

Research Article - History of Anatomy and Embryology

## Louis Hubert Farabeuf (1841-1910). A pioneer of topographical, clinical and surgical anatomy

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### Abstract

Louis Hubert Farabeuf (1841-1910) was a reformer of the study of topographical, clinical and surgical anatomy during the 19<sup>th</sup> century. He was a reputable professor of anatomy and many anatomical terms, clinical signs and surgical instruments bear his name.

### Key words

Medical teaching reform, surgical techniques, medical terminology.

### Introduction

Louis Hubert Farabeuf (1841-1910) is considered the founder of topographic anatomy. Unquestionably, he was one of the greatest figures of anatomy who renewed the teaching of anatomy both at theoretical and practical level. In a series of articles published in the journal *Progrès médical*, he had foreseen the architecture and dimensions of the dissecting pavilions as well as the necessary material for this goal, for example the anatomical pieces enclosed in showcases and the anatomical wallboards (Guivarc'h, 2003).

### Biographical sketch

He did his humanities at Provins and studied medicine in Paris. He was successively in 1864 intern and in 1868 assistant in anatomy, and in 1871 he received his degree in medicine. In 1872 he worked as prosector and took office at École Pratique of Paris (Binet, 1946). The same year he failed his aggregation exams in anatomy despite a good thesis he had written by the title *L'épiderme et les épithéliums* (On epidermis and epithelium) (Farabeuf, 1872a). In 1872 he also published a work on the ligature of the arteries (*La ligature des artères*) for which he made anatomical studies on cadavers, but also on the ape, the dog and the sheep (Farabeuf, 1872b). In 1876 he finally succeeded in the aggregation exams with a new thesis entitled: *Le Système séreux* (The serous system), where he examined the relations of the pleura and the

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pericardium with the chest wall and the relations of the peritoneum with its joints, especially in the rotation of the duodenum around the mesenteric vessels. This thesis soon became untraceable (Farabeuf, 1876). After the aggregation exams he was elected associate professor of Anatomy-Physiology-Histology in the Faculty of Medicine in Paris. In 1876 he published his treatise: *Réforme à apporter dans l'enseignement pratique de l'anatomie* (Reformation to be made in the practical teaching of anatomy), having in mind to expose the lamentable state of the practical teaching of anatomy in Paris and the solutions he advocated to remedy it. From 1866 to 1876 he taught dissections and surgical anatomy at the Clamart amphitheater and at the École Pratique of Paris. During the academic year 1876-1877 he gave a course of 32 lessons in histology with so many success that a bigger amphitheatre was needed and the text of its course was printed and distributed in 1200 copies, which was incredible for the time. Finally, in 1878 he became chief of the anatomical studies and in 1886 he was appointed full professor of Anatomy. He retired in 1902 becoming professor emeritus of Anatomy (Huguet, 1991).

His most important treatises were: his doctoral thesis in 1871, *De la confection des moignons, et de quelques moignons en particulier (poignet, coude, jambe); annexes : cathétérisme oesophagien, statistique de fractures par armes à feu* (On the making of the stumps and on some stumps in particular, wrist, elbow, leg; Appendices: oesophageal catheterization, fracture statistics by firearms) (Farabeuf, 1871). His first aggregation thesis in 1872, *De l'épiderme et des épithéliums* (On epidermis and epithelium) (Farabeuf, 1872). His second aggregation thesis in 1876, *Le Système séreux* (The serous system) (Farabeuf, 1862). *Cours d'histologie* (Histology lessons) in 1877 (Farabeuf, 1877). *Précis de manuel opératoire* (Manual of surgical anatomy) in 1880 (Farabeuf, 1880). *Principes fondamentaux d'obstétrique vérifiés, rectifiés ou établis à l'aide de l'expérimentation sur le mannequin naturel et de l'observation de la parturiente. Introduction à l'étude clinique et à la pratique des accouchements : anatomie, présentations et position, mécanisme, toucher, manœuvres, extraction du siège, version, forceps* (Fundamental principles of obstetrics checked, rectified or established using the experiment on the natural mannequin and observation of the parturient. Introduction to the clinical study and practice of deliveries: anatomy, presentation and position, mechanism, touch, maneuvers, breech extraction, version, forceps) in 1891 (Farabeuf, 1891). *Dystocie du détroit supérieur* (Upper strait dystrophy) in 1895 (Farabeuf, 1895). *Les vaisseaux des organes génito-urinaires* (The vessels of the genitourinary organs) in 1905 (Farabeuf, 1905).

## Farabeuf's legacy

Farabeuf's name is given to many anatomical terms and also many surgical techniques and instruments (Manuila, 1975). We can find his name in:

- "Farabeuf's retroclavicular artery" or "superior scapular artery" or "supra-scapular artery", branch of division of the thyro-cervical trunk, which runs behind the clavicle, passes over the coracoidal indentation and ramifies in the pit under the spine of scapula. It gives, among other branches, an acromial branch.
- "Sacral-recto-genital aponeurosis of Farabeuf and Pierre Delbet" or "utero-sacral ligament" or "utero-sacral retraction", fibromuscular and vasculo-nervous formation laterally joining the posterior surface of the supravaginal cervix to the ante-

rior sacrum. It consists of smooth connective and muscular bundles and contains part of the hypogastric nerve plexus and some arterioles and venules depending on the middle hemorrhoidal pedicle. It raises a peritoneal fold, the utero-sacral fold and helps to limit the cul-de-sac of Douglas. It crosses the rectum laterally, where most of the muscular fibers are lost.

- “Farabeuf’s triangle”, triangular space bounded behind by the internal jugular vein, forward by the thyro-linguo-pharyngo-facial trunk, and at the top by the hypoglossal nerve. It is in this triangle that we must look for the external carotid artery at its origin as well as its first collateral branches.
- “Farabeuf’s knocker” or “posterior zygomatic tubercle” or “retro-mandibular tubercle”, bony protrusion located on the longitudinal root of the zygomatic process at the antero-superior pole of the external auditory meatus.
- “Farabeuf’s sign”, in obstetrics, one of the best signs of the beginning of delivery; two fingers introduced through the vagina touching the lower edge of the pubic symphysis and directed towards the 2<sup>nd</sup> sacral vertebra do not reach the anterior surface of the sacrum because they are stopped by the head of the baby which starts to descend within the pelvic cavity. The existence of a sero-sanguine hump can make this sign misleading.
- “Ligament prégléno-sous-huméral” or “Lower glenohumeral ligament,” or “Schlem’s lard ligament”, ligament of the scapulo-humeral articulation extended from the antero-inferior surface of the glenoid bead and the part of it adjacent to the neck of the scapula to the anterior-internal surface of the surgical neck of the humerus.
- “Tibio-scapho-gleno-sustentacular ligament of Farabeuf”, or “deltoid ligament”, superficial layer of the lateral internal ligament of the ankle joint of triangular shape. It is inserted by its top on the tibial malleolus and by its base on the internal face of the tarsus.
- “Farabeuf’s ischio-supra-cervical ligament” or “ischio-femoral ligament”, triangular fibrous band lining the posterior surface of the coxo-femoral capsule, inserting at its base on the postero-inferior side of the cotyle, covering the whole extent of the sub-cotyloid gutter and with its summit in front of the digital fossa of the great trochanter.
- “Farabeuf’s operation”, a) surgical technique for the hemisection of the lower jaw, b) Ischio-pubiotomy technique.
- “Farabeuf’s amputation”, amputation of the leg at the middle third, with large outer flap.
- “Farabeuf’s retractor” or “appendicitis retractor”, a double-ended handheld retractor which is used in a variety of surgical procedures, particularly those that require a small incision, with great use in appendectomy. This retractor consists of a solid piece of stainless steel with one angled blade at each end which is smooth with a slight upward lip at the end. This is a very common surgical instrument in every day surgical work until today.
- “Farabeuf’s forceps”, two-point bone forceps, allowing the jaws to be adjusted according to the size of the bone to be grasped.
- “Farabeuf’s saw”, amputation and resection saw whose blade can pivot on its longitudinal axis. It comprises several interchangeable blades of various widths.

## Farabeuf's reform of anatomy

In 1878, Farabeuf was appointed chief of the anatomical studies, while the former pavilions of the Rue de l'École de Médecine were destroyed. In two years, he succeeded in replacing the old buildings on the Rue Vauquelin with modern pavilions. But his most important initiative was the reform of the education of anatomy which he introduced and lasted almost one hundred years (Dupont, 1999).

Under his impulse, dissection was compulsory for all students and a certificate of dissection, which was delivered only by École Pratique, was required to pass the exams of anatomy.

The anatomy classrooms were designed by Farabeuf. Teaching was radically transformed. The beginners, who after the osteology class dissected muscles and joints, were separated from the older and more skilled students who worked on the thorax, abdomen, head and neck with order and discipline under Farabeuf's supervision. A well-paid staff of prosectors and assistants facilitating the anatomy students. In addition, the use of cadavers was greatly improved. For their preservation there were three buildings in the courtyard behind the pavilions; a room for injecting into the cadavers phenolic glycerine, whose odor was less penetrating, a room for the storage of 80 cadavers, well ventilated and dry, and a cold room.

Farabeuf did not stay locked in his office. He supervised everything; the pupils through the glazed wall of his study, the dissection by leaning on the shoulder of students questioning and guiding. He monitored not only the presentations of the prosectors but their aggregation exams in surgical anatomy. After his appointment to professorship on 1st January 1887, he remained one year still at the head of the anatomical studies despite the arrival of his successor Paul Poirier (1853-1907). For ten years, Farabeuf went to live in École Pratique in his anatomical laboratory, where he prepared "subjects" and courses believing that: "we do not profane bodies, we use them for profit of the living". He spent his days there having actually lunch on the spot of the autopsy table (Guivarc'h, 2003).

Farabeuf was contrary to the so-called 'free-professors' of anatomy (*professeurs libres*). These 'free-professors' were authorized in 1813 to teach within the framework of École Pratique in order to remove the small private amphitheatres, still scattered in Paris. They were either 1) surgeons in hospitals either awaiting promotion or at their ninth year after receiving their aggregation in anatomy at the end of their nine years, 2) physicians, 3) non-physicians, such as Paul Richer (1849-1933), a painter whom Farabeuf would have liked to attach to himself as a painter and who made a career at the Fine Arts.

After 1850, the growing number of students and the small number of professors made these 'free-professors' very popular. They demonstrated and taught in a pavilion of the École Pratique or in small private amphitheatres. Their vogue was great among the well-to-do students who paid them, especially as many official professors drew little or no or had others to draw their anatomical drawings for their lessons. Farabeuf reproached these 'free-professors' for their success with the students, their laxity, but especially the misappropriation of pupils who on the approach of the practical examinations gave twelve francs to do dissections in private places, which theoretically was forbidden, while the cadavers or parts of them to be dissected were stolen from the Faculty of Medicine. Farabeuf managed to obtain a decree prohibiting

not only the practice of private lessons but also their validation for students, which de facto led to the disappearance of these 'free-professors' (Guivarc'h, 2003).

## Conclusion

Farabeuf was a great anatomist and a remarkable surgeon and obstetrician. But his real title of glory, the title to which Farabeuf was most sensitive, was to be: «l' organisateur d'un enseignement pratique original de l'anatomie à la Faculté de médecine de Paris » (the organizer of an original practical teaching of anatomy at the Faculty of Medicine of Paris) (Dossier de la Légion d'honneur, A. N. Lh/931/O7, No 29404).

## Acknowledgments

All authors declare no conflict of interest

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