A RENAISSANCE PROMOTER OF MODERN SURGERY (Abstract): The present paper aims, exploring the history of Renaissance medicine, to evoke the figure and work of the priest, surgeon and anatomist, Guido Guidi (Vidus Vidius) (1509-1569). The XVIth century is considered a period marked by artistic and scientific effervescence in the western part of Europe and Guido Guidi was a first order personality, grandson of Domenico Ghirlandaio and friend of Benvenuto Cellini. He was appointed by the King Francis I the first professor of anatomy and surgery at the newly founded Collège de France. On demand of the King, he wrote Chirurgia è Graeco in Latinum conversa Vido Vidio Florentino interprete, cum nonnullis eiusdem Vidii comentariis (1544), a beautifully illustrated original surgery book that became for the following two centuries the main source in teaching surgery. Our study realized a detailed assessment of the book and especially of its illustrations belonging to Francesco Salviati. Exploring the life of Guido Guidi, we were also able to point out other significant contributions in the field of anatomy and clinical medicine as De anatome the first book where are presented disarticulated, the bones of the skull base and also the discovery of the chickenpox. Some surgical personalities attributed to him both the elaboration of the term appendix vermiformis and the first description of an aneurysm, he treated with the help of Fallopio. Although forgotten today, Guido Guidi was a leading figure of the Renaissance medicine both in France and Italy. Keywords: GUIDI, SURGERY BOOKS, RENAISSANCE MEDICINE, SALVIATI, COLLEGE DE FRANCE.

At the beginning of the XVIth century Florence was the theater of major social and political convulsions occurring against the background of the economic prosperity and artistic effervescence at the peak of the Renaissance. The richness and patronage of the Medici family decisively contributed to the development of an unequaled Florentine artistic universe and to the apparition of brilliant masters and apprentices who scientifically studied the human body through dissection in order to achieve a realistic representation in works of art. This was the moment when the canons of anatomical drawing were established and the artistic anatomy began to be taught by cadaver dissection at the Arcispedale Santa Maria Nuova. Here Leonardo da Vinci (1452-1519) and Marcantonio della Torre (1481-1511) started to write a book with drawings
after dissection preparations but the plague of Florence (1511) interrupted this collaboration, due to the death of della Torre.

In 1540 was established, under the patronage of Grand Duke Cosimo I de Medici, the “Accademia degli Umidi”, which later became ”Accademia Fiorentina” (in 1541) (1). Here, anatomy was thought initialy by Cosimo Roselli (1439-1507) and later by his pupils, Piero di Cosimo (1462-1521), Andrea del Sarto (1486-1531), Domenico Ghirlandaio (1449-1494). This effervescent atmosphere marked by the enthusiastic desire for knowledge, developed the brilliant triumvirate Leonardo da Vinci, Michelangelo (1475-1564) and Benvenuto Cellini (1500-1571).

LIFE AND ACTIVITY

In this artistic Renaissance Florence was born, on February 10, 1509 (2, 3, 4). Guido Guidi, the son of the well-known Florentine physician Giuliano Guidi and Costanza Bigordi, daughter from a second marriage of the great painter Domenico Ghirlandaio.

The data of Guido Guidi’s childhood and how he obtained his university degrees are missing (5), but it is believed that the young man, with artistic blood in his veins and raised by his father in the medical tradition required by the Hippocratic oath, received a humanist education of the highest quality. In the first phase of his life, until 1535, he studied in Florence, becoming a connoisseur of Greek and Latin. Given his high education and early erudition he was noticed by the Cardinal Ridolfi, who took him under his protection. In the Cardinal’s entourage, the young Guidi had access to the famous Laurentian library that housed manuscripts of great value in all areas of science and art. Among them there was a codex of the Byzantine physician Nicetus from the X-th century, which contained, collected by Apollonius of Kitium, the Hippocratic works: De ulceribus, De fistulis, De vulneribus capitis, De fracturis, De articulis and De officina medicinae, the last three commented by Galen, in Galen’s treatise De fasciis and Oribasus, The laqueis and De machinamentes.

Between 1535 and 1538, Guido Guidi went to Rome where he worked with famous surgeons of the time, Antonio Ponzanello and Giacomo Rastelli, the latter being the personal surgeon of Popes Clement VII and Paul III. Under the guidance of Roman masters he became familiar with the use of contention and continuous extension devices in the treatment of strains and fractures. It seems that in Rome Guido Guidi met for the first time Benvenuto Cellini and warm friendship developed between the two Great Men.

After returning to Florence, Cardinal Ridolfi encouraged Guido Guidi to translate De ulceribus and De fistulis, adding not only his own comments but also that of Aristotle (causam nos docuit Aristoteles, quum tradit calorem in unu coactum au- geri...) and of Eudemus (370-300 BC), Cornelius Celsus (25 BC-50 AD), Paulus in Aegineta (625-690), and Soranus of Ephesus (ca. AD 98-138) (Soranus, cuius scrip- ta de vulneribus capitis adhuc extat...) as is specified in Chirurgia pp. 67-72.

King Francis I of France informed by Primaticcio (1504 - 1570), by the diplomat Alamanni and by Cardinal Ridolfi himself about the audacious attempt of the young erudite, invited him to Paris in 1542. From that moment the life of Guido Guidi had sensationally changed. He presented to the King the original codex and his translation of it, making an incredible impression. He was appointed the first professor of medicine and surgery at the newly established
Collège de France, the personal physician of the King, and was requested to complete the translations in order to publish a book of surgery, according him important ecclesiastical benefits.

At Paris, where Guidi taught and practiced medicine between 1542-1547, for unknown reasons he changed his name, becoming Vidus Vidius as he will be cited in the classical anatomical literature, including *Nomina Anatomica*. We believe that the truth is more subtle; tempted by the advantages of belonging to the clerical elite, Guido Guidi, skillful user of Latin, Greek and Arabic, had chosen for himself this cognomen derived from ”widower” or ”alone”, thus declaring his intention of becoming a priest. This idea is supported by at least two arguments: Tuscan contemporaries, including Cellini, continued to call him Messer Guido Guidi; in a pirate edition of *Chirurgia è Graeco in Latinum conversa* from 1553, the author was named Guy i.e. Guido the Widower (6).

In his private life, fate favored him again. The young Florentine became very good friend with Benvenuto Cellini who hosted him in his castle, Petit Nesle and, in his autobiography, made him an extremely flattering characterization. Here he met Pierre Galtier, the future editor of *Chirurgia è Graeco in Latinum conversa*, who worked in typography in the Paris castle of Benvenuto Cellini.

Guido Guidi became the first professor of medicine at the Collège de France, his clear and attractive public lectures on medicine and surgery, as well as his elegant style (also reflected in his writings) brought new students and a large audience and at their request he began to carry out public demonstrations of anatomy. He worked...
intensively until 1543 completing (fig. 1) the book entitled *Chirurgia e Graeco in Latinum conversa, Vido Vidio Florentino, cum nonnulus eiusdem Vidii commentariis* (7).

It seems that the book was printed under the guidance of Benvenuto Cellini himself, as demonstrated by the analysis of the capital letters at the beginning of the chapters, in which can be seen the floral ornaments used by Cellini for the armor of Cosimo I de’ Medici (8) (fig. 2).

Guidi presented the book to the King Francis I, requiring a protection against plagiarism and republication by others. The King wrote him an eulogistic foreword, calling him "notre cher & bien ayme maistre Vidus Vidius de Florence, docteur en medecine, notre medecin ordinaire & lecteur en Paris” and then he added ” nous a faict dire & remonstrer, quil estoit apres avoir laisser a imprimer a ses grandz fiz, mises & depenz, & au gand proffit & promotion des estudians en medecine & principalement en la chirurgie ung liure intitule....pour le teps & terme de six ans prochainement venant a commencer du jour & date de ces presentes, autres imprimeurs ne puissent imprimer ne vendre ledict liure ensemble, ou par ses parties, que ceulx a qui ledict permectra” establishing penalties and significant punishments for infringement of that prohibition. The royal document dated January 2, 1543 (7, p. 22 iiij) is the first known written copyright. But the author was not satisfied with that. He presented the manuscript to Pope Paul III and received, after 10 months of thorough review of the book in the papal chancery, a brief preface that proclaimed the originality and usefulness of the book and prohibited the partial or total reproduction under the penalty of excommunication (7, p. 22 ii).

*Chirurgia è Graeco in Latinum conversa* that became a reference book for the study of surgery in the XVI to XVIII centuries, begins as a result of author’s erudition, with a bilingual alphabetical index in Greek and Latin, where, across 14 pages, the correspondence of the surgery terminology is specified in both languages. Moreover, Guidi presents an index of authors and works, outlining that the first six chapters, *De ulceribus, De fistulis, De vulneris capitis, De fracturis, De articulis, De officina doctors*, belong to Hippocrates and are commented by Vidius (the first three chapters) and the following three chapters to Galen.
Chapter VII contains Galen’s *De fasciis*, and Oribasius’ *De laqueis* and *De machinamentes*, commented and illustrated by Vidus in collaboration with the Florentine painter Francesco Salviati (9) (fig. 4).

If, in the study of the six Hippocratic works, Vidus had only a theoretical contribution, the work of Galen *De fasciis* was richly illustrated with original designs of head bandages such as a complete capeline, single or combined with a goni-on/chin double support sling, other types of bandages for craniocervical injuries, upper limb and thorax bandages, seen in

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**Fig. 3.** A. The instruments imaged for different interventions on the bones (commentary illustrating *De fracturis*); B. Types of bandages for limbs and trunk; C. Models of surgical knots (7).
the Tabula LXXII, showing a shoulder immobilization technique used until today, such as the Desault bandage. Of the thoracoabdominal bandages, we mention the contention system used in the diastasis recti, where the bandages are arranged alternately, in the direction of the fibers of the oblique external and internal muscles of the abdomen and united in the midline as a raphe, which doubles the white line (fig. 3).

Of the periarticular bandages, the intercrossed pattern slings of the thumb, groin and talocrural bandages conclude the series of 138 drawings of the De fasciis chapter.

From the work of Oribasius (AD 320-403), Vidus selected, commented and supplemented the chapters on knots and orthopedic devices to reduce dislocations and fractures.

Fig. 4. Devices (machinamentes) for continuous extension (A) and luxation reduction (B) reproduced from original engravings of Francesco Salviati, preserved in Paris, at the Ecole Nationale Supérieure des Beaux-Arts, Inventario Masson, 210 (A) and Bibliothèque Nationale de France (B) Départements des Manuscrits (9).

In the work of Oribasius, the contribution of Vidus consisted in the diversification and improvement of the knot systems and especially of the outstanding graphical presentation that facilitated learning. Finally, the systems for the reduction of dislocations and fractures are initially presented segmentally, and then gradually assembled, indicating where to put the sprockets and pulleys thus making possible the replication of the device for any physician. The images of this last chapter of Guidi’s Chirurgia were also made by Francesco Salviati by engravings on copper plates (fig. 4).

After the death of King Francis I (1547), Guido Guidi returned to Italy and settled in Pisa, where he practiced surgery and held public lectures of surgical anatomy through demonstrative dissections of human cadavers (10, 11, 12).
This allowed him to accumulate a notable experience in surgery and anatomy that enabled him to add new discoveries to the scientific heritage of the time. In the surgical field he was the first to describe the arterial aneurysms, an original technique of tracheotomy, a procedure of lengthening the foreskin of the penis incurvatus or other sequels of circumcision, cutaneous plasty of trophic limb ulcers, nose plasty, plaster or wax dental implants to improve phonation and he established the axillary lines as landmarks for the thoraco-brachial approach (13, 14).

He named in Italian language _vermiforme_, the ileocecal appendix, discovered by Berengario da Carpi (1460-1530) and described the _ostia_ of the hepatic veins openings in the inferior vena cava. In the accompanying drawing it can be observed a rare anatomical variation of five such _ostia_, demonstrating that the study was done by dissection on human corpses.

In the medical field, he was the discoverer of chickenpox. By studying diabetes, he concluded that it was a consequence of a single glandular insufficiency (without specifying the gland). He successfully applied the physiotherapy, using the therapeutic qualities of the baths of Pisa (15).

In the anatomy field, he wrote a remarkable treatise – _De anatomie_ (fig. 5) – in which he established the conditions of
building a *Theatrum Anatomicum* (5), presented, for the first time, the disarticulated bones of the skull base, described the orbital process of the palatine bone and the pterygoid canal that bears his name – the vidian canal (16).

**CONCLUSIONS**

Although forgotten today, Guido Guidi was a leading figure of the Renaissance medicine, both Italian and French (17, 18, 19). He was the first professor of anatomy and surgery at the Collège de France, and his *Chirurgia*, remained the reference book for teaching surgery in the following two centuries. It is considered the first original surgery book, beautifully illustrated by a famous contemporary Florentine painter. In the field of anatomy Guido Guidi was a prominent personality with important contributions that lasted until today as eponyms in *Nomina Anatomica*.

**REFERENCES**