

Ferdinando Coletti and his inaugural speech *Dell'Università e de' suoi studi* (1879): clinical teaching at the medical faculties in the second half of the 19th century

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ABSTRACT: Ferdinando Coletti, Rector at the University of Padua in 1872-1873 and a full professor of *Materia Medica* and Therapeutics, delivered his inaugural academic year speech *Della Università e de' suoi studi*, which was published in 1880, but little known, at the lecture hall in the University of Padua on November 19th, 1879. This article analyses the inaugural speech, which is divided into six paragraphs: the first two are about the history of Italian universities in comparison with the European ones in general and the other four are devoted to a reflection on medical training and the disciplines into which the contemporary study system of the medical faculties is divided. The nodal point of this analysis is represented by clinical teaching in its various declinations and it becomes the field in the speech where medical-scientific, cultural, pedagogical, political and civil instances find a ground for comparison and synthesis.

EET/TEE KEYWORDS: History of Medical Education; Ferdinando Coletti; History of Clinical Teaching; Propaedeutic Clinic; XIX Century.

Introduction

In the aftermath of the Unification of Italy, the protection of health on which hygienists had focused their attention throughout the century acquires an increasingly significant weight for the organization of the new State¹ and issues,

¹ R. Cea, *Il governo della salute nell'Italia liberale. Stato, igiene e politiche sanitarie*, Milan,

such as the need for a modern healthcare legislation and the adaptation of Italian professional medical training to the one of the most advanced European countries², become crucial with it.

At a scientific level, this corresponds to an evolution of medical knowledge, which marks a major step forward towards the end of the century thanks to progress in physics and chemistry starting from a science in crisis due to its therapeutic ineffectiveness. The medical 19th-century is pervaded by a scientific tension, which determines the detachment from metaphysics in the early century and the initiation of a biological tendency in order to arrive at rising the basis of the modern pathological conception³ in the late century. Medicine had been enriched with laboratories and tools thanks to the achievements in chemistry and physics, which increasingly allowed the development of scientific research, the control and the validation of results with significant progress in fields, such as physiology, while clinical medicine benefited from the results of bacteriology and cellular pathology.

Beyond the different positions in political and scientific debates, there was a unanimous consensus in recognizing the strategic value of clinics for medical training, especially in the practical field. If the new unified state wanted to gain a place of merit among the most advanced European countries, it became essential to commit resources in order to equip small and big universities with

FrancoAngeli, 2019, pp. 65-128. The mobilization of the hygienist movement allowed the creation of hygiene as a discipline with an autonomous status and a precise field of application where the concept of prevention took on a crucial importance. Therefore, hygiene became the inspiring paradigm of the health policy for the liberal state, not only in reference to the prevention of the epidemics – first of all, cholera –, which plagued Italy throughout the 19th-century, but also as a discipline, which was able to coordinate all those sciences influencing public and private health. The health system of the new State was defined by the well-known Annex C to the law for the administrative unification of the Kingdom, which was promulgated on March 20th, 1865, thus becoming part of the basic competences, which were assumed by the new liberal State. Annex C with which the Piedmontese system was effectively extended throughout Italy became the basis of the Italian health administrative action until Crispi law in 1888 with which the health reform was implemented, refining the functions and the structures of the liberal State in the 19th-century. Being an official at the Ministry of the Interior, the figure of the provincial doctor, who was specialized in hygiene, was one of the key innovations, which were introduced by law, in his function of connection between prefect and territory, but also with the central government. The training deficiencies of the Italian academic system soon emerged due to the lack of hygiene institutes at universities and, for this reason, in 1888, a specialization school in public hygiene, which was placed under the direction of Luigi Pagliani, a full professor of Hygiene at the University of Turin and appointed by Crispi to supervise the Department for Health, and established within the Dicastery of the Interior, was established for provincial doctors at the laboratories in the Ministry of the Interior.

² A. Forti Messina, *Il sapere e la clinica: la formazione professionale del medico nell'Italia Unita*, Milan, FrancoAngeli, 1998, pp. 17-18.

³ F. Pellegrini, *La Clinica Medica Padovana attraverso i secoli*, Verona, La Tipografica Veronese, 1939, pp. 150-151. The author refers to the historical-medical analysis of the 19th-century, which was outlined by the well-known historian A. Castiglioni, *Storia della Medicina*, 2 voll., Milan, Arnoldo Mondadori, 1948, Vol. II, p. 586.

areas, which were devoted to clinics, and to modernize the already existing ones.

However, in the late 19th-century, medicine was still pervaded by contrasting attitudes in favour – or not – of a more practical training rather than a theoretical one. The enthusiasm towards experimental method and scientific research, which had determined so much progress in 19th-century medicine, corresponded to the skepticism of those who claimed that the clinician's task was to study patients, staying at their bedside, thus only perfecting diagnostic skills, while experimentation and research distracted doctors from their main training goal⁴, in addition to being a few doctors' prerogative. Among clinicians, however, authoritative voices also arose, such as Augusto Murri, who demonstrated an open attitude towards the Clinic at least in an initial phase not only as the place where doctors learn to recognize and to treat diseases, but also as a scientific laboratory:

The Clinic, as I see it, has two very different tasks: the first one is to provide society with doctors, who know how to understand and to treat human infirmities, and we will see in future lectures which is the most appropriate method to achieve it. But this office must not be the only one today; the Clinic must also be a scientific laboratory: the Anatomist, the Physiologist, the Pathologist give us the result of their labours, but we must examine it, purify it, make use of it and then send it back to them either modified or increased or simply validated by our experience. We must receive from them, but we must also give, we must depend on them, but we must not live a parasite's life. The true clinical science is created in Clinic, only in Clinic⁵.

Consistently with the position taken in the whole speech, the introductory lecture to Murri's course ends with an incitement to young students of Clinical Medicine to believe in experimental method, highlighting how the search for truth has the noble aim at benefiting in its application in order to alleviate the sick human race's suffering and to contribute to raise the fortunes of sciences in Italy at a civil level.

Murri's inaugural lecture, which was printed in 1876, is part of several published inaugural speeches, introductory lectures to academic courses circulating in the late 19th-century. Beyond celebratory and rhetorical tones, the attention in them was mainly addressed to crucial issues for teaching in the medical faculties.

This rich production of works largely consists of booklets with less than one hundred pages, which faithfully translate the speeches given by rectors and professors holding chairs of medical faculties at the university lecture halls. These are often little-known works with a limited-edition print, but nevertheless

⁴ V. Patella, *Obiettivi e limiti della propedeutica di clinica medica: Prelezione*, Padua, Stab. Prosperini, 1888, p. 14.

⁵ A. Murri, *Prolusione al corso di clinica medica letta il 19 gennaio 1876 nella R. Università di Bologna*, Bologna, 1876, pp. 26-27.

they are worthy of attention by historical-medical and historical-educational research, as they are able to shed light on what was perceived as the crucial issues at an educational and scientific level at that time.

As it has already been underlined, the debate on the reform of medical studies occupies an important part of the post-unification policy on university education in the awareness that it was necessary to decisively intervene at a training level in order to raise the fortunes of Italian medical faculties – and perhaps also the ones of the new Kingdom – and to restore dignity to medicine and the figure of the doctor in the social context⁶.

In this context, there is Ferdinando Coletti's work, *Della Università e de' suoi studi. Discorso Inaugurale de' corsi accademici dell'anno 1879-1880, letto nell'Aula Magna dell'Università di Padova il 19 novembre 1879*, which was printed in Padua in 1880⁷ and delivered while Coletti was a full professor of Materia Medica and Therapeutics at the University of Padua.

The speech is divided into six paragraphs, which are specifically devoted to an analysis and a reflection on medical training and the disciplines into which the contemporary university system of the medical faculty is divided⁸ except for the first two general paragraphs, which are addressed to the history of Italian universities and the comparison between the universities in Europe and in Italy. The work as a whole offers a balanced and lucid synthesis of medical university studies, but the analysis of clinical teaching in its various specialist declinations represents its real nodal point, taking into account what were the training tensions regarding medical practice at that time.

⁶ F. Zurlini, *The Galatei Medici and Medical Education in the Nineteenth Century*, «History of Education & Children's Literature», vol. XVII, n. 2, 2022, pp. 517-530.

⁷ F. Coletti, *Della Università e de' suoi studi. Discorso Inaugurale de' corsi accademici dell'anno 1879-1880, letto nell'Aula Magna dell'Università di Padova il 19 novembre 1879*, Padua, Ph. Giovanni Battista Randi, 1880, p. 83. Eighteen copies of this single edition are currently known and mostly preserved in libraries in Northern Italy, particularly in Veneto. The diffusion attests to a circulation of the work, which is mainly linked to the locations in Veneto, which were the protagonists of Coletti's teaching activity and his political commitment, and other cities with important medical faculties, such as Milan, Turin and Rome.

⁸ The work, which is divided into six paragraphs, does not have a printed index, which can be deduced by an overall analysis of the content. The first two introductory paragraphs are devoted to the reconstruction of a general framework about university studies in Italy and Europe in the late 19th-century. The third paragraph consists of a reflection on the pedagogical importance of a “median” classical training, which is preparatory to university studies and on which they are based. The fourth paragraph offers a careful examination of medical studies and the main disciplines into which they are divided – anatomy, histology, embryology, physiology, biology, general pathology, pathological anatomy and pharmacology –, which are described according to a progression of pedagogical importance in the young doctor's training. The fifth paragraph is entirely devoted to Clinic in its main areas – Medical and Surgical Clinic – and also its related ones, such as the Obstetric and Gynaecological, Ophthalmological, Dermatopathic-Syphilitic and, finally, Psychiatric Clinic. In the last sixth paragraph, our gaze extends to social medicine, hygiene, forensic medicine and statistics as an auxiliary science.

The topic of clinical teaching is exhaustively dealt with in the fifth paragraph where the clinics included in the study system are reviewed – the medical, surgical, ophthalmological, obstetric-gynaecological, psychiatric, dermatopathic and syphilitic clinics – about which Coletti highlights positive aspects and critical issues, also suggesting possible improvements at a teaching level through concrete training proposals, which were exemplified on the model of the most advanced European countries. This central part of the work – the fifth paragraph –, which combines scientific, training, ethical and political reflections, persuaded a careful analysis from a historical-medical and historical-educational point of view. But to fully understand the spirit of the work, it is necessary to analyse the author's profile and the context where its genesis takes place.

1. *Ferdinando Coletti and the University of Padua*

The University of Padua was a training place for the ruling class, who was aligned with the policies of the Habsburg Empire, until 1866, the year when Veneto was annexed to the Kingdom of Italy. After the fall of the Republic of Venice, Austrian government had influenced the main local institutions in its direction – obviously included the University of Padua *in primis* –, having reached a period of stability. The teachings of Medical Clinic and Surgical Clinic were introduced between 1811 and 1812 with the aim at modernizing medical studies. Vienna imposed on Padua the creation of an obstetric clinic and an ophthalmological clinic, in addition to a minor surgical clinic for provincial surgeons. Austrian government influenced the events of university organization and the teachers' appointments⁹ very closely.

Only after the annexation, which was sanctioned by a popular plebiscite, the University was involved in the reform, which the extraordinary commissioner Gioacchino Pepoli¹⁰, who had arrived in the city on July 17th, 1866,

⁹ P. Angeli, P. Burra, G. Silvano, *La Clinica Medica*, in G. Silvano, *Patavina Libertas: Una storia europea dell'Università di Padova (1222-2022)*. *La Scuola Padovana e la medicina in Europa e nel mondo*, Rome, Donzelli editore and Padua University Press, 2022, pp. 170-195 (kindle edition).

¹⁰ Gioacchino Napoleone Pepoli (Bologna, 1825-*ibid.*, 1881), the second son of the Marquis Guido Taddeo and Letitia Murat, the daughter of Joachim and Caroline Bonaparte, Napoleon's sister, the exponent of the Bolognese liberal-Bonapartist patriotic aristocracy, had returned to Bologna in 1852 to take part in the local liberal movement. At the fall of the papal government, he became part of the provisional government council, later he was a member of the government cabinet in the new provinces of Emilia and, after the Emilian plebiscite, Pepoli was elected as a deputy and a senator for several legislatures from 1860 to 1868. After having held various political offices, he was appointed Mayor of Bologna on February 28th, 1866 and was sent to Padua in the same year, after the annexation of Veneto to the Kingdom of Italy. Pepoli had always fought in favour of the Italian cause and, therefore, it is not surprising that the teaching staff at the

implemented in an intransigent manner, replacing professors linked to Viennese government, reconfirming the liberal-moderate ones and, above all, ensuring the re-instatement of those professors, who had been dismissed by Vienna for political reasons¹¹.

Among them, there is Ferdinando Coletti, who was appointed to the chair of *Materia Medica* and Therapeutics in November 1866. Coletti was a «son» of the University of Padua: having moved from his hometown, Tai di Cadore, to Padua at the age of eight and got his literary and classical studies, he enrolled in the medical practice where he graduated in medicine and surgery on August 22nd, 1845. Coletti leaves a memory of his training where he had professors, such as the Slovakian Franz Wilhelm Lippich¹² in Higher Medical Clinic¹³, Bartolomeo Signoroni in Surgical Clinic and Giacomo Andrea Giacomini in *Materia Medica*, in one of his autobiographical works where he narrates his experience as a professor of *Materia Medica*¹⁴, also showing a certain historical ability in reconstructing the history of this chair through the centuries of university life¹⁵. In particular, he refers to his experience as an assistant to the chair of Pathology

university of Padua, which he created with patriotic fervour, was renewed, bringing back into the teaching staff those who had been excluded for political reasons, such as Coletti. S. Alongi, *Pepoli, Gioacchino Napoleone*, in *Dizionario Biografico degli Italiani*, Rome, Istituto dell'Enciclopedia Italiana Treccani, 2015, Vol. 82, <<https://www.treccani.it/enciclopedia/gioacchino-napoleone-pepoli>> (last access: 07.01.2024).

¹¹ F. Agostini, *La transizione dall'Impero Asburgico al Regno d'Italia*, in Id., *L'Ateneo di Padova nell'Ottocento. Dall'Impero asburgico al Regno d'Italia*, Milan, FrancoAngeli, 2019, pp. 226-257.

¹² In the late 1834, Franz Wilhelm Lippich (1799 – 1845) was sent by Austrian government to play the role of full professor of Higher Medical Clinic, which he held until 1841. In the work *Annales Scholae Medico-clinicae patavinae* (1834-1835), Lippich inserts a thank-you note to Vincenzo Pinali (1802-1875), a young and brilliant assistant, who had got his first medical studies in Vienna; then he graduated in medicine and surgery in Padua in 1831-1832 and was particularly devoted to the observation of cardiac and pulmonary diseases through the use of the stethoscope, decisively contributing to the diagnostic progress of young clinical medical students. Regarding stethoscopy, Loris Premuda highlights how the new semiological method arrives in Padua not directly from Paris where it was conceived by René Laennec, but through Viennese filtration. This Vienna-Padua axis is nourished by the circulation of numerous foreign professors – Lippich, Rosas, Ernst Wilhelm von Brücke – for whom the role they held at the University of Padua acts as an intermediate step in their academic career towards the Viennese one. G. Ongaro, *La Clinica Medica padovana durante il dominio austriaco*, in Agostini, *L'Ateneo di Padova nell'Ottocento. Dall'Impero asburgico al Regno d'Italia*, cit., pp. 35-66.

¹³ The Higher Medical Clinic was so named to also distinguish it from the minor surgeons' one in terms of prestige, i.e. the phlebotomists to whom teaching was given in Italian rather than in Latin, whose institution had been desired by Austrian government. Ongaro, *La Clinica Medica padovana durante il dominio austriaco*, cit., p. 47.

¹⁴ F. Coletti, *Ricordi storici della cattedra e del Gabinetto di Materia Medica nella Università di Padova raccolti e commentati da Ferdinando Coletti, prof. di materia medica e direttore del Gabinetto*, Padua, Ph. Giovanni Battista Randi, 1871, pp. 17-18.

¹⁵ L. Premuda, *Ferdinando Coletti*, in *Dizionario Biografico degli Italiani*, Rome, Istituto dell'Enciclopedia Italiana, 1982, Vol. 26, <<https://www.treccani.it/enciclopedia/ferdinando-coletti>> (last access: 07.01.2024).

and *Materia Medica* in 1827 when it was assigned by Austrian government to the Hungarian Martin Steer. Coletti describes the Hungarian professor with acute irony as he was completely imbued and infatuated with the doctrines of the natural philosophers, who transcend observation and reality and give life to a horrifying mass of electromagnetic, astronomical, astrological theories through their lively imagination, showing an absolute distance – and a subtle criticism – towards what was detached from observations and experiments from the beginning of their academic career. Scientific and patriotic reasons – the anti-Austrian aversion was clear – are also combined in this criticism of his as in all his work. With the revolutions of 1848, Steer was forced to abandon his chair, while Coletti became president in the Padua patriotic club and later was forced in turn to go away to Lombardy and Switzerland until the Austrians came back. He returned to Padua only in the shadow of the amnesty in a climate of political suspicion so much so that he was only granted the provisional license as a private professor of Pathology and *Materia Medica* in 1850¹⁶. His political and patriotic commitment never failed – in 1859, he was the Head of the Central National Committee of Veneto and a City Councillor in Padua for fifteen years, after Veneto was annexed to the Kingdom of Italy – and, therefore, it is not surprising that he was reinstated by Pepoli in the teaching staff of the University of Padua in 1866.

His academic career reached its peak in 1872 when he was elected Rector of the University of Padua, the year of the official recognition and the definitive alignment of the University of Padua with the other universities in the Kingdom¹⁷. Illustrious names, such as Vincenzo Pinali, director of the medical-surgical-pharmaceutical practice, and Francesco Marzolo¹⁸, dean of the Faculty of Medicine, sat in the Academic Senate in that year, representing medical practice.

The most important reform, which Coletti managed to implement during his rectoral mandate, was the transfer of preclinical medicine teachings from Giustiniano Hospital to the renovated former convent of S. Mattia¹⁹. In 1872, Coletti also moved the Cabinet of *Materia Medica* here where no experiments

¹⁶ P. Del Negro (ed.), *Clariores. Dizionario biografico dei docenti e degli studenti dell'Università di Padova*, Padua, Padua University Press, 2015, p. 100.

¹⁷ *Annuario della Istruzione Pubblica del Regno d'Italia pel 1872-1873*, Rome, Ph. Sininberghi, 1873, pp. 104-110.

¹⁸ Francesco Marzolo (1818-1880) had attended the specialization school in Vienna the best students in the Austro-Hungarian Empire entered. Marzolo was another example of those professors, who were reinstated in the academic staff after the annexation of the Kingdom of Italy in 1866. After being appointed as a professor of Theoretical Surgery at the University of Padua in 1847, Marzolo had been dismissed in 1850 for the political role he played in the revolutions of 1848. He was the Dean of the Faculty of Medicine from 1875 to 1879 and Rector in 1879-1880. F. Agostini, *La transizione dall'Impero Asburgico al Regno d'Italia*, cit., p. 234.

¹⁹ Del Negro (ed.), *Clariores. Dizionario biografico dei docenti e degli studenti dell'Università di Padova*, cit., p. 100.

were carried out, but samples of drugs and chemical products, which were useful in medicine, and a collection of wax reproductions of edible and poisonous mushrooms were kept. He gave a particular development to pharmacological research, grasping connections among pharmacology, toxicology and pharmacy and calling for the correctness of applying experimental method²⁰.

The attention to preparatory training for Medical Clinic is a tension, which animated not only his rectoral policy but, above all, his teaching policy. When he delivered the inaugural 1879-1880 academic course speech *Della Università e de' suoi studi* at the lecture hall of the University of Padua on November 19th, 1879, he no longer held the position of Rector of the University of Padua, but the broad vision characterizing the detailed overview of the Italian university studies in comparison with the European studies and, particularly the medical ones, translates all the experience he acquired at the helm of the University of Padua.

In the articulation of his speech²¹, clinical teaching represents a central topic in the medical university system, as it has been already highlighted. Coletti deals with it, entering the broad debate on the reform of medical practice, which lasted throughout the 19th-century and mirrored the government debate on the administration of public health and hygiene in the new Kingdom. Before analysing in detail the paragraph of the speech, which is devoted to Clinics, it is necessary to roughly reconstruct the context of legislative reorganization for medical practice where it takes place and which influences its reading.

2. *The legislative framework, the medical university system and the reorganization of clinics*

In the second half of the 19th-century, we witnessed a series of laws and regulations, which were aimed at the reorganization of the school system and, in particular, the studies of the medical faculty. A special attention is paid to clinics, as they are considered necessary for medical studies and fundamental for learning medical practice, as attested by the main legislative provisions, which regulate the medical study system in the second half of the 19th- century. The chronological analysis of the medical study systems, which followed one another starting from 1859 until the end of the century, documents the growing role, which clinics acquired in medical training.

²⁰ P. Giusti, A. Vendramin, *La Scuola Farmacologica Padovana tra Ottocento e Novecento. Contributi agli studi sulle pallottole magiche*, in Silvano, *Patavina Libertas: Una storia europea dell'Università di Padova (1222-2022). La Scuola Padovana e la medicina in Europa e nel mondo*, cit., pp. 262-267.

²¹ See n. 8.

The law of November 13th, 1859, which was compiled by a Special Commission during Cavour government, prescribes the study system of the medical faculty in art. 51 where clinical teaching is associated with related disciplines: Medical Clinic with Special Medical Pathology and Surgical Clinic with Operative Medicine²². With Royal Decree of September 14th, 1862, no. 842, the so-called Matteucci Regulation²³, specific regulations for faculties were approved including the medical one where clinical teaching increased from two to five: Medical Clinic, Surgical Clinic, Ophthalmological Clinic, Obstetric Clinic, Clinic of Mental and Syphilitic Illnesses. In Berti ordinance²⁴ of October 20th, 1866, clinics increased to seven: reference is made to Medical Clinic, Surgical Clinic, Ophthalmoiatry and Ophthalmological Clinic, Obstetric Clinic, which are already in the previous 1862 regulation, but the Clinic of Skin Diseases and the Clinic of Syphilitic Illnesses, which is divided from the one of Mental Illnesses, are added to them.

In the Regulation of October 11th, 1875²⁵, art. 2, the distinction between Dermopathic and Syphilopathic Clinic and the Clinic of Mental Illnesses is maintained, while Medical Clinic returns to correlate with the teaching of Special Medical Pathology, Surgical Clinic with Special Surgical Pathology, Obstetric Clinic with the teaching of the treatises on Obstetrics and Gynaecology. Ophthalmological Clinic is separated from Ophthalmoiatry and Operative Medicine from Surgical Clinic. The teaching of Medical and Surgical Clinic began in the third and fourth year of the course, while studies extended to other clinics between the fifth and sixth years. On the whole, Bonghi Regulation reduces clinics to six, while clinics return to seven in Coppino Regulation²⁶ in 1876.

²² The Surgical Clinic illustrates only the most complex operations, which were performed on patients, while the Operational Medicine dealt with those external treatments, which use surgery for minor operations. The distinction is well clarified in the 1875 Regulations of the Faculty of Medicine by Ruggero Bonghi.

²³ C. Matteucci, *Raccolta di scritti vari intorno all'istruzione pubblica del senatore Carlo Matteucci volume primo*, Prato, Ph. Alberghetti, 1867, pp. 163-185.

²⁴ Domenico Berti (Cumiana, 1820 – Rome, 1897) succeeded Giuseppe Natoli as Minister of Education. With a decree of August 29th, 1866, Berti had repealed the Regulation of October 23rd, 1865, which had caused riots within universities, particularly in Naples, as soon as it was published. Therefore, the 1862 Regulation remained in force, even if it was defective in the distribution of teachings, which was better structured in the repealed 1865 Regulation instead. The 1866 ordinance was created to regulate the distribution of teachings between the repeal of the 1865 Regulation and the approval of a specific new law, which did not occur until 1875. R. Bonghi, *La Facoltà di Medicina e il suo Regolamento*, Florence, G.C. Sansoni editore, 1876, pp. 16-17.

²⁵ *Ibid.*, p. 138. Bonghi highlights that the part of medical teaching, which needed a greater attention and reform, is the one concerning clinics due to their connection with hospitals and the aspects regarding their administration and, above all, the kind of training they provided. For this reason, he entirely devotes Appendix II, which is published at the end of the 1875 Regulation, to «News on Clinics in Italy and Germany» (pp. 351-436).

²⁶ The general university regulations by Minister Michele Coppino and the special regulations of the faculties and the technical schools for engineers are approved with Royal Decree of October

Mirroring the adoption of various university regulations, the number of university clinics doubled within a few decades after the unification of Italy and spread almost everywhere in big Italian centres, without also including those clinics, which were established in big city hospitals and not strictly linked to university teaching, but with the same aim at practically training doctors – big hospitals made available a large number of patients and cases to be observed, a condition which was considered fundamental for clinical education –. The two – university and hospital – types of clinics coexisted without any regulatory provisions regulating their relationships in the decades after the Unification of Italy²⁷. The questions involving the organization of clinics were various at an operational level, but even more at a training level, from administrative to financial management – the cost of a clinic was high both in fitting out and management –, from the choice of an ideal dimension – they wondered whether a big or small clinic would be better for teaching purposes – to ethical conflicts – the problem of compatibility between hospital and clinic, that is, between care and assistance to the poor and the interests of science and research –.

With respect to the study system of the medical faculty, the debate concerned the relationship between teaching general clinics and teachings special clinics. It was impossible to deeply examine every part of medicine in general clinics so the importance of special clinics emerged to train good practical doctors, especially thinking about those young doctors, who would go to practise as medical officers. Most of the new graduates were destined for the office, which often loomed on the horizon as the only possible professional opportunity; this implied the need to have the broadest possible training, taking into account that several medical officers practised in rural and mountain communities or, in any case, in small isolated villages where it was not possible to make use of specialists²⁸. The need to increase the specialist dimension at a training level

8th, 1876, n. 3434 (published in the «Official Journal of the Kingdom» on October 27th, 1876, n. 251).

²⁷ Forti Messina, *Il sapere e la clinica: la formazione professionale del medico nell'Italia Unita*, cit., pp. 85-102.

²⁸ F. Zurlini, A. Vesprini, R. Sani, *From Medical Officers to Family Doctors: Historical and Training Paths Historical and Pedagogical Reflections on the Italian Context*, «Medicina nei Secoli, Journal of History of Medicine and Medical Humanities», vol. 35, n. 2, 2023, pp. 53-68. In the late 19th-century, the problem of specialization also affects the question of training medical officers, who practise in isolated rural and mountain areas, far from city centres where they can consult specialists. The debate sees opposing positions between those who strongly invoke the need for specialization and those who demonstrate a moderate anti-specialism attitude. The question of specialization in the training of medical officers but also midwives is added to the – perhaps most important – question of continuing education and resources to be allocated to it, especially in small municipalities in provincial areas. For example, for provincial midwives' training and medical practice see how the question of the need for continuing education has emerged since the early 19th-century S. Iorio, F. Zurlini, *Training and practice of the profession of midwife in the Napoleonic age in the March of Fermo*, «History of Education & Children's Literature», vol. XVII, n. 2, 2022, pp. 701-712.

was loudly represented both by illustrious university clinical doctors²⁹ and in medical conferences, even if there was no shortage of discordant voices. On this regard, Ruggero Bonghi expresses opposition to the division of clinical teaching in his Regulations of the Medical Faculty in 1875, well summarizing the question at a scientific and training level, strongly calling for the unity of medical knowledge, since

just saying, the heart of medical culture lies in medical clinic and this must serve to maintain the unity of medical science not only at the bedside of the patient, but in clinical teaching... By postponing the study of research methods from Medical Clinic to special courses, which are not in connection with Medical Clinic, and Special Clinics, all this accessory work increases and swells beyond measure without obtaining any deep and intimate knowledge of the morbid processes and the students, who enrol in such courses and are not unscrupulous and simple at all, completely discourage³⁰.

Ferdinando Coletti also actively takes part in this heated debate, which involves illustrious clinicians, professors and political exponents, with the speech *Della Università e de' suoi studi* and, in the light of other European university realities – in particular, the German model –, he formulates concrete teaching proposals for including Propaedeutic Clinic and Polyclinic, which will be analysed below.

3. *Clinical Teaching according to Ferdinando Coletti*

As it has been already highlighted, Coletti deals with the topic of clinical teaching in the fifth paragraph of his speech in his detailed examination of the medical study system, immediately starting from the proposal for the activation of a Propaedeutic Clinic. Compared to the three-year course in Medical Clinic, Coletti proposes subtracting the first year, devoting it to Propaedeutic Clinic, which had the aim at introducing young students to diagnosis and knowledge of symptoms as an intermediary practical course between theoretical and clinical studies:

Here is training in patients' examination, inspection and questioning to methodically collect their morbid signs; here is practice of percussion, auscultation, measurement, sphygmometry, spirometry, thermometry, uroscopy, aesthesiometers, graphic method, microscope, clinical

²⁹ Giuseppe Timermans, a full professor, director of the Medical Clinic at the University of Turin since 1864, was among the advocates for the increase of special clinics in compulsory study courses. *Cenni storici sulla Regia Università di Torino*, Turin, Ministry of Public Education, 1872, pp. 86-87.

³⁰ Bonghi, *La Facoltà di Medicina e il suo Regolamento*, cit., pp. 142-146. Bonghi particularly refers to the Viennese model where these special courses and special clinics are more developed than elsewhere in Europe, but with little benefit to the students, who attend them.

analysis, electrical devices... This year of preparatory study would be precious exercise for the senses, which we – incurious and neglected – do not bring up enough, but (mind you!) they must be first trained and sharpened by exercise without any tools, otherwise tools only cause hallucinations with slow or badly educated senses, far from bringing benefits³¹.

Then, the students, who are trained in this way for a year, can arrive at the clinical rooms and the bedside of the patient with awareness and basic skills. The unpreparedness to face the Clinic, which was found in young medical students, was due to the gap emerged in medical-clinical education, since general practical-clinical pathology had changed into experimental science – pathological physiology –, trying to establish the general laws of pathology in opposition to the intentions of physiology. The progress of medical science had undoubtedly benefited with the intimate knowledge of morbid processes, but this was to the detriment of preparatory training for clinic³². This gap in Italy had not been filled with evident negative results: young students entered the clinic without any preparatory knowledge, seeing tools they had never known used; the most diligent and lively ones tried to fill the gap on their own, resorting to reading various texts, but without a basic method.

The so-conceived first year of the Clinic risked being a wasted year. Very few universities in Italy, such as the University of Naples, offered courses in Propaedeutic Clinic, but it was a non-compulsory course, while the official establishment of a preparatory practical course between theoretical and clinical studies, which should have included that part of preparatory education, once connected to pharmacology and general pathology, had to be strongly desired. The general model, at which Coletti looked like other Italian professors, was the Propaedeutic Clinic in Berlin, which was directed by Prof. Ludwig Traube³³ with compulsory registration for students. These models were also very clear to political reformers. Regarding the German doctor, Bonghi writes again in his Regulations of the Faculty of Medicine

Prof. Traube holds a conference almost on a single symptom of a patient, he makes his students observe by which physiological and pathological conditions it can be supported; then, if this is feasible, he illustrates his words with chemical, microscopic or experimental demonstrations: the same applies for pharmacology, which he teaches from a clinical point of view: so young students are introduced into practice and, if they bring some exams in, they obtain clarifications and corrections from the professor³⁴.

³¹ Coletti, *Dell'Università e de' suoi studi*, cit., pp. 50-52.

³² Bonghi, *La Facoltà di Medicina e il suo Regolamento*, cit., pp. 388-389.

³³ Ludwig Traube (Ratibor, 1818 – Berlin, 1876), an experimental physiologist and pathologist, Johannes Müller and Johann Schönlein's student in Berlin. After graduating in medicine in Berlin in 1840, he studied in Vienna with Carl Rokitansky and Josef Skoda. He returned to the University of Berlin in 1843. From 1857, he directed the Propaedeutic Clinic at the University of Berlin. A. Verghese, G. Krish, A. Karnad, *Ludwig Traube. The Man and His Space*, «Archives of internal medicine», 1992, pp. 701-703.

³⁴ Bonghi, *La Facoltà di Medicina e il suo Regolamento*, cit., p. 394. Together with Carl

Coletti refers to Bonghi as an illustrious pedagogist in his speech. In particular, he agrees with the proposal to include Medical Physics and Medical Chemistry in the year of Propaedeutic Clinic as courses, which were taught by doctors, who were acquainted with Physics and Chemistry, and not by mere physicists and chemists, who were not able to teach disciplines referring to practical and intuitive medical concepts, albeit they were competent.

Compared to the proliferation of special clinic teaching, Coletti's position is clear: he warns against the risk of dismembering clinical education whose pillars remain Medical Clinic and Surgical Clinic, which must support the unity of medical science both at the bedside of a patient and in teaching.

Still following the German model, Coletti proposes to introduce Polyclinic, in addition to Propaedeutic Clinic: it is a flying clinic, a sort of city ambulance, which is accessible to all the patients free of charge and where everyone can obtain not only a visit and a consultation, but also medications and house calls. The variety of cases and the high number of patients represented a precious training opportunity for young students to learn how to deal with the most urgent cases with the simplest means. According to Coletti, Polyclinic was an excellent training ground for acquiring practical tact and a medical eye, which were not innate qualities, but the result of a long experience of observation: it was the synthesis of an experience raised to the power of intuition that no Academy was able to teach, but doctors had to build on their own through daily practice.

Coletti is always inspired by the German model where Polyclinic and Propaedeutic Clinic were already real in the medical education system. An accurate description of these two educational institutions for medical students at the University of Berlin comes to us from the report, which the doctor Arrigo Tamassia sends to the Minister of Education, Bonghi, who publishes it in the appendix to the Regulations of the Medical Faculty, which were published in 1876³⁵.

Wunderlich, Traube was among the German pathologists, who began to transpose the experimental method into the clinic.

³⁵ Several letters by Arrigo Tamassia, including *Letter from Dr. Arrigo Tamassia about the clinics in Berlin*, pp. 368-386, and *Letter from Dr. Arrigo Tamassia about the conditions of clinical teaching in Italy in comparison with the German one*, pp. 387-397, are published in the appendix to the above-mentioned *Regulations of the Medical Faculty* by R. Bonghi.

Arrigo Tamassia³⁶ draws up a comparative study between German and Italian clinical schools³⁷ during his German stay in Berlin. This document is full of extremely useful information at a political level for a reform of clinical teaching in Italian medical faculties. The Polyclinic is located in Berlin in the same building where surgical clinic is taught. At some hours of the week, all the poor patients go for medical examinations, receive free assistance and medicines and, if necessary, are also assisted at home.

The Polyclinic is directed by a full professor with four assistant doctors, who are paid by the State for this service. The two assistants, who carry out nursing home care, receive a greater pay. The practitioners, who serve at the Polyclinic for a whole year supporting the assistant doctors' work in the management of the Ambulatory, the examination of new patients and those who are already in treatment, are chosen among the young students, who have already attended the Medical Clinic and are about to complete their studies. The Polyclinic is an institute with a dual function: first of all, the function of social medicine as it

³⁶ Arrigo Tamassia (1849-1917) graduated in medicine at the University of Pavia and specialized in legal medicine at the same University. He won a scholarship to specialize abroad for his studies on legal medicine, he was in Berlin with the neurologist Karl Westphal and the pathologist Rudolf Virchow and then, he moved to Vienna, where he worked with Eduard Hofmann, and subsequently to Prague and Paris. After returning to Italy, he was appointed to teach legal medicine at the University of Pavia in 1876. In 1883, he was a full professor of legal medicine at the University of Padua where he was also dean of the medical faculty between 1889 and 1892. He actively took part in the debate on the birth of the new penal code in the unified kingdom. He had combined his scientific and teaching activity with his political activity, always fighting about topics relating to education and school system – even as a senator of the Kingdom appointed in 1909 –. L. Schettini, *Arrigo Tamassia*, in *Dizionario Biografico degli Italiani*, Roma, Istituto dell'Enciclopedia Italiana Treccani, 2019, Vol. 94, <<https://www.treccani.it/enciclopedia/arrigo-tamassia>> (last access: 07.01.2024).

³⁷ The research stays, which arise in academic contexts, represent an important tool for consolidating scientific relationships between Italy and Germany between the 17th and 19th-centuries. If Padua, Pavia and Pisa are important universities for many German and Austrian students, similarly Vienna and Berlin are interesting medical-scientific destinations for Italians. D. Von Engelhardt, *Rapporti scientifici fra Italia e Germania nel XVIII e XIX secolo: dimensioni e prospettive*, «Annali dell'Istituto storico italo-germanico in Trento», vol. 18, 1992, pp. 457-482. The relationships with German universities intensified after the unification of Italy when several German professors – Jakob Moleschott in Turin, Moritz Schiff in Florence, Franz Christian Boll in Rome – were installed in various Italian universities with the function of de-provincializing academic environments. In the second half of the 19th-century, Germany was a European point of reference especially for physiology and pathology, the main scientific fields of exchange together with hygiene and legal medicine, as in Arrigo Tamassia's case. U. D'Orazio, *Scienza Tedesca e Università Italiana: Recezione di modelli esteri nell'istituzionalizzazione delle discipline igieniche in Italia (1885-1900)*, «Medizinhistorisches Journal», vol. 33, n. 3-4, 1998, pp. 293-321. The political intent to de-provincialize the Italian university teaching staff and to raise their quality led the Ministry of Public Education to finance stays abroad with scholarships for new graduates from all the faculties who, once back home, often maintained and consolidated scientific relationships, which they had activated with foreign universities and research centres. Please, also see G. Corbellini, P. Mazzarello, *Medicina e sanità pubblica (1861-2000)*, in *La cultura scientifica in Italia*, Rome, Istituto dell'Enciclopedia Italiana Treccani, 2013, Vol. 33, n. 3-4, 1998, pp. 293-321.

guarantees free assistance to the less well-to-do, carrying out a public hygiene intervention; a training function since it offers a further opportunity to improve medical practice to the students of the Medical Clinic. The success of the German method in educating young students about Clinic must be recognized in the progressive articulation, which trains for the Medical Clinic, starting from Propaedeutic Clinic and reaching Polyclinic³⁸. This is a fundamentally practical-clinical approach founded on a sufficient theoretical basis, which is not however free from contemporary criticism³⁹.

The influence of the German model on Coletti's speech is evident not only from institutions, such as Propaedeutic Clinic and Polyclinic, which are directly borrowed from the University of Berlin, but also from the explicit reference in his speech to illustrious clinicians from the German area, such as Theodor Billroth for his pedagogical contribution to medical studies⁴⁰. Billroth is one of the most famous German surgeons in the 19th-century, who is known not only for his pioneering discoveries, but also for his extraordinary pedagogical ability as a reformer of surgical-clinical teaching⁴¹.

It is known that the admiration for the German university model already dates back to the first half of the 19th-century. The reasons for this esteem were not only linked to efficiency, organisation and discipline, but to the great contribution at a political level, which German university and culture had given to the German political awakening, starting with the national struggle against the Napoleonic invasion. Therefore, these political reasons implied the scientific

³⁸ The effectiveness of German clinical education was reiterated by the internist and pathologist Hugo von Ziemssen (1829-1902), Virchow's student in Berlin, the dean of the Faculty of Medicine for several times and also Rector of the Ludwig Maximilian University of Munich in 1890, in his article *Über den klinischen Unterricht in Deutschland*, «Deutsches Archiv für klinische Medizin», vol. 13, 1874, pp. 1-20. About Hugo von Ziemssen, please see J. Pagel, *Biographisches Lexikon Hervorragender Ärzte des Neunzehnten Jahrhunderts*, Berlin, Vienna, 1901, col. 1899-1902, <<http://www.zeno.org/nid/20008036217>> (last access: 07.01.2024).

³⁹ Despite the efficiency of the German training system, it was not immune from criticism and critical issues regarding an excessive practical approach to clinical training at the bedside of a patient compared to laboratory practice, which emerged in the German medical educational path in the late 19th-century. Please, see J. Bleker, *Medical Students – to the Bed-side or to the Laboratory? The Emergence of Laboratory-training in German Medical Education 1870-1900*, in H. Beukers, J. Moll, *Clinical Teaching, Past and Present*, «Clio Medica», vol. 21, 1989, pp. 35-46.

⁴⁰ Coletti, *Dell'Università e de' suoi studi*, cit., p. 50.

⁴¹ Between 1848 and 1852, Theodor Christian Albert Billroth (1829-1894) attended the Universities of Greifswald, Göttingen and Berlin where he brilliantly graduated. He was a professor of Surgery in Zurich (1859) and Vienna (1867) and an illustrious surgeon. He was a pioneer of visceral surgery and also did the first total laryngectomy for cancer in 1873. His teaching ability and attention to the questions relating to the training of young surgeons with a progressive spirit were proverbial. His teaching style was deeply innovative, not observant of academic hierarchies, but open and collaborative with the students he often met outside the classes on informal occasions. He strongly promoted surgical laboratory as an essential part of training and surgical practice. Most of his students held prestigious chairs of surgery in the main European universities. D.M. Favara, *Theodor Billroth: a surgeon for the 21st Century*, «The American Surgeon», vol. 80, n. 12, 2014, pp. 1192-1195.

and cultural ones and found a particularly fertile ground to be taken up and re-proposed in the political and cultural debate on Italian universities, even after its unification⁴², taking into account the political climate, which pervaded Italy in the 19th-century.

The third paragraph of the speech where Coletti underlines preparatory studies – in particular, the classical ones – are more important than university studies and considered fundamental not only in the approach to clinical teaching but, in general to medical studies⁴³, must be also read with this spirit, as it has been already seen. The basic assumption from which Coletti begins is political-ideological: school strength is the true strength of a nation and its importance equally arises from all its parts. Therefore, lower and higher teaching has equal value in training. In particular, Coletti exalts the value of classical training in the preparatory phase for university studies. The level of culture of a nation is measured by the state in which classical teaching is found. This refines not only taste, but it educates in virtue and the concept of homeland, which constantly illuminates the deeds of the heroes. But classical culture is responsible for the development of critical ability, the unity of method and language, which harmonizes all the knowledge, in addition to moral growth. Coletti hopes that teaching in the Faculty of Humanities will inform various disciplines, binding them into a scientific unity. Without this, the risk is that the outburst of science will dry up in a narrow-minded utilitarianism and the Universities «will produce empiricists who are not scientists, pedants who are not erudites, doctors who are not scholars... medicants who are not doctors...»⁴⁴.

In particular, medical studies have such a connection with all the sciences, not only the natural ones, but also the moral and civil ones, that one cannot help but indirectly touch them all in some way, dealing with medical studies. This is an extremely topical approach for medical training, just think of the contemporary debate on the role of Medical Humanities in medical faculties. None of the disciplines involved in medical studies have a lesser or accessory value because there is no hierarchy of knowledge in this case, but they complement one another. Spencer's positivist hallmark is particularly evident in this last statement, as it is from the very beginning of the speech where University is compared to a scientific organism, an encyclopaedia for higher studies⁴⁵.

Medicine undoubtedly occupies an important place in this encyclopaedia since doctors are entrusted not only with the task of maintaining people's health, but also progressively improving the way for humanity. Therefore, it

⁴² A. La Penna, *Modello tedesco e modello francese nel dibattito sull'università italiana nella seconda metà dell'Ottocento*, «Annali Della Scuola Normale Superiore di Pisa. Classe di Lettere e Filosofia», vol. 22, n. 1, 1992, pp. 227-301 <<http://www.jstor.org/stable/24307903>> (last access: 05.01.2024).

⁴³ Coletti, *Dell'Università e de' suoi studi*, cit., pp. 33-37.

⁴⁴ *Ibid.*, p. 37.

⁴⁵ *Ibid.*, p. 7.

is clear that Clinic, which takes on a key value in medical university training, becomes the heart of his speech and is reason and pretext at the same time to motivate his reform proposals concerning the entire university body.

Conclusions

The attention paid to medical studies occupies a significant part in the debate on Italian Universities in the second half of the 19th-century, as documented by Coletti's speech, the subject of this article. Like a magnifying glass, the analysis of his speech allows us to focus our attention on what were the main topics of discussion about medical science and its teaching in those decades. Political and moral tension pervades all his speech, also considering its author's biography where the scientific and teaching commitment has never been separated from the political one. Training doctors, who are successfully and effectively able to carry out their profession, becomes a scientific, pedagogical, moral and civil question.

In this context, Coletti shows his interest in clinical teaching, in particular Medical Clinic, which is a strategic training tool, especially for the generation of new practical doctors, who are called to practise even in the most remote rural and mountain areas in Italy and, therefore, to respond to various care needs of communities without the specialists' help. Therefore, the attention broadens from the teaching of Medical and Surgical Clinic to the need of teaching Special Clinics whose proliferation runs the risk of fragmenting the unity of medical knowledge. In the search for a model on which to copy the articulation of clinical studies, Germany, which has already had its influence on Italian scientific culture since the early 19th-century, becomes the point of reference, which also reflects the cultural and scientific climate of the century for this aspect, as it is evident in Coletti's speech. Propaedeutic Clinic and Polyclinic are successful examples of the German medical training system to be borrowed in the Italian one, because they are always based on practical training. However, there is a key point to be resolved: German University does not primarily and only aim at professional training, but at scientific training. As Coletti demonstrates, the debate in Italy declines differently at this level: the university structural backwardness – the lack of laboratories and adequate equipment for medical research – and the priority need to create a crowd of practical doctors, who are ready to conquer the most remote Italian corners in the construction of the new Kingdom, forces them to make different choices than the German ones.

The other reference model, the French one, which penetrates through the Piedmontese political class in its unitary and centralized vision, is little suited to the particularism characterizing every Italian corner, even in university

institutions, which have always been an expression of strong autonomy on par with the Municipalities as similar institutions from the medieval era.

Last but not least, in Coletti's speech there is a reference to the roots with the attention to classical culture as a training tool, which is able to maintain the unity of knowledge, to confer critical ability and to imbue medical studies with noble virtues.

Therefore, in Coletti's speech, Clinic becomes the ground where medical-scientific, cultural, pedagogical, political and civil instances find a ground for comparison and synthesis, translating all the richness of the contents, which this kind of mostly unexplored literary sources offers historians of education and medicine.