in a society ruled under an old regime of privileges: there were enemies in Barcelona, at the Hospital General and at the ancient guild of surgeons, but also among the medical doctors of the city; there were also enemies in Cervera, where the professors of that university considered the new school a threat, a new reason for losing registration fees[12].

The success of Royal College of Surgeons in Barcelona was based on three aspects: practical teaching, theoretical teaching and discussion of cases. The location of the school next to the Hospital General de Santa Creu supported these objectives. The main place for the

Fig. 5 - Bust of Pere Virgili, founder of the Royal College of Surgeons, represented with the plans of the school in his hands. Terracotta carved by Ramon Amadeu at the end of the 18th century. Courtesy of Museu d'Història de la Medicina de Catalunya

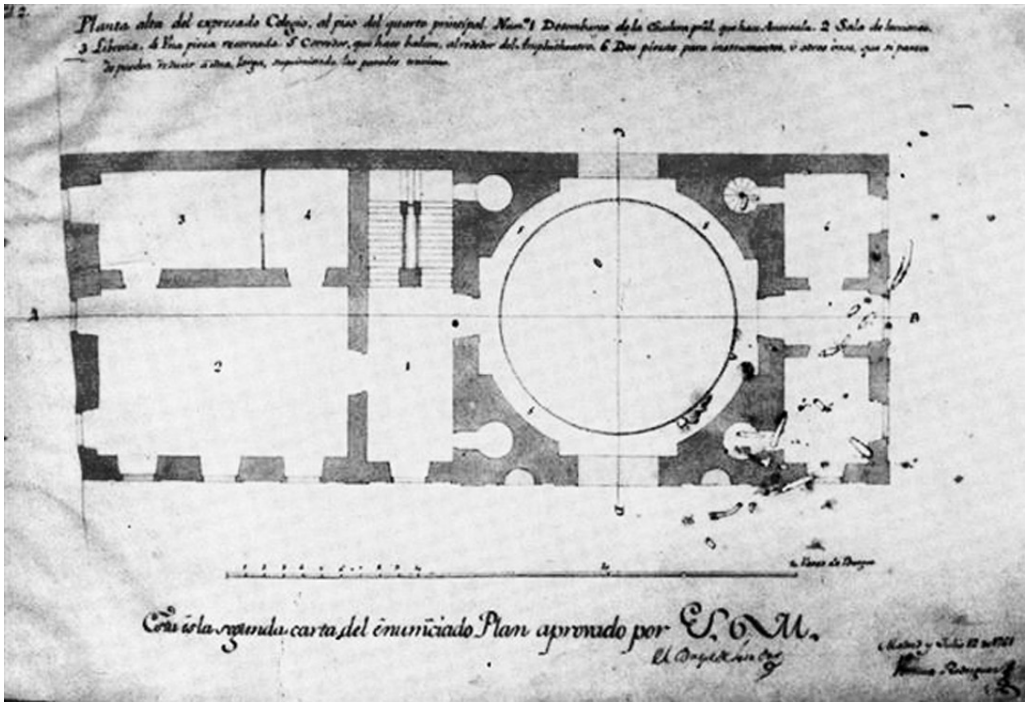

Fig. 6 - Plan of the first floor of the Royal College of Surgeons, according to the design planned by the architect Ventura Rodríguez in 1760. On the left side spaces were used as the lecture room and the library. On the right, the anatomical theatre, and next to it two rooms used as cabinets of instruments and the anatomical collection. Courtesy of Museu d'Història de la Medicina de Catalunya

production of knowledge in the school was the anatomical theatre, considered as the true book of nature. However, there was room for the creation of ancillary places such as the library, an anatomical specimen cabinet and a cabinet for instruments of experimental physics[13]. These areas were professionalized in the school through the creation of specific posts and duties: librarian, curator and professor. This pattern was already put into practice in England where John and William Hunter both collected and curated anatomical collections as a resource for anatomical teaching[14].

According to the inventories, the anatomical cabinet of the school took advantage of the material advances of the period to represent

nature. This cabinet participated in the exchange of knowledge through foreign acquisitions[15]. This resulted in a clearly educational collection of a plethora of models or representations of objects in a range of media, especially wax, which were ordered in a distinctive way of naming, dividing and classifying. Natural and artificial, normal and pathological anatomical models of the collection were complementary of the activities performed in the anatomical theatre. Thus, the presentation of the collection had a great utility for anatomical studies. In the cabinet there was also room for those surgical instruments used in the operations performed before the students and showed in the surgery books, mainly written in French, of the library[16].

Fig. 7 - Zenital view of the anatomical theatre of the Royal College of Surgeons. Courtesy of Museu d'Història de la Medicina de Catalunya

Fig. 8 - Anatomical model in wax representing the canaliculus system in the liver. Executed by Joseph Chiappi in 1825 by request of the Royal College of Surgeons of Barcelona. Courtesy of Museu d'Història de la Medicina de Catalunya

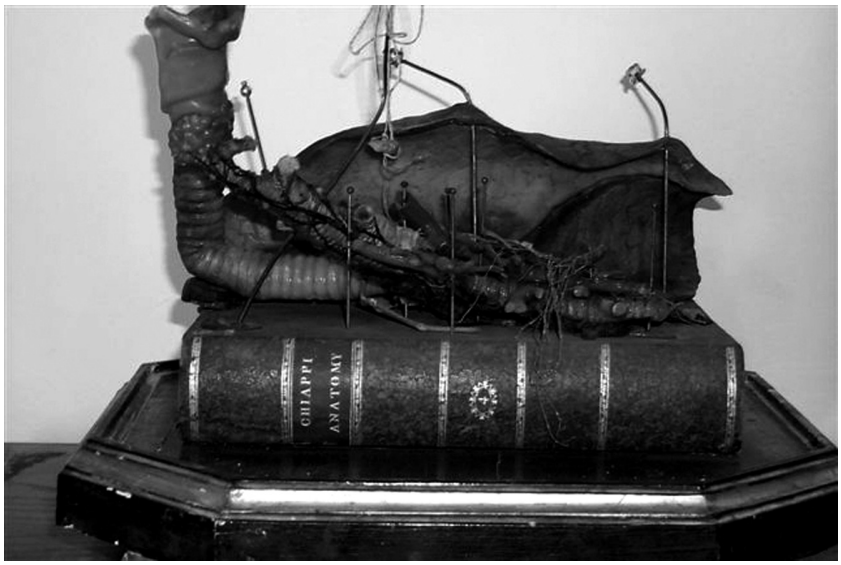

Fig 9 - Anatomical model in wax representing the structure of the right lung, trachea and larynx. Executed by Joseph Chiappi in 1825 on the request of the Royal College of Surgeons of Barcelona. Courtesy of Museu d'Història de la Medicina de Catalunya

3. *The restoration of the University of Barcelona and the emergence of museological sciences*

In 1842 the restoration of the university in the city of Barcelona was finally approved and effectively put into practice. The unified studies of medicine and surgery of the new Barcelona Medical Faculty occupied the premises of the Royal College of Surgeons[17]. The educational collections of this institution served as a basis for the new university school, which improved and enlarged them in the following decades. The phenomenon coincided with the emergence of what has been called the great age of scientific museums. John Pickstone has prominently defended a view that grants museums a paramount role in the development of the "new analytical sciences" from the early nineteenth century. According to this interpretation, such new disciplines can be considered as "museological sciences". This meant that universities maintained museums as a part of their teaching and research and that knowledge was organized around collections. Professor-curators were charged with the matter of ordering and enlarging the collections according to the "scientific" principles that revealed the order in nature[18].

Jonathan Reinarz has developed this view further in the field of medical history. It has been claimed that several ways of acquiring and producing knowledge coexisted. Alongside medical laboratories, the medical museum had an essential position in medical teaching. Accordingly, the label "museum medicine" describes the medical museum's contribution to university education from the nineteenth century to the mid-1950s[19]. In the turn of the 19th century, observations and description grew to be central qualities of the clinician inasmuch as the development of pathological anatomy consolidated with its paradigm of the localization of diseases. Museums became instrumental in developing the taxonomy of the new field and they spread out through European medical schools. Moreover, collections also contributed to the consolidation of new disciplines, such as comparative anatomy, zoology, geology, mineralogy and many more analytical sciences[20].

Fig.10 - Anatomical model of childbirth, in polychrome plaster, artist unknown, ca 1880-1890. Coming from the Barcelona Medical Faculty. Courtesy of Museu d'Història de la Medicina de Catalunya

Fig.11 - Anatomical model of dissected neck and larynx, in polychrome wax, by Maison Tramond, Paris, ca 1880. Coming from the Barcelona Medical Faculty. Courtesy of Museu d'Història de la Medicina de Catalunya

Under the aegis of the new medical paradigm, localization and identification of normal and pathological organs and tissues credited the importance of anatomical museums to medical education[21]. At a time, medical museums supplemented and complemented the anatomical theatre, which by then became called the dissection room. Realistic representations of the body were crucial and collections acquired a status of true pedagogic tools[22]. Techniques of medical illustration were borrowed from the Italian workshops of the modellers of religious images. Baroque artists such as Giulio Gaetano Zumbo, celebrated for his church tableaux and medical models, laid the foundations of the art of modelling anatomy[23]. The 18th-century anatomical models produced by Ercole Lelli's school in Bologna and Giuseppe Galletti's school in Firenze resulted in the university collections of these cities. Moreover, Felice Fontana, Clemente Susini and other artist-modellers from the Firenze school of La Specola produced two great anatomical collections in La Specola (Firenze) and in the Josephinum (Vienna). This anatomical workshop also provided the university collections of Pavia, Cagliari, Bologna, Budapest, Paris, Uppsala, London, Leyden and other cities throughout the nineteenth century with pieces[24]. By following the Italian example, a number of workshops and factories specialized in producing wax-models were created in 19th-century Europe. The increasing European demand for anatomical demonstration material, which mainly, but not only, came from university museums, favoured the production of plaster and papier-mâché objects on a considerable scale. In 1822, French anatomist and physiologist Louis Auzoux established a factory of anatomical educational models, mainly made in papier-mâché. The company succeeded, with more than a hundred workers in the mid-nineteenth century and having customers around the world, because of the detachable feature of the models. Known as clastic anatomical models, they can be taken apart like a corpse being dissected in the anatomical theatre[25].

4. *The anatomical museum of the Barcelona Medical Faculty*

The anatomical collections of the Barcelona Medical Faculty participated in the European trend that promoted medical education through museums. According to the known collection of this institution, which is nowadays preserved at the *Museu d'Història de la Medicina de Catalunya*, the medical faculty both acquired and produced anatomical models from the late 18th century to the early 20th century[26].

Ignasi Pusalgas Guerris, a man trained at the Royal College of Surgeons of Barcelona, was in charge of the anatomical collection of the school in the times of the transition to the university. In spite of being attached to one of the chairs of anatomy, the anatomical museum fell into the hands of the assistant professor in charge of teaching in the dissecting room. This assistant directed what were known as "anatomical proceedings" (*trabajos anatómicos*), and was meant to be in charge of the anatomical museum and the teaching in the dissecting room. So, despite the extensive presence of Carlos Silóniz in the anatomy chair (from 1847 till 1898), professor-curators of the museum followed the pattern already established in the times of the Royal College of Surgeons. Pusalgas directed the museum until his death in 1874. Jaume Ramon Coll Domènech was then nominated and he left the position in 1882 to occupy a chair in surgical pathology. From 1887 Antoni Riera Villaret was Silóniz's assistant and by 1892 was nominated director of "anatomical proceedings"[27].

In this paper we are only interested in two aspects from the reflections written by Pusalgas and Riera in their texts: the exhibitions staged in the museum and its public. Pusalgas published an important number of texts on several subjects, but mainly about medicine. At the very least he produced two texts on anatomical museums (1862, 1869), which are to be understood as a vindication of the university museum as a place of teaching and training and a claim

Fig.12 - Anatomical model in polychrome plaster of the brain. Probably produced by the Faculty of Medicine's anatomy sculptor, Dionís Renart, or by his brother and collaborator Joaquim, during the last third of the 19th century on the request of Professor Carles Silóniz. Coming from the Barcelona Medical Faculty. Courtesy of Museu d'Història de la Medicina de Catalunya

Fig.13 - Clastic anatomical model of the eye, papier-mâché. According to the inscription, it was produced at Dr. L. Auzoux's factory in Paris, 1882. From the Barcelona Medical Faculty. Courtesy of Museu d'Història de la Medicina de Catalunya

for the role of the professor-curator as an expert[28]. From the standpoint of the anatomist, the anatomical museum was to be considered as a complement to the dissecting room: the first place to learn anatomy was the corpse. But as corpses were not always available in number for students and hot and humid weather restricted such kind of manipulations to the winter term, the anatomical museum was an outstanding contribution to the study of anatomy. Moreover, natural and artificial models did not stink and decay and even more importantly they showed permanent images. And this was basic, for it was impossible to observe all types of diseases in the dissecting room during the same academic year[29]. Pusalgas' writings showed how anatomical museums should be arranged according to a method based on scientific principles. Such scientific order came in every section of the museum including master medical texts written by Ignacio Lacaba and Jaume Bonells, Beclard, Ricord, Manuel José de Porto, and so on. He also backed his discourse with references to the collections made by Hunter in London, Orfila in Paris and González de Velasco in Madrid[30].

According to Pusalgas, the anatomical museum of the Barcelona medical faculty was divided into several sections. Firstly, there were three sections devoted to descriptive anatomy, topographic and surgical anatomy and pathological and obstetrical anatomy (see Fig. 10 to 13). The female body, diseased and normal, appeared in the latter section. This was allegedly crucial for the man-midwives gynaecological training and Pusalgas detailed all human and animal pieces required, from those on embryology (*ovología*) to those about foetuses and instruments for delivery[31]. The next section consisted of a museum of exanthematic and syphilitic diseases, which still confirmed the embryonic state of dermatology as a discipline and its restriction to syphilology[32]. Pusalgas wrote explicitly that in this section

> *it is important not to leave out any of the dreadful details of syphilitic diseases, no matter how ghastly they could be, because they are the product of shameful and cruel affliction*.

Objects had, in that view, the educational purpose of combating sexually transmitted diseases by making a moral stigma visible[33]. The next section was devoted to internal medicine and was thought to be a support to the hospital clinical wards. Interestingly, this part of the museum also included mental diseases. Skulls and brains from "lunatics", "maniacs" and criminals had to be incorporated, alongside their portraits and medical histories. Here again, Pusalgas stressed the didactic side of the objects by claiming that

> *a museum of insanity is the best and invaluable jewel that a medical faculty and an asylum can possess*[34].

Examples of anthropological and physiological heads representing different races and "passions" as well as the intellectual faculties, through the Gall and Cubí method of skull examination were also included in this section[35]. Finally, the museum exhibited an iconographic gallery with stamps, pictures, portraits, figures and an atlas of different authors.

The anatomical museum remained in those premises until the movement of the whole medical faculty to another place in the city took place. In the year 1906 a new general hospital, known as Hospital Clínic, was inaugurated in the city, and had attached the building of the new medical faculty to it (Fig. 14). The abandoning of the old premises in the city centre resulted in being a good test to discover the significance granted to "anatomical proceedings" in the new building. Actually, the only real change that the teaching staff experienced was the transformation of "anatomical proceedings" into the new created chair of "anatomical technique" in 1907. Riera Villaret held the chair until 1927. By then he had successfully requested one

Fig.14 - General view of the Hospital Clínic i Provincial and of the Barcelona Medical Faculty from a postcard of 1907. Collecció postal Unión Postal, núm. 44, Barcelona. Courtesy of Museu d'Història de la Medicina de Catalunya

Fig.15 - Picture of the Anatomical museum created on the premises of the Institute of Anatomy of the new Barcelona Medical Faculty, 1917. Courtesy of Museu d'Història de la Medicina de Catalunya

of the two chairs in anatomy and so he incorporated the anatomical museum and the teaching in the dissecting room under that chair. After Riera Villaret's death, Manuel Taure won the chair in anatomy that he occupied it from 1932 till 1973[36].

The museum premises were enlarged in the new building (Fig. 15). The anatomy department was renamed as Institute of Anatomy and was structured in line with the German model. Among the rooms that the new institute occupied, there was a cold-storage room, two autopsy rooms, research and teaching laboratories, two theatre rooms, a projecting room, the anatomical museum and a workshop. Objects and instruments from the old museum were incorporated into these premises and the collection was enlarged with other items, such as new sets of different engravings, slides, pictures, x-ray plates and films (Figg. 16 to 19) [37].

The premises of the new institute of anatomy were all established on the ground floor. However, the museum was situated on the first floor because as

> *museums are frequently visited by people that are prophane in medical studies, it's convenient to place them apart from the other services and with an independent access*[38].

Riera's book describes the new premises in detail, but says little about the public visiting the institute. Beyond medical students, staff and license practitioners, Riera asserted that every academic year several students from the School of Arts registered on the anatomical training course and learnt to dissect in order to improve their knowledge of human morphology[39]. Thus, the anatomical museum was apparently restricted to professional uses[40]. However, the presence of two anatomical Venuses on the university premises (Figg. 1-2) would challenge the idea of a limited public. On the contrary, we have no evidence about the presence of the laity at the museum. The

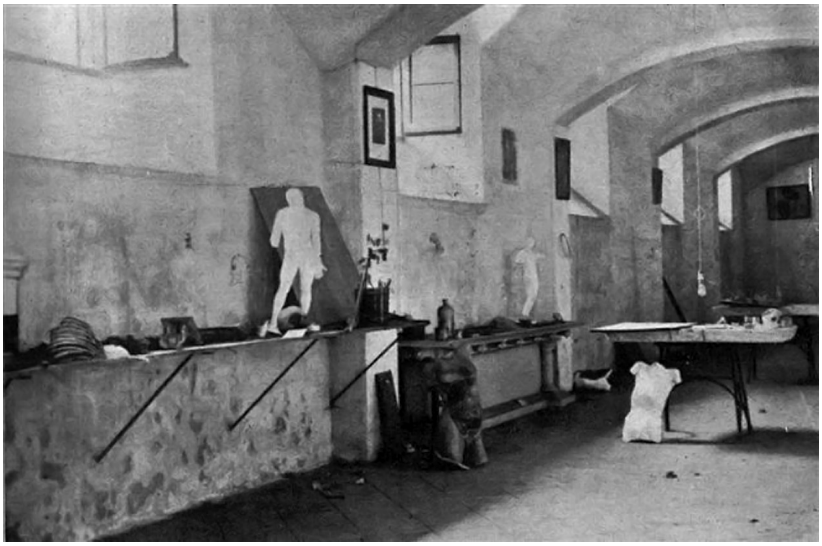

Fig.16 - Picture of the workshop of the anatomical modeller related to the Anatomical museum on the premises of the Institute of Anatomy of the new Barcelona Medical Faculty, 1917. Courtesy of Museu d'Història de la Medicina de Catalunya

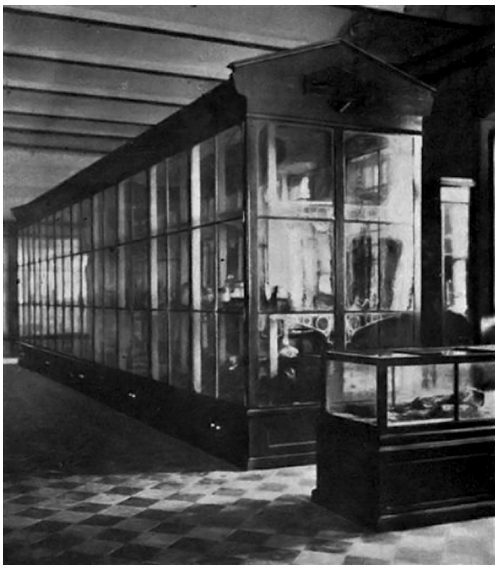

Fig.17 - Picture of the Anatomical museum created on the premises of the Institute of Anatomy of the new Barcelona Medical Faculty, 1917. Courtesy of Museu d'Història de la Medicina de Catalunya

anatomical Venuses probably were the naked pretext that provoked the private delight of medical students and staff. Even more if we consider that in those times, there were only a few public places where it was possible to see the body of a naked woman.
It seems that the state-sponsored university scheme that prevailed in Spain did not fit with other models of anatomical museums in Europe. In Birmingham's Medical Museum, for instance, but also in other English medical schools, the first objects purchased were not models for the teaching of anatomy. The acquisition of the head of a hippopotamus as well as other donations of curiosities resulted in a diverse collection. According to Reinarz

> *such artefacts were far easier for lay members of the public to interpret than ordinary tissue and bone samples, but were appreciated also by medical experts.*

In the English model, early in the 19th century the museum was opened to the industrious classes, at least once a week, without charge and under the aegis of an educational effort. This changed with the escalating cost of the museum in the middle of the century. From that time any visitors had to pay an entrance fee[41]. Although there existed important differences in terms of donations and financial support, something similar can be found in the Germanic context. Namely in Rudolf Virchow's Patologische Museum that was also opened to the lay public. This is a very interesting case where politics, science and religion met in a museum in order to change public images of nature. Virchow thought of his museum as a kind of anti-church, a place open to the people on Sundays, after the church services. He limited the public exhibition to glass jars, which were objects previously considered as freaks or venerated as relics. Virchow tried to train the public through what he called "*umittelbare Anschauung*", that is the unmediate/immediate observation of objects, with the

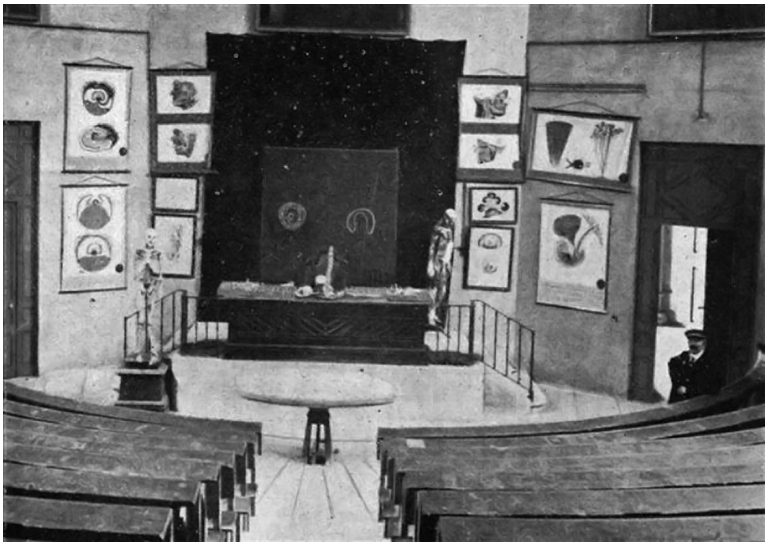

Fig.18 - Picture of the anatomical theatre and lecture room created on the premises of the Institute of Anatomy of the new Barcelona Medical Faculty, 1917. Courtesy of Museu d'Història de la Medicina de Catalunya

Fig.19 - Picture of the projecting room created on the premises of the Institute of Anatomy of the new Barcelona Medical Faculty, 1917. Courtesy of Museu d'Història de la Medicina de Catalunya

aim of changing the idols of religion for those of secular science. Ideology or the new religion can also be found in Virchow's collection restricted to the medical expert. Its genealogy of museum specimens tried to counteract Darwinian views, and by extension also socialist ideas, of the objects[42].

Early in the 20th century, new museums were created on the premises of the Barcelona Medical Faculty. Dermatology and ophthalmology were two disciplines that developed this kind of tool with educational purposes. Actually these specialties and their specimens had always formed a part of the main anatomical museum. However, it was in the department of pathological anatomy, which was not a newly established specialty, that the premises of an institute were created. This department was equipped with a museum and a laboratory and it stood out in the years 1924-1936[43]. After the war (1936-1939), changes in medical education schemes and a persistent problem of space led to a progressive abandoning of all medical museums, including its contents. In contrast to other European countries and universities, most medical heritage from the Barcelona Medical Faculty disappeared and just a small part of those collections remains now in the premises of the Museu d'Història de la Medicina de Catalunya in Barcelona[44].

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9. HUGUET T., ZARZOSO A., *L'Hospital General de la Santa Creu, 1671-1800*. In: Actes de la VIII Trobada d'Història de la Ciència i de la Tècnica. Barcelona, SCHCT, 2006, pp. 187-193. PUIG F., *Principios de cirugia, con los quales se instruyen los jovenes que se destinan a la profesion de esta grande arte en el Real Hospital General de la ciudad de Barcelona...* Barcelona, Imprenta de Teresa Piferrer, 1753. On this surgeon see: MASSONS J.M., *Francesc Puig (1720-1797) i els cirurgians del seu temps*. Barcelona, PPU, 1993.
10. FERRER D., *Historia del Real Colegio de Cirugía de la Armada de Cádiz*. Barcelona, Tipografía Emporium, 1961; *Biografía de Pedro Virgili*. Barcelona, Tipografía Emporium, 1963.
11. ASTRAIN M., *Barberos, cirujanos y gente de mar. La sanidad naval y la profesión quirúrgica en la España ilustrada*. Madrid, Ministerio de Defensa, 1996.

12. USANDIZAGA M., *Historia del Real Colegio de Cirugía de Barcelona (1760-1843)*, Barcelona. IMHB, 1964.
13. PÉREZ N., *Anatomia, química i física experimental al Reial Col·legi de Cirurgia de Barcelona (1870-1808)*, Barcelona, unpublised PhD thesis, Universitat Autònoma de Barcelona, 2007. Available online at: http://www.tesisenxarxa.net/TESIS_UAB/AVAILABLE/TDX-1203107-162239//npp1de1.pdf
14. BYNUM W., PORTER R. (eds.), *William Hunter and the eighteenth century medical world*. Cambridge, CUP, 1985.
15. This case is quite similar to that of the anatomical school of Ferrara, where the university reform of 1771 stimulated the creation of an anatomical collection with didactic purposes. See: BRESADOLA M., *Modellare il corpo. Giovanni Tumiati e lo studio dell'anatomia alla fine del Settecento*. In: BRESADOLA M., CARDINALI S., ZANARDI P. (eds.), *La casa delle scienze. Palazzo Paradiso e i luoghi del sapere nella Ferrara del Settecento*. Padova, Il Poligrafo, 2006, pp. 157-184. On the circulation of anatomies see: MAERKER A., *Uses and publics of the anatomical model collections of La Specola, Florence, and the Josephinum, Vienna, around 1800*. In: BERETTA M. (ed.), *From Private to Public. Natural Collections and Museums*. Nantucket, Science History Publications, 2005, pp. 81-96; MAERKER A., *The anatomical models of La Specola: Production, uses, and reception*. Nuncius Journal of the History of Science 2006; 21/2: 295-321.
16. ZARZOSO A., *Medicina i Illustració a Catalunya. La formació de l'Acadèmia Mèdico-Pràctica de Barcelona*. Barcelona, Fundació Noguera, 2004, pp. 72-90.
17. On this long and conflictive process, see: FERRER D., *De la unión del estudio de la medicina y la cirugía*. Medicina e Historia, 1966; 24: 1-14; BURKE M. E., *The royal college of San Carlos. Surgery and Spanish medical reform in the late eighteenth century*. Durham, DUP, 1977, pp. 66-187; DANON J., (ed.), *La enseñanza de la medicina en la Universidad española*, Barcelona, Fundació Uriach, 1998, vol I and 2001, vol. II.
18. PICKSTONE J.V., *Museological science? The place of the analytical/comparative in nineteenth-century science, technology and medicine*. History of Science 1994; 32: 111-138; *Ways of Knowing. A new history of science, technology and medicine*. Manchester, MUP, 2000, p. 73. Differences with the previous private collections, as well as how early modern museums faced with changes in the eighteenth and nineteenth centuries can be found in: FINDLEN P., *Possessing nature. Museums, collecting and scientific culture in early modern Italy*. Berkeley, UCP, 1994, pp. 393-407.

19. REINARZ J., *The age of museum medicine: the rise and fall of the Medical Museum at Birmingham's School of Medicine*. Social History of Medicine 2005; 18/3: 419-437.
20. LOURENÇO M.C., *Entre deux mondes. La spécificité et le rôle contemporain des collections et musées des universités en Europe*. PhD Thesis, CNAM, Paris, 2005, pp. 49-83.
21. On the creation and transformation of medical museums in eighteenth- and nineteenth-century Europe, see: CID F., *Museología médica, aspectos teóricos y cuestiones prácticas*. Bilbao, Medikuntza eta zientzia historiaren euskal museoa, 2007, vol. I, pp. 61-216.
22. SCHNALKE T., *Diseases in wax. The history of the medical moulage*. Berlin, Quintessence Publishing, 1995, pp. 15-52; *Dissected limbs and the integral body: on anatomical wax models and medical moulages*. Interdisciplinary Science Reviews 2004; 29-3: 312-322. De CHADAREVIAN S., HOPWOOD N. (eds.), *Models: the third dimension of science*. Stanford, SUP, 2004.
23. The relationship between science and religion has interested anglosaxon historians. For instance, Sander L. Gilman contended that "*realistic representation of the body was as vital for the scientist as for the churchman: real bodies were bodies that could be saved*". Yet, the relationship of those artists with anatomical schools must be stressed, especially in Bologna and Firenze, where they worked their pieces from a previous task of dissecting corpses in anatomical theatres. See the review of Thomas Schnalke book written by Gilman in British Medical Journal, 1995; 1: 711-712.
24. POGESSI M., *La collezione ceroplastica del Museo La Specola*. In: *Encyclopaedia Anatomica*. Köln, Taschen, 1999, pp. 6-25; CATTANEO L., RIVA A., *Le Cere Anatomiche di Clemente Susini dell'Università di Cagliari*. Cagliari, Edizioni Della Torre, 1993; RUGGERI A., BERTOLI BARSOTTI A..M., *The birth of waxwork modelling in Bologna*. Italian Journal of Anatomy and Embriology 1997; 102/2: 99-107; MARALDI N.M., MAZZOTTI G., COCCO L., MANZOLI F.A., *Anatomical waxwork modeling: The history of the Bologna Anatomy Museum*. The Anatomical Record (New Anatomist). 2000; 261: 5-10; SCARANI P. *Una vita difficile: I musei anatomici dell'Università Bolognese*. Med. Secoli 2000; 12-2: 99-107; DACOME L., *Waxworks and the performance of anatomy in mid-18th-century Italy*. Endeavour 2006; 30/1: 29-35.
25. Éstablissements Auzoux still runs in Paris. De CLERQ S.W.G., *The anatomical wax-models of Petrus Koning*, In: Proceedings of the Fifth Congress of the European Association of Museums of History of Medical Sciences.

(ed. Fundació-Museu d'Història de la Medicina de Catalunya) Barcelona, Collection Fondation Marcel Mérieux, 1990, pp. 181-187. MULDER W.J., *L.Th. J. Auzoux's models used for the dissemination of anatomic knowledge*, In: Proceedings of the sixth Congress of the European Association of Museums of History of Medical Sciences. Paris, Collection Fondation Marcel Mérieux, 1994, pp. 129-136. PASTOR J.F., VERONA J.A.G., De PAZ F.J., BARBOSA E., *The anatomical museum of Valladolid*. Yamagouchi Journal of Veterinary Medicine 1995; 22: 53-60.

26. ZARZOSO A., *Les collections del Museu*. Barcelona, COMB, 2005. The anatomical models of the Museu d'Història de la Medicina de Catalunya that come from the medical faculty indicate widespread origins: waxes from early 19th-century Italian ceroplastic workshops or from the Maison Tramond in the late 19th-century Paris; plasters from Lenoir & Forster in the late 19th-century Viena and from Falcó & Cia in Valdemorillo; papier-maché models from 19th-century Auzoux factory in Paris; and a number of models produced at the same faculty by unknown modellers and by reputed artists such as J. Coll i Soler, J. Renart, Rossend Nobas i Ballbé or Enric Monjo i Garriga.
27. Ignasi Pusalgas is still an unknown person: studies of the Royal College of Surgeons do not mention a word of him. In fact this has still to do with the lack of an analysis of the history of university collections in Barcelona. On this see: CID F., *Análisis de las preparaciones en cera y yeso sobre el aparato respiratorio y mediastino que se efectuaron en los centros médicos barceloneses los años 1824-1870*. In: *Historia y medicina en España. Homenaje a Luis S. Granjel*. Valladolid, Universidad de Valladolid, 1994. On the other hand, studies on phrenology in Barcelona have neglected his reception and texts on this and other anatomies and physiologies of the nineteenth century. See: MASSONS J.M., *Història del Reial Collegi de Cirurgia de Barcelona, 1760-1842*. Barcelona, Fundació Uriach 1838, 2002 and NOFRE D., *Una ciència de l'home, una ciència de la societat: frenologia i magnetisme animal a Catalunya, 1842-1854*. Barcelona, UAB, 2005, unpublished PhD thesis. Publications written by Pusalgas have recently received attention but without placing them in their historical context, see: GARCÍA GONZÁLEZ A., *Ignacio Pusalgas, un médico romántico del siglo XIX*. Asclepio 2003; 55/2: 201-230. On the case of Silòniz and his contributions to anatomy in 19th-century Spain, see: LÓPEZ PIÑERO J.M., *La contribución de las generaciones intermedias al saber anatómico en la España del siglo XIX*. Asclepio 1971; 23: 95-130, especially, pp. 103-112.

28. PUSALGAS GUERRIS I., *Ensayo sobre la formación y arreglo de un Museo Anatómico: orden científico de las piezas naturales y artificiales para el fácil y completo estudio de la organografía humana descriptiva, general, topográfica, quirúrgica y patológica, obstetricia, clínica médica, etc…* Barcelona, Lib. De Joaquín Verdaguer, 1862; *Pensamientos acerca un reglamento para los departamentos de anatomía práctica y sus museos anatómicos de las facultades de medicina del reino*, Barcelona, Est. Tip. Jaime Jepús, 1869.
29. Pusalgas's reasoning in these ideas was conclusive, see: PUSALGAS, ref. 28, 1862, p. 1.
30. Not only did Pusalgas refer his readers to the main places of production of anatomical knowledge in Europe but, for orders, he also determined the names of the producers of artificial anatomical models, such as the plaster skulls fabricated by Mr. Guy, the clastic models manufactured by Dr. Louis Auzoux or the plaster models on skin diseases made by Dr. Félix Thibert. All of them established in Paris in the middle of the century. Alongside this information, Pusalgas did not forget to mention the names of local producers and artists, starting with the workshop of Juan González and stating the works of José Chiappi, the academic models made by Rafael Mengs, Eugenio Caudron and Julian Fau, the models in glass produced by José Fradera. See: PUIG-PLA C., *Desarrollo y difusión de la construcción de máquina e instrumentos científicos, el caso de Barcelona: siglos XVIII-XIX*. Scripta Nova 2000; 69/8, online journal. On Chiappi see: BRESADOLA M., ref. 16, pp.173-181. In addition, Pusalgas explained his relationship with his colleague from Madrid, Pedro González de Velasco. On this see: PORRAS GALLO Mª.I., *Buscando la renovación de la enseñanza médica en la España decimonónica: la escuela teórico-práctica de medicina y cirugía del Hospital General de Madrid y la escuela práctica de medicina y cirugía de Pedro González de Velasco*. Medicina e Historia 2002; 1: 1-16.
31. Pusalgas claimed that, "*it would be an odd case among museums of human organography and natural history not to find curious pieces such as those representing the progress of reproduction in the womb through the nine months of pregnancy*". (Raro es el Museo de Organografía humana y de Historia Natural que no contenga las curiosas piezas que representan los progresos de la generación en el útero de la mujer, durante los nueve meses de embarazo). In: PUSALGAS ref. 28, 1862, p. 13. On the debate on man-midwifery, see: MARTÍNEZ-VIDAL A., PARDO TOMÁS J., *Un conflicto profesional, un conflicto moral y un conflicto de género: los debates en torno a la atención al parto en la Ilustración*. Cronos 2001; 4: 3-27.

32. Dermatology consolidated as an autonomous medical specialty in the turn of the 20th century. A teaching museum of dermatology was created in Madrid, but without support from the university; it was inaugurated in 1882 by medical doctor José Eugenio de Olavide at the premises of San Juan de Dios Hospital. In 1910 was created the university chair in Madrid. In the Barcelona Medical Faculty was finally established in 1915. As a part of the efforts spent in establishing the contents and borders of dermatology, there were created collections of dermatologic pieces. In Barcelona, there was created the Museum of Dermatology in the Hospital de Santa Creu i Sant Pau created by Dr. Santiago Noguer Moré in 1927 and clausurated in 1941. GARCÍA PÉREZ A., Del RÍO E., *La escuela madrileña de dermatología*. Monografías de dermatología, 2001; 14: 270-282; CONDE-SALAZAR L. (ed.), *Piel de cera. Olavide, San Juan de Dios y el Museo*. Madrid, AEDV-Luzan 5 ediciones, 2006; SIERRA X., *Los inicios de la dermatología en Cataluña (1880-1915)*. Monografías de dermatología 2001; 14: 283-293; TUNEU A., URKÍA J.Mª., *La proyección internacional del profesor Jaume Peyrí i Rocamora, Jefe del Servicio de Dermatología del Hospital Clínico y primer catedrático de dermatología de Barcelona*. Monografías de dermatología 2001; 14: 294-309. For other cases see: STICHERLING M., *The collection of dermatologic wax moulages at the University of Kiel, Germany*. International Journal of Dermatology 2001; 40: 586-592. PARISH L.C., WORDEN G., WITKOWSKI J.A., SCHOLZ A., PARIS D.H., *Wax models in dermatology*. Transactions and studies of the College of Physicians of Philadelphia 1991; 13/1: 29-74.
33. PUSALGAS ref. 28, 1862, p. 14: "*Siendo de suma importancia para el médico, conviene no omitir nada de los estragos* [*de las enfermedades sifilíticas*], *por horrosos que parezcan, de esa vergonzosa y cruel dolencia*".
34. Pusalgas rethorically asked about the utility of such a collection for the study of spiritualist phrenology and the medical and psicological knowledge of madness. In: PUSALGAS ref. 28, 1862, p. 15: "*Un museo de vesanías es la mejor e inestimable joya que puede poseer la Facultad de Medicina y todo Manicomio. De cuánta utilidad será para el estudio de la Frenología espiritualista, y conocimientos médicos psicológicos sobre la locura?*".
35. PUSALGAS ref. 28, 1862, p. 15. On Franz Gall and Marià Cubí, see NOFRE, ref. 27.
36. On the process of creation of a new medical faculty and hospital, see: ARQUÉS J., *Cinc estudis històrics sobre la Universitat de Barcelona, 1875-1895*. Barcelona, Columna, 1985. On the history of the Barcelona medical faculty see: CORBELLA J., *Història de la Facultat de Medicina de Barcelona,*

1843-1985. Barcelona, Fundació Uriach 1838, 1996.

37. RIERA VILLARET A., RIERA CERCÓS A., *Tratado de técnica anatómica*. Barcelona, Librería Médica de Juan Bautista Aragonés, 1917, 2 vols. On Riera see: MEDALLÓ J., GENÉ M., HUGUET E., *El Dr. Antoni Riera i Villaret (1865-1931). Apunts biogràfics i de la seva obra*. Gimbernat, 1990; 14: 193-206.
38. RIERA & RIERA ref. 37, 1917, vol. I, p. 35, "*Como los museos son muchas veces visitados por personas profanas en los estudios médicos, es conveniente estén en punto aislado de los demás servicios y tengan acceso independiente*".
39. RIERA & RIERA ref. 37, 1917, vol. I, p. 314.
40. This is stated in the articles devoted to the opening hours and access in Pusalgas's *Pensamientos*. PUSALGAS, ref. 28, 1869, pp. 14 and 15. This text was produced under the aegis of the political changes that occurred in Spain in 1868. The opening of a revolutionary period resulted in the blooming of alternative institutions to the university, considered as an stagnating institution. Pedro González de Velasco, the Madrid professor-curator of the anatomy museum, produced also a paper on the same subject: *Reorganización de los trabajos y museos de anatomía de las facultades de Medicina y Cirugía de España*. Madrid, 1868.
41. REINARZ ref. 19, pp. 423-426.
42. KRIETSCH P., DIETEL M., *Pathologisch- Anatomisches Cabinet*. Berlin, Blackwell, 1996; MATYSSEK A., *Rudolf Virchow: Das Pathologische Museum: Geschichte einer wissenschaftlichen Sammlung um 1900*. Schriften aus dem Berliner Medizinhistorischen Museum, Darmstadt, Steinkopff, 2002.
43. On the new medical museums see: CID F., GORINA N., *El Museo Anatomopatológico Ferrer y Cagigal (1924-1942), un fondo científico perdido*. In: *Actas del VIII Congreso Nacional de Historia de la Medicina*. Murcia-Cartagena, Universidad de Murcia, 1986, pp. 254-262. On other European cases, see, REINARZ, ref. 19, LOURENÇO, ref. 20.
44. On the creation of the Catalan Museum of the History of Medicine in Barcelona in 1981 see: CID F., *Museu d'Història de la Medicina de Catalunya*. Colección Grandes Museos, Madrid, 1995; 23. The museum was closed in 1997 due to architectural deficiencies and managerial changes in a context of debate about how to face a new situation: searching for a new place, a new museological orientation and new partners. On this see: ZARZOSO A., *Instrumentos antiguos para un nuevo proyecto divulgativo:*

el Museu d'Història de la Medicina de Catalunya. Quark 2005; 35: 42-49; *Història i ensenyament de la ciència al Museu d'Història de la Medicina de Catalunya*. In: I Jornada d'Història de la Ciència i Ensenyament. Barcelona, SCHCT, 2005, pp. 115-122; *Instrumentos científicos: patrimonio recuperado y didáctica de la ciencia*. Dynamis 2005; 25: 523-537; *El Museu d'Història de la Medicina de Catalunya: la construcció d'un nou projecte de preservació patrimonial i de promoció de les ciències de la salut*. In: *Actes del 17è Congrés de Metges i Biòlegs de Llengua Catalana*. Barcelona, Fundació Alsina i Bofill, 2007, pp. 111-124.

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