PICTURES FROM THE PAST OF THE HEALING ARTS

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ORVOSTÖRTÉNETI KÖZLEMÉNYEK

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– SEMMELWEIS MEDICAL HISTORICAL MUSEUM, LIBRARY AND ARCHIVES–

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LECTURIS SALUTEM

Welcome to the visitor who enters the birthplace of Ignác Semmelweis, the home of the Museum, and takes this volume in hand.

In this present publication we do not seem to give the reader a catalogue with a dry statistical record of the exhibits, but to compile a "museological reader", a guide to the exhibition, first of all to inform the visitor with a coherent about the museum, and to help him through the exhibition halls. Furthermore, it should fulfil the task of recalling to the visitors everything that they have seen – when reading it a new at a later date – thus reminding them of the fascinating relics of the past and making them acquainted with the past of museum affairs concerning medical and pharmaceutical history in Hungary, the history of Ignác Semmelweis's birthplace, his life and work and the formation and activity of the Semmelweis Medical Historical Museum, Library and Archives and the collections of its two departments.

The Semmelweis House has become a house of symbols. It has been rebuilt from its ruins to become a symbol of commemoration and progress. Semmelweis's personality radiates a symbolic guidance, a passionate searching spirit in favour of mankind wisdom and genius, an indomitable fight for truth, and a firm belief in its victory. It is the duty of all Hungarian physicians and pharmacists to keep and cultivate his memory. His life-work is the inheritence of everyone who is determined to serve the cause of public health. We present this volume – the result of the common efforts of our colleagues – in this spirit, and hope to have served a good cause.

Emil Schultheisz

PREFACE

There are considerable medical historical collections in many countries of Europe, thus the foundation of a Hungarian medical historical museum was not only necessary but an urgent demand. The study of medical history is not a compulsory part of the curriculum in the Hungarian medical universities, consequently the Semmelweis Medical Historical Museum is entrusted also with the task of teaching the new generation of physicians the past of the healing arts, thus contributing to the development of the medical profession's moral and historical consciousness.

An educated mind has no doubt about te necessity of a Medical Historical Museum. To-day no branch of science can exist and be developed without the knowledge of its history of development. Medical history is an organic and inseparable part of the universal history of science; if we acknowledge the latter, the research into the historical development of medicine has to be regarded as essential.

In addition to pointing out the general connections, medical history – and within its scope the medical historical museum – has a special significance. The new generation of to-day is confronted with all the results of medicine that have been reached so far. Without the knowledge of the history of medicine the young generation would never realize how much trouble, sacrifice and inventive imagination was required to produce this heritage, this vast knowledge in the field of medicine that has been accumulated. For example, the development of medicine and medical writing was greatly retarded by historical circumstances in the period of the Turkish occupation and during the various fights for independence, lead by the Estates.

The most significant medical historian of the 18th century, *István Csanádi Weszprémi* made great efforts to collect all available data on the lives of the physicians of Hungary and Transylvania who had preceded him. Professor *Ferenc Bene,* the prominent physician of the first half of the 19th century wrote another important work: his book of five volumes, a manual of internal patho-

logy, had been highly appreciated abroad. Real progress was achieved, however, only after the War of Independence, thanks to the school which developed around *János Balassa, Ignác Semmelweis, Lajos Markusovszky, Sándor Lumniczer, Frigyes Korányi* and later with the appearance of *József Fodor, Endre Hőgyes, Sándor Korányi* and *Vilmos Tauffer*. There was no lack in great physicians, but the state of public health and especially the availability of hospitals was most unfavourable by comparison to the countries of Western Europe. It was due to pecuniary troubles on the one hand and the lack of understanding on the other: the passivity of both leaders and broad masses towards public health. It will perhaps suffice to refer to the report of *Kornél Chyzer,* medical officer in the county of Zemplén to serve as an example, who speaks about the "registered" midwives being paid a few pennies, some fried dough and half a litre of brandy in return for their services at a child-birth. *Vilmos Tauffer* struggled for half a century until he could change these utterly backward conditions.

Besides the general underdevelopment of public health it is worth while saying a few words about the difficulties that even the greatest minds had to scope with. *Ignác Semmelweis* had only a few beds at his dieposal for proving his discovery which changed the whole field of obstetrics. But we may also refer to *Pasteur* who had to bow when entering his "laboratory". When all the world was hostile, how deep were the roots of the "misbeliefs" they undertook to exterminate! In order to make successful research work in the future we must learn from our predecessors that knowledge combined with intuition ist not enough for creating new theories and their realization in prectice, but constant work, sometimes even courage are required, too, for defeating backwardness.

Beyond the sphere of healing, medical history contributes also to a deeper understanding of the deeds and personalities of great historical personalities: leading statesmen, military leaders, representatives of certain branches of art and science. The actions of many historical personalities were influenced by their state of health, e. g. the illness of Nero or Napoleon, the fracture of Emperor William's arm, etc. Victories of wars were nullified at once when an epidemic broke out in an army. The recapture of Buda from the Turks was delayed a hundred years, since the liberating army which started from the West in 1594 could reach only Esztergom due to the dysentery which devastated among them. *Sándor Korányi* reminds us in one of his lectures on medical history that in France there was, in the 16th century great filth and squalor even next to the Royal Palace, as Paris had not yet been paved and provided with sewerage, which contributed to the erection of Versailles Palace. *Magellan's* long voyage round the world could not have been carried out without the observation that scurvy could be avoided by consuming onion and fresh vegetables. In the Franco–Prussian War of 1870–1871 the number of smallpox cases on the French side was higher than that of the wounded, while on the German side – thanks to the introduction of *Lister's* method – even the rate of recovery of the injured

was influenced favourably. In the Second World War the dangerous effects of the jungle were counteracted with the use of the insecticide DDT.

Examining the question from the other aspect, we may see how far the state of public health was affected by wars. It will suffice to refer to the crusades and the spread of syphilis and leprosy which accompanied them together with various other epidemics. World War II on the other hand greatly contributed to the large scale production and use of penicillin and other antibiotics.

These examples – picked out at random from time and space – aimed only at demonstrating the significance of medicohistorical research work from the viewpoint of history, cultural history and more strictly its significance in the history of the profession. Scientific research work is, however, only a part of the activity of the Semmelweis Medical Historical Museum and Library. Its other function is to collect, preserve and scientifically catalogue the objects and documents of medical history, and present them in exhibitions. To this goes the precious collection of the Archives. The Library with a collection of almost 100,000 volumes is an indispensable place for scientific research work and documentation. This present volume aims at introducing the reader to this manifold activity and the results of this work.

PICTURES FROM THE PAST OF THE HEALING ARTS

(GUIDE FOR THE EXHIBITION)

I. MEDICINE IN THE ANTIQUITY AND MIDDLE AGES

Medicine is almost as old as man himself. His instincts, necessity, and experience taught man the art of healing.

The objects and other illustrating material in the first part of the exhibition ranging from the Neolithic Age to the Late Middle Ages – with such outstanding peaks as the the eight medical papyri in Egypt, Hippocrates and the Classical Greak School, the great physicians of the Roman Empire, Arabian medicine – represent the development of medicine.

From primeval primitive curing imbued with superstitions and the fear of the unknown forces of nature, through the medicine of the ancient Orient making already use of the observation of nature we come to rationalistic Hippocratic medicine suggesting already a classification for the symptoms of the diseases. The knowledge of the Greek physicians was further developed by the medical men of the Roman Empire, especially in the field of practical surgery.

After the decline of the Byzantine medical philosophy insisting on its strict schemes, the Hellenistic scientific results were reawakened and preserved for the Middle Ages and even for the Modern Age by the prominent humanistic culture of Islam.

1. Prehistoric and Primitive Medicine

The characteristic feature of primeval primitive curing was that the practice of healing was based on superstitions, misbeliefs and mystical theories, since the real causes of disease could not be explained. Within the limits of their knowledge, however, they made good use of their rudimentary instruments. By collecting drug plants they introduced a practice surviving even to-day.

The earliest exhibits of the museum (Fig. 1.) are an idol from the Neolithic period, the representation of a cultic progenitrix and a symbol of fertility (Fig. 2.). The trephined skull of a woman from the period of the Conquest of Hun-

gary is an interesting find from a medicohistorical angle, as the regrowth of bone tissues around the trepanation holes prove that the patient managed to survive the difficult operation (Fig. 3–4.). The "diagnostic" bones and drugs of a witch–doctor (medicine man) from South-Africa are of special interest as they represent the methods of healing among the primitive tribes. The pulverized medicine was preserved in a horn to be kept dry. (Fig. 5.) Furthermore we present a mask for expelling disease and a snakefetish made of gazelle horn.

2. Medicine in the Ancient Orient

The written history of medicine begins with the claytablets (ostrakas) of Babylon and the Old-Egyptian medical papyri. One is tempted to think that the high degree of artificial mummification, the exploration of the inner secrets of man's body had a beneficial effect on Egyptian anatomy. This was not so. The dead body was considered unclean, so the process of embalming was carried out not by physicians – the priests of Sechmet – but by the embalmers living in a separated necropolis, who were lacking medical knowledge. The physicians on the other hand gained their anatomical knowledge not by studying the human body but rather from analogies observed on the sacred animals. Five amulets can be seen in the exhibition, a Horus eye carved in carnelian to protect against black-magic and snake-bite; a heart of ibis, the sacred bird symbolizing the blood of Isis, a backbone made of blue faience which can be connected to Osiris; a sacred scarab, symbol of resurrection carved in white bone; a damaged Toeris statuette of blue faience from the Ptolemaic Age (4th-lst cent. B. C.) protecting pregnant women (Plate I.). The head of a mummy (Fig. 6.) from the Roman Age refers to the pharmaco-historical practice according to which mummies were ground to powder and used for making up of the medicine called "Pulvis Mumiae" to which magic qualities were attributed. In modern times when the number of mummies decreased, the "mummy powder" was made of skulls and its use was continued even into the 18th century being considered a most elegant medicament.

3. Greek and Roman Medicine

The relics referring to Greek and Roman Medicine are presented side by side (Fig. 7.). Some statuettes from the Hellenistic period (about 330–30 B. C.) representing pathological deformations might be of interest. According to some scholars they might have been ancillary objects used for teaching in the medical school of Smyrna (Fig. 8.) Galen (130–200 A. D.), one of the most famous of Roman physicians had also studied in the School of Smyrna.

Hippocrates (460–377 B. C.), the Father of Medicine, is portrayed in classical style in the statue made by an unknown French sculptor in the 18th century (Fig. 9.).

The vessels and medical instruments showing the development of Roman medicine are all finds from Pannonia. The glass vessels contained different oils and beauty preparations. An especially precious find is a balm-container which is 50 cm. high. The Romans who had lived in Pannonia imported their glass vessels from Italy or the glassworks of the Rhineland. The vessels deriving from the 2nd and 3rd centuries A. D. were also produced in those places. The medical instruments were excavated in Aquincum. The bronze scalpel is especially noteworthy; its shape has hardly changed during the past eighteen centuries (Fig. 10.).

4. Islam and Public Health

The two basic components of the world of Islam are the Arabic language and the Muslim religion. In their great age the territory they occupied reached from India to Spain. They preserved the culture of the peoples which came under their rule: the culture of the Persians, Arameans, Copts, Jews and that of the Central Asian peoples. Arabic medical writings to some extent preserved and developed classical Greek medicine. The Nestorian Christian physicians had a great influence on Arabic medicine. All that combined with Muslim spirit brought about a specific synthesis. Islamic culture flourished in the 8th–11th centuries.

The sacred book of Islam, the Koran contained also orders referring to washing, fasting, etc. This is why the enlarged photo representing a page from the Koran, a detail of a chapter (sura) referring to the affairs of health is exhibited on the wall of the exhibition hall dealing with this period. (Plate II.) Among the greatest personalities of Arabic medicine mention should be made of *Avicenna* (980–1037, in Arabic called *Abu Ali Husain ibn Abdullah ibn Sina*). His encyclopaedia "Canon Medicinae" composed in five volumes is a masterpiece of Arabic scholasticism. This work, the encyclopaedia of contemporary medicine, served as a main textbook until the seventeenth century. The exhibited copy was published in 1658 in Louvain (Leuven, Löwen). The coloured slide represents an instructive picture from a 15th century codex "Cyrurgia cum formis instrumentorum" – preserved in the University Library of Corna – the Latin translation of *Albucasis'* (cca. 912–1013) 'On Surgery...' representing the extension of vertebrae. Furthermore we present some Arabic health-protecting amulets and vessels and jars for carrying water (Fig. 11.).

Beside Arabic medicine another great "trend" of medieval medicine was scholastic medicine lasting until the middle of the 16th century. The period between the 6th and 12th centuries is known as monastic medicine. At that time nursing and healing people were part of the mission of the monastic orders. The monks knew Latin and combined their knowledge obtained through observation with the elements of Classical medical and natural sciences. Monastic medicine came to an end in 1130 when the Council of Clermont forbade the clergy the practicing of surgery.

From the 12th century onwards at most medical universities the basis of teaching was the study of the ancient classical works. Practice, especially surgery, fell into the background. Scholastic medicine is well characterized by the words of *Arnoldus de Villanova* (1235–1312): "The physicians of Paris study only for the sake of the university and not in order to obtain knowledge and practical skill."

The pictures here refer to the life of the universities. The book in the show-case is the work of *Hieronymus Brunschwig* (1450–1533) entitled "Dis ist der Chirurgia" and published in 1597. It is one of the first German surgical works to have been printed. Next to it there are ribbed Gothic pharmaceutical mortars dating from the 14th–16th centuries (Plate III.). Our earliest pharmacy jar was produced in Faenza between 1520 and 1530 (the word *faience* derives from this name). It is an albarello called "alla porcelana" meaning "porcelain-like". The inscription in minuscles reads: "g.d.ocha". It was imported from Portogruaro, a Venetian province in Italy. The earscoop, a surgical instrument from the beginning of the 16th century, was unearthed during the excavations of the castle of Eger. The coat-of-arms granted to *Mihály Dabi*, the royal barbersurgeon, by King Sigismund in 1430 deserves attention both from the viewpoint of heraldry and medicohistory (Fig. 12.).

II. THE BIRTH OF MODERN MEDICINE

The critical view of the modern searching mind influenced by the Renaissance demanded the reevaluation of the classics. The discovery of printing made the newly translated works accessible to an ever increasing number of readers. Owing to the geographical discoveries new drugs (ipecacuanha, guaiacum, chinin) came to be used in medical practice. Renaissance art called attention to anatomy. *Leonardo da Vinci* was its pioneer and reached its first peak in the work of *Vesalius*. *Leonardo* studied the anatomy of the human body in order to be able to achieve in his paintings and sculptures a more true representation of life. With *Vesalius*, on the other hand, anatomy became a science in the service of medicine.

The wars of religion contributed to the development of practical medicine, especially surgery. The most prominent of the military practitioners was *Ambroise Paré* (1510–1590), who – beyond the practice obtained on the battlefields – perceived the importance of anatomical knowledge based on the anatomy of Vesalius and thus opened a new period in the history of practical surgery. The great figure ot the age, *Paracelsus* (1493–1541) professor in the University of Basle is said to have publicly burned the books of *Galen* and *Avicenna* to emphasize his view that healing must be based on direct experience. Englands has also given a great genius to medicine in the person of *William Harvey* (1578–1657) the discoverer of blood circulation. Though not a physician, *Anton van Leeuwenhoek* (1632–1723) the great natural scientist of the Netherlands made a name for himself also in the history of medicine by the discovery of the microscope.

1. *Rebirth of Medicine in the 16th–17th centuries*

a) Vesalius and Modern Anatomy

Andreas Vesalius, the founder of modern anatomy (1514–1564) was the son of a court pharmacist in Brussels. Already as a young boy he was interested in the natural sciences, especially anatomy. He studied first at the University of Louvain, afterwards at the famous University of Paris, then Louvain again and Brussels. He was granted the title of Doctor of Medicine in 1537 in Padua. He was appointed professor of surgery and anatomy in the same university, when only 24 years of age. He worked with passionate energy and unfailing diligence. He completed the manuscript of his fundamental work on August 1 1542. The book, entitled "De humani corporis fabrica libri septem" ('The Fabric of the Human Body, in Seven Books') was printed at the famous Oporonius

press in Basle. The epochmaking work of 663 folios and 300 woodcuts was published first in 1543. The chief significance of *Vesalius* is that he cleared anatomy of the false, unwarrantable *Galenic* theories that still prevailed, which were based only on analogies of animal-dissections. Special mention should be made of the artist, who made the drawings and whose person is still a question under discussion. By all probability he was an artist called *Jan Stephan van Calcar* (1499–1546), a Dutchman belonging to the school of Titian. According to some scholars Titian himself might have had a hand in the illustrations.

In the exhibition we displayed an edition of *Vesalius*'s masterpiece, published in Nuremberg in 1551. In front of it you can see an anatomical figure carved in wood from the 17th–18th centuries (Fig. 13.). The two precious ivory figures next to it are worthy of mention, too: they are sectional ancillary objects used in the teaching of obstetrics. Their anatomical structure – analysed from a medicohistorical point of view – reveals pre-Vesalian knowledge but according to their style they belong to the middle of the 17th century. They were made by *Stephan Zick* (1639–1715), a famous master of ivory carving in Nuremberg (Fig. 14.). In the background of the show-case you can see the diploma of medicine of *Valerius Bellatus*, granted him in Venice in 1575. Medals of *Vesalius*, *Nicolaus Tulp* (who appears in the famous painting of *Rembrandt*) and *Girolamo Fracastoro* complete the material of this showcase.

b) The Discovery of Blood-Circulation

Galen (130–200 A.D.) a court physician of Emperor *Marcus Aurelius* "whose genius inspired medicine for one and a half thousand years but whose great influence at the same time barred the way to progress" – recognized blood moved in the arteries but did not solve the question of circulation completely. Erroneously he considered the liver the central organ of the vascular system and the producer of fresh blood. He also believed that the blood could pass through the separating heart wall (from the right ventricle into the left ventricle). He described the movement of the blood and the arteries quite correctly, but did not recognize the continuous circulation of blood. Galen's physiological system is shown in a diagram.

Another forerunner of the discovery of blood-circulation was *Miguel Servetus* (1511–1553). Spanish physician and theologian who discovered the lesser (pulmonary) circulation. It became known in 1924, however, that it was *Ibn an-Nafis* (1210–1288) Arabic physician of the 13th century "who first said that the interventricular septum is solid and referred to the pulmonary circulation".

The anatomical interest of the University of Padua, preserving *Vesalius*'s heritage, greatly contributed to the discovery of blood circulation. *William Harvey*'s (1578–1657) professor at Cambridge was *Caius*, a pupil of *Vesalius*. He went to Padua at *Caius*' advice where he obtained the title of Doctor of Medi-

cine in 1602 having attended the lectures of Fabricus ab Aquapendente on venous valves. Returning to England he practised in London, in the famous Bartholomew's Hospital. Soon he was appointed professor of anatomy and surgery at the Royal College of Physicians. Based on his anatomical and biological experimentation he announced the discovery of blood circulation already in his lectures given in 1616. Nevertheless he published nothing until 12 years later, but continued to experiment. Then in 1628 his book appeared based on the results of his experiments and comparative investigations of animals. The epoch-making work is entitled "Exercitatio anatomica de motu cordis et sanguinis in animalibus" ('An anatomical disquisition concerning the motion of the heart and blood in animals') and was published in Frankfort. *Harvey*'s discovery gave rise to a great controversy among anatomists, the majority of whom insisted: "It is preferable to be wrong together with Galen than acknowledge *Harvey*'s right". *Harvey* did not defend his truth against the attacks. His fundamental discovery did not need further explanations, it stood for itself and compelled admiration. *Harvey*'s way of thinking is well characterized by his famous statement: "A question raised correctly is already a significant step towards the correct answer".

A coloured illustration represents *Harvey*'s conception with an enlarged photo of his portrait and signature. A small show-case contains the facsimile copy of his diploma and the original copy of his other famous work entitled "Exercitationes de Generatione Animalium" ('Disquisitions concerning the Generation of Animals') published in Amsterdam in 1662.

c) The Discovery of the Microscope and Theories of Medicine in the 16th–17th Centuries

The first microscope was constructed by a Dutchman, *Anton van Leeuwenhoek* (1632–1723) a famous investigator, who gave start to the discovery of the minute world unperceivable to the naked eye. His invention has opened up new prospects for practical research affecting science even at the present time. The introduction of the microscope into research produced interesting results as in the work of *Marcello Malphigi* (1628–1694) published in 1661. He describes here his discovery of the capillary blood vessels and with it he supplied the missing element in the investigations of *Harvey* – the channel between arteries and veins. Harvey did not use a microscope yet.

Leeuwenhoek was not medically or scientifically trained, but he was an indefatigable and shrewd investigator and an excellent lensemaker. He constructed his microscopes himself. He made a series of manifold but disconnected discoveries. From the viewpoint of medicine his most important achievement is by all means the description and illustration of the first micro-organism seen by man in 1683.

Medical theory in the 16th and 17th centuries reveals a twofold character. Those who stuck firmly to the classical past refused to accept the new theories. Their number was great but with the spread of the new results this number decreased rapidly. The other side – increasing both in number and scientific reputation – rejected the classics as a whole, kept pace with the "modern" discoveries and tried to make use of the results of the natural sciences in the field of medicine, too.

Contemporary literature was a true reflection of this twofold character of medicine. Classical works which were considered the representations of imperishable values were continued to be published without any alteration or at the most with a brief commentary. We present here among others an edition of *Hippocrates'* "Opera omnia" published in 1558 in Basle and the edition of *Galen's* "Librorum sexta" published in 1597.

The other "sect" is well represented by *Thomas Sydenham* (1624–1689), the "English Hippocrates" who is not responsible for any spectacular discovery, neither did he teach in a university, yet his practice in hospitals had such a great influence on his contemporaries and posterity that even to-day he is considered the founder of modern clinical medicine. Among the works on show special mention should be made of the herbal of *Petrus Andreas Mathiolus* (1501–1577), a physician of great knowledge and reputation, published a Kreutterbuch in Frankfort in 1586. Above the bocks there is a picture painted by an unknown Flemish master at the turn of the 17th–18th centuries representing a *"Lancet Operation"* (Fig. 15.).

2. Medical practice in the 16th–17th centuries

Next to the engraving from the work of Hans von *Gersdørf* "Feldtbuch der Wundtarzney" ('Field book of wound surgery') published in 1517 representing a haemostasis, some burning irons are exhibited whose shape has hardly undergone any change from the Middle ages until the beginning of the 19th century.

The immediate "benefit" of the wars was a dynamic improvement in surgery. This observation can be well demonstrated by the life-work of *Ambroise Paré* (1510–1590). His long life was spent mostly in wars, thus he dominated the field of surgery not only because of his talent – but also due to his long practice as a military surgeon. Hew as not a trained physician, he did not know Latin either and the classical authors meant nothing to him. Yet he won reputation and was fully acknowledged which is also proved by his appointment as surgeon-in-chief at the College Saint-Come. Experience and an incident led him to the recognition that gunshot wounds are not poisonous and therefore they do not have to be treated by burning. In this question he was opposed by no less an authority than *Giovanni de Vigo*, court surgeon of the Pope. *Jacques Dubois,*

the professor of *Vesalius* in Paris appointed him prosector (pathological anatomist), but *Paré* did not accept the anatomical views of *Dubois* referring to *Galen* but became a straight follower of the Vesalian theories in 1555. Another significant contribution of *Paré* to the surgical art was the reintroduction of ligatures. *Paré* indeed should be considered the forerunner of modern surgery. At the side his work "Chirurgica Opera" (1582) surgical instruments are exhibited: a trephine and other instruments. (Fig. 16.). In that age surgeons represented the lowest level in the hierarchy of physicians. They had no academic training except some practical teaching in connection with the barbers' profession, and they performed only manual healing. Medical doctors, however, in the possession of their scientific knowledge, obtained at the universities did a work very much like our internal medicine to-day and could generally boast of having written several serious medical works.

The other great personality of this age was *Paracelsus,* whose full name was *Philippus Aureolus Theophrastus Bombastus Paracelsus ab Hohenheim* (1493–1541). His personality was rich in contradictions and nas been a favourite subject for the historians of medicine for centuries. He was the typical representative of the universal man: physician, alchemist, philosopher and theologian; it seems easier to enumerate the things he did not deal with during his life full of adventures. As a physician he was almost a "specialist" in surgery, anatomy, pathology, botanics and pharmacology. After *Fracastoro* and before *Ramazzini* he was the first to study the occupational illnesses and wrote a special study on a disease common among miners. He applied chemistry not for making gold but in the service of pharmacology. His theories were built upon the foundations laid by the ancient authors even if he had rejected them, but his ingenious, often bold way of thinking produced new, heterodox views which he tried to realize in his practice. We present his book and a medal preserving his memory (Fig. 17.).

The most devastating disease of the age was Plague, one of the illnesses that has been known by mankind for a long time past. Several dreadful outbreaks spread throughout Europe between the 16th and 17th centuries. Plague took most of its victims in the 14th century when one fourth of the population of Hungary died from that disease. *János Hunyadi* also died from Plague in 1456.

The coins and the so-called "plague-thalers" in the showcase preserve the dark memory of this disease. The column of Holy Trinity in the Castle of Buda was erected also as a memento by those who survived.

Special mention should be made of the flat casket made of silver and partitioned in 12 sections which contained medicines. The names of the medicines were inscribed on the congruent parts of its lid (Cinnamon, Mint, Clove, Amber, etc.). It was made by a German master at the turn of the 16th–17th centuries.

Hungary weakened by internal conflicts and the blows of the Ottoman Empire, was cut into three parts after the battle of Mohács in 1526. In the struggle for survival there was practically no room left for science. Hungarian scholars worked abroad, all over Europe. *János Zsámboki* (Sambucus) (1531–1584) for instance worked at the imperial court of Vienna. The Hungarian polyhistor who knew fourteen languages was know as a "giant of erudition" (monstrum eruditionis). *György Henisch* (1549–1585) who was the first to describe the "morbus hungaricus" (typhoid fever) was forced to leave for Brünn (Brno) on account of the jealousy of the Viennese physicians. He is one of those who are reputed for the analysis of the mineral waters of Hungary. He also maintained that syphilis can be infectious not only through sexual intercourse. *János Bánfihunyadi* (1576–1664) taught in Gresham College, London. *János Jeszenszky (Jessenius)* (1566–1621) called himself a "Hungarian nobleman" though he spent his whole life abroad. He was appointed rector of Charles University in Prague but previously he was professor and rector of the famous University of Wittenberg. It was he who introduced dissection in Prague in 1600. His rich scientific career, however, did not prove to be sufficient ground to save him from the Emperor's revenge: he was condemned to death and executed for participating in the Czech rebellion.

Ferenc Pápai Páriz (1649–1716) was graduated as a doctor of medicine in Basle in 1664. Returning to Hungary he became medical officer in Debrecen and afterwards he returned to the famous College of Nagyenyed (today Aiud in Rumania), the "alma mater" as professor (Fig. 18.). His most significant and popular work is the "Pax Corporis" ("Peace of the Body") displayed in the exhibition. He sets out the aim of his work in the preface as follows: "As far as I know there has not been written any work on this matter in our language so far." He presents the medical knowledge of his age in popular form especially for those "living in the countryside, where a sick animal finds medical aid sooner than a sick man..."

The number of historical relics from this age is scarce – for obvious reasons. In the show-case (Fig. 19.) one can see a small pedestalled pharmacy vessel made of glass from the 17th century which is considered the oldest drug-pot of Hungarian origin in the collection of the Museum. The longshaped, blue oil-container revaling the rougher workmanship of glass-works is from the same period. A valuable piece is the silver sipping vessel of *Mihály Teleki,* chancellor of Transylvania, decorated with his coat-of arms and the enumeration of all his titles dating from the year of his death. The toothless nobleman used it against the danger of swallowing fishbone (Fig. 20.).

Simple people learned curing from the calenders. The Almanac of Lőcse, containing "regulations" for venesection, cupping and bathing, was published

in 1692. The original accounts of the Hospital of Sopron dating from 1586 is also displayed here.

On the label of one of the early-baroque wooden pharmacy vessels one can see both the signs of the alchemists and the Latin inscription. The tin ginger-containers derive from the 17th-18th century. As regards form, the pear-shaped pedestalled vessel is the most interesting among them. The seals of the guilds of surgeons in Tokaj and Győr belong to the chirurgical documents of the 17th century. Some contemporary books complete the material of this show-case: "Emblemata et aliquot nummi..." by *Ioannes Sambucus (Zsámboki)* published in 1599; "Anweisung zur Wund Arzney" (Instructions for Wound Surgery) by *Jessenius (Jeszenszky)* published in Nuremberg in 1674; Pax Corporis ("The Peace of the Body") by *Pápai Páriz* edited in Kolozsvár in 1747. One of the most beautiful medals of the rich numismatic collection of the Museum preserves *Jessenius*'s memory (Plate IV.).

III. THE RISE AND DEVELOPMENT OF PHARMACY IN THE 16th–18th CENTURIES

On an European scale the date of birth of pharmacy as an independent science could be fixed only arbitrarily. It was a long process with many factors taking part: the gradual separation of actual healing from the dispensing of medicine; commercial factors due to which the stock of "drug-stores" was reduced to drugs exclusively, and last but not least the reforms introduced in the training of pharmacists: the road from the examination to be taken before the country-physician to the degree-issued by the university.

The introduction of new drugs due to the geographical discoveries also had a considerable part in the process.

Paracelsus was responsible for the further increase of the stock of medicaments when "introduced chemotherapy in treating certain diseases". The introduction of new tools and instruments also furthered the development of pharmaceutical technology. Alchemy the "hermetic science" was replaced by iatrochemistry. The revolution of the natural sciences in the 18th century opened a new era in the history of science. Instead of chasing unrealistic dreams and aims; seeking the secret of gold-making or the philosophers' stone, the whole outlook was changed and research began to scientific truths. The band of quacks, charlatans and amateurs found themselves on the fringes of society for the very reason of their ill reputation. The trained pharmacist on the other hand held an important position in society. Their prestige was due to their acquired knowledge. Commercial interests compelled the chemists to furnish their pharmacies and laboratories on the highest possible level. Moreover, official decrees made the use of glazed faience and glass pharmacy jars compulsory.

The general progress of Hungary in the 16th–17th centuries fell behind the European level. The best scientists of the country were compelled to seek fame abroad on account of the uncertainty of existence resulting from one and a half centuries of Ottoman rule, (lasting until the recapture of Buda in 1686), Habsburg oppression, the cutting of the country into three parts, the counter-reformation and all the ensuing divisions. Pharmaceutics was of course also effected. There were only a few pharmacies but on the territories occupied by the Turks and even those that had existed fell victims to destruction. The number of trained apothecarians was also small. More favourable conditions were brought about only from the 18th century onwards.

Plate I. Egyptian amulets

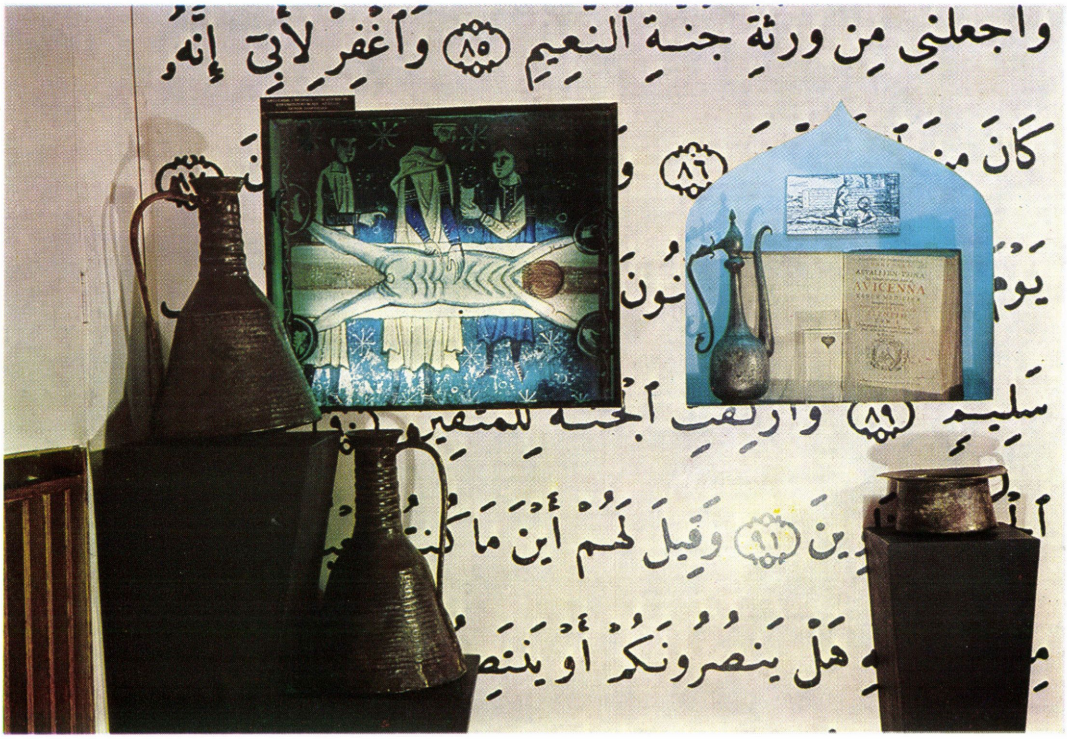

Plate II. Detail of show-case presenting medical relics of the Islam

Plate III. Gothic mortars from the 14th–16th centuries

Plate IV. Jessenius medal

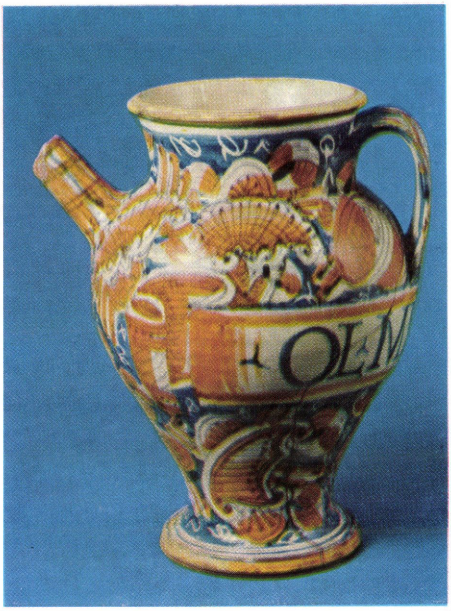

Plate V. Pharmacy Jar from the 16th century

Plate VI. Pharmacy Jars of the Telekessy Pharmacy made in the Holics Factory

Plate VII. Italian albarellos from the 17th century

Plate VIII. The Physician. Painting by J. C. Fiedler (1697–1765)

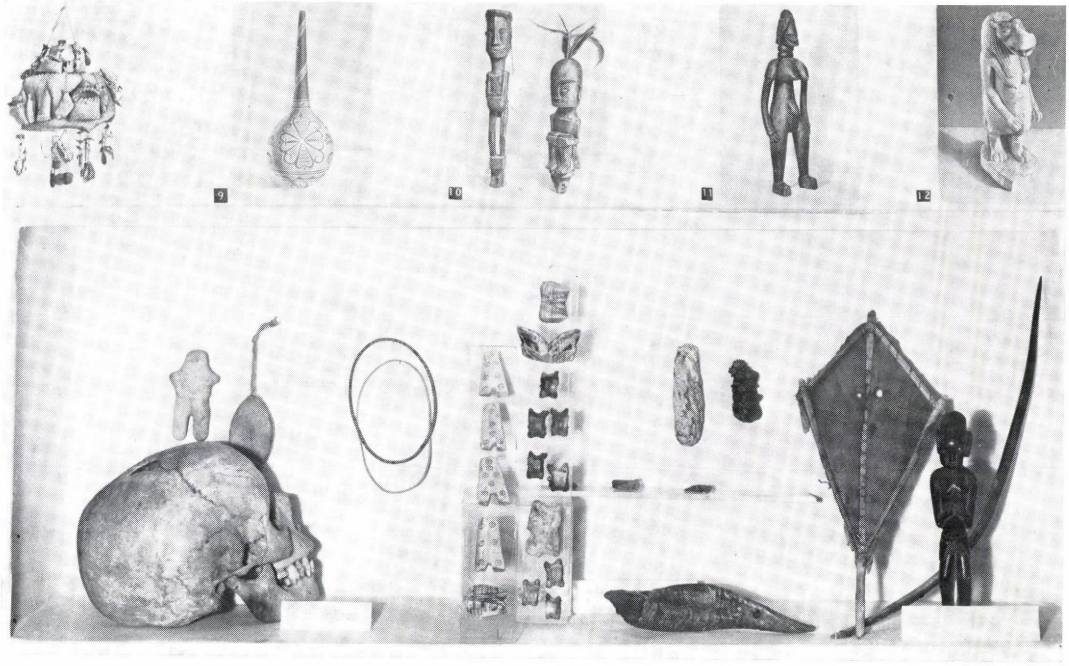

Fig. 1.

Fig. 2.

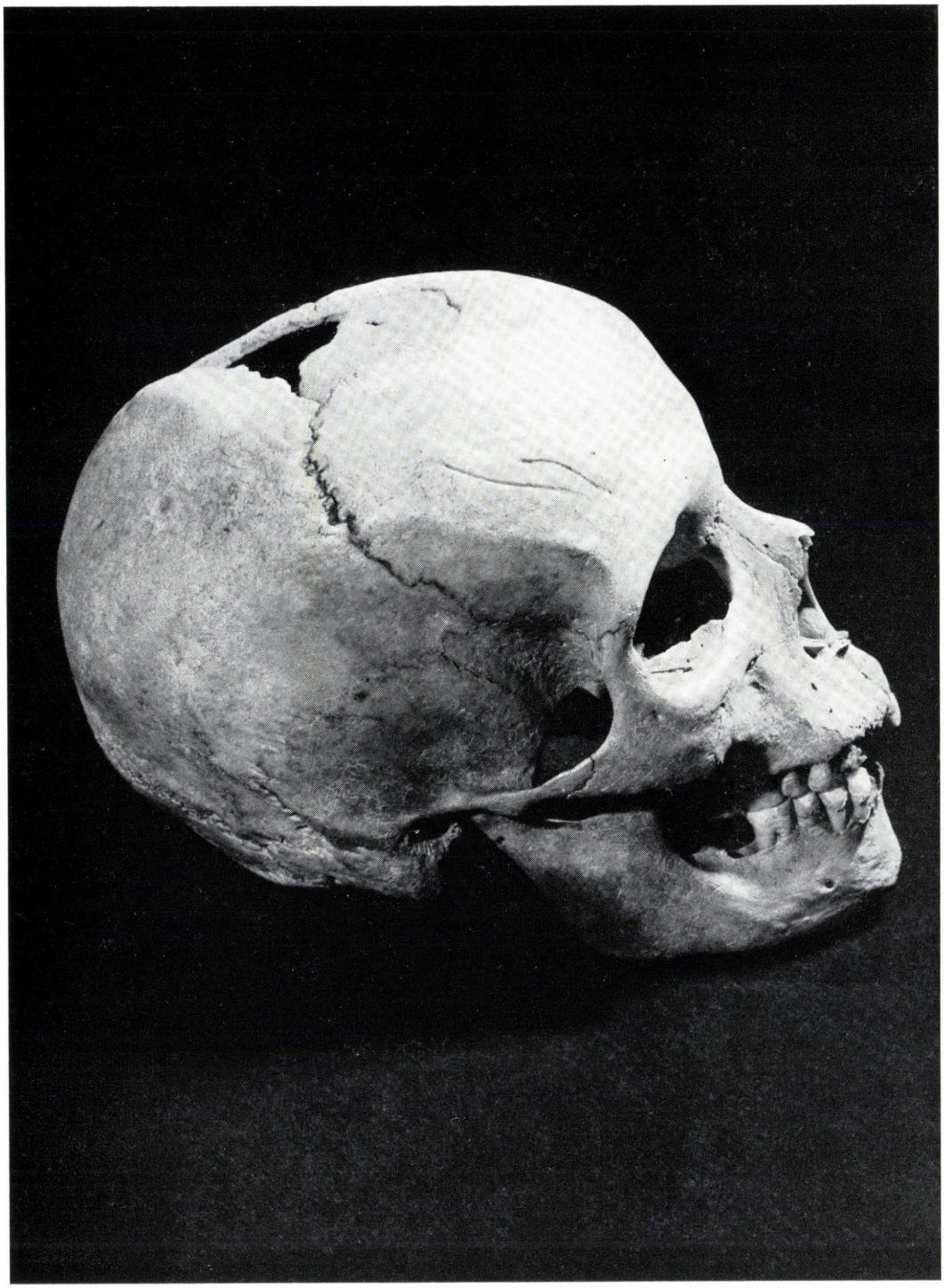

Fig. 3.

Fig. 4.

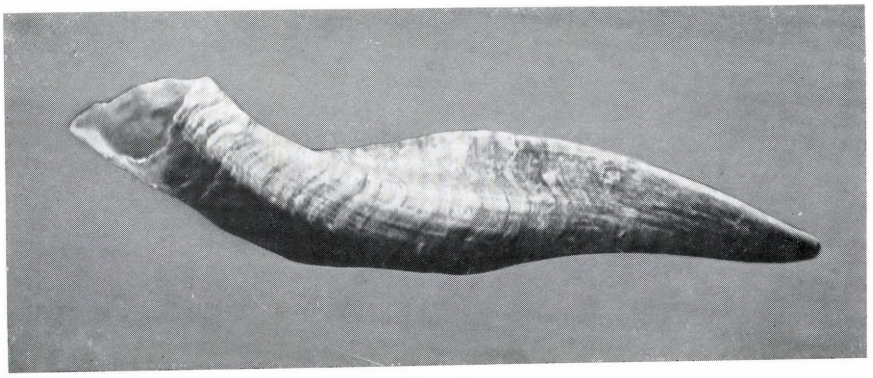

Fig. 5.

Fig. 6.

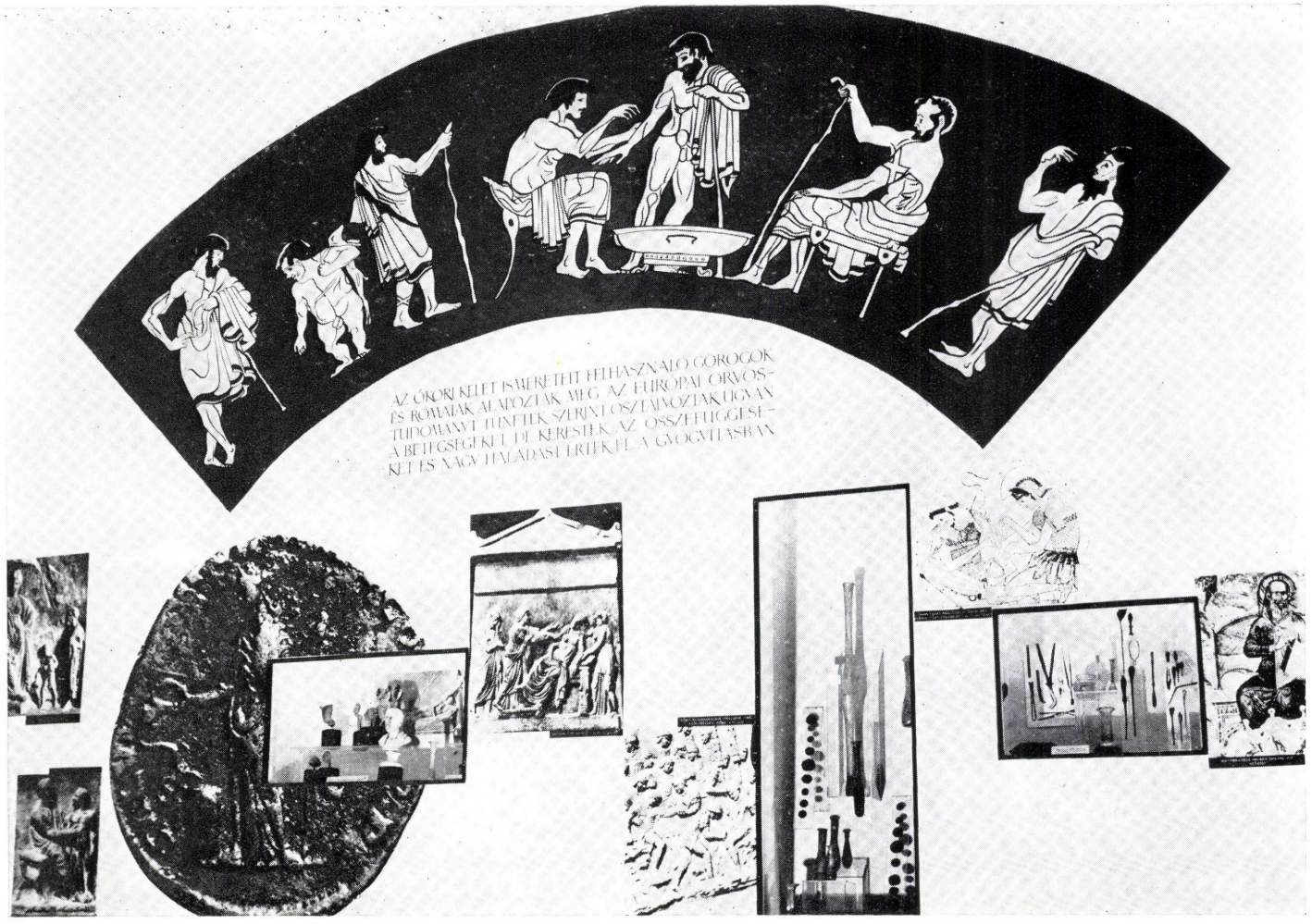
AZ ÓKORI KELET ISMERETEIT FELHASZNÁLÓ GÖRÖGÖK
ÉS RÓMAIAK ALAPOZTÁK MEG AZ EURÓPAI ORVOS-
TUDOMÁNYT. FIGYELEK SZERINT OSZTÁLYOZTÁK UGYAN
A BETEGSÉGEKET, DE KERESTÉK AZ ÖSSZEFÜGGÉSE-
KET ÉS NAGY HALADÁST ÉRTEK EL A GYÓGYÍTÁSBAN

Fig. 7.

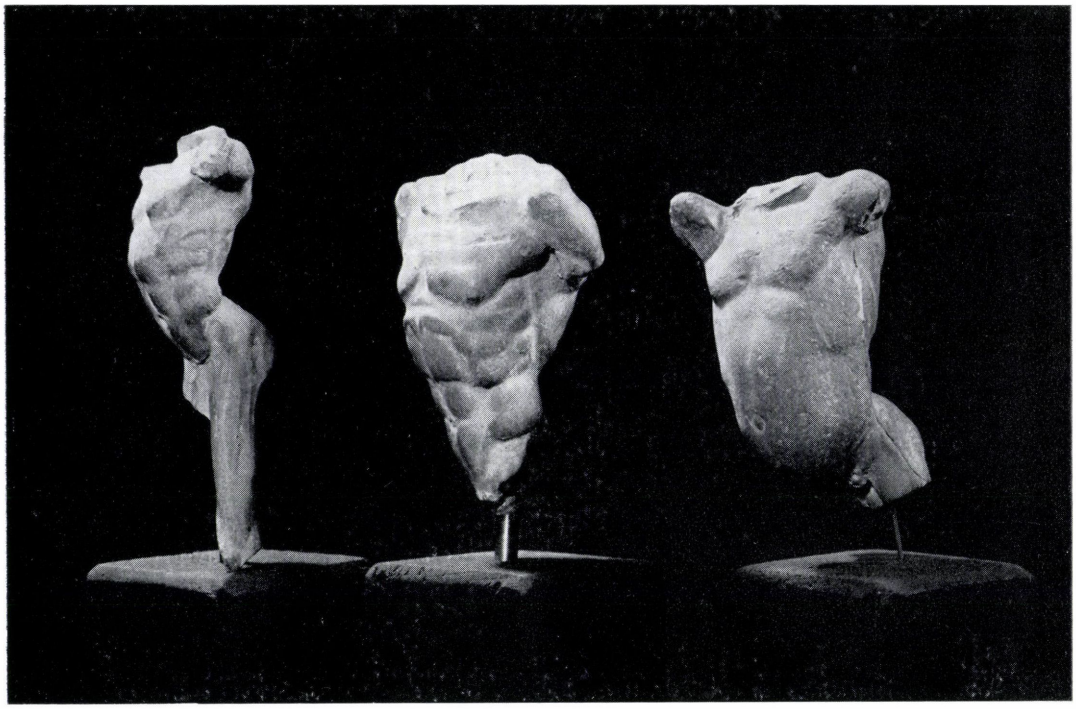

Fig. 8.

Fig. 9.

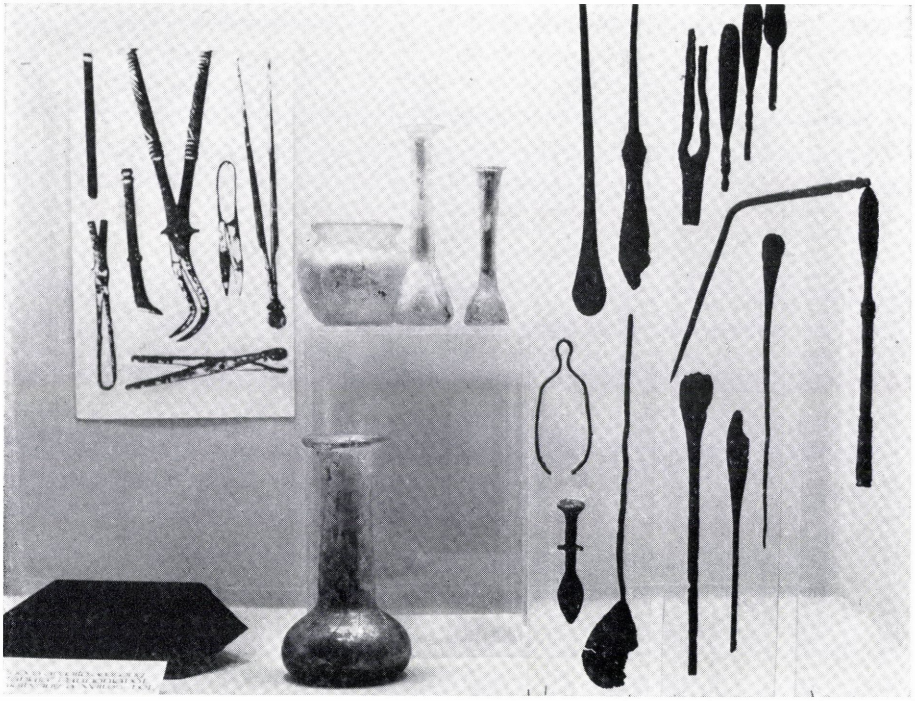

Fig. 10.

Fig. 11.

Fig. 12.

Fig. 13.

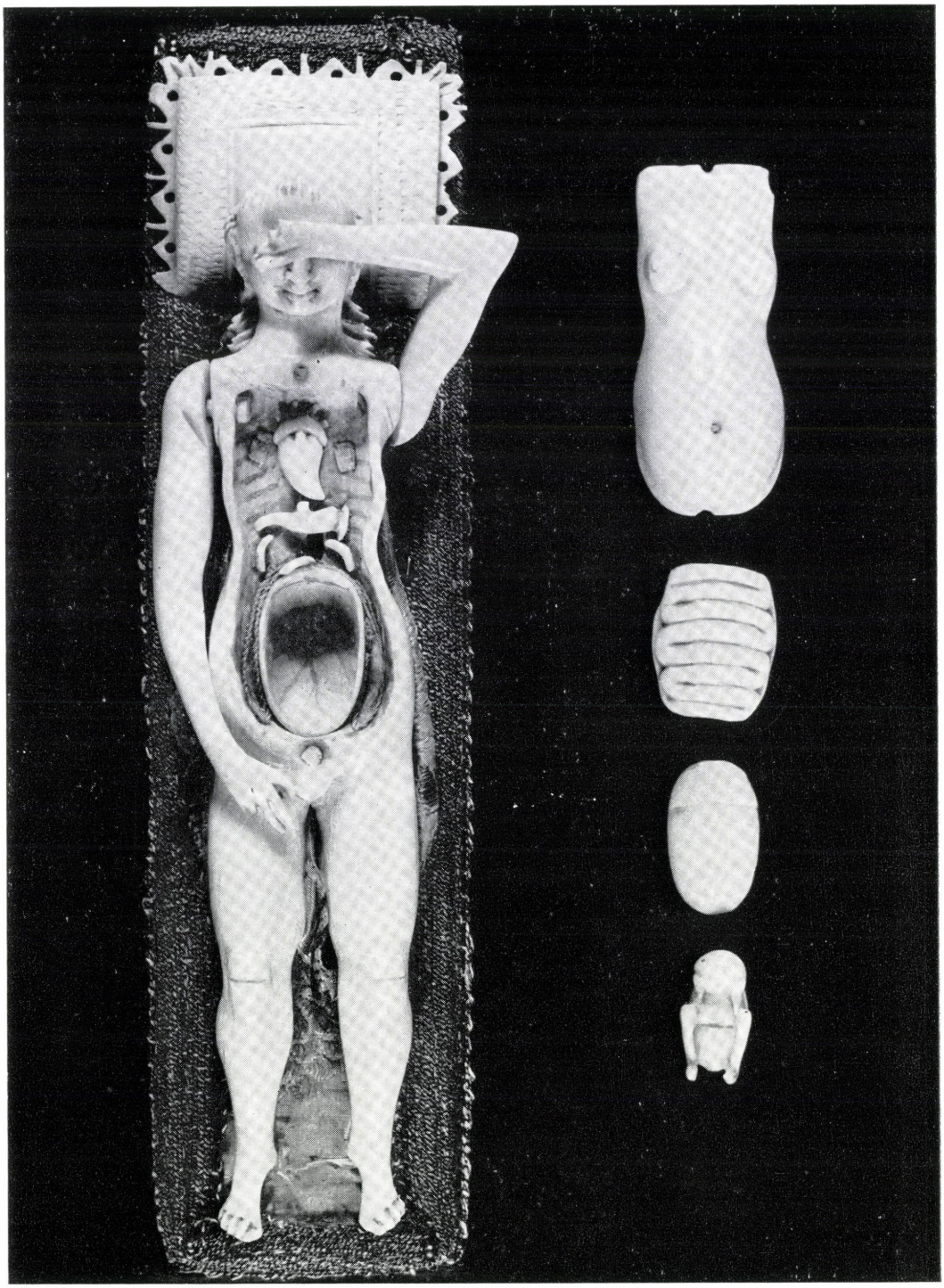

Fig. 14.

Fig. 15.

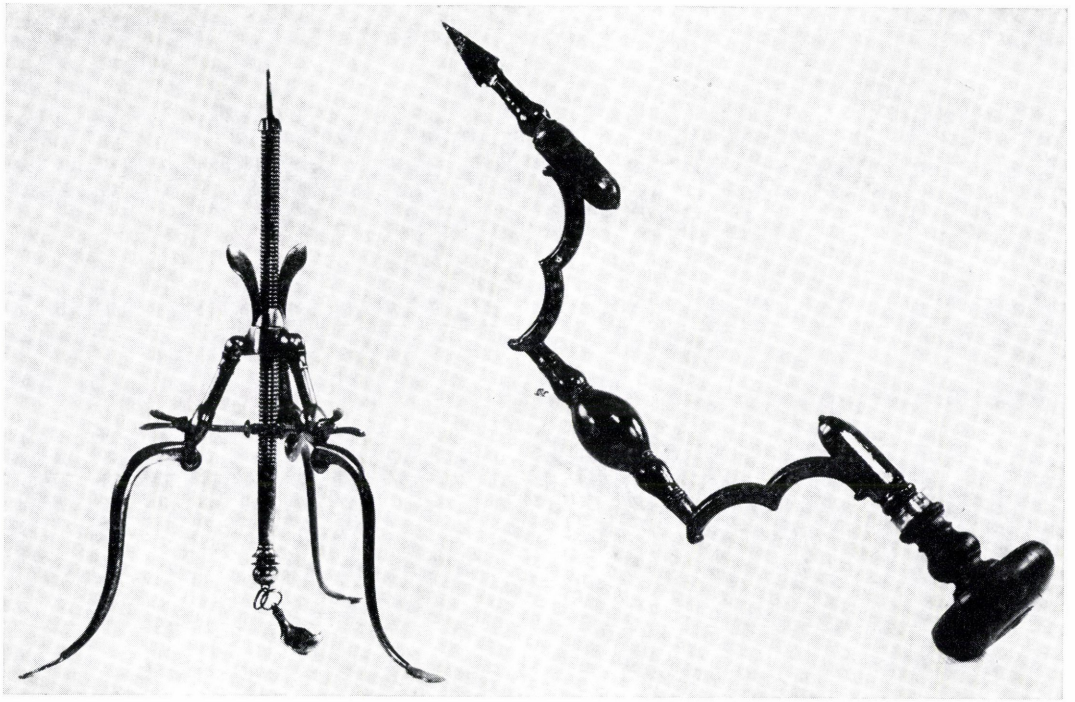

Fig. 16.


PHILIPPVS
THEOPHRASTVS
BOMBAST.
HOHENHEIM-
ENSIS:
SVEVORVM
ex Panægyris Nobilium
ARPINAS:
Confœderatorum Eremi
EREMITA:
PHILOSOPHVS
PARADOXVS:
MYSTERIARCHA:
ARTIVM MAGISTER:
MEDICINARVM PROFESSOR:
Musarum Mechanicarum
TRISMEGISTVS
GERMANVS.
ALTERIVS NON SIT QVI SVVS ESSE POTEST.
EFFIGIES PHILIPPI THEOPHRASTI
AB HOHENHEIM: ÆTATIS
SVÆ. XLVII.
OMNE DONVM PERFECTVM
A DEO:
IMPERFECTVM A DIABOLO.

Fig. 17.

Fig. 18.

Fig. 19.

Fig. 20.

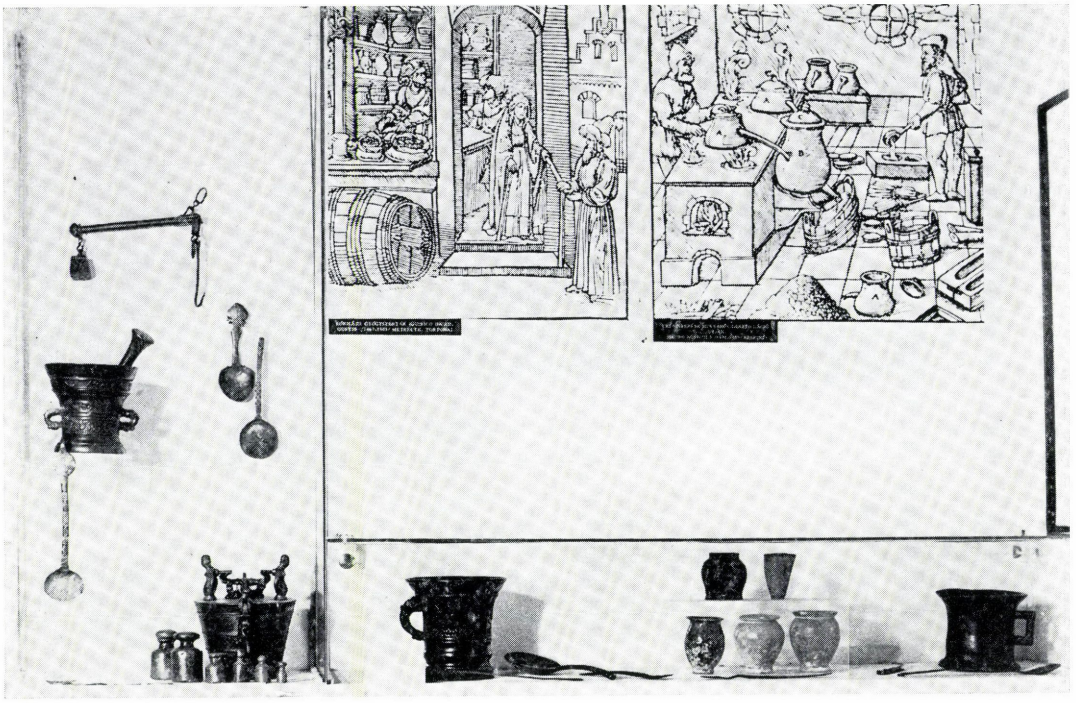

Fig. 21.

Fig. 22.

Fig. 23.

Fig. 24.

Fig. 25.

Fig. 26.


„ÜDVÖZLÉGY CSODASZÉP ÉGI FÉNY, VILÁG SUGÁRZÓ VILÁGOSSÁGA
—BÖLCSEK KÖVE—
TE HÓNÁL FEHÉREBB FÖLDTEREMTŐ, TE A LOMBIK FENEKÉN BAL-
ZSAMILLATOT ÁRASZTÓ LEGÉDESEBB ÉDESSÉG, TE EMBERISÉG ÉLET-
MENTŐ SZERE, MELY GAZDAGSÁGOT ADSZ, MEGBÉKÍTŐZOD A GYÁSZT,
ÉS ÉP EGÉSZSÉGET ITATSZ ...“
(MELCHIOR — 1625)

Fig. 27.

Fig. 28.

Fig. 29.

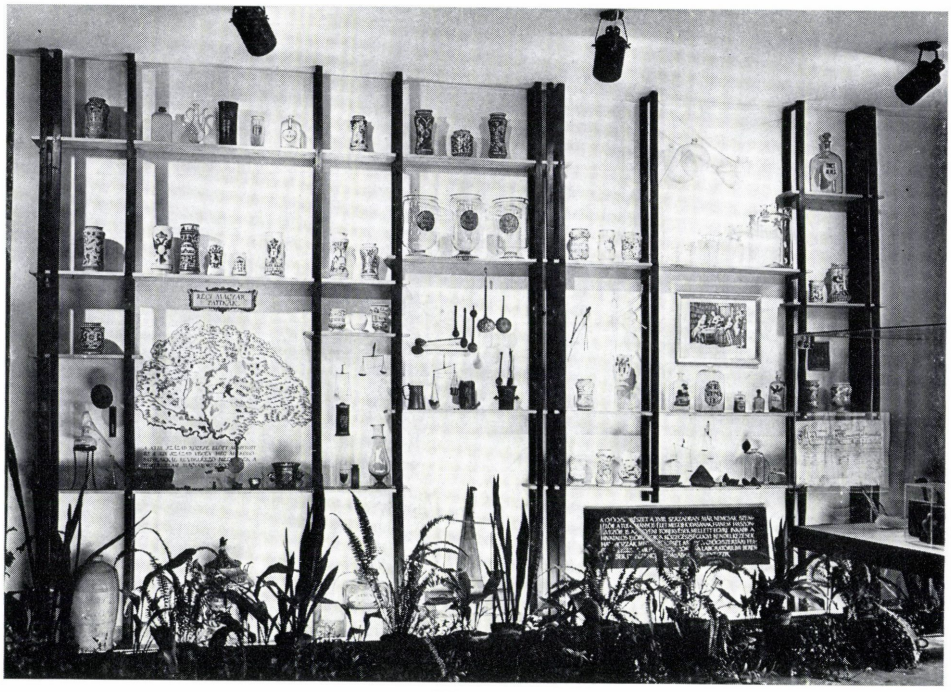

Fig. 30.

Fig. 31.

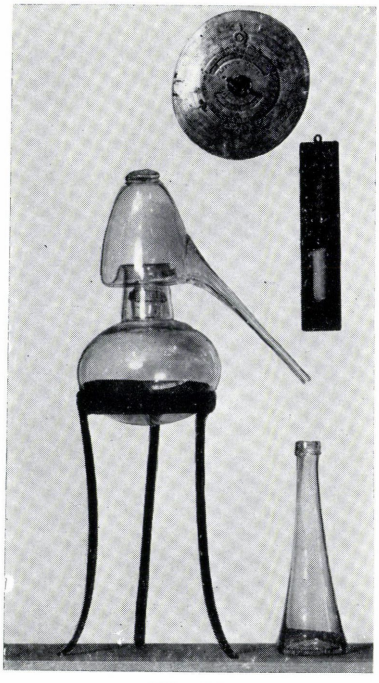

Fig. 32.

Fig. 33.

Fig. 34.

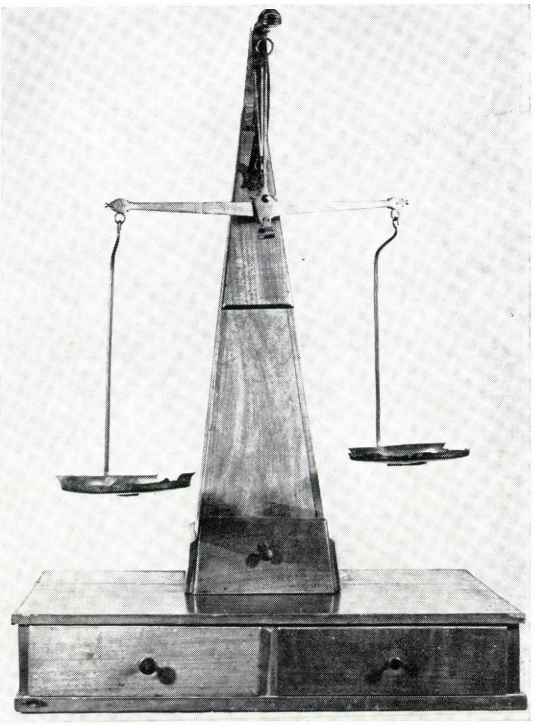

Fig. 35.

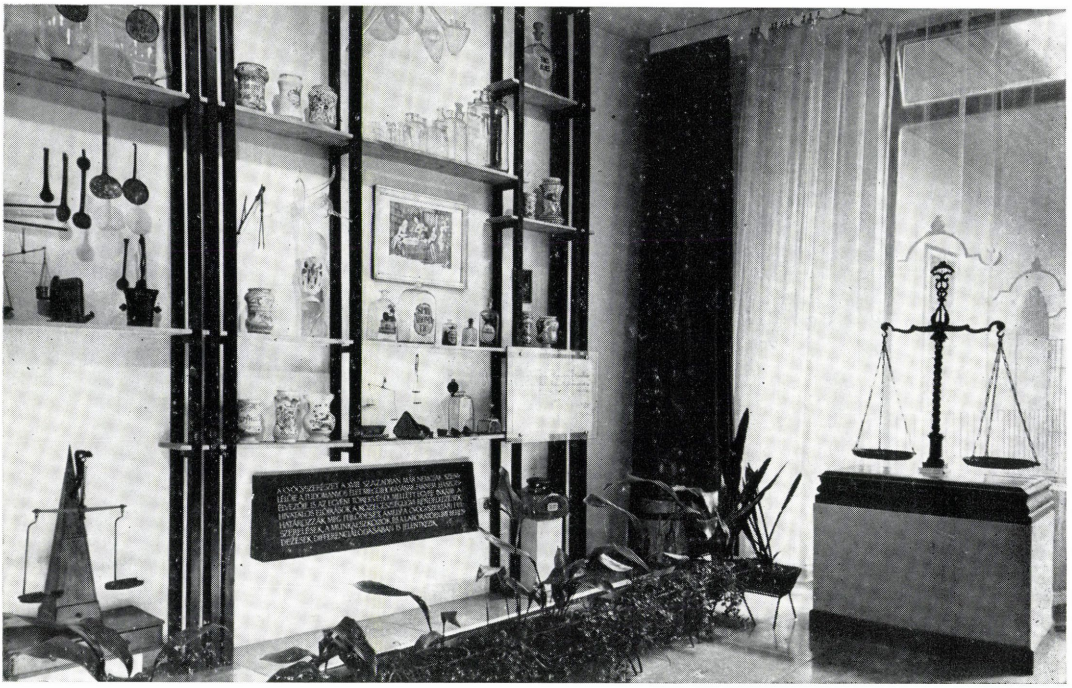

Fig. 36.

The manifold material of laboratory instruments from the sphere of practical pharmacy is presented in tow show-cases: a vertical and a horizontal one (Fig. 21.). These objects – valuable also as pieces of fine workmanship – are related mostly to sclaing (e.g. balances, weights, casket) and dosing scoops. Among the coins revealing alchemists' marks and weights of traditional shaping there is a weight-holder made of bronze in the firm of a foal's head having a banded lid. It contained the bucket-shaped weights made of brass and bronze which fitted into each other (Fig. 22.) Mention should be made of a mortar made of bronze with handles in the form of a dolphin bearing the date 1648 (date of the Piece of Westphalia ending the Thirty Years War). Its late-renaissance style is already coloured by early-baroque elements. This same transitory style characterizes the scoop made of bronze in the form of a heart. The single-armed Roman balance made in the 18th century preserves strictly the traditional form of its Roman predecessors (Fig. 23). In the horizontal show-case, on the right, there is a bronze mortar bearing the date 1665 and in from of it there is another, unfortunately damaged one, from the 16th century. Among them some scoops, melting pots and salve-boxes are displayed, the latter probably used for taking away the prepared medicine. Below there are glass laboratory instruments to be seen (e. g. distilling cap, boiling flasks of double eyes, etc.) (Fig. 24.) dating from the 17th–18th centuries and made by all probability in the glassworks of Hungary.

2. *Faience Apothecary Jars*

Five small show-cases present maiolica jars, the products of the Italian pottery art from the period of the renaissance. (The name faience comes from Faenza, a town in Italy, where tin glazed jars of high artistic quality were produced from the 14th century onwards. The term *maiolica* can be traced back to the Isle of Mallorca that played an intermediatory part in the import of the jars glazed with Spanish-Moorish lustre technique from Spain to Italy.)

The non-transparent white tin glaze was an excellent back-ground for the rich colours of the Italian schools of painting – refined in the service of Church art – so they appeared in their full brilliance on the apothecary jars of the age, too. The special value of maiolica-painting lies in the delicate brushwork revealing a brilliant skill. As the glazed background preserves every single touch for ever, so correction is impossible. The second (fixing) firing covers the surface with a never-fading shine and preserves the original radiance of the colours.

The shapes of the jars underwent some changes too. The rounded shapes of the albarellos going back to Far-Eastern origin became more and more atten-

uated and spindle-like. Apart from stylistic development, practical reasons might have also contributed to the change in the shape of the jars: the cylindrical ones were more easy to be held. The various syrups were kept in pitchers with spouts. The large, round-shaped vessels with wide orifice contained leaves of herbs or their powdered extracts. The development of the shapes of pharmaceutical jars was the result of the mutual effect of style development of the given period and the stage of pharmaceutical technology. The presented collection of pharmacy jars begins with an albarello decorated with head of an angel produced by all probability in the workshop of Palermo about 1600. Next to it there is an oblong albarello from Sicily (Caltagirone) from the 17th century. The syrup pitcher bearing the antique inscription "S. DE. ABSO" and decorated with wreaths of leaves against blue background derives from the workshop of *Domenico da Venezia* (1560–1570) (Plate V). Its counterpart is an oil container from Castel Durante from the beginning of the 17th century. The cylindrical jar decorated with the figure of Fortuna standing on the riverside and labelled "DIAMOSCHI" is a product of the same workshop but from an earlier date (about 1580). (Fig. 25.). The neighbouring show-case presents an artistic, spindle-shaped albarello produced in Palermo in the 1660's and decorated with yellow and green "trofeo" design and the figure of the Virgin Mary. The powder-pot manufactured in Trapani about 1630 is decorated with acanthus-leaves design against blue background. Next to its pendant of larger size there is a jar bearing the date 1671 produced in South-Italy, probably in a Neapoletan workshop. It represents the Virgin and is marked "S.C.G." Two jugs complete the collection presented in the show-cases: the first one derives from the workshop of Levantino of Albissola (SAVONA) from the 17th century, the other one is a product of the Pescetto workshop of Savona from the 18th century.

The mortar bearing the date 1524 and a Latin inscription which refers to Italian origin is displayed as an independent piece for its Renaissance decorations are true reflections of the style of this age.

3. Pharmaceutics in Hungary it the 17th and 18th centuries

In the 16th–17th centuries pharmacy affairs were not regulated by any law in Hungary. This respectable profession was an "ars libera" (free trade) and was not brought under the control of the guilds. The licence to set up a pharmacy was considered as "jus municipii" (municipal right). Only the royal decree of 1759 set down that the grant of a licence for opening a pharmacy is "ius regale" (royal right). Apothecarians were trained in the pharmacies, their certificate was issued by the owner of the shop and that was sufficient for opening a shop of their own. In 1753 a decree was issued according to which the

pharmacists had to pass an examination conducted by a physician (a municipal or a county medical officer) and from 1774 onwards pharmacies could be run only by apothecarians who had passed this examination. The Generale Normativum issued in 1770 brought about a complete change in the training of apothecarians. They had to attend first a three months' course and from 1774 onwards a one year course at the University of Nagyszombat (today Trnava in Czechoslovakia). The loose, seemingly non-compulsory training until the middle of the 18th century proved useful in practice, since the pharmacies in the towns were run partly by physicians and partly by apothecarians. E.G. the Pharmacy in Kecskemét opened in 1748 and was run by *György Vághi,* a physician and *Antal Falt,* an apothecarian.

In the cabinet fixed to the full-size photograph of a painted Hungarian baroque medicine-cabinet from the middle of the 18th century – now in the possession of the József Katona Museum in Kecskemét – there are pharmacy vessels made of earthen-ware, faience, glass and wood (Fig. 26.). Among the earthen-wares two pots, the products of peasant pottery are of special interest: two ointment containers in the form of jars. Among the faience works mention should be made of the jars of white glaze from the famous Holics faience factory. As for the glasses, the most precious objects are the green, square-shaped flasks from the end of the 17th and the beginning of the 18th century, the oblong, angular powder-containing jars in baroque style from the beginning of the 18th century bearing double inscriptions (alchemists' symbols and Latin names); and finally the cylindrical goblet form jars of blown glass with floral decoration from the middle of the 18th century. Mention should be made furthermore of the pedestalled pear-shaped double vessel blown of almost black, dirty glass at the beginning of the 18th century.

It may be interesting to learn that a number of our jars are still containing the original drug which was once put into it.

4. An Alchemist's shop

Passing by the portrait of *Dávid Spielenberg* (1627–1684) painted by an unknown master, we enter the great exhibition hall. The enlarged photo, a reproduction of *David Teniers'* (1610–1690) genre painting representing the apprentice watching his master in the alchemist's shop, serves as a background recreating the atmospheres. (Fig. 27.). The hanging stuffed animals, an alligator, a lizzard with testaceous tale and a sea urchin have the same function (Fig. 28.). Superstitous belief and mystical elements have survived for a while. The alchemists were seeking the philosophers' stone and the secret of gold making. Some laboratory instruments are to be seen here referring to this subject: e. g. a large retort made of fired clay standing on a tripod; windbag (pair of

bellows), melting pots made of graphite and terracotta; tin, bronze and copper scoops and weights (Fig. 29.). The corner recreating such medieval atmosphere aims at illustrating the starting point, alchemy, from where development lead in the direction of the scientific approach of the 18th century.

5. The Telekessy Pharmacy at Eger

István Telekessy (1633–1715), bishop of Eger, was an outstanding personality of the anti-Habsburg liberation was (1703–1711) led by Ferenc Rákóczi – who despite being a Catholic member of the Upper House voted for the dethronement of the Habsburgs at the Parliament at Ónod in 1707. He was the founder of the Pharmacy of the Jesuits at Eger in 1713 – one of the three pharmacies established by that order which has come down to us in a more or less unharmed state. In the photomontage of this pharmacy there is one of the most precious Hungarian apothecary bottles to be seen. The prismatic white glazed bottles were produced at the Holics faience factory established in 1743. They contained various fluids. (Plate VI.) The colours of the latebaroque polychrome cartouche decorated with the Telekessy coat of arms can compare with the most beautiful Italian and French products. The syrup containing jug decorated with the emblem of the Jesuit order (the monogramm IHS) is also special interest. The wooden vessels painted black are of later origin revealing Empire characteristics; they also excel with their beauty.

6. Pharmaceutical relics from the 17th century to the middle of the 18th century

The pharmaceutical relics from the 17th century to the middle of the 18th century are displayed on a modern space-lattice of double lighting. (Fig. 30.). First a coloured map attracts our attention showing the geographical location of the Hungarian pharmacies established before 1750 and still working in the 19th century. A characteristic feature is the pitiful standard of health supply in the Great Plain, where the number of inhabitants greatly decreased on account of the Turkish domination. Moving on one can see a cross-section of the art of European faience pharmacy jars. Here, too, the Italian jars predominate; vessels from Rome, Urbino, Pesaro (Fig. 31.), Savona, Castelli, Sicily, Liguria, etc. are put on display (Plate VII). Other vessels of various shapes and origins are form Spain (Talavera), Germany (a rare one from Hamburg with the monogramm D.S.), the Netherlands, France (Moustiers). The wooden and glass pharmacy jars are mainly of Hungarian origin. The arrangement in frames is a good means for presenting the less artistical but for the preparat-

ion of medicines equally important laboratory vessels and instruments. There is a complete distilling apparatus on show made of glass (round-bottomed flask, beaked distilling cap, recipient vessel) on an iron stand. Next to it a sand-clock and a copper astrological calendar are to be seen (Fig. 32.). Some of the Roman balances bear the Austrian stamp of calibration used in the second half of the 18th century. Next to them the weights used in Austrian medicine are put on display (1 pound=420 g=24 lat) (1 lat=less than half an ounce) etc. (Fig. 33.). Among the laboratorical instruments produced in Hungary (boiling flask, retort, distilling cap) one can see the predecessor of the pipette, the small sampling tube called "*lopó*" (Fig. 34.). Among the bronze scoops and colanders there are more and less sensitive balances exhibited. The case of one of them contains a measuring-tube of the manipulum ("*marok*"=a handful...) the unit of dry measure.

The interesting suspended balance on the wooden stand was used in the "*Helping Virgin*" Pharmacy founded in Mosonmagyaróvár in 1690. The pointed wooden pyramid of special elaboration rises from a pedestal of two drawers. An animal's head is fixed to it which holds the two beams of the balance. The bars holding the scale-pans can be disconnected and they are fixed to the pans. Despite its contradictions it is a unique piece, one of the most precious objects of the museum (Fig. 35.).

An Italian engraving, a contemporary diploma, a large acid container, wooden and brass mortars, South-German salt-glazed medicine-water containers render a varied effect where modern installation harmonizes with the relics of the past that have come down to us.

In the corner there is bronze mortar with handles in the form of dolphins. It bears a carved calligraphic inscription which reads: "ANSPACHISCHE HOF : APOTHECKE" and below it: "A (nno). 1785". Close to the rim of the foot the name of the owner has been inscribed: "I. E. BRUCKNER H. (of) APOTHECKER".

The baroque laboratory balance derives from Szombathely from the 18th century. It stands on a spiral column, on its two equally long beams large scale-pans are suspended on chains. The richly decorated dial-plate is suspended in a simple V-formation. The work of the unknown master is a real masterpiece which is also proved by its balance as light as air. (Fig. 36.).

The pharmacy cabinet belonged to the "*Szerecsen*" Pharmacy founded in 1692 in Pécs. The four-feet high cabinet with two doors boarded with walnut is a beautiful example of the well-balanced Louis seize style. It was made specifically for the purpose of pharmacy administration. Its cover can be opened up and used as an oblique desk-leaf. Beyond the doors decorated with chess-patterned marquetry a system of drawers can be found labelled alphabetically for the purpose of storing receipts. Mention should be made of the refined strap-hinges and bronze drawer pulls.

IV. MEDICINE IN THE AGE OF ENLIGHTENMENT

Like any great trend of thought, Enlightenment cannot be fixed to exact dates. Especially not when its essence is examined within the narrow scope of a special branch of science – in this case medicine. The slow spread of new ideas in time and space, the reconciliation of the opposition they create, involve long, polarized or parallel processes. From the view-point of medical history, the 17th century cannot be separated from the beginning of the 18th century. The great explorers realize it again that they have to work "for the sake of mankind". Research should be made not for its own sake but in order to enlighten people and to banish the misbeliefs in supernatural forces. Depending on empiricism they acknowledged as true only that had been justified by experience and common sense. This is why their scientific work was based on observation and experimentation. The different branches of science built on the wide base of the revolution in the natural sciences secured a wide horizon for the theory of medicine and subsequently for medical practice.

1. The Development of the Natural Sciences

From the view-point of the history of medicine and pharmacy the development of chemistry should be treated first. Chemistry, in the modern sense of the world, was born out of the chemical knowledge of the ancients lost in the mists of time. Then the period of alchemy, the "secret science" followed, spreading triumphantly from China according to some scholars, or Egypt as others believe it – and lasted until the 17th century. Medical chemistry, i. e. iatrochemistry born in the Renaissance and developing parallel with alchemy came more and more into prominence. From the middle of the 17th century until the last quarter of the 18th century the so-called "phlogiston" theory (fire-substance) predominated. This theory has long been discarded, nevertheless, the foundation of modern chemistry based on the investigation of natural phenomena may be said to have been laid by its representatives. Due to the creative forces of the great political revolutions transforming social systems in the end of the 18th century, a real revolution took place in chemistry, too. Its father was *Lavoisier* (1743–1794) who was later executed by the revolution itself. He considered balance as the basic instrument needed in research-work, thus providing chemistry with an unshakable mathematical basis.

In front of the diagram illustrating the apparatus used by *Joseph Priestley* (1733–1804), the discoverer of oxygen, in his experiments in the production of fixed air (carbon dioxide) a sodawater-siphon is exhibited which works on the same principles.

Carl Linne (Linnaeus) (1707–1778), the great Swedish botanist has created a new system for the whole living nature. His introduction of binominal nomenclature (double names) was applied in medicine for designating the diseases. *Jean-Baptist de Lamarck* (1744–1829) was the first to create a modern theory on the history of development of the living world.

Contemporary works of this period which are put on display are the following: Genera Plantarum by *Linne* published in 1767; Elementa Chemiae by *Boerhaave* published in 1733; and *Lavoisier*'s "Opuscules Physiques et Chimiques" published in 1810.

2. Medical Theory and Practice in the 18th Century

In Hungary there was no medical university between 1526 and 1769 therefore those who wanted to obtain a diploma in medicine were obliged to study abroad. Before the 18th century Italian universities, e. g. the University in Padua, Bologna, etc. had been favoured, but later – as an immediate effect of the Counterreformation – those in Germany, Switzerland and especially in the Netherlands (Leyden, Utrecht, etc.), breathing the free intellectual atmosphere of the Protestants, were in preference. The diploma of *Petrus Peetsi* (Péter Pécsi) Hungarian medical student from Transylvania granted to him by the Rector of the University in Utrecht marks this "peregrinating" period of Hungarian medicohistory.

The Dutch *Hermann Boerhaave* (1668–1738) dominated the field of both theory and practice in 18th century medicine. He taught medicine at Leyden University and lectured almost on every field of medicine, distinguishing himself as "totius Europae praeceptor", the tutor of whole Europe. His scientific works became textbooks on the European universities to be published several times. His great contribution to medicine was the introduction of bedside teaching (teaching at the patient's bedside) and thus clinical medicine became an essential part of medical instruction.

One of *Boerhaave*'s pupil was *Albrecht Haller* (1708–1777), university professor at Göttingen. The station of his career – Tübingen, Leyden, London, Paris, Basle, Bern – represent the places where the would-be great physicians of the century were supposed to turn up. The great pioneer of physiology, *Haller,* achieved distinction as physician, botanist and poet. We present his work "Primae lineae physiologiae" ('First lines of physiology') published in 1747 where he first maintains that anatomy and physiology cannot be separated from each other. His greatest work, "Elementa physiologiae corporis humani" ('The elements of the physiology of the human body') which appeared between 1757 and 1766 was the bible of physiological research for almost a hundred years.

The work of *Giovanni Battista Morgagni* (1682–1771), professor of anatomy at Padua University, laid the foundations of pathological anatomy. His important contribution to medicine is the discovery that certain diseases bring about specific lesions in the organs and as soon as these symptoms are seen the diagnosis of the disease can be concluded. The recognitions of *Morgagni* contributed to the development of pathological medicine and as a result of it the possibility of causal treatment could be realized.

The main feature of the life-work of *Haller* and *Morgagni* is that their theories are of equal importance with their results in practical medicine.

In the show-case below their portraits there are two table microscopes on wooden stands to be seen and a small portable microscope with copper handle, together with the complete works of *Morgagni* published in 1765 entitled "Opera omnia", and the work of *Sámuel Rácz* (1744–1807), the first Hungarian professor of medicine, entitled „A skarlátos hidegnek leírása és orvoslása" ('Description and treatment of scarlat shivers') published in 1784 (Fig. 37.). *Sámuel Rácz* was a physician of ardent patriotism. "Who dared to speak Hungarian among us, he was the first!" remarked one of his pupils. (At that time the official language of the lecture in the university was Latin). *Toldy* characterizes him as follows: "From anatomy and physiology to pathology and therapy he worked on the whole of medicine".

As a counterpart of the photos illustrating coins referring to medicine, a vertically arranged panel presents the history of the development of the microscope.

18th century medical practice is presented in a long show-case in the middle of the great hall (Fig. 38.).

Among the surgical instruments special mention should be made of the lancets, trocars, fistulas, trephines, catheters, etc. The rudimentary, roughly executed extracting forceps are displayed on the cartoon of *Delaporte* representing a "successful" tooth extraction.

The obstetric forceps, one of the earliest Hungarian handicraft products, is given a prominent place. The same field is represented by the labelled obstetrical kit covered with leather, which was made in the *Malliard*'s workshop in 1793. It still contains some of its original obstetrical instruments. (Fig. 39.). A fashionable way of treatment in that age was "enema". Next to a French caricature a clyster of great size can be seen. One of the most interesting objects of the show-case is a contemporary coffee-mill made by a smith, which is nicety accompanied by a chapter from *Mátyus* book entitled "On Koffe, Kaffé or Kávé" (Fig. 40.).

In comtemporary Hungarian literature concerning health treatment the popularizing books for "home-treatment" must be separated from the scientific works on medicine. We present some typical examples from both types. As to the former one: *János Kömlei*'s (1725–1802) „Szükségben segítő könyv" ('Book

helping in need') published in 1790; *Mihály Nediliczi Váli* (c. 1700–1772) „Házi-orvos szótárotska" ('A small dictionary of self-treatment') published in 1797. From the exhibited medical literature of scientific value mention should be made of *István Kibédi Mátyus*'s (1725–1802) (Fig. 41.) "Ó-és új Diaetika" ('Old and new dietetics') published in 1792 and *Mihály Kováts*'s (1768–1851) "Az emberi élet meghosszabbításának mestersége" ('The art of lenghtening human life') published after Hufeland in 1798.

Among the authors of several books concerning the training of midwives and barbers, special mention should be made of *István Weszprémi* (1723–1799) (Fig. 42.) whose work "Succinta Medicorum Hungariae at Transilvaniae Biographia" published in four volumes has remained the most precious source of Hungarian medical history up to the present days.

Weszprémi was not only an excellent medicohistorian but at the same time an outstanding practitioner of his profession. In his work "Tentamen de inoculande peste" published in London in 1755 he was the first to suggest that prevention of plaque should also be tried by injection, similar to small-pox vaccination.

Balthasar van den Bossche's (1681–1715) oil-painting (48 × 60.3 cm) representing the removal of a plaster in the surgeon's consulting room is an outstanding piece in the museum collection. According to the original mark it was painted in 1707, probably in Antwerp. This intimate picture is painted in the style of the early Dutch genre paintings representing simple scenes taken from every-day life. The figures – the surgeon, the apprentice warming up the plaster, the suffering patient and the women watching them with astonishment and fear – form a harmonic unit in the simple event of everday life. Although the warm colours are low in key, the picture is not sombre but rather objective.

Johann Christian Fiedler's (1697–1765) oil-painting on a copper plate entitled "Examination of a patient" (41.5×31.5 cm) represents a uroscopy in the refined, aristocratic Rococo style developed in France. The elegant lady is sitting in a velvet armchair and looks at the doctor as if asking for help. He is holding a pear-shaped vessel used in urinanalysis in his right hand while he is feeling the patient's pulse with his left hand. The enterieur is painted with great skill, especially the finely executed tea-set on the table. The fabric of the curtain, table-cloth and costumes is light and airy. A remarkable contrast can be observed between the solemn, somewhat affected representation of the figures and the intimate realistic portrait of the painter himself which hangs on the wall (Plate VIII.).

An indispensable accessory of medical practice has always been the medical kit or case containing the instruments of the physician visiting patients, together with the most important medicines for prompt aid. The most beautiful ones in the collection of the museum are presented in a separate show-case. The wooden kit revealing the stylistic features of Austrian late-baroque – the

so-called Maria Theresa style – is a valuable object of applied arts. The convex lid is a marquetry of fine execution both in the front and at the reverse sides. On its sides there is a gilded handle with curved and spun decoration which can be turned. The cascet is divided into several parts. The upper part consists of 31 boxes. In the boxes there are white, ground phials with tulip design. Below, int the hidden drawer among six cylindric tin jars there is some empty place for medical instruments.

The refined grinding of the glasses, the beautiful wooden work and sensible arrangement lead us to the conclusion that the physician who ordered it must have been keen on his profession.

3. Folk Medicine

The Age of Enlightenment brought about a radical change in the development of the natural sciences. Nevertheless, however, the important new results migh have been, they had an influence only on a small, educated layer and became public property of the whole manking only very slowly. In folk-medicine, treating methods rooted in religious beliefs survived.

The medicine of the primitive man at the lowest stage of civilization and that of the masses already civilized but staying on the fringes of culture is characterized by the interweaving of mistical beliefs in unknown forces and practical experience based on the observation of every-day life handed down as oral tradition from generation to generation. The beliefs in supernatural powers appeared in the guise of various religions in the course of time. Folk medicine is rooted in the traditions. The petrified forms of its beliefs, content and practice have remained unchanged for centuries. This can be concluded from the so-called votive statuettes i.e. offers placed on the altar of the "deity" by the sick hoping for remedy.

The show-case presenting these magic-endowed objects stands in front of the space-lattice of the great hall. (Fig. 43.) The earliest piece is a foot and a phallus of Etruscan origin from the 3rd–1st century B.C. The votive statuettes were called later "offers". A whole series of offers from the 18th century is put on display together with the negative moulds used for cating the figures: denture, eye, hand, child, etc. (Fig. 44.). The offer representing a pig must have been offered at the time of epizootic diseases. The offers of the rich were made of precious metal or marble, those of the poor were made of wax which was cheaper. These latter were bought and sold in the markets taking at the times of parish-feasts.

Next to the double crosses and coins with protective power against plague there are special pitchers from Transylvania exhibited. Each of them is decor-

ated with the picture of a saint protecting against certain diseases (e.g. Saint Rochus, Saint Barbara).

Above the show-case there is the enlarged photo of an engraving representing Cell (now Celldömölk), a "wonder-working" holy place popular in the 18th century.

V. THE DEVELOPMENT OF PUBLIC HEALTH IN THE AGE OF ABSOLUTISM IN HUNGARY

Public health in Hungary in the first third of the 18th century – especially as regards the number of physicians – cannot be considered as satisfactory. There were counties where not even one physician could be found.

The Hungarian Consilium Locumtenentiale (Governing Council) was set up in 1723 and within its scope a permanent Hungarian council of public health was established in 1738. The organization of the central health administration meant a definite progress compared to measures adopted by local authorities until that time. Public health became part of state administration, thus the foundations of a broader public health policy, extending to the whole country were laid down.

The organisation of public health in the Monarchy was organized by *Gerard van Swieten* (1700–1772), the organizer of the first – Vienna school of medicine, and medical adviser of Maria Theresa. The Consilium Locumtenentiale passed a decree in 1752 that each county should keep a trained physician – called "physicus" at that time – whose authority was to cover the whole field of public health: pharmacies, guilds of surgeons, midwives, health administration, protection from epidemics. It meant the starting point of the future institution of medical officers. The detailed regulation entitled "Generale Normativum in Re Sanitatis" which prescribed the official duties of physicians, surgeons, midwives and apothecarians was published in 1770. It was written by *József Hodosi Skollanich*, "physicus" of Pozsony county. Soon afterwards (1786) the post of the chief medical officer (regni protomedicus) was organized. He was to be responsible for the training of physicians, the supervision of education, and the administration of hospitals. These changes in health administration brought an upswing in public health in Hungary.

The history of university training in Hungary began in 1367 when King *Louis the Great* (1342–1382) founded a university in Pécs. It was followed by the University at Old-Buda established by King *Sigismund* (1387–1437) and that of Pozsony (today Bratislava, Czechoslovakia) founded in 1467 by *Matthias Corvinus* (1458–1490), the great renaissance king. At the universities of Old-Buda and Pozsony medicine was taught, too. From the second half of the 15th century, however, there was no medical training in the country and those who wanted to study medicine had to attend foreign universities. Since Protestant students were excluded from receiving the title of Doctor of Medicine at the University of Vienna even in the second half of the 18th century, they had to attend universities in Holland, Switzerland or England. The major part of the Hungarian medical students received the support of the town of aris-

tocrats, but these grants involved the obligation of returning to serve one's patron after finishing the studies.

The University of the Jesuits in Nagyszombat (today Trnava, Czechoslovakia) was founded by *Péter Pázmány* in 1635. At that time it had no medical faculty. The wish of opening a medical faculty at the University of Nagyszombat was first expressed by the members of the Diet in 1723. *János Perliczi* (1705–1778) submitted the same request to Maria Theresa but it was not granted.

The medical faculty of Nagyszombat University was founded at the advice and intercession of *Gerard van Swieten,* the "medical reformer of the Austrian Empire". The supreme document which ordered the teaching of medicine dates from 7 November 1769. This day means a mile-stone in the history of medical teaching in Hungary. Owing to circumstances hindering modern teaching – few patients, restrictions on autopsies – the University moved to Buda in 1777 and then to its final place in Pest in 1784, where it is still functioning.

The history of the foundation of the Hungarian medical faculty is presented in a separate show-case. (Fig. 45.). The original coloured engraving of *Georg Hoefnagel* (1542–1600) represents the episcopal town of Nagyszombat at the (in Latin: Tyrnavia), end of the 16th century. In the middle of the show-case there is the medical diploma of *István Lumnitzer* (1747–1806), the first member of a noted dynasty of physicians, received in 1777 in the University of Nagyszombat. (Fig. 46.). Furthermore one can see a miniature with his portrait (Fig. 47.) and his dissertation. Next to the memorial plaques (Fig. 48.) there are works of the famous physicians of the age: *Van Swieten, Plenck, Trnka, Haller, Csapó,* etc. on show.

Around the show-case there are portraits of famous physicians: Vencel Trnka (1739–1791), professor at the University of Nagyszombat from 1770 onwards and rector of the University of Pest in 1786/87; *Sámuel Pataki* (1765–1824), chief medical officer of Transylvania, who was the first to perform small-pox vaccination at Kolozsvár (today Cluj, Rumania); *Samuel Rácz* (1774–1806) professor of physiology at the universities of Buda and Pest, the pioneer of medical teaching in the Hungarian language.

A remarkable engraving by an unknown master represents the visit of King *Francis I.* (1792–1836) to the military hospital at Lugos in 1789. This is the only representation of a contemporary hospital in Hungary from inside that has come down to us and this explains its medico-historical value.

The most beautiful piece of the precious anatomical collection of the museum is the life-size female wax-figure (moulage), a present from King *Joseph II* (1780–1790) to the medical faculty of the University of Pest in 1789 – together with some other wax figures in order to promote medical teaching in Hungary. The wax figure was made by *Felice Fontana* (1730–1802), the learned abbot,

who was the leader of the wax-figure workshop in the Pitti Palace in Florence. The most significant Italian wax-sculptors of the period worked under his direction. The above mentioned wax-figure was probably made by *Ferrini* or *Clemente Susin* (Fig.50.).

The exposed abdominal and chest cavity of the lying nude figure reveals the inward organs, nerves and arteries. The naturalistic illustration served the purpose of teaching but at the same time manifests a great sculptural skill and a modelling of high artistic interest. The other pieces (Fig. 51.) representing various parts of the body were produced by all probability in the same workshop. They are exhibited in and around the show-case referring to the University of Nagyszombat as indispensable ancillary objects used for teaching and training at the universities.

The Council of Buda in 1279 forbid the monk – physicians to perform any "bloody operations". This prohibition was acknowledged by the secular physicians, too, which fact also contributed to the rise of a category specially concerned with surgical activities, i.e. the appearance of barber-surgeons, or as they were called "chirurgeons" of lower medical training, lacking a university degree. In order to protect their common interests they formed guilds.

Having served the years of apprenticeship, it was necessary for the chirurgeons to pass an examination conducted by the county physician. On the basis of a succesful examination they were granted a certificate. Some documents of this kind dating from the 18th century from Léva (today Levice, Czechoslovakia), Komárom (today Komarno, Czechoslovakia), Veszprém and Buda. These certificates are valuable documents from the view-point of local history, since the view of the town which issued it was often represented in the heading according to contemporary custom. This, however, does not refer to the certificates issued at Léva and in Veszprém which are decorated with ornaments taken from Hungarian folk art.

VI. THE DEVELOPMENT OF HUNGARIAN FAIENCE PHARMACY JARS FROM THE FIRST THIRD OF THE 17TH CENTURY TO THE FIRST THIRD OF THE 19TH CENTURY

Our exhibiton claims to offer the survey of medical theory, medical practice and pharmaceutical history in a strict chronological order – as far as it is possible under the given circumstances. We have deviated from this basic principle only at the display of pharmacy jars and the history of balneology. The development of Hungarian pharmacy jars between the 17th and the 19th centuries is presented separatly as an independent unit, partly for aesthetical reasons and partly because it represents a homogenous process and reflects the high quality of Hungarian ceramic art corresponding to the contemporary European standard.

The earliest known relics of Hungrian pottery are the products of potters from the period of the rule of the House of Árpád (907–1301): vessels made for everyday use, the bottom marks of which have not been solved yet. The first unglazed clay vessels were covered with lead glaze from the Middle Ages onwards. Under the reign of King *Matthias Corvinus* (1458–1490) Italian masters from Faenza who worked for the court introduced the tin glaze of radiance, but the spread of its use can be ascribed to the "habán" craftsmen who fled from religious persecutions and settled down in Hungary in the middle of the 16th century. The word *Habán* derives from the German "Haushaben". The origin of this Anabaptist religious sect has not been satisfactorily cleared up. The stations of their wanderings were: North-Italy, France, Switzerland, South-Germany, the Southern and Eastern provinces of Austria, Moravia and in 1546/47 Hungary. Their settlements in Hungary were in Transdanubia, the Northern Highlands or Upper Hungary (today Slovakia), and Transylvania (now in Rumania). They lived in strict community of goods and were diligent craftsmen practicing various trades but best remembered for their contribution to pottery.

A characteristic feature of *habán* ceramic art is the use of the white tin glaze and from the 17th century onwards the introduction of blue glaze and the four special *habán* colours: yellow, green, cobalt and manganese violet fired at high temperature. Despite the special individual qualities, their decorating motifs reflect the influence of Italian Renaissance, Turkish, Hungarian, Dutch (Delft) stylistic trends, as well as that of the local Hungarian folk-art, Slovakian and Transylvanian folk-lore, which may help us in establishing the date of their production. Their products are often labelled (marked) and generally bear the date of production.

Our earliest *Haban* pharmacy vessel is a little keg labelled V[inum]

40 CERASO[rum] which – or a similar one – is listed in the inventory taken in the Rohonc castle on the estate of the Counts Batthyány in 1634 ("Uy Köröztien földbul czinalt hordoczkak..." 'little kegs made of neo-Christian earth') (Plate IX.) The handbowl (lavabo) in the shape of a fire-place, whose tap is unfortunately broken, dates back to 1648 according to its mark. It could be hung on the wall (Plate IX.). Special mention should be made of the sexangular ointment or balm container with floral decoration, wide orifice and pewter-screwlid with dolphin-shaped handle. It is marked 1661. The hexagonal medicine bottle made for *Gregorius Genser* represents a similarly high artistic values. The medical ewer with pewter lid and handle dated 1678 is remarkable for the so-called Vandekyan motif winding round and round and framing the Renaissance floral decoration (Plate XI.). The rounded rectangular bottle bearing the inscription Jar: Domine and the date 1672 reveals the characteristic features of the *habán* "ornamental Renaissance" style: the detail of the landscape with onion-shaped dome alternates with floral decoration in ornamental frames on both sides of the flask. The above mentioned vessles variate the four basic *habán* colours, except a blue monochrome sextangular ginger or tea container with pewter-screwlid which reveals Far-Eastern influence through the mediation of Delft. The jumping deer and blue bird are favourite decorating elements of Haban pottery. We present two bottles, of this type dating from 1705 and 1724 (Plate XII.). The 18th century alcohol container with marble imitating design was produced in Transylvania. Below it there is a jug bearing the date 1720.

In the next show-case there is an angular Haban (Neo-Christian) vessel with blue floral decoration from Transdanubia which contained pulverized leaves of herbs.

The last pieces of Haban jars are two small bellied drug-pots produced in the manufacture at Kosolna, near Nagyszombat (Trnava, Czechoslovakia).

The year 1743 was a turning point in the history of Hungarian faience production. It marks the date when the Holics faience factory (Holic, Czechoslovakia), established under imperial patronage to work. Their products reveal French (Strasbourg) and Italian (Castelli) influence. The high artistic quality of their products was due to the workers of Haban origin. The most beautiful pharmacy bottles of the Holics, factory are the prismatic bottles of the Jesuit pharmacy in Eger, decorated with the coat of arms of the founder of the pharmacy, Bishop *István Telekessy*. (Middle of the 18th century, Plate VI.) There are three more faience jars and a stone-ware one of later origin exhibited, all products of the famous Holics factory. The first faience factory in Buda was established by *Domonkos Kuny* (1754–1822) in 1785. He manufactured pharmacy vessels in great numbers: first faience and later stoneware pots. The products of this factory were marked with the letters Of (Ofen, i. e. Buda) and the labels had an encircling design of wreath of leaves. (Fig. 52.)

In the third show-case we present the products of the faience – and stone-ware factories established in the first half of the 19th century. Due to the lower costs of production, stone-ware, the discovery of *Wedgewood*, the English ceramist (1765–1768), spread soon all over the country. A number of stone-ware factories were established: e. g. at Körmöcbánya (Kremnica, Czechoslovakia) in 1800, at Kassa (Kosice, Czechoslovakia) in 1801, at Pápa in 1802, at Murány (Muráň, Czechoslovakia), at Igló (Spišská Nova Ves, Czechoslovakia) in 1812, Rozsnyó (Rožnava, Czechoslovakia) in 1810, at Miskolc in 1832, at Apátfalva in 1843, etc. The old faience factories changed over to the production of stone-ware vessels: the Holics factory already in 1786, the Tata factory in 1824 and the Buda factory in 1809.

The show-case presents the pharmacy jars of the above mentioned Hungarian factories in order to represent the development of Hungarian industry at the beginning of the 19th century. China-ware (porcelain) invented in 1717 appeared to be rather expensive even at the end of the 18th century, only the higher nobility around the Court could afford it. The attention of the rich bourgeoisie – the owners of the pharmacies included – was focused on white-glazed vessels made of opal glass or milk-glass which had the effect of porcelain but it was much cheaper. Hungarian glass works, e. g. that of Körmöcbánya, produced opaline glass jars. Two beautiful examples are exhibited deriving from the beginning of the 18th century.

Though not of Hungarian origin, mention should be made of a finely decorated, precious Alt-Wien (old-Vienna) porcelain jar (Sorgenthal period, from 1784 until the middle of the 19th century) from the Arany Oroszlán ("Golden Lion") Pharmacy in Pest. Together with a glass bottle of the same decoration it refers to the fact that the apothecarians of the capital could already afford to buy expensive Viennese porcelain.

VII. BALNEOLOGY IN OLD HUNGARY

Similar to the pharmacy jars, balneology is also presented as a separate unit and not within the general chronological order. Water cure is one of the oldest methods of healing. Hungary has always been rich in health resorts and spa as Aquincum, the "capital" of Pannonia was famous for its baths which refers to the fact that the Romans knew the thermal springs well. According to the records, the medical orders under the Kings of the House of Árpád, founded baths next to their monasteries. The first public bath in Hungary was founded by *St. Stephen* (1001–1038) in 1005 next to the xenodochium at Pécsvárad. It had four nurses and six servants. During the Turkish occupation balneology flourished in Hungary. (Hungarian soaps were reputed already in the 16th century). The first book on balneology was published in Basle in 1549 entitled *"Hypomnemation, de admirandis Hungariae Aquis"* ("A short review on the wonderful waters of Hungary") written by *György Wernher,* constable of Sáros county (now Šaris in Czechoslovakia). The life of the European health resorts from the 15th century onwards is represented in the engravings exhibited. In the middle of the 17th century *Tamás Jordán* (1539–1585) gave an analysis on the medicinal waters of Trencsény (Trencin, Czechoslovakia). This first attempt was followed by several works rendering a chemical analysis of the thermal waters. The most significant ones are presented in the show-cases of the exhibition.

From the beginning of the 19th century onwards the health resorts of the Monarchy became more and more fashionable among the Hungarian nobility, gradually assuming the features of a middle class. The Bohemian glass industry, famous for its refined taste and excellent technique, supplied the visitors with beautiful spa glasses. (Plate XIII.) (Water cure can be traced back to the 16th century.) In the first show-case referring to balneology we present spa glasses mostly of Bohemian origin, while in the second one the execution of which is perhaps somewhat simpler but their shaping preserves the best traditions of Hungarian glass making... Books on balneology, coins and plaques complete the material on show. Coloured prints from the last century mark the end of this part of the exhibition.

VIII. JENNER AND SMALLPOX VACCINATION

The most dangerous of all plagues which terrorized human race was smallpox. The statistical data which inform us about its spreading are shocking. Instead of them let us, however, refer to the warrant of apprehension dating from London 1776, according to which the recognition mark of the wanted criminal was "not pock-marked". Apart from bitter tears no efficacious remedy has been known in Europe against it" – *Sámuel Váradi* remarks in 1802. It is said that certain forms of variolation was known in China already in the 11th century, e. g. pulverized smallpox crust blown into the healthy child's nose. African slave merchants preserved the health of their "goods", especially the beauty of the women in similar ways. The method of direct infection was discovered in Europe at the beginning of the 13th century. Though it was rather dangerous it enabled the patient to get the disease in a mild form. In the years 1713–16 two papers describing the practice at Constantinople were read before the Royal Society in London by *Emmanuel Timoni* and *Giacomo Pylarini* but it attracted little attention.

The first data on variolation in Hungary dates back to 1717 when János Ádám Raymann (1690–1771), physician of the town of Eperjes (Prešov, Czechoslovakia) "inoculated [the patients] in a method learned from Greek-Armenian merchants". This method became recognized in England in 1722 when the English princes were inoculated at the advice of *Lady Mary Wortley Montagu* (1689–1762) the wife of the English ambassador in Constantinople. Variolation proved to be a practice not without any risk. It did not give complete protection and at the same time the persons who had been inoculated were exposed to other infections, e. g. syphilis, transferred by it. It was *Edward Jenner* (1749–1823), the pupil of *John Hunter* who succeeded in developing a final and satisfactory solution to this question. As a result of his observations and experiments conducted for several years, he proved those vaccinated with cow-pox vaccine (Variolae Vaccina) taken from infected cows gained complete protection against smallpox. He wrote a paper on his discovery to the Royal Society but it was met with opposition. Despite it he proceeded his experiments with persistance and achieved batter and better results. In 1798 he published his results in his famous book where he described 23 cases in 75 pages. He wrote two more books on the results of his experiments (published in 1799 and 1800) trying to convince the opponents of vaccination. His genius and persistence triumphed and vaccination was introduced all over the world.

Vaccination was introduced in Hungary by *Ferenc Bene* (1775–1858) university professor, who in his work written in 1802 mentions 43 physicians having previously experimented with smallpox vaccination.

Another excellent Hungarian physician of the age, *Mihály Lenhossék* (1773–

1858), chief medical officer of the country urged the introduction of compulsory small-pox vaccination. We are proud that Hungarian physicians were among the first to recognize the significance of vaccination and endeavoured to introduce it immediately.

The show-case presents *Sámuel Váradi*'s work entitled *"A tehénhimlő avagy a vaktzina"* ('Cowpox or vaccine') and several plaques representing the outstanding personalities of medicine of the age, together with a certificate of small-pox vaccination dating from 1847. Furthermore there are vaccination instruments and *Jenner*'s work in German translation to be seen (*"Beobachtung über die Kohpocken"* 'Observations on Cowpox', published in Hannover in 1800) and the above mentioned work of *Ferenc Bene* entitled *"Elementa politiae medicae"*.

IX. SECTS IN MEDICINE

In the 18th and 19th centuries, during the birth of scientific thinking and systematization, the representatives of medical theories often fall victims to quick and unsound generalizations. Especially at the turn of the 18th and 19th centuries different medical sects emerged as a result of the absolute acceptence of certain partial truths. The scientific value of these sects lies, however, in the crystallization of the proper principles of healing. Mention should be made of the "magnetism" of *Franz Anton Mesmer* (1734–1814), the theory of excitability by *John Brown* (1735–1788) and the vampirism of *Francois Joseph Broussais* (1772–1838) (Fig. 53.).

In the show-case we have exhibited the skull-model by *Joseph Gall* (1758–1828) with his diagram showing the localization of the supposed centres of the mental faculties in the brain. His theory met the severe opposition of his contemporaries which is referred to in the contemporary caricature on Gall on show. Nevertheless, he is considered the founder of phrenology.

Among the various theories the homeopathy ot *Friedrich Samuel Hahnemann* (1775–1843) was the longest one to survive. It has followers even to-day, especially in the United States. The idea "similia similibus curantur" ('Similar to be treated by similar') found several followers in Hungary, too. Mention should be made of *Pál Almási Balogh* (1794–1867), the private doctor of *Kossuth* and *Széchenyi; Döme Argenti* (1809–1893) and *Gusztáv Jármay* (1716–1890) apothecarian in Pest who had homoepathic pocket medicine cases made. Several series of his medicines are on show (Plate XIV.). Next to it there is the bust of *Hahnemann* made of bronze. (Fig. 54.). Above the show-case the lines of *Mihály Vörösmarty*, the great Hungarian poet of the 19th century, can be read in praise of *Hahnemann*.

X. DEVELOPMENT OF PHARMACY IN HUNGARY IN THE FIRST HALF OF THE 19TH CENTURY

In the first and second third of the 19th century, during the Age of Reforms (1825–1848), the War of Independence (1848–1849), and the Compromise of 1867 with Austria, Hungarian pharmacy seemed to be in an unfavourable position due to the subjugation and interference of Austria, member of the Holy Alliance. There were great contradictions between the useful and progressive orders and their execution. Our medicohistorians complain about the "deficient number" of pharmacies, the government on the other hand seems to have been satisfied with the situation. Statistical data from 1840 list 324 apothecarians, while the number of physicians was 555. Most of the apothecarians worked in Pest-Buda and thus it is understandable that their first association called *Gremium* was established there, probably in 1809. The first pharmaceutical periodical in Hungarian language corresponding the scientific standard of the age was founded in 1848 by *Ferenc Láng Adolf* (1795–1863) apothecarian and judge of the County Court in Nyitra. It was entitled *"Gyógyszerészi Hírlap"* ('Pharmaceutical Journal'). Next to the above mentioned journal one can see the second edition of *"Gyógyszerek árszabása Magyarországon és hozzákapcsolt tartományaihoz alkalmazva"* ('Price-list of Drugs in Hungary and adapted to its connected provinces') published in 1843. The first edition was published in 1829 by the Pharmaceutical Association of Pest-Buda.

On the side-wall of the show-case there are two reliefs representing Hygieia – one made of metal, the other made of wood. The pharmaceutical instruments and objects exhibited in the show-case are as follows: a mortar made of serpentine (ophite), wooden and bronze mould for casting suppositories, a densimeter made of copper and glass, alcoholometer, a series of metric liquid measures (mensura), weights, carved glass with lid, stochiometric tabulation with sliding caliper. The letter of *Gusztáv Jármay* to *Mátyás Rozsnyai* is of special interest since he is asking there for data on tannic quinine in the name of the editorial board of the first Hungarian pharmacopoeia. The name of *Mátyás Rozsnyai* (1833–1895) is connected with the discovery of tasteless quinine, which was called after him. The opposite side wall of the showcase presents the portraits of the most famous Hungarian pharmacists of the age.

One of the most characteristic laboratory instruments of 19th century pharmacies were presses. In our exhibition we present two special samples: one is a herb-press from the beginning of the 19th century (Fig. 55.), the other one is a tincture-press dating from the 50's of the 19th century. This latter one deserves special attention, since it belonged to the St. Bernard Pharmacy in Zirc, founded in 1849. It was used for pressing herbs soaked in alcohol, water and wine. The careful and functional execution and the rustic forms reminding

us of wine-presses lead us to the conclusion that it was manufactured by a village craftsman. (Fig. 56.).

Besides altar pieces ordered by the Church, rich citizens, too, gave orders to the masters. This leads us to the applied arts and the joiner's trade especially. At the beginning of the 19th century when sculptural arts flourished, carving on the level of craftsmanship did not suffice any more. The demand rose in the guilds to create pieces of art on artistic level in the real sense of the word instead of objects of fine craftsmanship.

The balance with figural decoration made by an unknown master and deriving from the Lion Pharmacy at Gönc founded in 1835 is a good example of the above described development. The lower part is black and contains drawers. A small base is placed on it for the statue of Asclepios. He is represented with his symbol, a snake coiling up a stick.

The anatomy of the statue is perfect, the fine execution of the folds of the toga and the delicate smile of the face of the figure suggest that it was made by an excellent master. The balance itself (not contemporary) is suspended on the back of the statue without spoiling its aesthetic effect (Fig. 57.).

XI. MEDICINE IN THE FIRST HALF OF THE 19TH CENTURY

The spirit and scientific results of the Enlightenment did not vanish without leaving any trace behind. The revolution of scientific reasoning effected also the different branches of medicine. Healing activity was always considered as a science but it really became sicentific in the 19th century. 19th century medicine is characterized by the introduction of the results of the natural sciences into medicine which was possible due to the systematic development of chemistry and physics.

The instrumental advances of medicine were extended: *Jean Nicolas Corvisart* (1755–1821) made a new translation of *Leopold Auenbrugger's* work on percussion "*Inventum novum*" ("A new invention") published in 1761 but soon forgotten. Corvisart completed his translation with an extensive commantary based on his own experiences gained in 20 years and percussion came into common use. *René Theophile Hyacinthe Laennec* (1781–1826) introduced the use of stethoscope, which has remained an essential instrument in internal examinations ever since. Microscope has become a basic instrument of the medical laboratory. The introduction of ether as an anaesthetic, the discovery of general anaesthesia, sterilization and haemostasis changed dramatically the aspects of surgical practice. The influence of the great physicians of the age was twofold: it affected university training and promoted the rise of the different "medical schools". The process of specialisation – lasting even today – started to accelerate also during the last century.

Medical Activities in Hungary in the Age of Reforms

The first achievement in the medical efforts of the Hungarian reform period (1825–1848) fighting for national independence and burgeouis development was the creation of a special Hungarian medical language. Until then medical and pharmaceutical terminology had been Latin or German, – the latter due to the politically dependent position. The undying merit of *Pál Bugát* (1793–1865) was the creation of Hungarian medical terminology. Together with *Ferenç Toldy*, the secretary-general of the Hungarian Academy of Sciences and a famous man of letters, he published the "*Magyar–Deák és Deák–Magyar Orvosi Szókönyv*" *(Hungarian–Latin and Latin–Hungarian Medical Dictionary)*. His name is connected also with the edition of the "*Orvosi Tár*" ("Medical Magazine"), the first medical periodical in Hungarian language in 1831. The periodical which aimed to be a store-house of practical medicine arouse great interest. Later, between 1839–49 it was edited by *Ferenc Flór* (1809–1871) an ex-

cellent surgeon. *Flór* defended his doctor's thesis in Hungarian in 1834. He was the first in surgery to use chloroform as a general anaesthetic.

The material referring to this period is exhibited in four show-cases. The first volumes of the "*Medical Magazine*" and the "*Hungarian–Latin – Latin–Hungarian Medical Dictionary*" are displayed here together with a manuscript of a collection of medical words, contemporary medical works and the famous work of *József Sadler* (1791–1849) physician, pharmacist and botanist, entitled "*A magyar planták szárított gyűjteménye*" ("Dried Collection of Hungarian Plants") – published in 1824. In the first low show-case there are documents referring to *János Teofil Fabini* (1791–1847), the first professor of ophthalmology: his prescription from 1828, his door-plate and his writings in Hungarian language. The material is completed with two sets of ophthalmological instruments, the so called Schuster eye-dropper made of blown glass and anatomical instruments.

The second show-case contains documents referring to the cholera-epidemics of 1831 and *Ágost Schoepf Merei's* (1804–1858) scheme of his "*Children's Hospital*" (1836) which has come down to us in a manuscript form. Mention should be made of the dove-shaped opaline glass baby's comforter (Plate XV.).

Next to the almost complete kit of obstetric instruments dating from the beginning of the 19th century, there is the small bust of *David Gruby* (1809–1899) and his letter of Hungarian interest. *Gruby* lived in Paris and was one of the most famous physicians of his age. He became private physician to the two Dumases, to Balzac, Heine, Chopin and Gambetta. The portraits, diplomas and other documents exhibited on the panels above the show-cases inform us of the intellectual activities the result of which was the establishment of the Budapesti Orvosegyesület (Budapest Medical Association). This organization wished to concentrate the discordant medical profession into a firm organization. The year 1841 is significant, it marks the foundation of the Magyar Orvosok és Természetvizsgálók Vándorgyűlése (Itinerary Congress of Hungarian Physicians and Naturalists) at the initiative of *Ferenc Bene*. The Természettudományi Társulat (Natural Science Association) was founded in the same year. Below the above mentioned obstetric instruments there are two precious illustrated albums to be seen: *Kilián's* "*Geburtshilflicher Atlas*" and "*Geburtshilfliche Demonstrationen*" published in Weimar in 1824.

2. *The Second "Vienna School"*

Clinical medicine was established in Vienna by *Gerard van Swieten* and *Anton De Haen,* the disciples of *Boerhaave*. With the assitance of *Stoerck, Stoll, Auenbrugger, Frank* and *Boer* they founded the the first Viennese medical school and thus Vienna became a European centre for medical teaching. At the

50 turn of the century and at the beginning of the 19th century the expected progress stopped on account of the system of absolutism. A new prosperity of clinical medicine started with the rise of the second Vienna School (Fig. 58.) in 1841. The leading person of this school was the pathologist *Karl Rokitansky* (1804–1878) whose "*Handbuch der pathologischen Anatomie*" was published in that year. In the show-case we present *Joseph Skoda's* (1805–1881) work entitled "*Abhandlung über Perkussion und Auskultation*" ("Treatise on percussion and auscultation"). He was the first to combine these two methods of examination and thus pathological diagnostics was provided with a firm basis.

The third leading personality of the Second Vienna School was *Ferdinand Hebra* (1818–1880), the confidential friend of *Ignác Semmelweis*. (Both *Skoda* and *Hebra* were of Czech origin.) Hebra's interest was centred mainly on dermatology. His famous book on skin diseases entitled "*Diagnostik der Hautkrankheiten*" was published in Vienna in 1845. His vast experience on this subject made him known all over the world. Professor Hebra was the first to review *Semmelweis*'s discovery.

Beside this outstanding triad the name of *Joseph Hyrtl* (1810–1894) should be mentioned here. He came from Hungary and was professor of topographical anatomy at Vienna and a most successful teacher of this subject. His book "*Handbuch der Topographischen Anatomie*" published in Vienna in 1865 is exhibited in the show-case. Next to the documents of books and portraits there are the plaques of the greatest personalities of the Vienna School to be seen. We may maintain that the members of the second Vienna School aimed at the "modern scientific foundation of the different branches of clinical medicine".

3. Medical Instruments in the First Half of the 19th Century

In the first half of the 19th century Paris became the European centre for medicine. We should only consider the following names: *Xavier Bichat* (1771–1802), *Jean Nicolas Corvisart* (1755–1826), *Philippe Pinel* (1755–1826), *René Theophile Hyacinthe Laennec* (1781–1826), *Francois Joseph Victor Broussais* (1772–1838) and *Claude Bernard* (1813–1878). *Bichat* introduced the term "tissue" and emphasized that the origin of a disease is in the damaged tissues. He published his experiences in his work "*Reserches physiologiques sur la vie et la mort*" ("Physiological researches on life and death"), a copy of which (Paris, 1805) is exhibited here. His activity greatly contributed to the development of cytology, histology and his influence was felt on pathological anatomy, too. We have already mentioned *Corvisart*'s merit of the rediscovery of percussion, but he also made a very notable contribution to special pathology, to cardiotherapy. We have exhibited here the contemporary wooden samples of Laennec's stetoscopes.

The presented clinical instruments belong to the different fields of medicine: surgery, internal pathology, dental surgery. They are completed with some contemporary prescriptions. Mention should be made of the lithotriptor, lancets, trephines for trephination of skulls, a needle-holder, extraction forceps, etc. Two coloured caricatures represent a collection of all the costumes (plague-masks) advised by physicians as protection against cholera epidemics.

4. Medical Relics of the Hungarian War of Independence (1848–49)

A mile-stone of Hungarian history was the War of Independence suppressed by Austria and its ally, Tsarist Russia. Among the fighters for national independence we find the outstanding personalities of the emerging medical School of Pest: *János Balassa, Lajos Markusovszky, Sándor Lumniczer, Endre Kovács-Sebestyén, Ágost Schoepf-Merei* and *Frigyes Korányi.*

The leaders of Hungarian medical life were united in their political fight for national independence. They formed a firm circle out of which Hungarian medicine rose to European level in the second half of the 19th century.

Medical documents of the two years' period of the revolution and War of Independence are displayed in the show-case dedicated to this period, and they are surrounded with pictures. E. g.: the handwritten inventory of the Surgical Clinic (signed by *Balassa* and *Markusovszky*); the appointment of *János Balassa* to the rank of ministerial counsiller signed by István, Palatine of Hungary, the work of *Endre Kovács-Sebestyén: "Javaslat az álladalmi közegészségi és orvosi ügy rendezésére"* ("Suggestion for the organisation of state public health") published in Pest in 1848.

There are two more interesting documents to be mentioned: *Lázár Mészáros* (1795–1858) minister of Defence appoints *Albert Grósz* "physician supervisor of hospitals" and the military passport of *Albert Grósz*. The portrait of *Illés Politzer* (1825–1907) director of the Hospital at Nagyvárad (today Oradea in Rumania) during the War of Independence was painted by *Antal Simonyi* (1821–1892). The exhibited cockade of the Academical Legion belonged also to *Politzer*. *Károly Than* (1834–1908) aged 14, was one of the youngest soldiers of the War of Independence. Later he became the pioneer of experimental chemistry in Hungary and the founder of the first chemical institute of the country.

The founder of Hungarian psychiatry was *Ferenc Babarczi Schwartzer* (1818–1889). During the war of Independence he served his country under the name of *Ferenc Fekete* as a surgeon-major. The pocket-watch on show evokes his memory.

The exhibited instruments mainly belong to military surgery: ophthalmological instruments, bullet-drawer, surgical instruments in tool-case, bone-drills, trephines on stands, etc. The wooden chest with iron battens was used for storing medicines and medical instruments (Fig. 60.).

XII. SEMMELWEIS AND THE EMERGENCE OF THE MEDICAL SCHOOL OF PEST

The outstanding Hungarian physicians of the first half of the 19th century – *Rácz, Bene, Bugát* and *Schoepf-Merei* – despite their activity of lasting value – did not form any medical "school" of their own. To the formation of a medical school several factors are needed, e. g. excellent organisers, experts of high professional knowledge, common maxims and approaches, kindred ideas and last but not least a political climate favourable for these activities. In 1850 all these factors mentioned above seemed to be given: *János Balassa,* the excellent surgeon had been teaching at the University of Pest since 1843. His active role in the War of Independence got him into prison during the period of Habsburg oppression. After his release he hegan his work as an organiser. With his friends who gathered around him he organized riding tours where they discussed the questions of policy and medicine in Hungary. This is why they were given the name "Faculté de medicine á cheval", i. e. the riding medical faculty. In 1850 *Ignác Semmelweis* joined this circle, too. Other outstanding persons of the circle were *Lajos Markusovszky, Frigyes Korányi, Sándor Lumniczer* and *Ignác Hirschler.* In the 60-ies Hungarian medicine could boast with such names as *Lajos Arányi, Jenő Jendrassik, József Lenhossék, Ferenc Sschwartzer, János Wágner* and *Tivadar Margó.* The significance of the Medical School of Pest is that its members of excellent knowledge and wide intellectual horizon raised Hungarian medicine to European rank.

1. János Balassa

János Balassa (1814–1868) (Fig. 59.) received his diploma as a surgeon in Vienna. In 1839 he worked in the Surgical Clinic, then in the Allgemeines Krankenhaus. Here he was appointed deputy of the head physician. In the show-case we present the authentic copy of the certification signed by *Skoda* which states that *Balassa* had attended the lectures on percussion and auscultation organized by the T. B. department. The other document dating from 24 October 1838. is a permission for Balassa to enter the Pathological Institute. After a longer study – tour to Western countries he was appointed Professor of Surgery to the University of Pest. During the War of Independence of 1848/49 he was director of the Medical Faculty and Military Hospital. For this reason he was imprisoned and he could return to his cathedra only after his release in 1851. Here he introduced a modern surgical teaching which he combined with practice. We should bear in mind that he was among the first in Europe who operated under general anaesthetization. He was searching for

new solutions in the field of plastic surgery, too. His work *"Képző műtétek" ("Plastic Operations")*, an illustrated atlas, (Fig. 61.) is exhibited here.

The birth of the Hungarian medical press was also the result of his organizing activity since the *Orvosi Tár* edited by Bugát ceased to appear in 1849. He organized the National Council of Public Health, and became its first president. He described the conservative method of the treatment of tubercolotic bone and articular diseases. Objects of special interest displayed in the showcase refering to the life and work of Balassa are: the hand of *Balassa* carved by *Ferenc Deák* (Fig. 62.), hypodermic instruments made of "r–Z" glass, artery forceps and hooks, adjustabe rectoscope, chain-saw and several memorial plaques. On the panels we present the various diplomas of Balassa.

2. Lajos Markusovszky

Another outstanding personality of the medical school of Pest beside *Balassa* was *Lajos Markusovszky* (1815–1893) (Fig. 63.). His career was determined already by the title of his thesis: *"Az orvos, mint nevelő" ("The physician as educationalist")*. He – as many other Hungarian medical students – studied in Vienna for two years and was a pupil of professor *Wattmann*. In Vienna he became a lifelong friend of Ignác Semmelweis. He returned to Pest-Buda in 1847 and became assistant to *János Balassa* who recognised his excellent qualities. *Markusovszky* tried the above mentioned "ether anaesthesia" first on himself and applied it on patients only afterwards, together with Balassa. Similar to *Balassa,* he took part in the War of Independence, and lectured on a "course for military physicians". Later they performed an operation on *Görgey* who had a heavy head wound and he also accompanied him to exile at Klagenfurt after the capitulation at Világos. His political activity cost him his job. *Balassa* then employed him as his private assistant. He had private praxis and became the private doctor of the *Eötvös* and *Trefort* families. The symphaty between patient and doctor developed into a close friendship. His wide intellectual ability, manifold talent and excellent qualities as organizer made him an indefatigable realizer of new ideas. He was the owner and editor of the *Orvosi Hetilap* (Medical Weekly) which was first published on 4 June 1857 and which has been the forum of the Hungarian medical society ever since. His name is also connected with the establishment of the Magyar Orvosi Könyvkiadó Társulat (Hungarian Medical Publishing Society) in 1863. It was *Markusovszky* who urged *Semmelweis* to publish his discovery. After 1867 the ministry of *Eötvös* enabled him to realize his programs as an organizer. First he was put in charge of medical training and later of all the university affairs. After the death of *Eötvös* in 1871 he continued to play an active role under the ministry of *Trefort*. *Markusovszky* modernized medical training, organized special faculties

for public health, promoted the development of clinics and laid down the foundations of the further education of physicianas. He took an active part in the programs for reforming Hungarian public health in the last third of the 19th century: the establishment of the National Public Health Council, and National Public Health Association and he played a direct part in drafting the Public Health Law (1876: XIV) which reorganized Hungarian medicine.

The show-case and the panel are dedicated to the life and work of *Markusovszky* presenting documents on certain important mile-stones of his career.

Above the large show-case with a glass walls there is a picture of the professor of the medical faculty of the University of Pest dating from 1863, a litography by *József Marastoni*(1834–1895)(Fig. 64.). In the show-case the following objects can be seen: surgical instruments dating from 1827, an autopsy document from the St. Rochus Hospital with the signature of *Semmelweis,* and the copy of *Semmelweis's* skull made after the exhumation in 1963.

3. Sándor Lumniczer

Sándor Lumniczer (1821–1892) (Fig. 65.), another great personality of the Balassa circle, was the grandson of *István Lumniczer,* the founder of the "dynasty". He studied in Pest and Vienna and obtained his diploma in Pest in 1844 and his degree of master of obstetrics in Vienna in 1847. Both diplomas are on show together with the enlarged photograph of *Lumniczer* and his disciples. His thesis entitled "*Orvossebészi értekezés a képlő sebészetről*" ('Physico-surgical treaty on Plastic Surgery') written in 1844 is a basic work in the history of plastic surgery in Hungary.

He took an active part in the War of Independence. He was medical officer in chief of a battalion and later surgeon-major and private medical officer to *Görgey*. In June 1849 he was appointed head of the Public Health Department of the Ministry of Defense. After the surrender at Világos which ended the Hungarian War of Independence, he was condemned for working as a male-nurse and only *Böhm,* his colleague in Vienna, could save him from this job. During the so-called Bach-regime, the period of Austrian neoabsolutism in the 1850's his articles were published in the Medical Weekly. He took part in the work of the Budapest Medical Association and was its president between 1880 and 1886. Then he became head of the Surgical Department of the St. Rochus Hospital. In 1872 he was appointed assistant professor and from 1880 onwards professor at the University of Pest. Beside his activity as a professor he took an active part in the organization of public health in Hungary. In 1895 he was appointed member of the Upper House.

In the show-case dedicated to his life and work we have exhibited a golden copy of the so-called *Lumniczer* forceps which is named after him. It was

made and presented to him by his disciples. Next to it there is his contemporary photograph and a plaque made by *Ferenc Hőgyes* together with some surgical instruments of the age: accessories for suture, tonsillotome, Petit's raspatory and Leiter's osteotome, etc.

4. Ignác Semmelweis

The hard life and world-famous discovery of the greatest Hungarian physician is well-known from his numerous biographies written by both Hungarian and foreign medico-historians. Here we only should life to enumarate the exhibited objects and documents referring to him. We present the copies of the "*Land-registers*" of the Tabán district kept in the Buda Archives which prove that the *Semmelweis* family lived in the present building of the museum between 1806–1823. One can see a page of the birth-register of Taban Parish Church with the entry of *Ignác Semmelweis*'s birth. The poem written by the 7 year old *Semmelweis* to his grandmother dates from 1825. Mention should be made of the mourning-card of *József Semmelweis,* the father of *Ignác Semmelweis,* who died in 1846, because it was published in Hungarian, whereas in Buda, German used to be the more widely spoken language at that time. There is a certificate on show dating from 1847 where *Semmelweis* states that *Markusovszky* completed his obstetrical practice successfully. You can see the original marriage-certificate of *Semmelweis* with *Maria Weidenhofer* in 1857. *Semmelweis*'s report on his students goes back to the same date. The contemporary photographs represent *Semmelweis* in 1861 and his wife in 1863 and there is a photo of his widow with her family. Some of his personal keepsakes that have come down to us are displayed here, too: his brief-case, paper-knife made of walrus-tusk, and a silver box which contained his shirt-buttons.

The second show-case presents the documents referring to his scientific activity (Fig. 66.): a copy of the Medical Weekly from January loth, 1858 where his first study on his discovery was published. There is a facsimile copy of his letter written to the Hungarian Academy in 1860 on show and his momentous work published in Leipzig in 1861 which he presented to the University Library. One can clearly see his lines of dedication in it. The three "*Open Letters*" which were prooked and attacked by the European gynaecological circles can be seen, too. Here we should like to refer to the question of Semmelweis's nationality. We exhibited Siebold's work written in German to which *Semmelweis* made marginal notes in Hungarian. It serves as a psychological proof of the fact that Semmelweis was in fact thinking Hungarian even while reading in German.

Above the show-case there are portraits of some famous gynaecologists

of *Semmelweis*'s age and Semmelweis's *Instructions* written on the prophylaxis of puerperal fever.

The third show-case presents a few medical instruments used in Semmelweis's age: instruments for cutting dead embryoes (Somatomes), uterodilators, bougies, forceps and a pelvimeter. Furthermore one can see a forensic medical report by *Semmelweis* and *Lajos Arányi*, and the photograph and book of *Tivadar Kézmárszky* (1841–1902), his successor. On the panel above the show-case the work-places of Semmelweis and photo-copies of his portraits can be seen.

The fourth show-case contains the documents and reliquies concerning *Semmelweis*'s death: the bilingual (German–Hungarian), mourning-card and the Hungarian one of his wife, the epitaph in the Schmelz Cemetery, where he first rested, two massive copper plates found fixed to his metal coffin during the exhumation in 1963. In the show-case there are three memorial medals (plaques) dedicated to *Semmelweis* and made by the artists Reményi and Szántó (Fig.67.).

The part dedicated to *Semmelweis* concludes with three quotations which may reveal the essence of his life and work: *"Everything was problematic, everything was undecipherable, everything was doubtful, only the great number of the dead was an irrevocable reality"*.

The second reads as follows: *"Murder must be stopped and in order to stop it I shall keep guard and he who dares to propagate dangerous doctrines on puerperal fever will find a determined opponent in me."*

The third qoutation was written by the English Semmelweis Memorial Committee: *"The scheme to raise an international Semmelweis memorial is a noble one and we are pleased to support it... What Semmelweis had accomplished does not belong simply to medicine, to his country or to ours, but to the whole world."*

5. The Medical School of Pest and the Formation of Special Disciplines

The *"Medical School of Pest"* the chief merit of which was to raise Hungarian medicine to European rank, was not devoid of great names in the last third of the 19th century, either. Its line of development can be said to the unbroken. *József Lenhossék* (1818–1888) – the second of the three Lenhosséks – was professor of anatomy at the University of Pest. He performed important studies on the medulla oblongata and medulla spinalis, and his anthropological research work on deformed skulls is important, too.

The founder of the "Bókay-dynasty", *János Bókay* senior (1822–1884) was the creator of modern pediatrics at the University of Pest. *Jenő Jendrassik* (1824–1891) was the first significant representative of physical medicine. He was responsible for the plans of the Physiological Institute of the University which belonged to the most up-to-date institutes of contemporary Europe.

Tivadar Margó (1816–1896) was professor of zoology and comparative anatomy. He was a famous biologist of his age who first introduced Darwinism in Hungary. Special mention should be made on *Ignác Sauer* (1801–1863) not only on account of his merits in the War of Independence but also for the fact that he belonged to those professors who delivered their inauguration speech in Hungarian. He was professor of pathology and therapy at the university and he is reputed also for the introduction of auscultation and percussion.

Frigyes Korányi (1823–1913), a member of the "Balassa-circle" was the first great representative of internal medicine in Hungary who won European reputation. After the War of Independence he was exiled to Nagykálló, his native village, but in vain, Hungarian medicine could not do without his vast knowledge. He was university professor from 1866 to 1908 and took an active part in reforming public health. He started the fight against tuberculosis in Hungary and his activity opened a new epoch in treating the diseases of the kidneys. In his medical activity he represented progressive and modern ideas which were welcomed by all.

Lajos Arányi (1812–1887) (Fig. 68.) was another remarkable representative of this generation. He furnished the department of pathological anatomy at his own costs. He was professor of pathological anatomy between 1861 and 1873 but his activities covered archaeology, museology and the protection of historic monuments as well. Among his contemporaries mention should be made of *János Wagner* (1811–1889), professor of internal medicine, *József Török* (1814–1894), professor of forensic medicine and public health, and *Ignác Hirschler* (1823–1891) the famous oculist, who was private doctor of János Arany for a longer time.

The show-cases present dental and ophthalmological instruments and a few interesting pieces of the collection of spectacles in the possession of the museum. Special mention should be made of *János Czermák*'s (1828–1873) laryngoscope, constructed by him in 1858 (Fig. 69.). Czermák – a Czech by birth – was professor of physiology at the Faculty of Medicine of Pest between 1858 and 1860. The exhibited instruments (laryngoscopes, auroscopes, nasoscopes, tongue-spatulas, laryngeal painters, etc.) aim at representing the contemporary standard of otorhinolaryngology (ORL) in Hungary.

XIII. THE MICROBIOLOGICAL REVOLUTION AND MEDICINE IN HUNGARY

From the middle of the 19th century onwards the period of scientific specialization started in medicine, due to the manifold development of medical science. The most spectacular series of successes was achieved in microbiology. The history of research work done in this field can be divided – rather simplified – into the following chapters:

1. Discovery of micro-organisms by *Leeuwenhoek* in 1683.
2. Establishment of the doctrine of the germ origin of diseases *(Agostino Bassi,* (1771–1856)
3. Refuse of the theory of spontaneous generation first by *Francesco Redi* (1626–1697) in the middle of the 17th century, by *Lazzaro Spallanzani* (1729–1799), etc. until *Pasteur. Louis Pasteur* (1822–1895) came to the conclusion that "there is no fermentation without micro-organisms and each fermentation is caused by a special germ" about 1867.

Beside the portraits of the most outstanding personalities of contemporary medicine: *Pasteur* (1822–1895), *Koch* (1843–1910), *Metchnikoff* (1845–1916), *Hata* (1837–1938), *Ehrlich* (1854–1915) enlarged colour transparent photos of germs can be seen, the discovery of which brought about a revolution in medicine.

In the small show-case there is a binocular microscope made by Negretti and Zamba in 1870 in England. It is exhibited as the most important instrument of the above described discoveries.

1. Antiseptic surgery – Lister

The antiseptic method is an important way of excluding infections. It means the destruction of germs, the causes of disease – by the use of physical or chemical agents. This fundamental revolution in surgery was introduced in the second half of the 19th century by *Lister* in order to destroy the harmful germs by the use of antiseptics. The antiseptic method was gradually superseded by the more effective aseptic method, the introduction of which is inseparably linked with the name of *Semmelweis. Lord Lister* (1827–1912) who was hailed by his contemporaries as "medicorum facile princeps", greatly contributed to the revolution in surgery. A contemporary medical review said of him that by his wok "*He had saved more lives than all the wars of history had thrown away*". Lister's antiseptic operations and the instruments used by him (his carbolic spray) are demonstrated in photos and drawings. There is an oil-painting of his portrait made by *Ede Komlóssy* in 1887 on show, too. His hand-writ-

ing is preserved in a letter addressed to professor *Manninger*. Under his portrait there is a stone-ware medical wash-basin with blue decoration standing on a wooden stand and deriving from the end of the 19th century.

2. Public Health in the dualist period in Hungary

Public health in Hungary was organized in the dualist period (1867–1918) which followed the Compromise of 1867 between Austria and Hungary. *Balassa, Markusovszky, Korányi* and *Jendrassik* wrote a memorandum in 1868 where they set forth the most important measures to be taken. It was followed by the establishment of the National Public Health Council and after long preparations the passing of the Public Health Law in 1876 (Act XIV) which was the first act in Hungary settling public health affairs. Under *Ágost Trefort* (1817–1888), Minister of Public Education, the surgical school of Kolozsvár was transformed into a medical faculty. (1872). The department of political medicine at the Faculty of Medicine of Pest was separated into departments of forensic medicine and public health. The first professor of public health was *József Fodor* (1843–1901) (Fig. 70.) who disproved Pettenkoffer's false soil theory and won international reputation. At his initiative posts for doctors and teachers of public health were organized in the schools.

Ernő Jendrassik (1858–1921) was an excellent representative of internal medicine and neurology. From 1893 onwards he was professor at the university of Pest. His book *"Szervi szívbajok kórtana és orvoslása"* (Pathology and Therapy of Organic Heart Diseases) was written in 1891.

Vilma Hugonnay (1847–1922) (Fig. 71.). was the first Hungarian woman doctor. He obtained her degree in Zurich and had it nostrificated in Hungry in 1897. She wrote a thesis on obstetrics and the training of midwives and took and active part in the women's right movement which started at that time.

Vilmos Tauffer (1851–1934) was professor of the Second Obstetric and Gynaecological Clinic between 1881 and 1918. He was the first to perform stitching of the ureter which had been cut through. He had great achievements in the foundation of up-to-date obstetrical and gynaecological operations in Hungary. His name is also linked with the reform of midwife training and the introduction of obstetrical registration.

Endre Hőgyes (1847–1906) was one of the most excellent physician scientists in Hungary. He was at first professor of pathophysiology at the University of Kolozsvár (today Cluj, Rumania) in 1875 and then from 1883 onwards until his death professor at the Medical Faculty of Budapest. Among his manifold activities mention should be made of his modification of Pasteur's immunization against rabies, his researches in the field of bacteriology – first in Hungary. He also established hospitals and the Pasteur Institute.

In his work of three volumes written between 1881 and 1885 he was the first to describe "the reflex arc of equilibrium sense and its reaction to electric impulse and rotation".

Sándor Korányi (1866–1944) followed his father's example and became an excellent internist. From 1908 onwards he was professor of internal medicine and he is considered and internationally reputed as the founder of up-to-date pathology and physiology of the kidneys. On the basis of the reduction of the freezing-point of blood and urine he was the first to find a satisfactory method to registrate the functions of the kidneys which is still used in a slightly modificated form (ureometry). He was the first to describe the essence of renal insufficiency and thus he became one of the founders of functional pathology. His merits as a teacher are also outstanding, he had many disciples, and created a significant school.

Károly Than (1834–1908) was an internationally recognized authority of the teaching of chemistry at the university. From 1862 onwards he was professor of the Chemical Department at the University of Budapest and he initiated the establishment of the First Chemical Institute in 1872. In 1895 he founded the "*Magyar Chémiai Folyóirat*" ('Hungarian Chemical Journal'). He played an important part in the formation of Hungarian chemical terminology. He was editor of the chemical part of the second pharmacopoeia.

The show-case demonstrating the activities of the above mentioned persons present interesting medical instruments and tools and some remarkable medico-and pharmaco-historical documents: the letter of *Mihály Táncsics,* writer and revolutionist of the 19th century, written to *Dr József Egei* who had performed a successful eye operation on him (Fig.74.). Furthermore one can see the letter of *Lujza Blaha,* famous singer and actress, to *Vilmos Tauffer;* one of the first X-ray photographs in Hungary out of the time of the thurn of century (Fig.75.); *Sándor Korányi*'s letter to *Tauffer*. Among the books mention should be made of *Károly Than*'s fundamental work and the first and second Hungarian Pharmacopoeia. As regards instruments and tools, the following objects are worthy of mention: a metal kit for midwives (Fig.76.), *Endre Hőgyes*'s experimental instruments for fixing hares and doves, Petz's gastric suturating machine (Fig.77.), Than's microscope; cast-iron pharmacy vessels and a leech-spoon. The medals represent the outstanding personalities of the period: *Billroth, Röntgen, Hőgyes* (Fig.72.), *Pettenkoffer, Than, Pasteur, Behring, Korányi* (Fig.73.) etc.

This part of the exhibition presents furthermore the following exhibits: (Plate XVI.)

a) The bust of József Lumniczer (Fig.77.) by *Alajos Stróbl. Alajos Stróbl* (1856–1926) was an outstanding Hungarian sculptor whose marble statue "Our Mother", a sitting figure of a woman was given Grand Prix in Paris in 1900. The portrait of *József Lumniczer* was made during World War I. The bust

reveals the excellent craftsmanship of the master, it is an objective portrait which expresses well the character of the doctor.

b) Uniform of chief medical officers used at the turn of the century and shako of a regimental surgeon displayed on a dummy.

c) Neo-Renaissance "Home-Pharmacy" from the end of the 19th century deriving by all probability from a cloister. The glass vessels which have survived help us to find out what kind of drugs were originally used for curing certain diseases.

The above described three exhibits are surrounded by the enlarged signatures of Nobel-prize winner physicians and physiologists (1901–1939) displayed on the two columns of the large hall.

XIV. MEDICAL RELICS OF JAPAN AND THE FAR EAST

The progress of medicine in the Far East had been isolated up to the middle of the 19th century. This, in addition to the geographical potentiality, in a great part was due to religious and political reasons. The Far-Eastern material should have been placed at an earlier part of the chronological order of the exhibition, but it had not been so because this region became accessible and known for Europe only as late as the second half of the 19th century.

A special product of the history of medical arts and crafts of Japan is the *inró*. This is a medicine case made up of one or more compartments, its form and closing device being determined by the clothing peculiarity that the kimono had no pocket only a belt. The *inro* is usually made of Japaned wood inlayed with pearl or guilded japan thrown into relief with lac of different colour. From among the motives decorating the sidepiece of the telescoping compartments, the landscapes and figural representations are the most interesting. The safety string is usually fastened, closed and connected to the belt by an ivory or steatite carving *(netsuke)*.

The *inrós* possessed by the museum date back to the 18th and 19th centuries. (Plate XVII.). We exhibit an early 19th century salve-box made up of telescoping compartments and a genuine Chinese "secret" instrument used for healing purposes.

Above the show-case there is a coloured print of a Japanese engraving entitled "*Instructions for Fathers and Mothers*". It shows the ten months of gestation according to the lunar year, and the monthly changing presentation of the foetus. The flowers and medicinal plants in the mother's hand refer to the infusion of herbs proposed for the month concerned. Here is a leaflet on view from Osaka in the turn of the 18th and 19th centuries: it is a fly-bill of an itinerant healer, reading pieces of advice against illnesses and offering his preparations.

XV. THE "HOLY GHOST" PHARMACY OF KÁROLY GÖMÖRY FROM 1813

Károly Gömöry "Apothecarian, captain in Pest, elected freeman of the town, scientist, lover of art and Maecenas" was born at Győr in 1779. He had serves his apprenticeship as assistant chemist in Pozsony and graduated as dispessing chemist at the university of Vienna in 1801. He purchased the third pharmacy of Pest, founded in 1786, the Holy Ghost Pharmacy in 1803.

This educated gentleman with an exquisite taste of the Palatine era, who as an assessor of the Improvement Commission of Pest took part in the building of the National Museum, commissioned *Mihály Pollack* (1773–1855), eminent architect of the age, to design a pharmacy house for him in the Király Street in 1812. The pharmacy was opened in 1813. The furniture – after being taken to pieces in 1951– arrived at its present place, the Semmelweis Medical Historical Museum in 1965. One of the most beautiful pharmacy interiors, in all probability designed by *Mihály Pollack,* was finished by the cabinet-maker *Márton Rosznágel* of Pest (1783–1857), while the decorative wood carving was made by the noted sculptor *Lőrinc Dunaiszky* (1784–1835) (Fig.80.).

The pharmacy furniture is U-shaped with rectangular outline. Its bottom is drawered, has cabinets at its set-backs, and shelves opened or fitted with glass above. The proportioning shows the hand of an architect. The cornice crowning the shelves and mounting the whole furniture, projects with abrupt proportioning. Under the cornice there is a guilded black bull's eye lath-work indicating the upper level of the fitting and synthetising the whole interior. In the subjacent troughs a gilt Empire foliation ending in flames and clusters of grapes, right and left springing from Hygieia heads or flamy vases is parading. Above the wall cupboards the shelved cabinets are screened with mirror-doors of four joints. The straight line of the furniture is broken by a projection at the axis of the rear wall, with a richly guilded French clock between the two columns of its cornice. According to the evidence of the inscriptions found on the drawers in the course of the restoration, the great Hungarian politicians and writers of the age – *Petőfi, Kossuth, Eötvös* and *Wachott* – must have been regular customers of the pharmacy. We wanted to emphasize the social meeting place character of the pharmacy by placing a set of furniture with fan-shaped backs around an Empire round table.

The most impressive parts of the pharmacy are the guilded wooden reliefs carved by *Lőrinc Dunaiszky*. The subject of the six high reliefs was probably given by *Gömöry* himself, their elaboration, however does credit to the exquisite artistic ingenuity of *Dunaiszky*. Above the entrance door there is the scene "Curing", then from left to the right: "Hygieia", "Chemistry", "Pharmacy", "Asclepios" and "Medicine" follow. The subject of those decorating the two

longitudinal walls are interdependant while the two partition walls form one unit with each other beside. The classical restrictions of the two mythological compositions (Hygieia and Asclepios) gave no possibility for the adequate reflection of the artist's independant intellectual world, but the more so the other, iconographically more free subjects. The artist threw off the formal academic pattern and gracefully represented the professional activity: the allegorical figures authentically reflect the bourgeois charm of the Biedermeyer times.

The 600 wooden, glass, faience and porcelain vessels of the pharmacy come from different regions of the country, and range over the age between the early 19th century and the first third of the twenties. It is worth giving prominence to the Empire wooden pedestalled jars of Gönc and the Biedermeyer ones of Békéscsaba (Fig.81.), the faience vessels of Miskolc, the Alt-Wien porcelain vessels of the Brothers of Mercy Pharmacy and those of the Zsolnay works at Pécs. From the glass vessels the opaline glasses of "The Snake" Pharmacy of Pest and the polished jars of the Brothers of Mercy decorated with pomagranate for containing powders and liquids are to be mentioned. Some beautiful mortars on the tare table, balances and other equipments complete the pharmacy interior unique in its kind.

Plate IX. Habán (Neo-Christian) Pharmacy jar from the beginning of the 17th century

Plate X. Habán (Neo-Christian) pharmacy jar dated 1648

Plate XI. Habán (Neo-Christian) pharmacy jar made in 1678

Plate XII. Habán (Neo-Christian) pharmacy jar from 1724

Plate XIII. Spa glasses made in Bohemia in the first part of the 19th century.

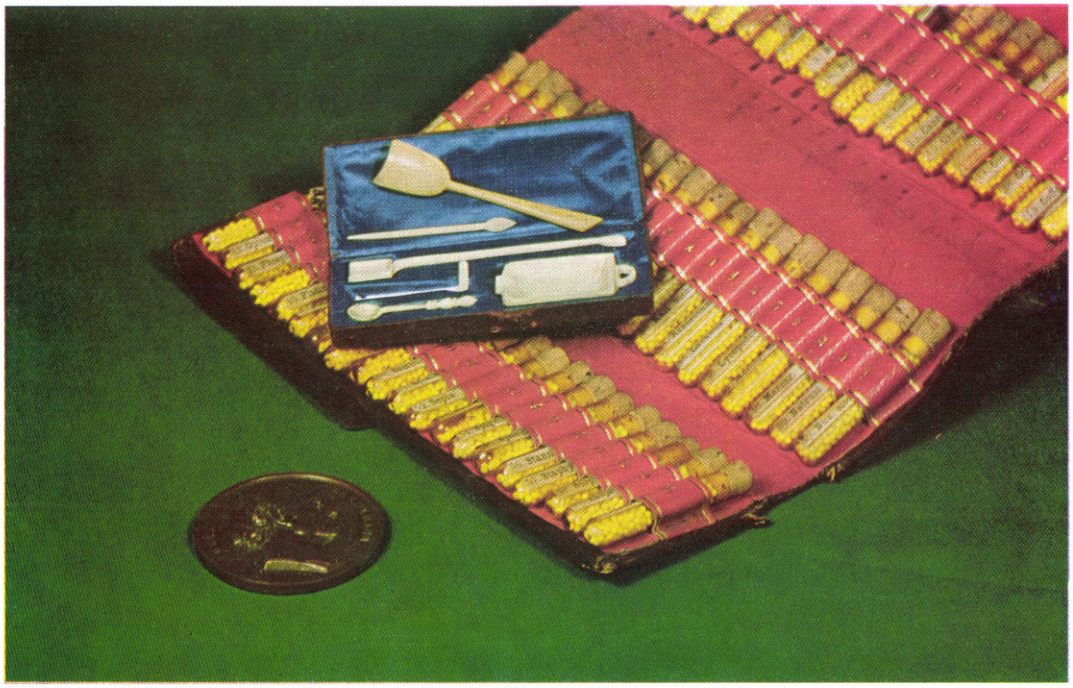

Plate XIV. Homoeopatic family-pharmacy

Plate XV. Beaked sucker

Plate XVI. Neo-renaissance family-pharmacy, regimental surgeon's uniform from the turn of the century and in the background the bust of Lumniczer by A. Stróbl

Plate XVII. Japanese inros from the 18th–19th centuries

Plate XVIII. Semmelweis memorial room

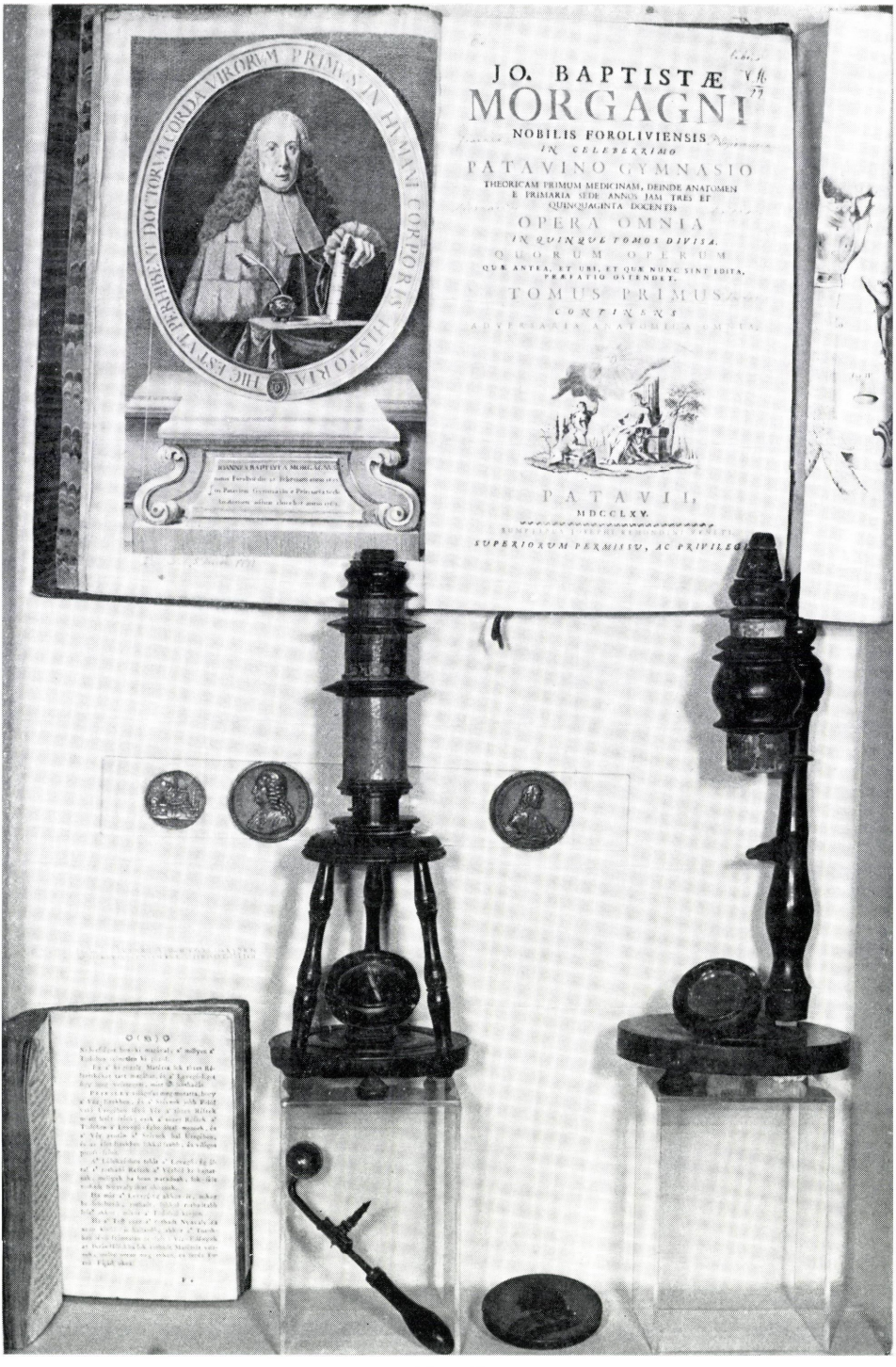
HIC EST VT PERHIBENT DOCTORVM CORDA VIRORVM PRIMARIA IN HVMANI CORPORIS HISTORIA
JO. BAPTISTÆ
MORGAGNI
NOBILIS FOROLIVIENSIS
IN CELEBERRIMO
PATAVINO GYMNASIO
THEORICAM PRIMUM MEDICINAM, DEINDE ANATOMEN
E PRIMARIA SEDE ANNOS IAM TRES ET
QUINQUAGINTA DOCENTIS
OPERA OMNIA
IN QUINQUE TOMOS DIVISA.
QUORUM OPERUM
QUÆ ANTEA, ET UBI, ET QUÆ NUNC SINT EDITA,
PRÆFATIO OSTENDET.
TOMUS PRIMUS
CONTINENS
PATAVII,
MDCCLXV.
SUPERIORUM PERMISSU, AC PRIVILEG

Fig. 37.

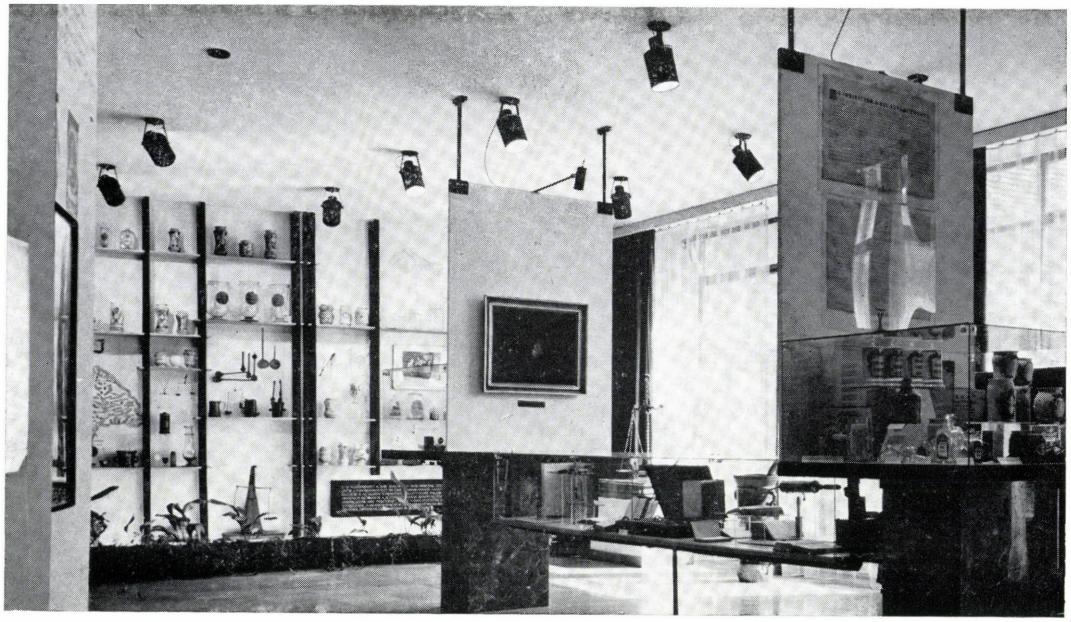

Fig. 38.

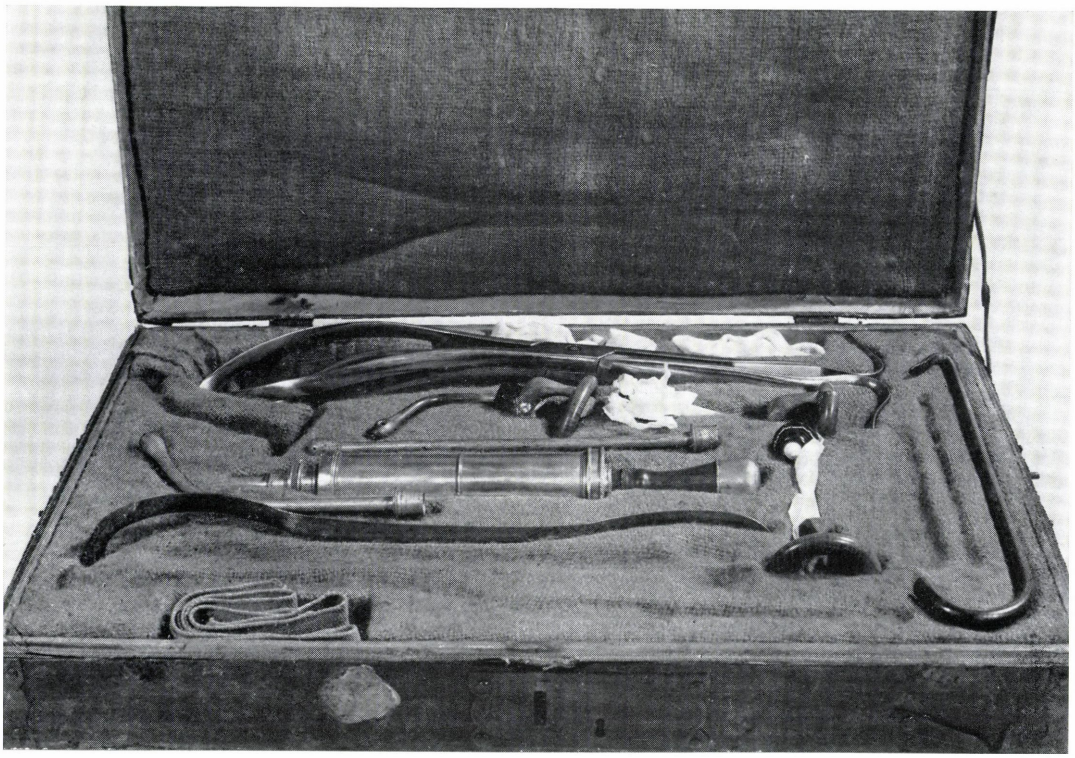

Fig. 39.

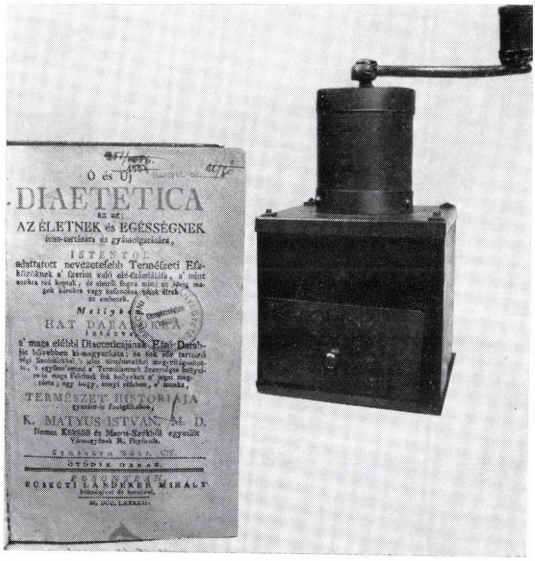
Ó és Új
DIAETETICA
AZ ÉLETNEK és EGÉSSÉGNEK
ISTENTŐL
TERMÉSZET HISTORIÁJA
K. MÁTYUS ISTVÁN, M. D.
ÖTÖDIK DARAB.

Fig. 40.


K.MÁTYUS ISTVÁN.Orv.Doct

Fig. 41.

BÁBA MESTERSÉGRE TANITÓ KÖNYV.

Mellyet

KRANTZ HENRIK NEPOMUK JÁNOS,
AA. LL. és MED. DOCT.
MEDICINÆ és BÁBA PROFESSOR,
FELSÉGES TSÁSZÁRI és APOSTOLI
KIRÁLYNÉ ASZSZONYUNK
TANÁTSOSA,
A' Leopoldino-Josephina Académiának
Nat. Curios. Adjunctussa, és a' Florentziai
Botan. Societásnak Társa irt a' Bétsi
Univerſitásban NÉMET Nyelven
a' Köz-Jónak haſznára.

Moſtan pedig MAGYAR Nyelvre fordított
WESZPRÉMI ISTVÁN
MED. DOCT.

DEBRETZENBEN,
Nyomt: MARGITAI ISTVÁN által,
cIↃ IↃCC LXVI. Eſtend.

Fig. 42.

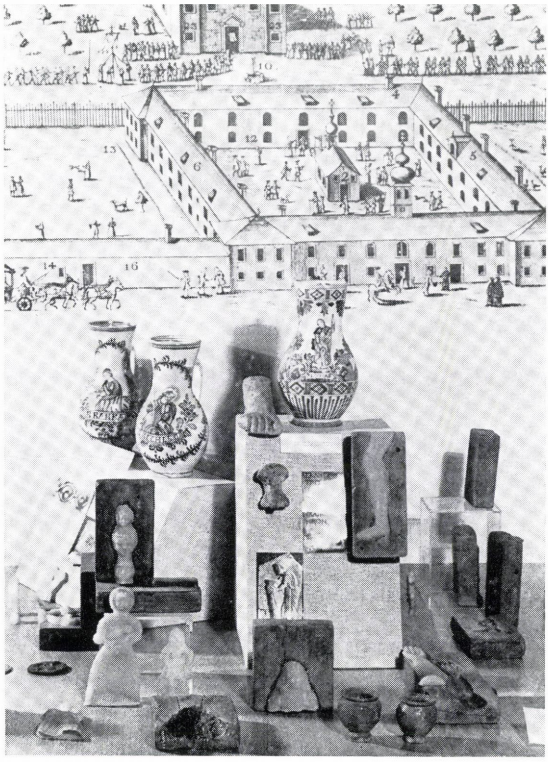

Fig. 43.

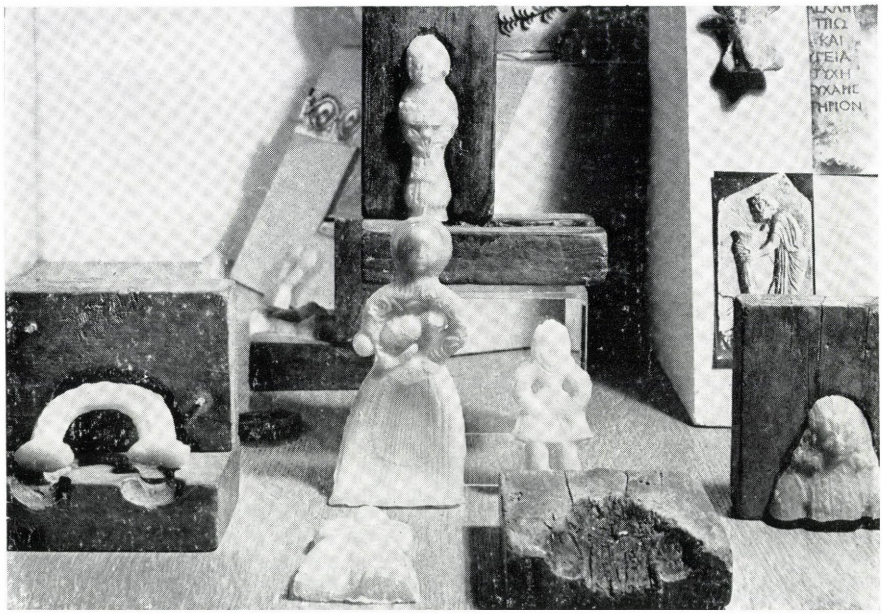

Fig. 44.

Fig. 45.

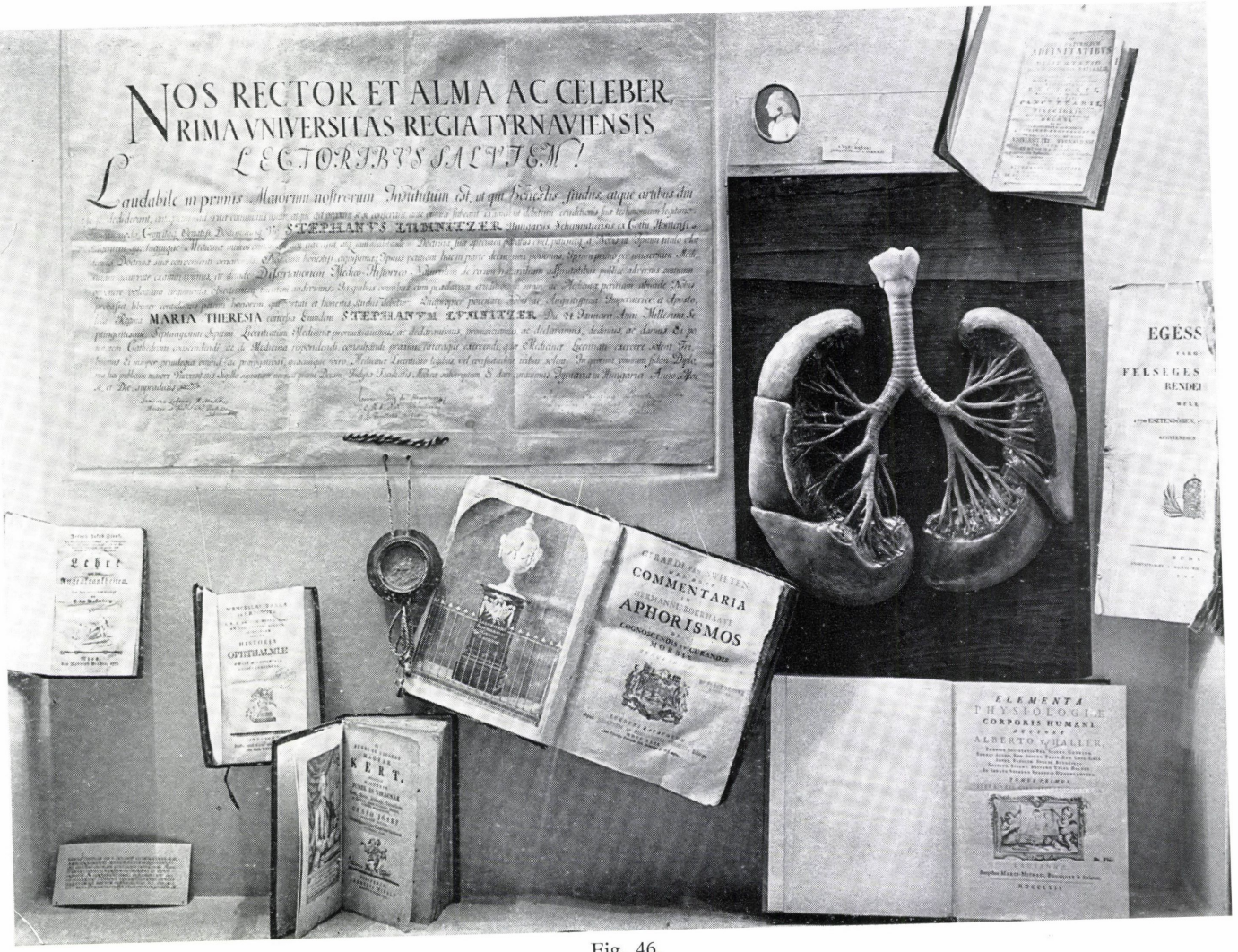
NOS RECTOR ET ALMA AC CELEBER
RIMA VNIVERSITAS REGIA TYRNAVIENSIS
LECTORIBVS SALVTEM!
STEPHANVS LUMNITZER
MARIA THERESIA
STEPHANVM LVMNITZER
COMMENTARIA
APHORISMOS
HISTORIA
OPHTHALMIE
KERT.
ELEMENTA
PHYSIOLOGIÆ
CORPORIS HUMANI
ALBERTO v HALLER.
EGÉSS
FELSŐGES

Fig. 46.

Fig. 47.

Fig. 48.
Memorial plaque of Gerhard van Swieten (1756)

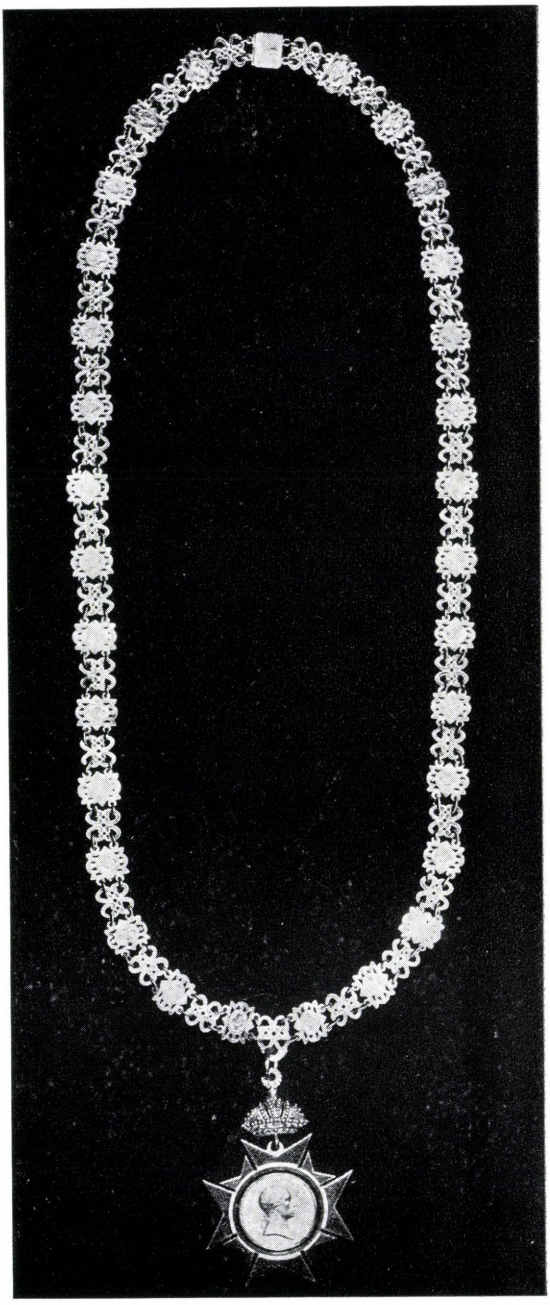

Fig. 49.
Dean's chain granted by Francis I.

Fig. 50.

Fig. 51.

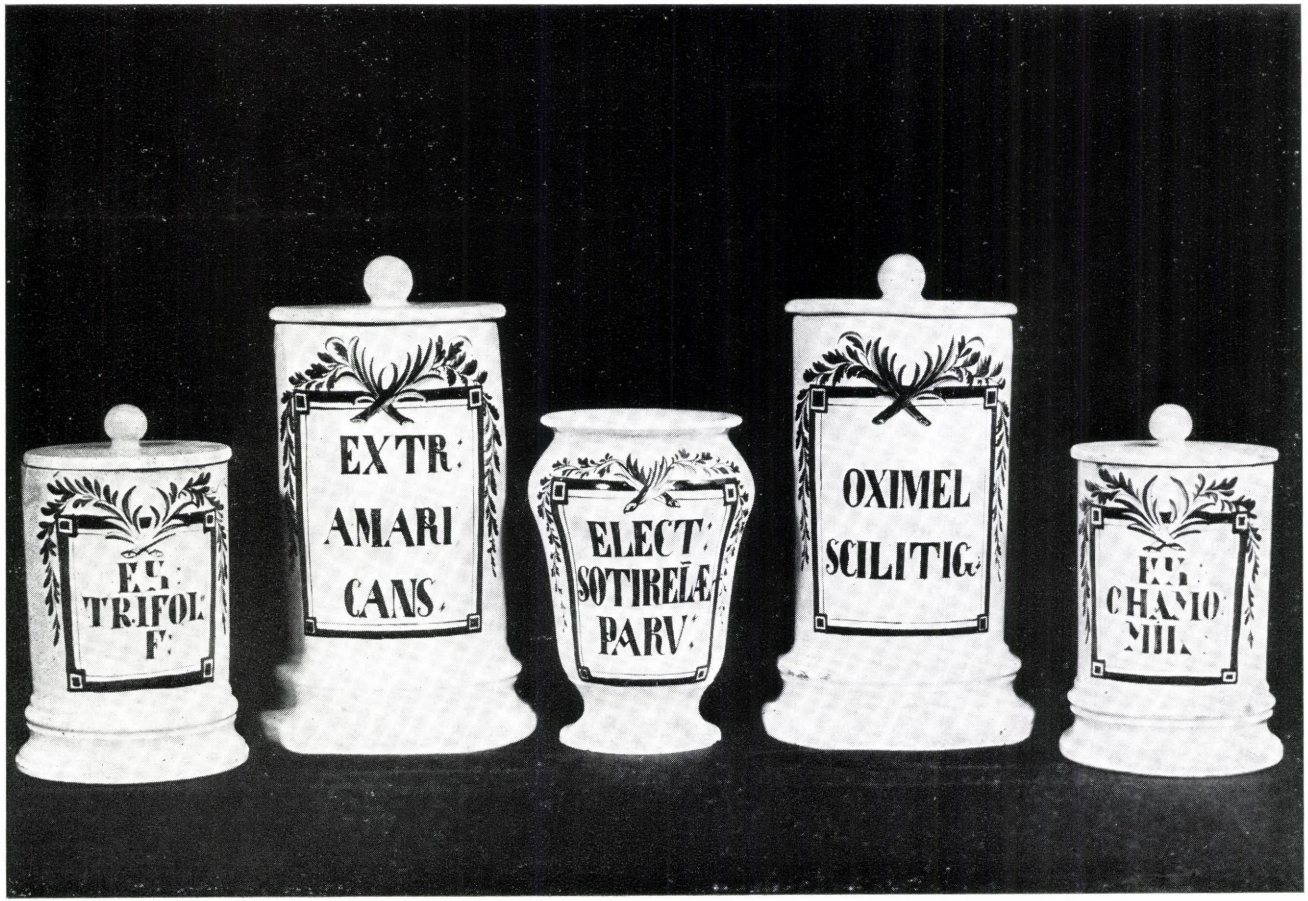

Fig. 52.

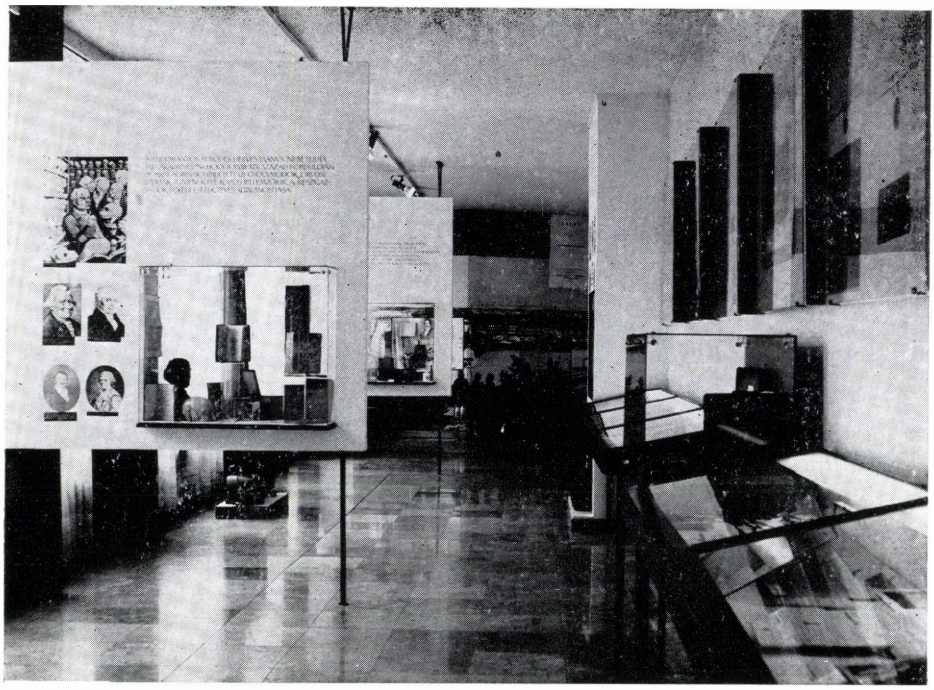

Fig. 53.

Fig. 54.

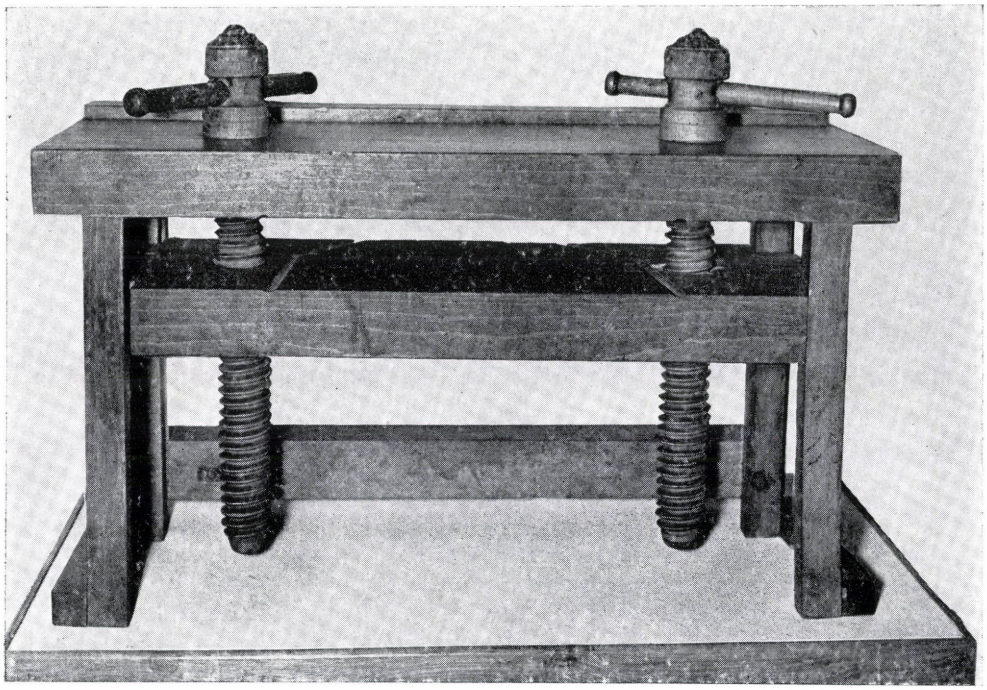

Fig. 55.

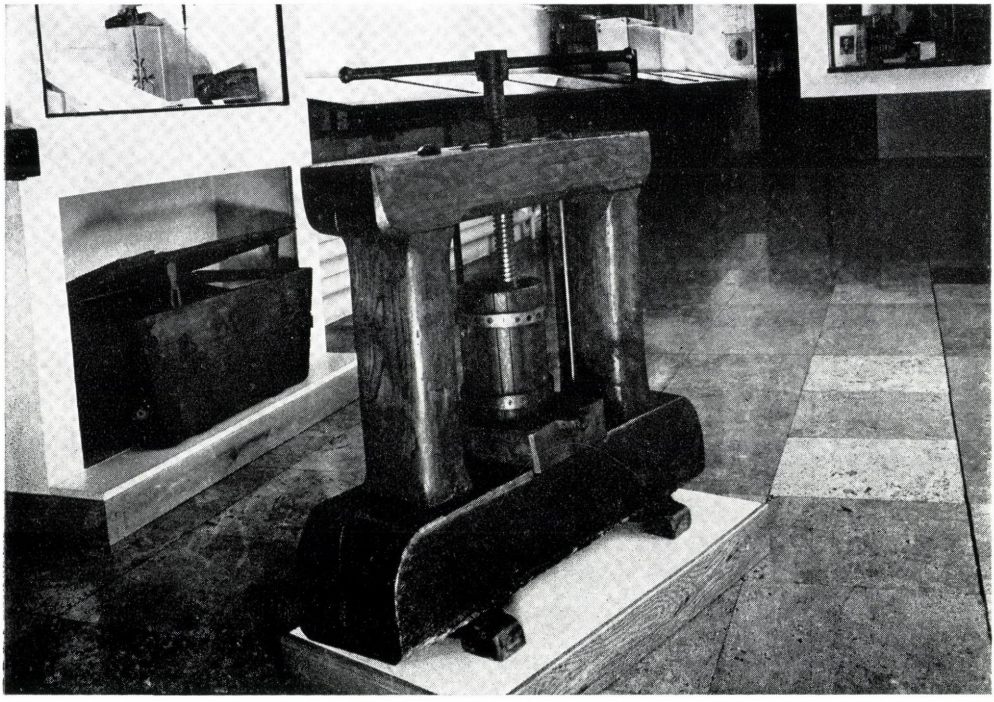

Fig. 56.

Fig. 57.

Fig. 58. Professors of the medical faculty of Vienna University in 1853.
Standing (from left to right): Hyrtl, Sigmund, Redtenbacher, Unger, Haller, Brücke, Oppolzer Helm Hebra, Dlauhy. Sitting (From left to right): Schuh, Rosas, Rokitansky, Skoda, Dumrecher

Fig. 59.

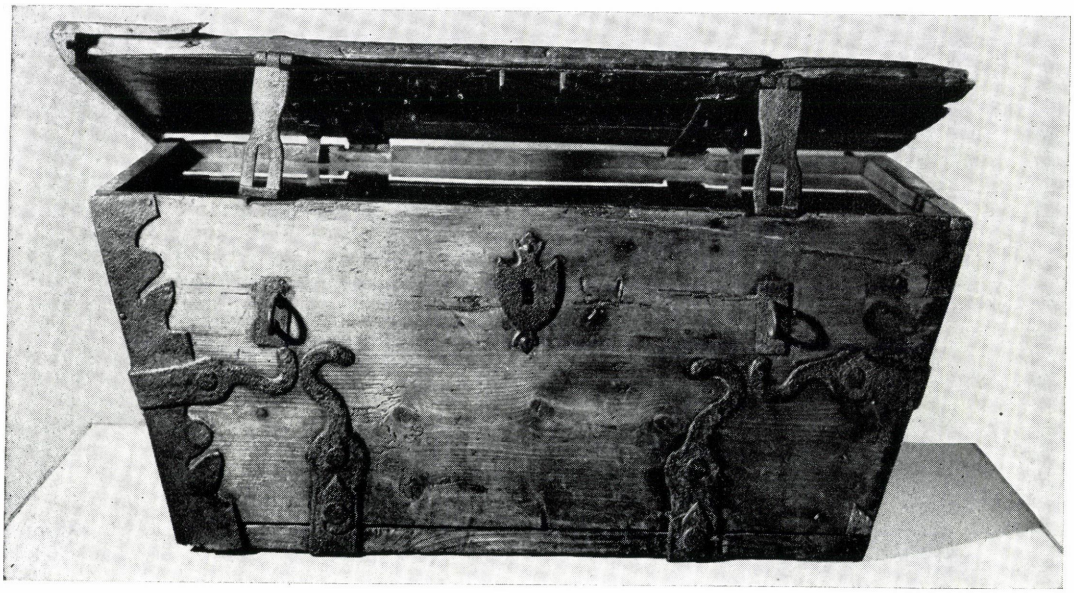

Fig. 60.

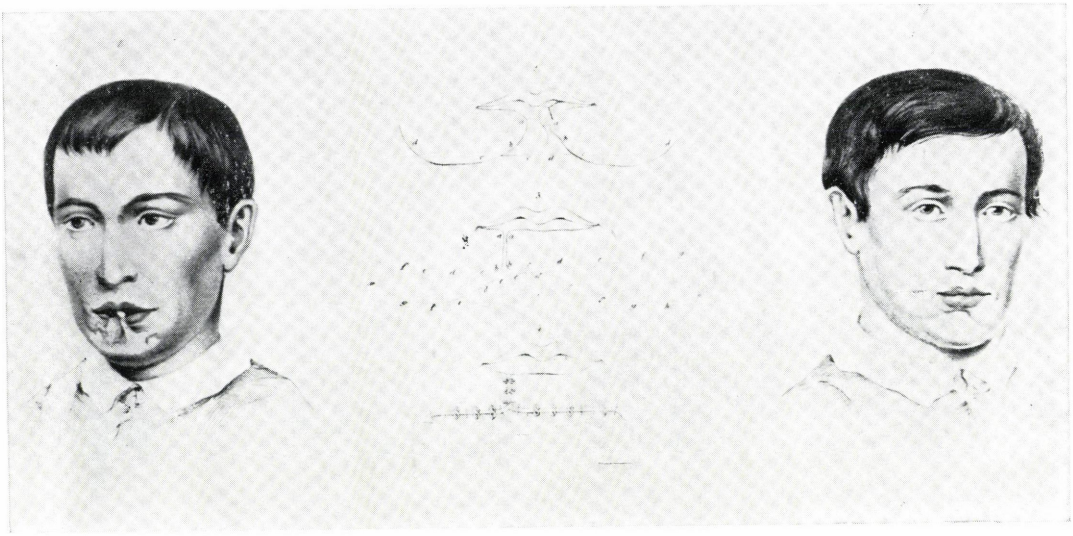

Fig. 61.

Fig. 62.

XVI. THE SEMMELWEIS MEMORIAL ROOM

The closing room of the exhibition is the Semmelweis memorial room. The interieur evokes the atmosphere of the 1860-ies. The furnishing consists of original furniture, paintings and carpet of Semmelweis preserved by his family and assigned to the museum. The style of the room brings us back to *Semmelweis*'s age, it is not homogenous, it represents the transitory period. The Biedermeyer and Neo-Baroque furniture are symbols of bourgeois welfare and harmony. Semmelweis's Neo-Baroque desk, on which he perhaps wrote his main work the *"Aetiology"*, stands under a portrait of Balassa made by *Mihály Kovács* (1818–1892). The two plain bookcases reveal the Biedermeyer influence of the Steindl-workshop in Pest (Plate XVIII.). The simple, strict execution gives way to the free predominance of the books. It contains some valuable survivals of the Semmelweis library: *Cicero, Horace* and *Virgil*'s works in a German-Latin series (Fig.82.), Democrite written by *Karl Julius Weber,* the bound volumes of contemporary obstetrical journals which contain *Semmelweis*'s marginal notes, etc. The angular oblong saloon table is an original piece, too. The rest of the furnishing had been selected to harmonize with the original pieces. (Fig.83.).

The portrait of *Terezia Müller,* the mother of *Semmelweis* and *József Semmelweis,* his father, the owner of the grocery store to "The White Elephant" which stood in the House, was painted by an unknown Hungarian painter, probably from Buda. The portrait of *Semmelweis* as a child at the age of 12 was painted by *Lénárd Landau* (1790–1868) (Fig.93.). The aquarell portraits of *Ignác Semmelweis* and his wife *Mária Weidenhofer* in 1857, the date of their marriage, was made by *Ágoston Canzi* (1808–1866) the reputed portrait-painter of the age. (Fig.84.). Beside the contemporary photographs of Semmelweis that have come down to us this painting can be considered as the most authentic *Semmelweis* portrait. There are two more painted photographs exhibited of Semmelweis's wife from a later date and their daughter, *Antónia.*

The interieur is completed with the restored carpet of Semmelweis, a Savonnarie with blue background which covers whole room; the white stove, a contemporary lustre, a silver plate produced in the Buda goldsmith's workshop and the frothy curtains.

In the *Semmelweis* memorial room we take leave of the visitors. "The Saviour of Mothers" started his career in this building – perhaps in this very room – and he returned here in his mortal remains. His birthplace and last resting-place became thus a real place of pilgrimage.

SEMMELWEIS'S BIRTHPLACE – THE HOME OF THE MUSEUM

Only a few monuments of the old Tabán have survived and one of them is the house in Apród Street 1–3, the birthplace of *Ignác Semmelweis*. It stands in a picturesque surrounding, at the southern foot of Castle Hill, underneath the reconstructed remnants of the medieval Royal Palace and castle wall. The townscape here will undergo further changes but its significance is already manifested.

THE OLD TABÁN

The atmosphere and romantic spell of the district often haunted the imagination of the late chroniclers evoking the past history of the house. They believed that it had harboured a medieval monastery, a Turkish harem or at least a tavern. Apród Street is in fact of medieval origin but its old houses had been destroyed in the fights when Buda was recaptured from the Turks in 1686. Its northern side where the *Semmelweis* house was erected had not been built up before the last decades of the 18th century. The lively and busy Rácz (i.e. Serb) Town spreading along the busy port began to flourish when the Danube's boat-bridge was completed (1767), the bridge-head of which reached exactly to Apród Street. Trade became even more lively due to the breaking through of the Southern wall of the castle and erecting the New Gate (later Ferdinand, Castle, or Tabán Gate) under the reign of Joseph II (1780–1790). The opening of the gate shortened the way of students, citizens and tradesmen to the Castle Hill (Fig.85–86.).

The street leading up to the New Gate stretched next to the *Semmelweis* House along the Szarvas-ház (Deer House). It was called Palota Street (Palace Street) and this name was given later to the stretch of Apród Street which obtained its present name in 1879. Rich merchants acquired pieces of land and built houses along the busy street. The Semmelweis House in today's Apród

68 Street 1–3, was also built in this way at the end of the 18th century. Originally it was built in Neo-Classic Late-Baroque style. The great fire of 1810 in Tabán destroyed the house but it was soon rebuilt and given its present 'zopf' facade. (Fig.87.). The traces of the great fire are still to be seen in some parts of its walls: some smoky parts have been revealed at the latest reconstruction. Research has not identified the persons of the architects, neither that of the Baroque nor of the 'zopf' building.

Three rizalits – one in the middle and two on both sides – give plasticity to the one-storey building with 2+3+3+3+2 windows. They are broken up by pilasters ending in double consols which connect the ground floor and the second floor. Between the pilasters there is a protuberant festoon decoration in the main cornice, echoed by festoons underneath the windows. The simple side view looking onto the Sándor-lépcső (Sándor stairs) is broken up by windows to give the wall a more animated effect. On the other side, looking onto the Szarvas House a partition wall is waiting another attaching building. Considering the surroundings, the magnificent view up to the Royal Castle, the future building needs proper and careful design. A hasty, ill-considered design or building would cause irreparable damage.

THE BIRTHPLACE

The birthplace of *Ignác Semmelweis* was never owned by the Semmelweis family as it is stated in several Semmelweis monographs. This is why the question arose whether the building considered as the birthplace of Semmelweis could be connected to the Semmelweis family at all and whether this familiar and generally known belief is justified or not.

On the basis of the Grundbuch Conscription preserved in the Municipal Archives it can be maintained that between 1814 and 1844 the house was owned by *János Meindl,* a well-to-do tradesman and respected citizen and his family. Between 1844 and 1852 it was entered under the name of *Lőrinc Jankovits,* afterwards it was owned by *Leo Schallinger* and his successors. In 1906 when the Semmelweis memorial plaque was placed on the house it was owned by *Márton Wolf,* greengrocer.

The registers of Tabán in the material of the "Buda Archives" preserved in the Municipal Archives reveal us the owners and tenants of the Meindl House, today's Apród Street 1–3 between 1805 and 1830. *József Semmelweis,* the father of *Ignác Semmelweis* lived here with his companion *Simon Gerhard* in 1809 before the great fire as an unmarried young man. He stayed here even after his marriage in 1810 which coincided with the year of the great Tabán fire. In the conscriptions of 1815 the Semmelweis family is entered with the three elder sons (József, Károly, Fülöp) and the servants. In 1817 the registers

already record *Julianna Semmelweis* and in 1819 and 1821 the would-be physician *Ignác Semmelweis,* reputed all over the world. (In 1821 he is entered with his two younger brothers, János and Ágoston). At the conscriptions the actual age of the persons had been asked and the date of birth was calculated accordingly which often caused divergencies.

The number of tenants also points to the fact that during the reconstructions after the great fire the house was enlarged and instead of the earlier 23, the number of inhabitants was 38. Beside the Semmelweis family, the family of the owner too, lived in the Meindl house, and furthermore in subsequent years the Pfisterer, Tyrnauer and Kényesi families and single people like *Benedek Virág* the outstanding priest writer of the age who stayed there in 1815, and of course a great number of servants. *Benedek Virág* later moved to the opposite side of the street to Apród Street 10.

In June 1823 *József Semmelweis* informed his customers that his store moved to his own house which he had bought from Demeter Bandy in 1822. The contemporary advertisement reads as follows: *"I have the honour to inform you that the grocery store I have run for 17 years (Material, Spezerey und Farbwaren) has been moved a house of my own, opposite to the former one. I ask for the further kind support of my honoured customers."* He often advertised the products of his store "To the White Elephant": leaf-tobacco in 1813, old wine from Mór and Csóka and eau de Cologne named "3 Lilies" in 1830. He played an active role in the life of the district which is well demonstrated by his position among the town citizens, his advertisments of orders, his role as witness at wills and his relations to rich Greek families.

The above records lead us to the conclusion that the store of *József Semmelweis* was run in the Meindl-house between 1806 and 1823 (proved also by the registers of conscriptions) which also implies the fact that the family actually lived in this house. The house owned by *Semmelweis,* on the other side of the street had been previously owned by the famous Greek *Paziazi* family. Later it passed into the hands of *Demeter Bandy* of Macédonian origin (1808–1822). Upstairs there were seven rooms, downstairs three business premises. When the store moved into this house, the family moved over, too. In the registers of later date (1827, 1830) the large *Semmelweis* family was entered under this address, *Ignác Semmelweis* included. The six servants worked in the store and household: assistants (sodalis), an apprentice (tyro), and a maid (ancilla).

THE BIRTH OF A PLACE OF PILGRIMAGE

The cultivation of Semmelweis's memory which was started at the turn of the century, was stimulated by the event of bringing back Semmelweis's earthly remains from Vienna to Hungary. Strangely enough it was then on the occasion

of the reburial of his remains in a special grave donated by the city authorities that the idea of marking his birthplace emerged. The Semmelweis Memorial Committee decided to place a memorial plaque on Semmelweis's birthplace in 1894 but the work was not carried out until 1906 when the Semmelweis Memorial made by *Alajos Stróbl* was unveiled as a crowning event of the International Semmelweis Celebration in Budapest. The red Swedish granite plaque was made by the sculptor *Béla Seenger* and placed on the wall with the following inscription: *"Ignác Fülöp Semmelweis, Professor of Medicine, the saviour of mothers was born here on July lst, 1818"* (Fig.88.). The memorial plaque, too, perished in World War II. Instead of it a simple marble plaque announces now: *"The birthplace of Ignác Semmelweis and the resting place of his earthly remains"* (Fig.89.).

It should be noted here that *Julia Semmelweis* mentioned above in connection with the conscriptions of the family, was still alive when the proposition of the memorial plaque to the Meindl house emerged and also lived to see its erection in 1906. Moreover, she took part in the festive celebrations with her son, *Peter Ráth.* Other persons beside the old lady attending the celebrations was Semmelweis's widow, Mrs. *Semmelweis Mária Weidenhofer* whose figure is preserved in a photograph published in the *Vasárnapi Újság* (Sunday News) as she was standing in front of the birth-place.

Although the birthplace was now marked, nothing more had been done for saving the building from decay. It nearly shared the fate of the other buildings of the old Tabán district, i.e. being pulled down. Where narrow streets used to twist a green park emerged and there were only a few ruins left to evoke the atmosphere of by-gone times. The tenants left this ramshackle house, too, and town planning interests urged the pulling down of the building. Fortunately, the house escaped this end, but World War II was less merciful and ignored totally the significance of the place.

It would be impossible to give an account of the long and tedious process that was carried through by the ardent representatives of medical history and those of the conservation of monuments in order to save and restore the building which had been condemned to demolition and was severely damaged during World War II. The reconstructing works were undertaken between 1962 and 1964. *Egon Pfannl,* the architect entrusted with the task, had to encounter a most complicated and highly responsible work. He had to design an up-to-date museum in a partly ruined burgher's house. After restoring the original facade, the only part which has survived, (Fig. 90–91.), he created a modern exhibition area in the place of the destroyed interior, easily distinguishable from the original parts.

This building now houses the Semmelweis Medical Historical Museum and the earthly remains of the great Hungarian obstetrician were placed in the stone wall in the yard of the house on the Castle Hill side, on October 15th 1964.

He returned to the place where his life was born. Perhaps we are justified to hope that his fifth grave will in fact be his "final resting place". In front of it there is the memorial, a statue made by *Miklós Borsos* the sculptor, fine piece of modern art is a most ingenious expression of the idea of "Maternity" (Fig.92.).

THE LIFE OF IGNÁC SEMMELWEIS (1818–1865)

Hungarian medicine developed under the influence of Vienna in the 18th and 19th centuries. This town was the Mecca of Hungarian medical students where they could complete their knowledge and were introduced to the most recent theories and practice of contemporary medicine. The diplom acquired there was acknowledged throughout the empire.

The Habsburg rule deprived Hungary from its national independence preserved underdevelopment and hindered the rise of the progressive Hungarian intellectual life. This does not contradict the fact that the government issued useful, moreover progressive orders referring to public health, teaching and social conditions. They acted under the pressure of historical development but this was not in vogue with the natural demands of Hungary's own development. As Hungary's natural development was hindered and the retrograde powers were supported, the affairs of public health and teaching were rather provincial. This does not minimize but increases the merit of those scholars who–working under such poor conditions – undertook the troubles of public life.

In the Age of Reforms Pest became the center of scientific life and the rising Hungarian medical life. The medical school of Pest was formed when the new generation began to gather around János Balassa. This new generation reaches the scientific level of the leading countries, it has a homogenous view referring to medicine and public life and creates a "school" for the coming generation.

A hard time came upon them after August 1849, the surrender at Világos and the end of the War of Independence.

János Balassa was imprisoned, but fortunately soon released. On the initiative of *Markusovszky,* the medical men arranged riding tours and called themselves ironically "Faculte de medicin a cheval". *Markusovszky* and *Lumniczer,* the two excellent surgeons were private assistants to Professor *Balassa* as soon as his chair was returned to him. The "Balassa-circle" first gathered at ridings and later at other social events. The members of the Balassa-circle

formed the School of Pest, the beginnings of which go back to the Reform period preceding the Hungarian Revolution and War of Independence. Their circle extended and included such members as *Lajos Arányi, János Wágner, János Bókay, István Sass, Ignác Hirschler, János Czermák, Jenő Jendrassik, Kálmán Balogh* and among the very first – *Ignác Semmelweis.*

BIRTHPLACE AND YEARS OF STUDY

Ignác Semmelweis was born on July 1st 1818, in the above described house built in the style of the age of Louis XVI, which is the seat of the Semmelweis Medical Historical Museum. The *Semmelweis* family did not belong to the ancient families of Buda. The history of the family can be traced back to the middle of the 16th century in historical Hungary on the basis of the occurence of the family name. They lived in small villages in what was called Western Hungary, which became part of Austria after World War I and was given the name Burgenland. They can be traced in Márczfalva (Marz), Szikra (Sieggraben), Kabold (Kobersdorf), Felsőpéterfa (Oberbetersdorf) and in Kismarton (Eisenstadt), today all in Austria. They – like *Hyrtl* or *Ferenc Liszt* – originated from a distinct group of Germans called Hintz (German: Haenzen, Hungarian: hienc), quite different from the rest of the Germanspeaking population of Hungary. According to certain views, the Hintz is believed to be descendent of Charle magne's Franks settled here previous to the Hungarian Conquest.

József Semmelweis, (1778–1846) the father of *Ignác Semmelweis* was born at Kismarton. He moved to Buda and was granted citizen-rights in 1806. In the same year he opened his grocery store "To the White Elephant" in the Meindl house in Tabán (seat of the Museum). His store had been run there for 17 years (between 1806 and 1823), and he rented there also a flat for himself and later for his family. He must have been a prosperous man, because in 1810 he married *Terézia Müller,* daughter of the famous coach-wright, *Fülöp Müller.* Their financial affluence is well demonstrated by the number of the houses (four) they owned. They moved into one of them which stood on the opposite side of the street, together with their shop. They had ten children, including a stillborn one. All the boys attended schools. At the age of 11, *Ignác Semmelweis,* having concluded his elementary schooling, attended the Royal Catholic University Gymnasium up in the Castle Hill, situated next to the Michael Tower on Hess András Square. Later the school was handed over to the Piarist order and so he attended the two last forms (forms V and VI) at a time when the Piarists had taken over the school. His final school certificate marks him as eminent, achieving the distinction of second best among sixty students but "competing with the best" (Fig.93.).

His result at school have to be appreciated all the more as he attended one of the best institutions of the country. A number of eminent students attended this school, e.g. *József Eötvös, László Szalay, Lajos Arányi,* etc). Their teachers were the best instructors of the age. Even if we bear in mind that the educational system was rather backward at that time, we have to refuse the rumour –spread both in Hungary and abroad –that *Semmelweis* was uneducated. Furthermore, it should be also emphasized that in the official certificates the nationality of both Ignác and his brothers was marked as Hungarian, whereas the nationality of the non-Hungarian was marked as German, Croatian, etc.

After the Gymnasium he attended the two-year's course of Philosophy at Pest University. Complying with his father's wishes who insisted that he should become a military judge, Semmelweis enrolled as a law student in the University of Vienna in 1837. But he soon changed his mind and continued his studies at the faculty of medicine. After one year in the University of Vienna Semmelweis returned to Pest where he attended the university for two years. Then he again returned to Vienna and finished his studies there. He took his degree in 1844 on the basis of his thesis from the field of botanics, entitled "*Tractatus de Vita Plantorum*" (Fig.94.) In the same year he obtained his master's degree in midwifery and graduated as an operating surgeon.

Semmelweis stayed in Vienna at a time when the Vienna School of Medicine reached its full development. The internist *Skoda* and the pathologist *Rokitansky* had not yet risen to eminence and lectured only in private courses but they enjoyed a tremendous popularity among medical students, *Semmelweis* included. Rokitansky did not accept the view of the Old School according to which pathology was attributed a secondary role of sanctioning or at best correcting. Following *Bichat*'s experiments, he enriched pathology with the aspects of pathophysiology.

Semmelweis was greatly affected by the influence of *Skoda,* the reformer of diagnostics in internal medicine and his colleauge *Hebra,* who put forward a new classification of skin diseases founded on pathological observations. Their effect on Semmelweis revealed itself in both his medical training and erudition and his passion for researching and the methodology of his researches. The New Vienna School was characterized by the predominance of the new trend of pathology the effect of which was to be felt in their results. They could give answers to questions which could never have been solved on the basis of the examination of the living. The collaboration of *Skoda* the internist, and *Rokitansky* the pathologist showed whether the internal diagnosis was right and made the control of pathological observations possible in the living organism.

Semmelweis had to choose obstetrics instead of internal medicine, since Professor *Skoda* could not give him the post of an assistant in his medical clinic. Thus he applied for the assistant's vacant post in Professor *Klein*'s Obstet-

ric Clinic. He had to wait for two years until he was appointed first as temporary then as regular assistant in 1846. But in these two years he carried on his regular autopsy work beside. *Rokitansky* and attended the lectures of *Skoda,* too. *Lajos Markusovszky,* the other outstanding Hungarian representative of medicine, also stayed in Vienna at that time (between 1845 and 1847) as a schoolarship holder. They became good friends for a lifetime, Markusovszky was an ardent supporter of *Semmelweis* and encouraged him and inspired him in all his life.

THE GREAT DISCOVERY

The General Hospital in Vienna (Allgemeines Krankenhaus) was built during the reign of Emperor Joseph II (1780–1790) (Fig.95.). Its Obstetric Clinic was established already in the first year of the opening of the hospital, in 1784. During four decades the mortality rate of labouring women was as low as 1,25 percent. But in the twenties of the 19th century the mortality rate increased considerably. The situation had not changed even when the lying-in department of the hospital had been divided into two separate clinics. The director of the 1st Clinic remained Professor *Klein,* while Professor *Bartsch* was appointed head of the 2nd Clinic. A definite change was noticeable, however, from 1840 onwards, when an act was passed to separate the instruction of the medical students from that of the students of midwifery. The 1st Clinic was made available for medical students only, whereas the 2nd Clinic was open to midwife students only. Between 1841 and 1846 in the 1st Clinic, out of 20,042 labouring women 1989 died (9,92%), while in the 2nd Clinic 691 out of 17.791 (3,38%).

The most dreadful "epidemic" ravaged between October 1841 and May 1843. There had been months (October 1842) when as much as 29,3% of all labouring women died in child-bed fever, before being to able to enjoy the maternal joys. The rate of puerperal mortality and the remarkable difference in it between the two clinics arose the interest of the officials, too. Commissions were sent out to investigate, but without any result. Puerperal fever was considered a contagious disease and treated as an epidemic. Several theories were created on its cause: the hospital being overcrowded, the manner of attendance, etc. Fears from the dangers of labouring in hospital and the difference between the two clinics soon spread in Vienna.

Puerperal fever scarcely occured among women who gave birth to children at home or among the worst conditions in the street. Women to be admitted to one of the two departments did their utmost to be admitted to the clinic of Professor *Bartsch.* But of course it could not always be attained. Those unmarried mothers who were forced to labour in hospital in order to receive free medical assistance and foundling hospital for their children, had little chance

to make their choice. The birth rate of illegitimate children in the towns of Europe, including those of the Monarchy, was rather high, especially where soldiers were stationing. Puerperal fever took its victimes and the cause of the disease could not be solved.

Semmelweis was a gay, carefree young student when he arrived at Vienna. His sensitive soul, humanism, however, was greatly perturbed and deeply moved by the ravages of puerperal fever. He could not reconcile himself to the inescapable facts of the mortality rate or the established old and recent explanations. Day after day he saw the mothers in great joy and then die, without being able to save them. Later he himself described the history of his discovery. In his tormented state of mind everything seemed problematic and undecipherable, only "*the great number of the dead was an irrevocable reality*".

His professor in pathology was Rokitansky. He himself looked for an answer in the dissecting-room. Each morning he conducted post-mortem examinations and the symptoms were always the same: inflammation of the arteries, the lymph vessels, the peritoneum, the pleurisy, the pericardium, and the meninx. On the basis of *Skoda*'s elimination method, he weighed all the theories which considered puerperal fever first at all an epidemic. He refused the idea of an epidemic outbreak on account of the different mortality rates between the two clinics. There was no epidemic in the town either. No effect of the seasons could be observed in the case of puerperal fever, an unusual symptom, however, in case of epidemics. Why could the closing of the clinic stop the spreading of the "epidemic"? No "injury through force" could be the cause. The other assumed factors (pudency, rough examination, therapy) were the same in both clinics. What could be the local cause in the 1st Clinic, the clinic of Professor *Klein?*

After a few months' work *Semmelweis* had to give up his post as assistant according to the previous agreement when Dr. *Breit,* his predecessor, returned. He began to learn English and wished to leave for Dublin to study obstetric methods there where puerperal mortality rate was lower. Meanwhile a comission introduced severe restrictions in the clinics in Vienna to eliminate rough examinations: the number of the medical students was decreased, especially that of the foreign students. It resulted in the decreasing of the mortality rate! Dr. Breit was not very busy in doing post mortem examinations himself, thus the danger of infection was smaller. *Semmelweis* was, however, soon reinstated in his post, because Dr. *Breit* was appointed to the chair of midwifery at the University of Tübingen. Then, after so much trouble and worry, in March 1847 he set out for Venice in order to relax together with his friends, among the historical monuments of the town.

After his return to Vienna, he started work with renewed energy. The puerperal mortality rate increased rapidly, in April 1847 it was again as high as 18%. To-day it is known that it was partly *Semmelweis* himself who – in a most fatal

way – caused the death of her labouring patients when hurrying to them right after the most mortem examinations. While he was staying abroad, his friend *Kolletschka,* professor of forensic medicine died. During an autopsy his finger had been cut by a medical student's knife. Semmelweis learned it after his return and studied the record made of Kolletschka's post mortem. He was deeply shocked because he realized that the findings were identical with the symptoms of those who died in puerperal fever: pyaemia. *"Day and night I was agitated by the report of Kolletschka's death and there was forced upon my mind with irresistible clarity the identity of this disease from which Kolletschka had died, with that from which I had seen so many hundreds die in childbed."*

Some foreign authors, among others *Podach,* who died some years ago, think that the role of *Kolletschka*'s death in *Semmelweis*'s discovery is too romantic. Since *Semmelweis* refers to it several times himself when reporting on his discovery, it should be accepted, because it is easier to beleive the truth of his own words than the "critical" observations of his late biographers. Nobody questions the significance of the Vienna School in Semmelweis's discovery, the fact that it had provided him with his scientific background and a searching and examining spirit. It does not contradict the fact that the last association, the genious glimmer of knowledge was due to the conclusions of *Kolletschka*'s death.

Semmelweis discovered that the causes were in both cases one and the same: *"the cadaveric particles were introduced into the blood-vascular system."* And they were introduced by the examining physicians and medical students themselves who did post mortem examinations and were constantly dealing with cadavers. The cadaverous matter could not be removed from the doctors' hands merely by washing them with soap and water – as the peculiar smell which was retained also revealed it. Midwife students wer not engaged in autopsies, this explains the difference in the mortality rate between the two clinics. A disinfectant was needed which could remove the "cadaverous poison". After experimenting with different chemicals, he chose chlorinated lime. From May 1847 onwards he introduced the use of chlorinated lime handwash. He made it compulsory for all physicians, medical students and the nursing staff.

This new measure produced amazing results: the mortality rate was greatly reduced, in June being 2,38%, in July 1,20%, in August 1,89 per cent. "In October 1847 a patient was admitted in the first Clinic suffering from purulent uterine cancer." Eleven out of the twelve women who shared her sick-ward died. *Semmelweis* realized that not only cadaverous particles could produce puerperal fever but "any pudric organic material" of the living organism. Consequently, he made handwash compulsory also between each examinations. Next month another patient, suffering from carious knee-joint, was responsible for the infection of her fellow-patients. It became clear now that the infectious agent could be transferred to the patients not only by the putrid particle

attached to the fingers of the doctor but also by the "atmospheric conditions" of the room.

The exact execution of chlorinated lime handwash resulted in a great reduction in the mortality rate, in the 1st Clinic being 1,27 percent, in the 2nd Clinic 1,33 percent. In March and August 1848 there were no deaths in the clinics. Each mistheory that had been out forward on the causes of puerperal fever were done away with and the Semmelweis doctrine was born. He clearly defined the aetiology of the disease and the ways and means for its prevention, which is nothing else than asepsis, the prophylaxis of infection. This simple truth, however, was not easily accepted. Not only his jelous and regressive chief, Professor *Klein,* his colleauges, the medical students and the staff – who all considered the chlorine handwash as an unnecessary molestation – but also a great number of foreign authorities on obstetrics like *Simpson* in Edinburgh, *Scanzoni* in Würtzburg, *Dubois* in Paris and *Kiwish* in Prague unanimously refused Semmelweis's theory. Only Professor *Michaelis* in Kiel accepted his discovery, who having realized that he himself had been the "murderer" of the mothers, committed suicide.

Semmelweis made the fatal mistake of not publishing his discovery in a full authentic text. He wrote private letters about it to his friends, because as he said later: "*my whole nature repulses from any kind of paper warfare.*" Instead of him, his friends, the members of the Second Vienna School undertook this task. Professor *Hebra,* the famous dermatologist said that Semmelweis's discovery was equivalent to Jenner's small-pox vaccination. *Skoda,* the internist of great reputation, supported Semmelweis by lecturing on his discovery. These atmosphere in the Viennese medical circles was rather tense, when in 1848 the revolutions in Europe broke out.

SEMMELWEIS AND THE MEDICAL SCHOOL OF PEST

During the Hungarian revolution and War of Independence against Austria (1848–1849) *Semmelweis* stayed in Vienna. The revolutionary storms that reached Vienna in March, caused the fall of *Metternich* and the Emperor agreed on the formation of the Academic Legion and the National Guard. Among the members we find *Hebra, Hyrtl* and *Semmelweis,* too. The National Legion was, however, disbanded when the second Revolution of Vienna (October 6th, 1848) broke ont. There is little likelihood that *Semmelweis* was member of the Academic Legion, he could only be the member of the National Guard, in the spring months. Had he taken a more active part in the event *Rosas* and *Klein,* the representatives of reaction would have been quick to use the revolutionary behaviour of the reformers, above all *Semmelweis,* to their discredit. He could, however, continue his career as obstetrician and fought for the vindication of

his discovery. It would be equally wrong to consider him a revolutionary heroe – though there in no doubt about his sympathy for the revolution – or being hostile to his nation in the days of the struggle for independence.

On March 20th 1849 his appointment as assistant at the Clinic expired. His request for its renewal was rejected by *Klein* and *Rosas*. Later he applied for a recognition as private *dozent* (9th. February 1850) and asked to be allowed to demonstrate on phantoms and cadavers. In his next petition of 9th. May he even accepted the restriction not to use cadavers and to demonstrate only on phantoms "until the cadaver-question would be settled". His friends persuaded him to deliver a lecture in the Medical Society of Vienna on May 15th 1850 with Professor *Rokitansky* presiding. It was followed by two discussions in consecutive meetings. He was triumphed and opposed to in the last months of his stay in Vienna. At last his appointment as private *dozent* arrived on October 10th 1850 *"with the restriction that my practical demonstrations could only be done on phantoms"*. In the same month he suddenly left Vienna and returned to Pest.

His personal disillusions are not considered by many to be a serious enough reason to account for his sudden leave. We learn from a letter of his to *Markusovszky* that in the meantime he had been at home. His colleagues, the members of the emerging "School of Pest", *Balassa* and *Markusovszky,* too might have urged him to return home. He soon found, however, that the situation was not much better at home either. His friends, the most eminent representatives of the School of Pest had fought for the rebirth of a new burgeois Hungary and during the revolution fulfilled their duties as military surgeons.

A hard time came upon them after August 1849, the surrender at Világos. The Balassa-circle was to make up for the lack of social organizations and scientific institutions abolished or hard-pressed by Austrian neo-absolutism. The lack of medical literature was more and more acute since the *Orvosi Tár* ceased to exist in 1849. At last the *Orvosi Hetilap* (Medical Weekly) came out in 1857 edited by *Markusovszky*. It was the forum of the School of Pest, the papers of *Balassa* were published there and the article of *Semmelweis* was first published in it. *Balassa* was a public man, the "head" of the society, but the real organizer was *Markusovszky,* not only of Hungarian medical life but also of medical publishing. In 1863 he founded the *Hungarian Medical Publishing Society,* and at the same time, as private physician to the Eötvös and Trefort families he established important political connections.

In the period of the Compromise of 1867 medical life was characterized by busy public atmosphere but often also by clique-mindedness. In this period of preparation to transform the country to a European burgeois state, in the reform plans for the administration of higher education and public health, *Semmelweis* had an active part, too.

The state of affairs were, however, rather miserable. In the Medical Univer-

sity there were five small rooms for labouring women, the windows of the St. Rochus Hospital looked onto the dissectingroom. The head of the hospital was at the same time professor of midwifery, surgery and pathology. *Birly,* the professor of midwifery tried to fight against puerperal fever by giving the patients purgatives. *Semmelweis* received an appointment as unsalaried head of the maternity ward of the St. Rochus Hospital (Fig.96.) under such circumstances. In six years he achieved that only 0.85 percent of his patients died from puerperal fever. Professor *Birly* died in 1855 and *Semmelweis* was appointed Professor of Theoretical and Practical Obstetrics in the University of Pest. This appointment meant not only the chair at the university but a complete recognition of his activity which he could have never achieved in Vienna. He was professor in the University of Pest only for ten years, but this period was of immense importance in the life of the Medical Faculty, so much so that the Medical Faculty of the Budapest University was named after him in 1969. He struggled with unbelievable energy against the elimination of the dangers of infection. Hundreds of obstetricians and midwives spread his doctrine in Hungary.

In 1857 a new period began in his life. He refused the invitation of the university of Zurich, but encouraged by *Markusovszky,* he published his doctrine in the *Medical Weekly* established by that time. He described his theories on puerperal fever, the history of his discovery and the difference between his opinion and that of the English obstetricians, who believed that puerperal fever was a specific contagious disease. Meanwhile he married *Mária Weidenhofer.* Out of the five children from the wedlock (Figs. 98–99.) only three survived and only one had further descendants.

His articles in the *Medical Weekly* did not prove sufficient to defend his truth against his opponents. Only a book written in German could fulfil this task. His work *"Aetiologie der Begriff und die Prophylaxis des Kindbettfiebers"* came out at the end of 1860 (publishing date: 1861) (Fig.100.). It contains everything we know about the history of his discovery, discussions, doubts and successes. His work is a basic and thorough medical work, an exact statistical document, a memoir of direct tone and an argumentation of refined irony at the same time. He went on attacking his opponents with his *"Open letters"* written in German (1861, 1862). His tone became more and more acid. Nothing could make him, who was sure of his truth, loose his temper more than the lack of comprehension. His chief opponents were Spaeth, Siebold and Scanzoni. He wrote to the latter: *"You have demonstrated Herr Hofrath, that in a new hospital like yours, provided with the most modern furnishings and appliances, a good deal of homicide can be commited where the required talent exists".* Among his other oppenents we find the French Academy as well as Professor *Virchow.*

HIS ILLNESS AND DEATH

The last years passed in bitter emotions and melancholy. He continued, however, his work and theoretical activity, and greatly contributed to the rise of gynaecology in Hungary. His doctrine was favourably received by the obstetricians of St. Petersburg and he was somewhat comforted by this recognition. In the middle of July 1865 his mental make-up seemed to be breaking down. His mental insanity became quite obvious on a faculty meeting of the university when instead of voting he began to read the text of the midwives' oath. His astounded colleagues took him home. Professor *Balassa, Bókay* and *Wagner,* the most eminent professors of the University of Pest examined him. On July 31st 1865 he was taken to Vienna and placed under care of a mental home. He was accompanied there by Professor *Hebra* (Fig. 102.). He wanted to walk out but he was restrained. Hardly a fortnight passed when *Semmelweis* died on 13th August 1865.

The immediate cause of his death was that some days before the above-mentioned faculty meeting, he had cut the middle finger of his right hand, apparently while performing an operation. The wound became supporons, his arm inflamed, he suffered from paroxysm. The process spread over his whole organism. The autopsy record stated pyaemia (sepsis). His early death had actually the same cause as from which the puerperal died for whom he had been struggling in all his life, and the aetiology of which disease he had discovered. This is the real tragedy of *Semmelweis's* passionate and restless life.

"There were three entirely independent phases in the mental illness of Semmelweis. The first phase, that of psychopathia, culminated around 1861 but never developed into insanity. The second phase was a chronic degeneration of the nervous system, probably paralysis. It progressed in gradual stages from 1861 onwards and became acute in the summer of 1865. The third phase, the acute infectious mental disturbance was due to a neglected osteomyelitis which developed in the mental hospital in Vienna. His death was caused by pyaemia."

The significance of *Semmelweis*'s discovery transcends the framework of obstetrics, it belongs to surgery and medicine as a whole. His discovery was fully verified only by the rise of bacteriology, through the activities of *Pasteur* and *Koch.* There was a long discussion in medical literature the priority of the work of the American Holmes, the English Lister and Semmelweis. It was *Lister* who introduced the use of carbolic acid spray in surgery in order to destroy pyogenic germs. *Semmelweis* on the other hand stressed the significance of the prophylaxis of infection.

Each scientific discovery has its predecessors, and numerous parallels can be discovered in the proposed methods. But the question of priority in the basic question, the discovery of the fact that puerperal fever and sepsis are

one and the same – cannot be dubious, it is unseparably connected with *Semmelweis*'s name.

Ignác Semmelweis is the greatest international authority of Hungarian medicine. His birthplace, the seat of the Medical Historical Museum is worthy memorial of the great man. His life and work, birth and death, struggles and achievements – which were inseparable – inspire all who enter his birthplace and make it a place of pilgrimage for those who fight for human and scientific ideals.

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THE ORGANIZATION AND COLLECTIONS OF THE SEMMELWEIS MEDICAL HISTORICAL MUSEUM, LIBRARY AND ARCHIVES

HISTORICAL PRELIMINARIES

The development of museum affairs concerning medical history can be divided into two phases. The first, when simply the ancillary objects of demonstration serving university training are kept in the museums of the departments of the university (collections of anatomical and pathological preparations). Step by step these collections may grow into proper medical historical museums like those in Vienna or Copenhagen. The second phase of the development is when a medical historical museum is established with the definite purpose and character of a museum, e.g. the Wellcome Institute of the History of Medicine in London, or the Semmelweis Medical Historical Museum in Budapest.

The first initiatives for the establishment of a medical historical museum in Hungary were taken in 1905 when the Royal Association of Physicians invited all the physicians to help with their donations the foundation of a museum. After a promising start (organization work done by Tibor Győry, accomodation of the growing collection in the centre of the Association, important correspondence and manuscript material of the Balassa, Lumniczer and Markusovszky families aquired) the institute could not strike roots as an independent establishment. This is shown by the fact that professor Lajos Nékám in 1918 elaborated a scheme for the establishment of a Hungarian Medical Historical Museum but the unfavourable pecuniary conditions after World War I. frustrated the realization of the scheme.

The plan for establishing an independent pharmaceutical historical museum arose in 1919, too. Similar plans were created at the medical faculty of the Pázmány Péter University of Sciences in 1935 which was to be based on the valuable collection of the university institutes. The majority of these collections has survived but never became a real museum. The material collected by the Royal Association of Physicians remained stored in poor conditions.

The museum affairs concerning pharmaceutical history seemed to be better off. The first initiatives were taken in Transylvania, in Kolozsvár, in 1887 and

1903. One of the chief organizers was dr. Gyula Orient. The material of the Hungarian Pharmaceutical Museum at Kolozsvár was arranged in 8 collections, its stock exceeding 1000 pieces.

Attempts for establishing a pharmaceutical museum in Budapest resulted in the foundation of the "József Ernyey" Pharmaceutical Museum in 1948. Its material derived from the collection of the Pharmaceutical Institute and that of the National Museum. It ceased its activity in 1963. Most of the material was taken over by the Semmelweis Medical Historical Museum being under organization. A smaller part was left in the keeping of the Institute of Pharmacognosy at the Medical University in Budapest where it is used for demonstrating the lectures on pharmaceutical history.

The preparation of the Semmelweis Medical Historical Museum started in the 1950's. In 1958 a preparatory committee was formed and statutory provisions appeared concerning the announcement of museum pieces. In 1962 the Budapest Municipal Council conveyed the birthplace of Ignác Semmelweis to the Ministry of Health. After restorations of the building the institute moved in the new home and the registration and description of the accumulated material could now start.

The bases of the present collection are the objects of the Medical Historical Museum of the Association of Physicians (1905), the Pharmaceutical Museum of the Association of Pharmacists (1906) later transformed into the "József Ernyey" Pharmaceutical Museum (1948) and the material collected by the Medical Historical Library (old apothecary jars, spa glasses, the wellknown numismatic collection of Faludi etc.). The material is completed by material received from all parts of the country and presented by other institutions.

A new decision in 1966 placed the baroque pharmacy of the Castle district (I. Tárnok u. 18.) under the aere of the Museum. The preparations are under way, the scientific research completed, and soon the pharmacy to the "Arany Sas" (Golden Eagle) can be opened as a pharmaceutical historical museum.

THE ORGANIZATION OF THE SEMMELWEIS MEDICAL HISTORICAL MUSEUM, LIBRARY AND ARCHIVES

Our institution – despite its wide-ranging collection and activity – belongs to the smaller institutes. The institute is headed by the general director and the deputy general director. Next to the board of directors is the *Scientific Council* in advisory role. Its members are appointed by the minister of health from among the professors of the medical universities of the country, ministeries and specialists concerned. The deputy general director is the director of the Library and Archives and editor of the scientific periodical of the institute entitled Orvostörténeti Közlemények (Communicationes de Historia Artis

Medicinae). His immediate collaborators are the scientific secretary who is the leader of the "Arany Sas" (Golden Eagle) Pharmacy Museum to be opened in 1974 and the József Ernyey Pharmaceutical Library and instructor of the pharmacy museums of the country, and the *assistant editor* the head of Department I. The organization of the institute is as follows: There are three departments such as I. Public Information and Library, II. Archives, III. Museological Department, which carry out all the necessary work to secure the safe development of the institute. These three departments have scientific tasks like the procession and documentation of the material and administrative tasks which complete it, and in general everything which is necessary to run the institute in accordance with its function and aims. The researchers of the departments form a scientific college which serves the purposes of a reference service in the special field of Hungarian and universal history of medicine.

The collaborators of our Institute are researchers having degree in various subjects, assistant librarians, restorers, museum executives having a specialized higher secondary education and caretakers. Both restorers have varied tasks: one of them restores paintings, ceramics, objects made of wood, glass, ivory and textiles, the other one restores books and printed or handwritten documents. The museum executives ensure the uninterrupted flow of work in the institute, their activity serves as basis for the scientific work. The caretakers of the museums are not only concerned with the protection of the exhibits and keeping order but act at the same time as guides through the exhibition making use of their knowledge of languages and thus they also take part in the popularizing activities of the institute.

This administrative organization enables the institute to perform its tasks within its present scope and is in accordance with the varied fields of interest and activity of the staff.

Fig. 63. Professors of the medical faculty of Pest University in 1863.
Standing (from left to right): János Diescher, János Wágner, Lajos Arányi, Ignác Semmelweis, Gáspár Lippay, József Lenhossék, Jenő Jendrassik, Döme Nedelkó, Ferenc Linzabuer, Dávid Wachtel, Tamás Stockinger, Sitting (From left to right): Vilmos Zlamál, Ignác Sauer, N. János Rupp, János Balassa.

Fig. 64.

Fig. 65.

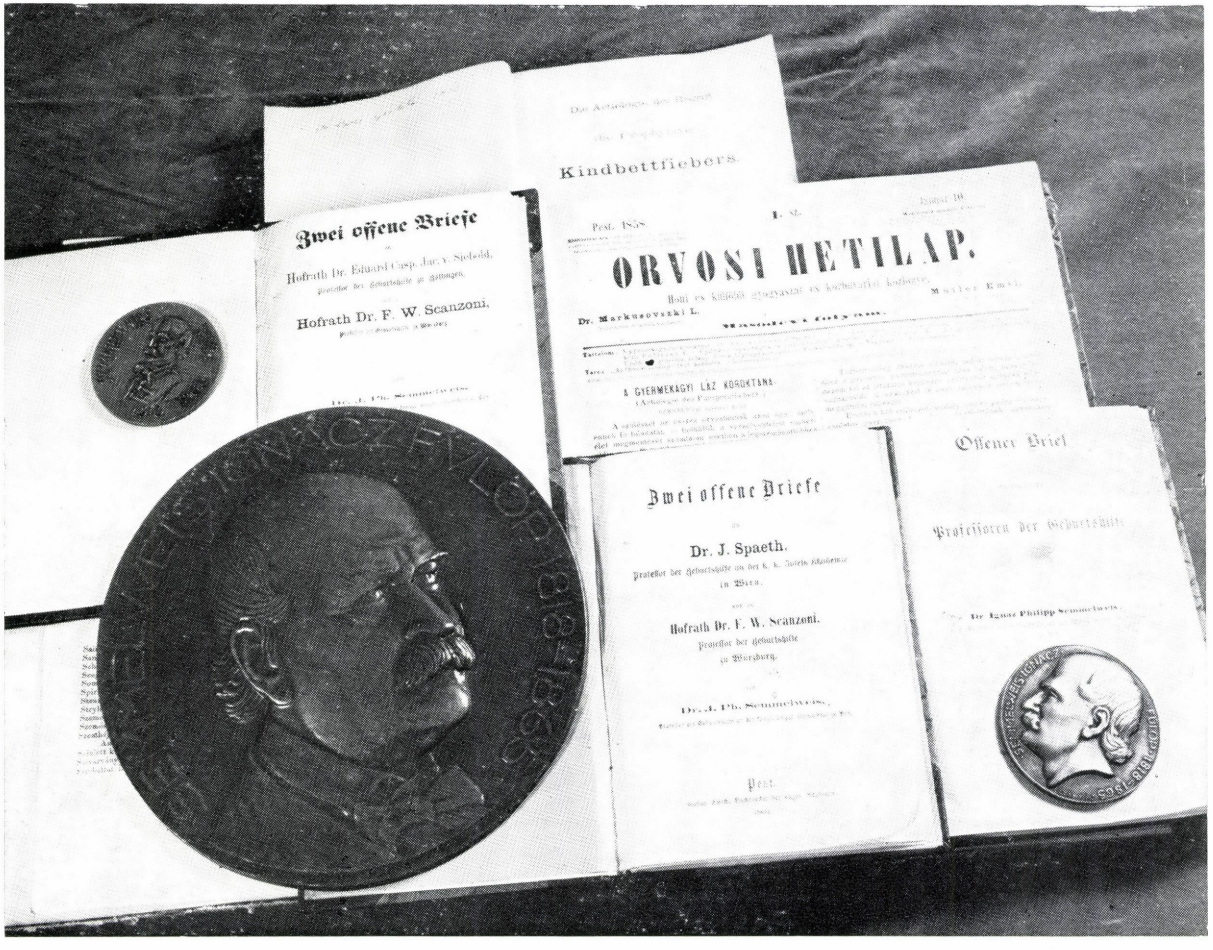

Kindbettfiebers
Zwei offene Briefe
Hofrath Dr. Eduard Casp. Jac. v. Siebold,
Hofrath Dr. F. W. Scanzoni,
ORVOSI HETILAP.
A GYERMEKÁGYI LÁZ KÓRÓKTANA.
Zwei offene Briefe
Dr. J. Spaeth,
Hofrath Dr. F. W. Scanzoni,
Offener Brief
Professoren der Geburtshilfe

Fig. 66.

Fig. 67.

Fig. 68.

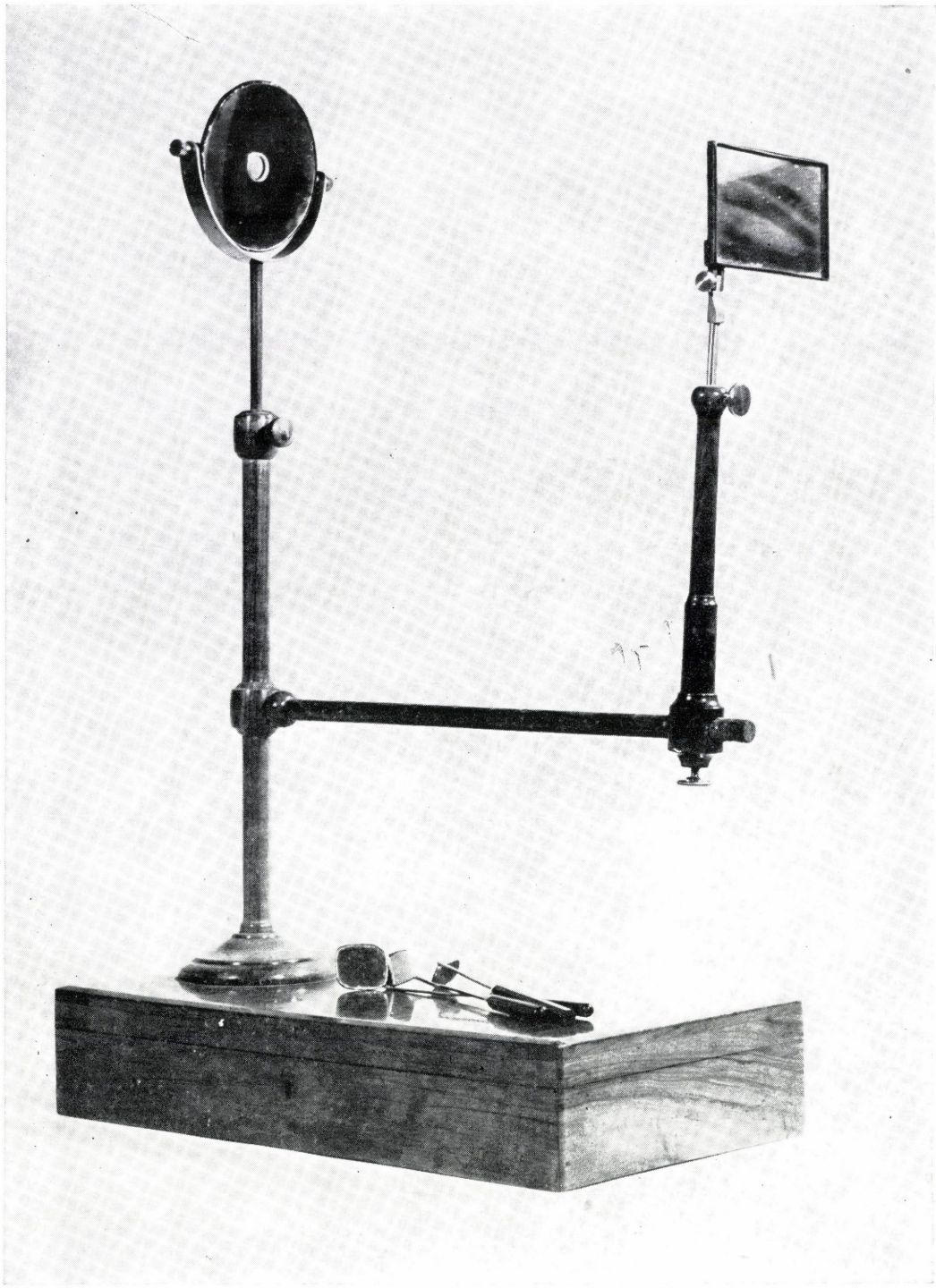


Fig. 69. An instrument for demonstrations with Czermák laryngoscopes on the stand

Fig. 70.

Fig. 71.

Fig. 72.

Fig. 73.

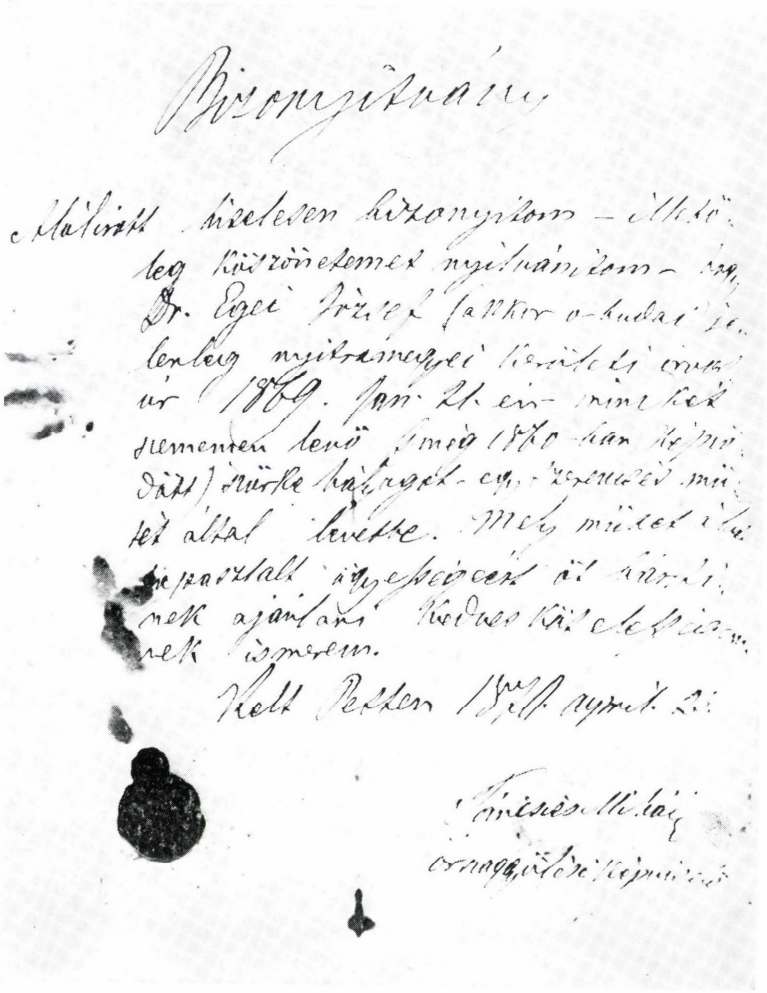


Fig. 74.

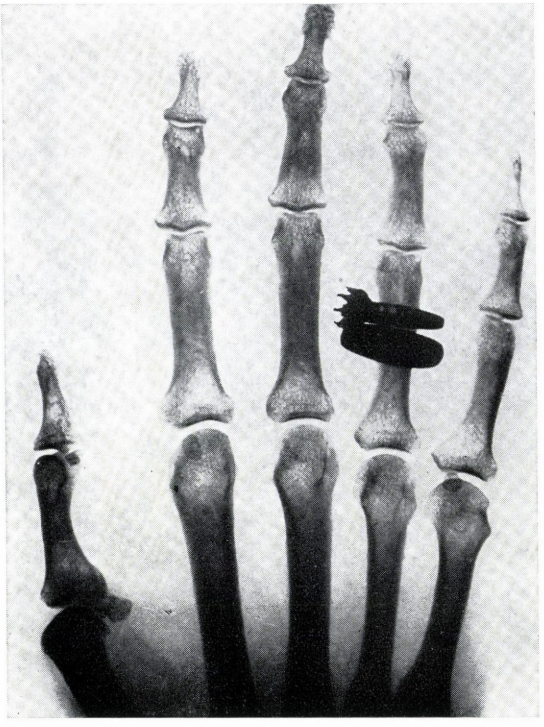


Fig. 75.

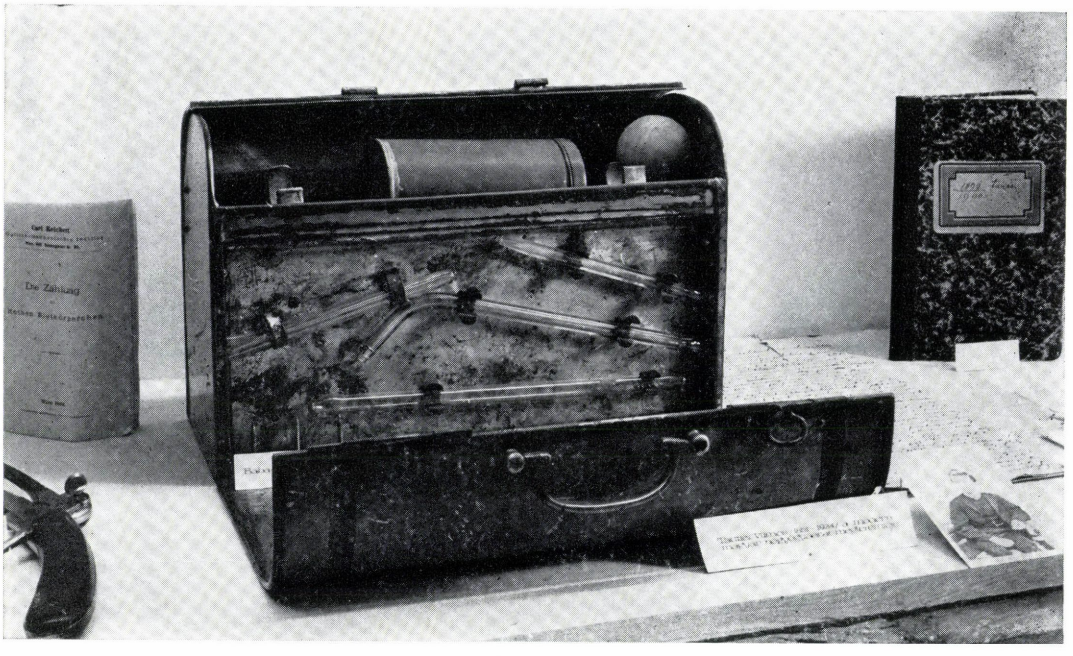


Fig. 76.

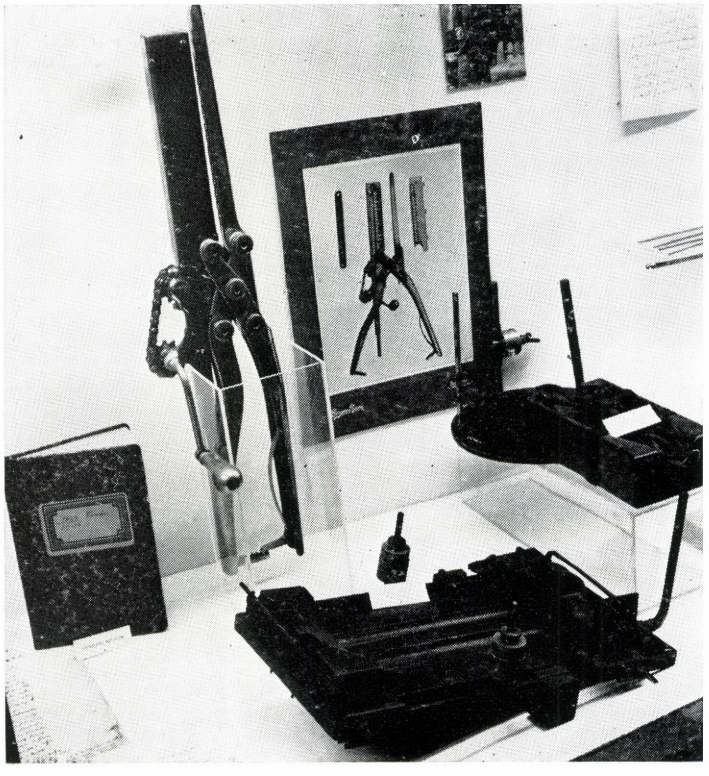


Fig. 77.

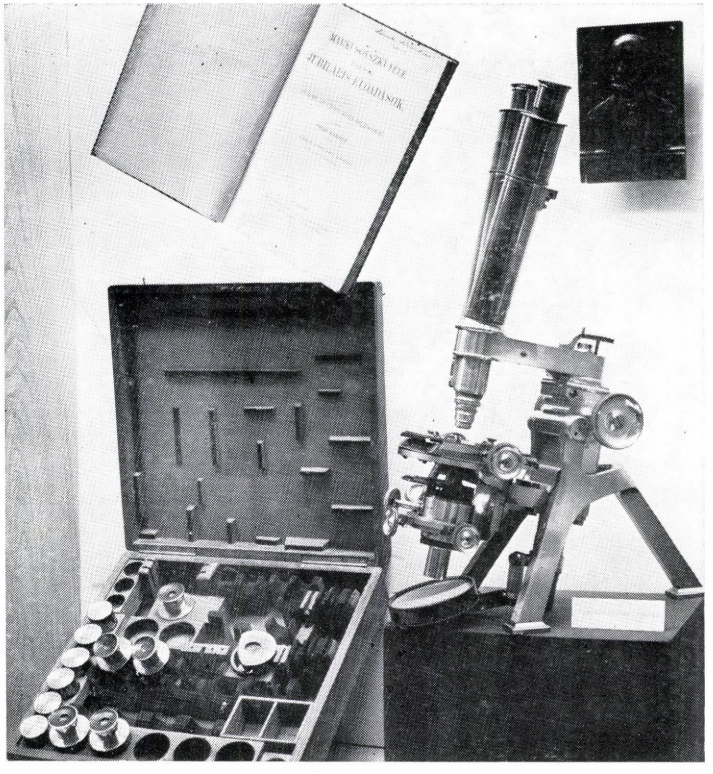


Fig. 78.

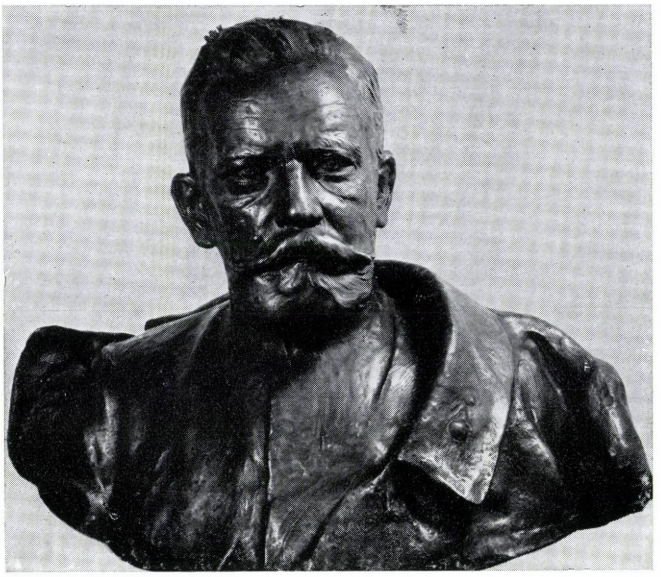


Fig. 79.

Fig. 80.

Fig. 81.

Fig. 82.

Fig. 83.

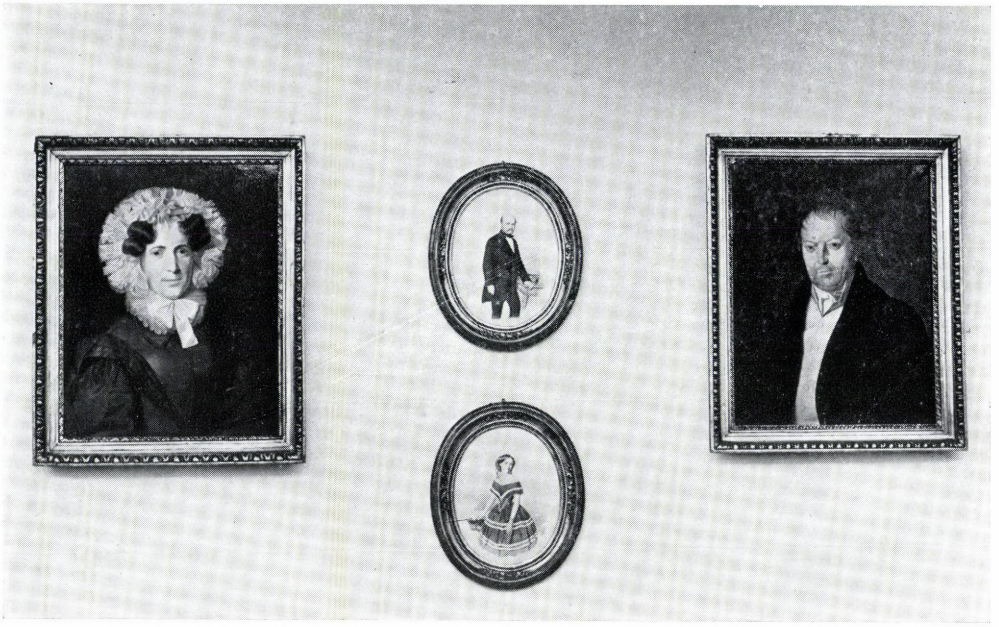


Fig. 84.

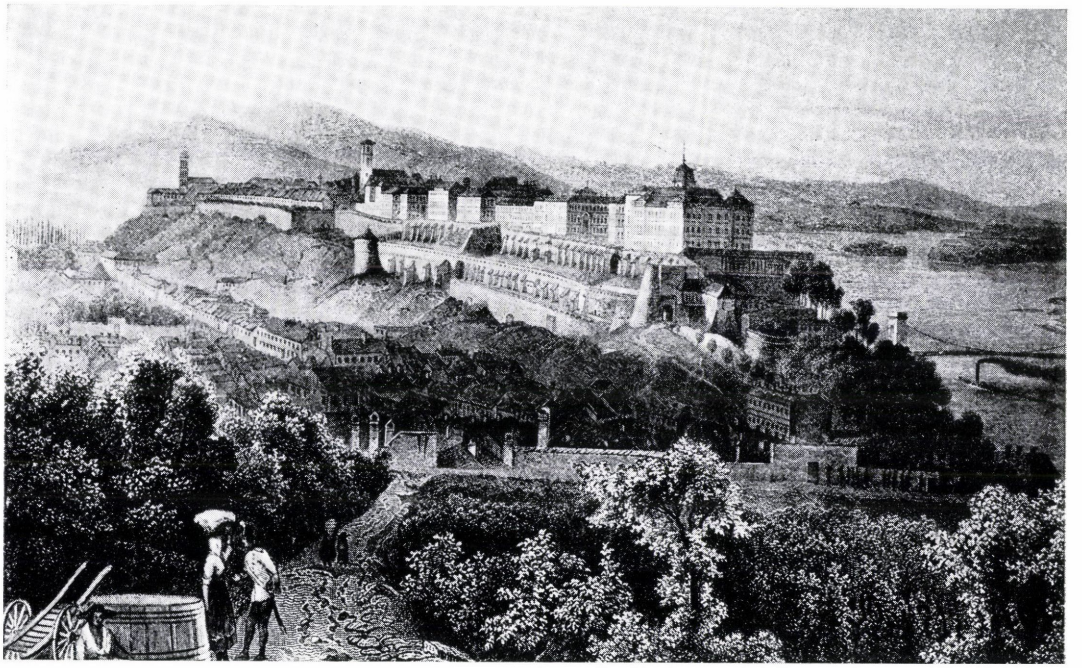


Fig. 85. View of Tabán from Gellért Hill. (Painting, 1850)

Fig. 86. Tabán in the 1870's (photograph)

Fig. 87. Semmelweis's birthplace in the 1900's


ITT SZÜLETETT 1818 JUL. 1.
SEMMELWEIS IGN. FÜLÖP
ORVOSTANÁR
AZ ANYÁK MEGMENTŐJE

Fig. 88.


SEMMELWEIS
IGNÁC
SZÜLŐHÁZA ÉS
HAMVAINAK
NYUGVÓHELYE
1818 - 1865

Fig. 89.

Fig. 90. Modern view of Semmelweis's birthplace

Fig. 91. Detail of the inner court-yard of the Semmelweis's House

Fig. 92.

Fig. 93. Portrait of Semmelweis around 1830.
(Oil painting by Landau)

TRACTATUS

DE

VITA PLANTARUM

Dissertatio inauguralis

auctore

Ignatio Phil. Semmelweis

Medicinae Doctore

Fig. 94.

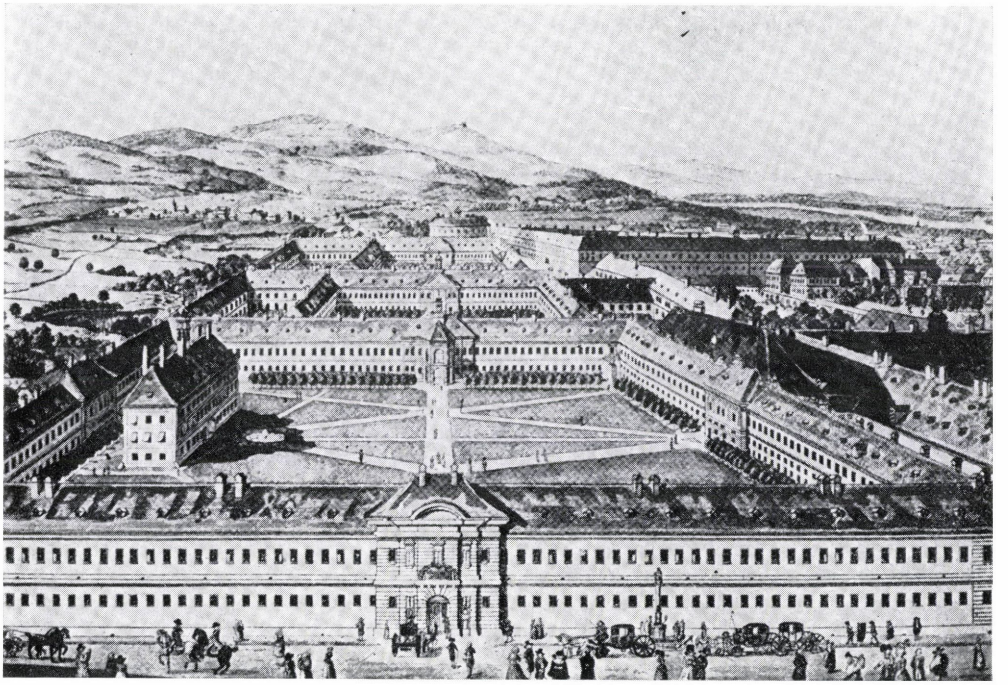


Fig. 95.

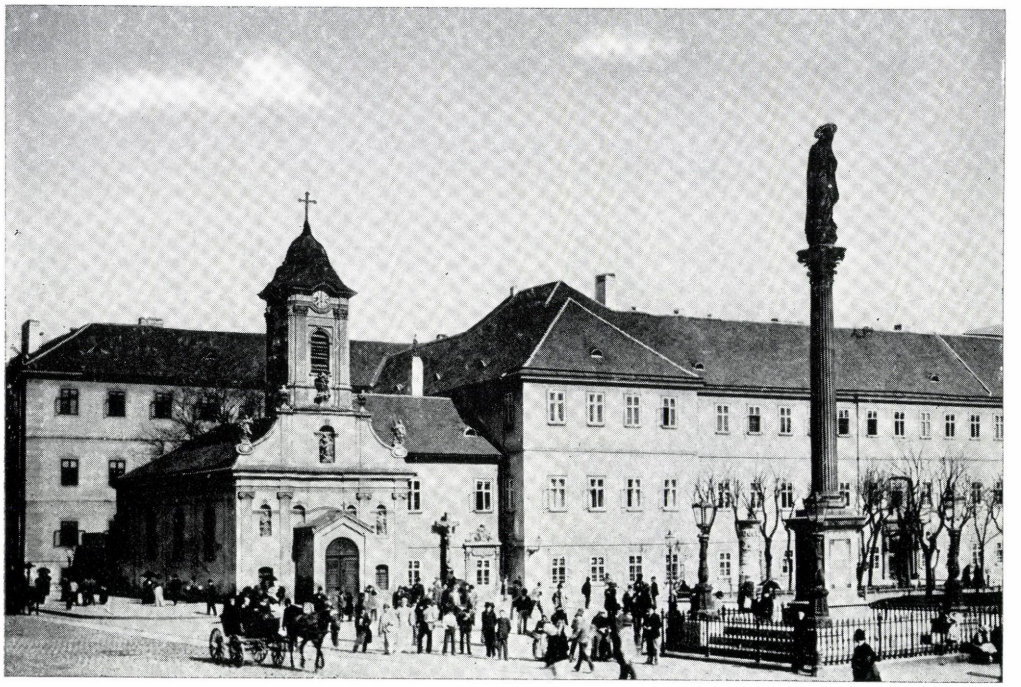
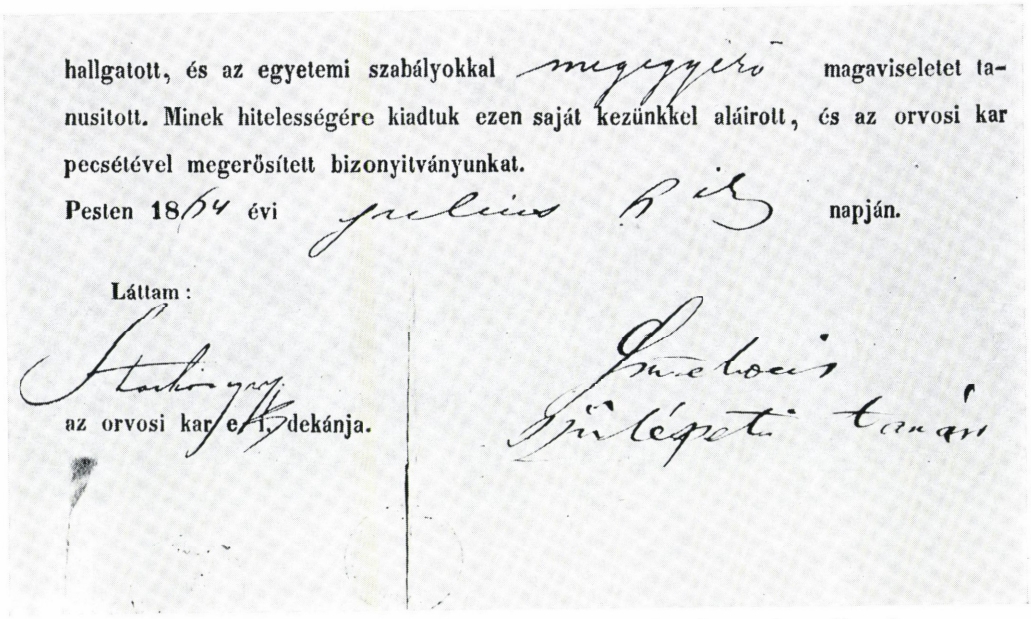


Fig. 96.



hallgatott, és az egyetemi szabályokkal megegyező magaviseletet tanusitott. Minek hitelességére kiadtuk ezen saját kezünkkel aláirott, és az orvosi kar pecsétével megerősített bizonyitványunkat.

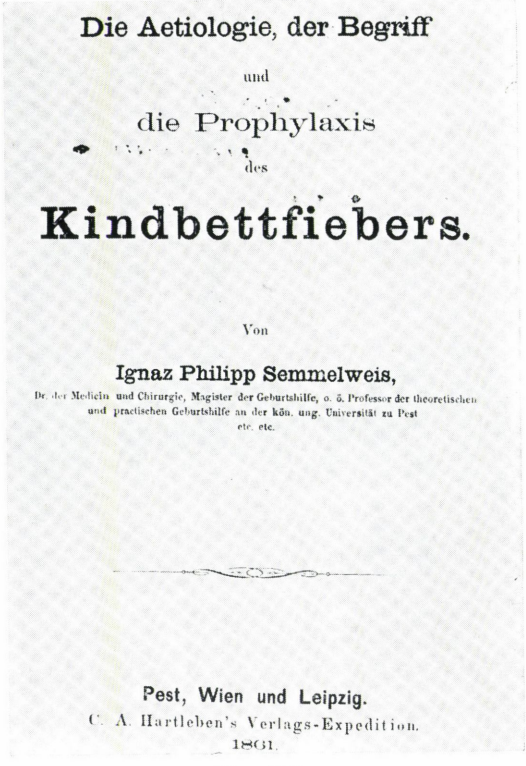
Pesten 1864 évi julius 6 án napján.

Láttam:

az orvosi kar e. i. dékánja.

Semmelweis
Szülészeti tanár

Fig. 97. Certification for attending lectures of a university student. Signed "Semmelweis professor of midwifery m. p. July 6th 1864"



Die Aetiologie, der Begriff

und

die Prophylaxis

des

Kindbettfiebers.

Von

Ignaz Philipp Semmelweis,

Dr. der Medicin und Chirurgie, Magister der Geburtshilfe, o. ö. Professor der theoretischen und practischen Geburtshilfe an der kön. ung. Universität zu Pest etc. etc.

Pest, Wien und Leipzig.

C. A. Hartleben's Verlags-Expedition.

1861.

Fig. 100.

Fig. 98. Semmelweis. Portrait in aquarell by A. Canzi (1857)

Fig. 99. Mária Weidenhofer.
Painting by Á. Canzi (1857)

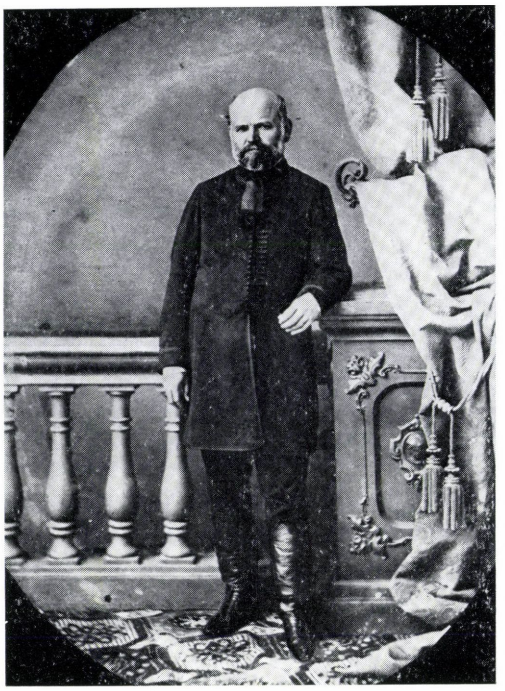


Fig. 101. Semmelweis in 1863. (Photograph)

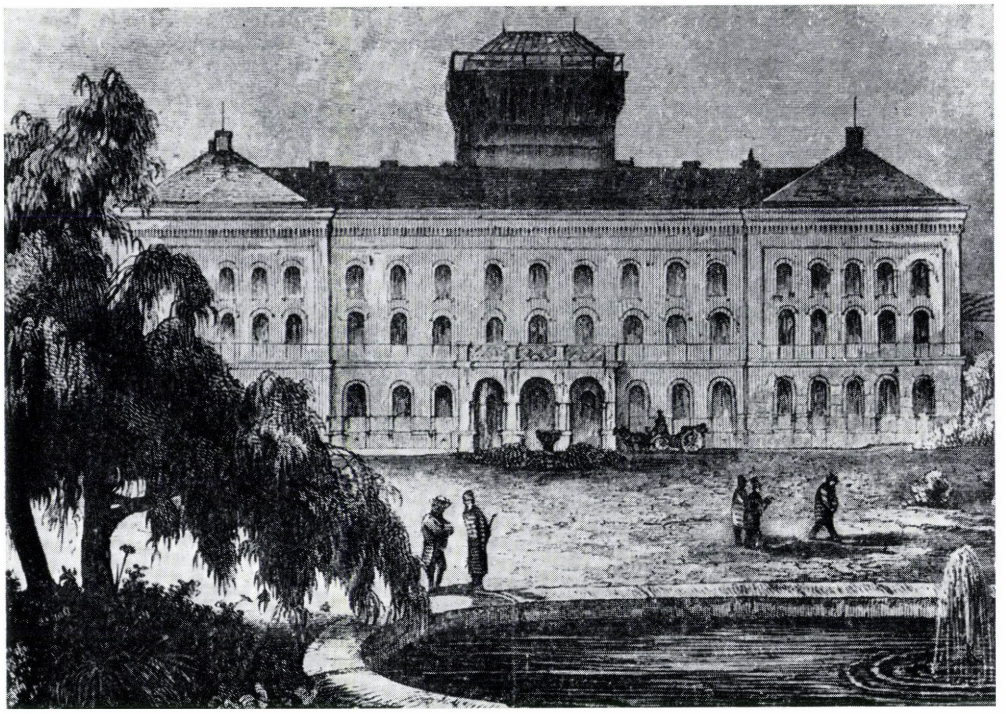


Fig. 102. The Mental Home in Vienna, one of the supposed seats of Semmelweis' death.
Drawing by C. A. Reinhardt (1858)

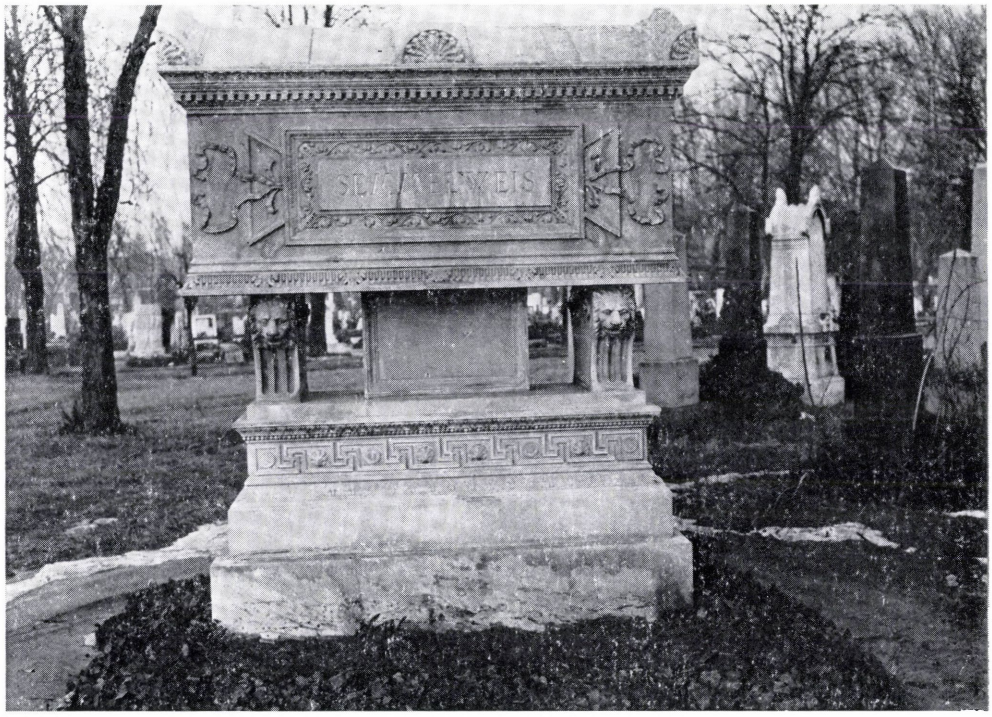


Fig. 103. Semmelweis's tomb in the Kerepesi cemetery

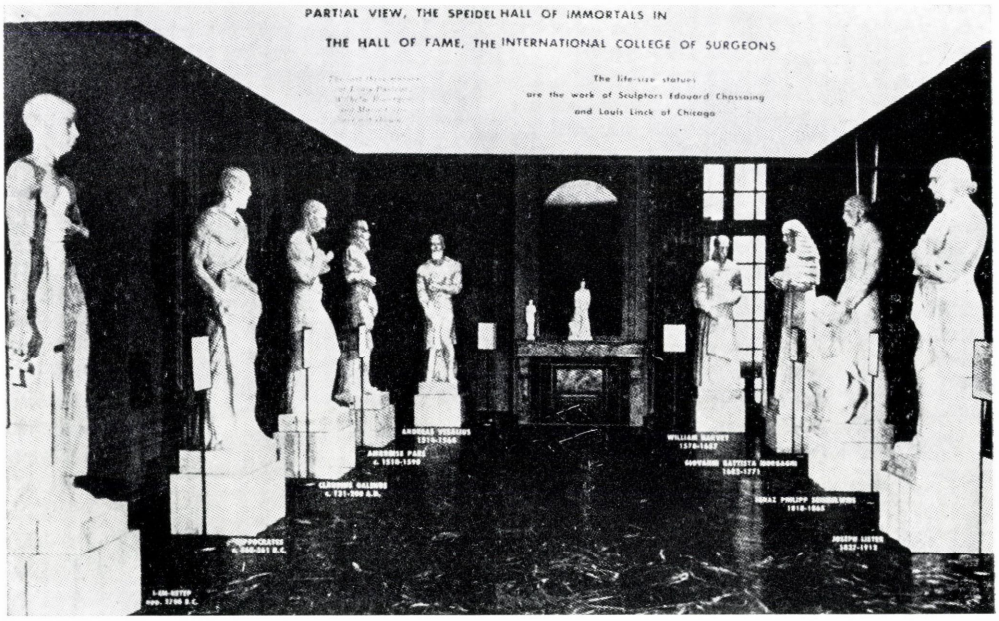
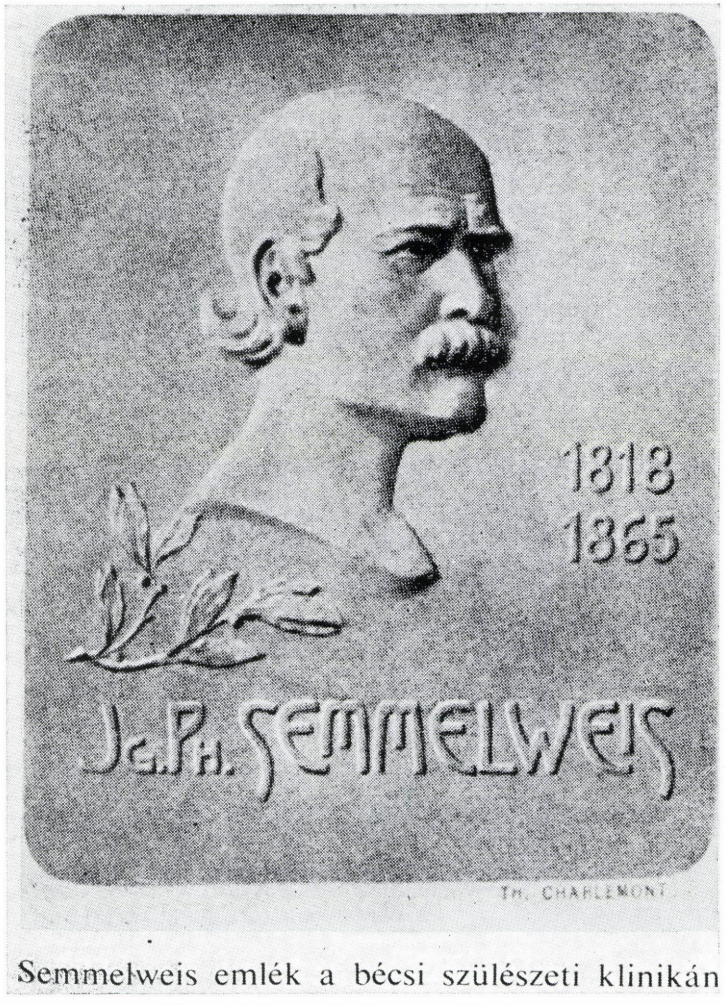


Fig. 104. Semmelweis's statue amongst the immortals in the Hall of Fame of the International College of Surgeons, Chicago (Second from the right)



Semmelweis emlék a bécsi szülészeti klinikán

Fig. 105. Semmelweis memorial plaque
on the Obstetric Clinic in Vienna

Fig. 106. Semmelweis memorial plaque
on the St. Rochus Hospital in Budapest

Fig. 107. Semmelweis memorial plaque in Semmelweis Street, Budapest

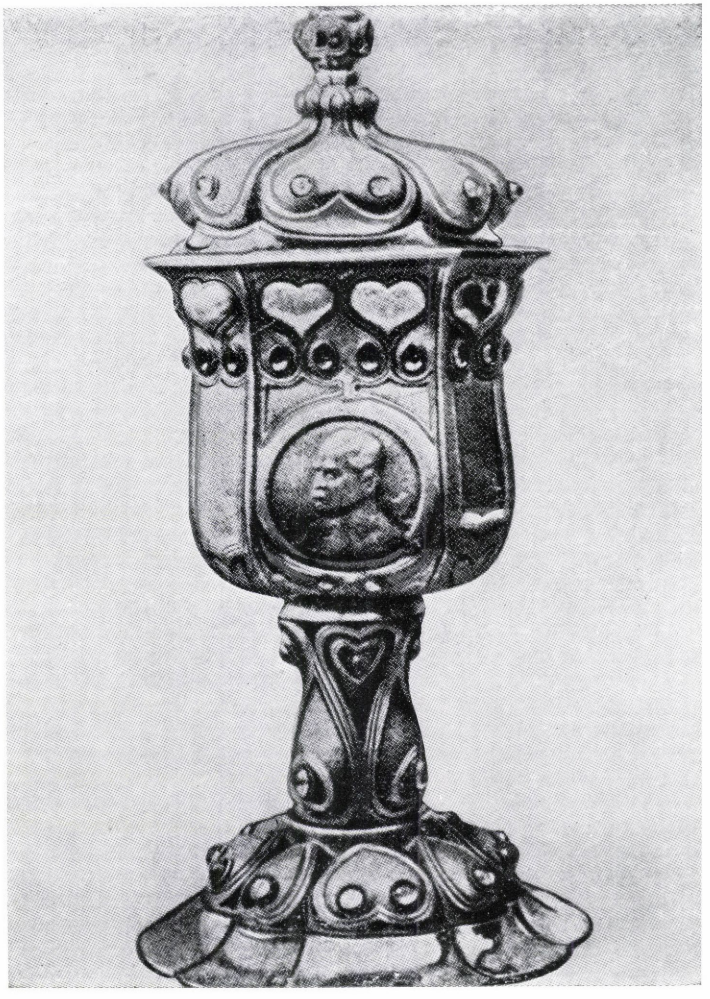


Fig. 108. The Semmelweis Cup

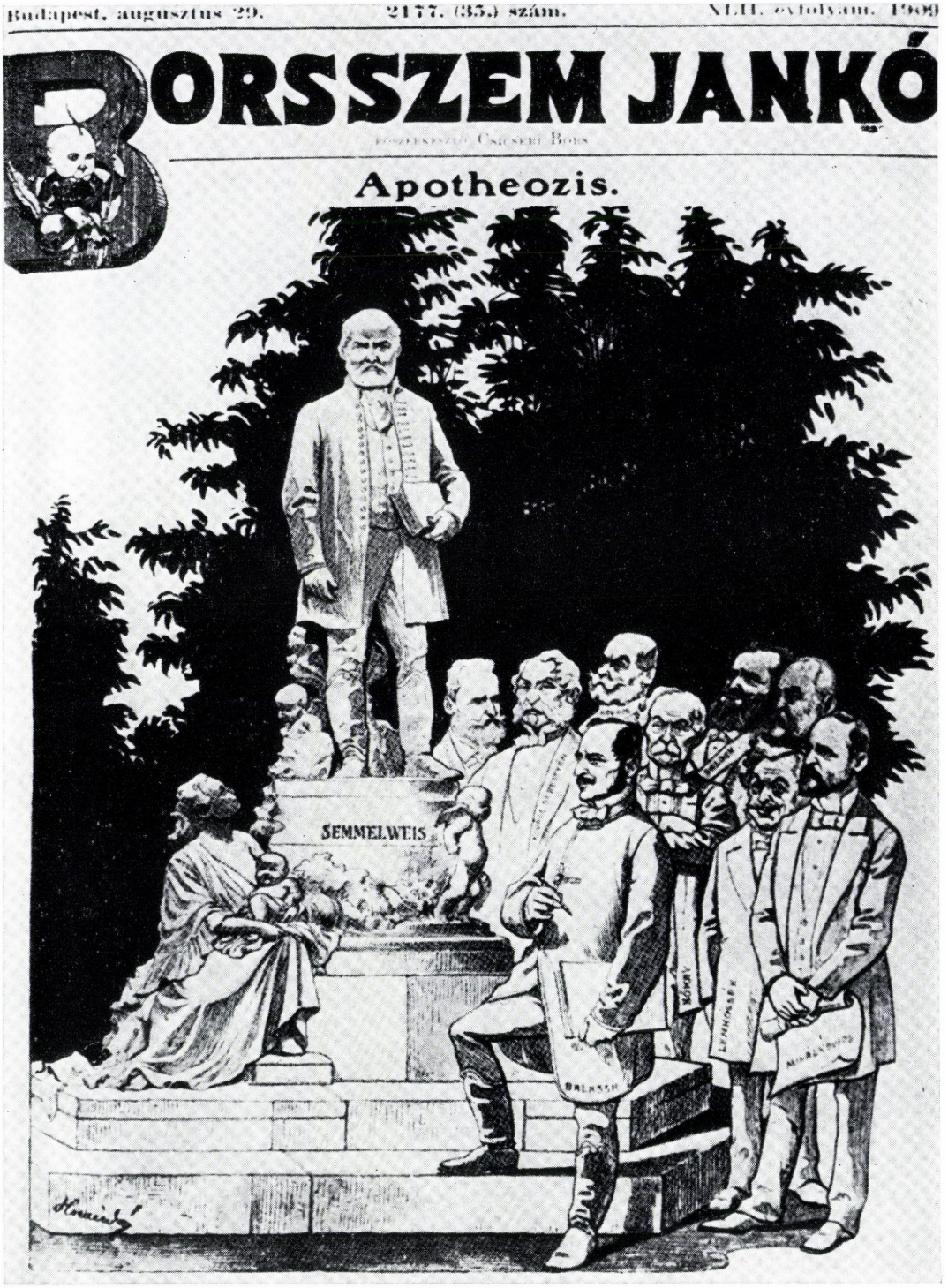


Fig. 109. Picture on the title page of the Hungarian humorous paper Borsszem Jankó, (No. 35, 1909. August 29th)

Fig. 110. The Semmelweis family at the unveiling of the memorial plaque, in 1906

Fig. 111. Scene in the film "Semmelweis" in 1939. (On the left Tivadar Uray as Semmelweis)

Figs. 112–113. Scenes from the Semmelweis film of 1952. (Imre Apáthy as Semmelweis)

COLLECTIONS OF THE MUSEUM

MEDICO-HISTORICAL COLLECTION

1. *Medical tools, instruments and devices*
2. *Spectacles, dentures, artificial hands and legs*
3. *Medicine-containers, homeopathic glasses, etc.*
4. *Archaeological material*

PHARMACO-HISTORICAL COLLECTION

1. *Faience, Maiolica and Porcelain (stone-ware) Pharmacy Vessels*
2. *Wooden Pharmacy Vessels*
3. *Glass Pharmacy Vessels*
4. *Laboratory Vessels*
5. *Pharmacy equipments and instruments*

ANTHROPOLOGICAL COLLECTION

1. *Skulls, skeletons*
2. *Anatomical Ancillary Objects, Mummies, etc.*

COLLECTION OF MEDICO- AND PHARMACO-HISTORICAL RELICS

1.and 2. *Personal Keepsakes of Physicians and Pharmacists*
3. *Relics of hospitals and other institutions of Public Health*

ETHNOGRAPHICAL COLLECTION

1. *Relics of Hungarian Folk Medicine*
2. *Foreign relics of Folk Medicine. Objects of archaeological interest*

COLLECTION ON NATURAL HISTORY (DRUGS)

1. *Mineralia*
2. *Plant- and Animal Preparations*
3. *Drugs*

BALNEOLOGICAL COLLECTION

1. *Spa Glasses and souvenirs from health resorts*
2. *Balneological equipments and instruments*

FINE ARTS COLLECTION

1. *Paintings*
2. *Sculptures, reliefs*
3. *Drawings*
4. *Graphic Art (Prints)*

APPLIED ARTS COLLECTION

1. *Furniture, furnishings*
2. *Textiles, carpets*
3. *Miscellanea*

NUMISMATICAL COLLECTION

The richest collection of the Museum, the world-ranking numismatic material based on the Faludi collection is divided into nine parts. The *first group* contains Classical coins of medical subjects or referring to public health. The *second group* is made up by coins representing the birth, illness and death of statesmen, and other historical personalities and those presented to people for

services rendered. The coins representing important personalities (physicians, pharmacists, scholars) belong to the *third group*. The *fourth group* contains a rather mixed material: coins with representations of towns and counties and referring to major events in the life of the town concerned, e.g. congresses, universities, schools, etc. The *fifth group* is that of the Miscellanea, arranged according to subjects and special fields of medicine (surgery, dentistry, pharmaceutics, balneology, erotics, etc). Amuletts and talismans complete the material. *Group six* is made up by devotional coins, representing the patron saints of healing and holy places arranged in alphabetical order. *Group seven* contains plaques, *group eight* medals and orders (Red Cross, injury, etc.) The *last group* is made up by notes and emergency currencies. Each item of the numismatic collection is of medical or pharmaceutical interest or refers to public health in general.

HISTORICAL DOCUMENTS (ARCHIVES)

1. *Written documents (manuscripts)*
2. *Printed documents*
3. *Pictures*
4. *Records, sound relics*

ARCHIVES

Material collected from different archives, collected documents of legal persons (e.g. corporations, associations).

1. *Documents of the Associations of Physicians* including papers referring to memberhip, aids and bills, banking accounts of the assiciationsion, etc.

2. Material of the *Itinerary Congresses of Hungarian Physicians and Natural ists* arranged in a similar way as the above documents but taking into consideration special characteristics of the material.

3. *Personal documents.*

REFERENCE (AUXILIARY) COLLECTIONS OF THE MUSEUM

1. *Documentation*

Documents in connection with the functions and activities of the Museum. Special groupping of the collections in not necessary, the subjects are reflected in the register.

2. *Film Archives*

a) Photo negatives
b) Photo positives (prints and enlarged photos)
c) Dia slides
d) Films

3. *Ancillary objects for studies*

a) Copies which have no artistic value and which are to be used for scientific purposes or as demonstrational material for public education, e.g. plaster casts, advertisements.
b) Copies of printed studies, articles

SCIENTIFIC REFERENCE LIBRARY IN THE MUSEUM

1. *Material of the Library*

The sphere of collection in the reference library of the Museum is determined by the aim to ensure the continuous processing (registrating) of the material. We strive to completeness in obtaining works referring to museums and restoration, while from among general medical historical works and works from the sphere of historical sciences we are interested only the basic manuals, since their large-scale collection belongs to the Medical Historical Library.

2. *Periodicals*

The same principles of collecting refers to the periodicals.

THE MEDICAL HISTORICAL LIBRARY

Its sphere of interest is twofold: it aims at collecting Hungarian and foreign medical literature up to 1900 on the one hand and continuously collects reference books, manuals and medical historical works necessary for medical historical research activity without any time limit on the other. The collection of books is completed by a rich periodical, dissertation and separatum collection. As it is a historical collection, there are also works from the related branches of science to be found beside the main field of interest. A significant part of the holdings of the library are made up by historical, science historical, art-and cultural historical documents.

BOOKS

The collection of rare books – marked by "S" – is composed of handwritten works made previous to the invention of printing, incunabula (printed before 1500), foreign publications between 1501 and 1600 (rarissima-vetustissima), and early Hungarian printings from the beginnings up to 1711. Here one can also find the products of the best known printing presses (Figs. 115–116.), unique copies, books known for their illustrations, famous bindings (Fig.117.) and books of noted possessors. The collection contains nearly thousand volumes, and we try to make it known by reviewing the most outstanding ones. The complete catalogue of the collection of rare books in under preparation.

HANDWRITTEN WORKS

1. Among the manuscripts prepared previous to the invention of printing mention should be made of a medical fragment dating back to the Late Middle Ages, probably the work of *Sigismundus Albicus,* the physician of the Bohemian

King Wenceslaus and Sigismund, Emperor and King of Hungary. The codex consists of 28 pages written on parchment and has contemporary leather book binding. It consists of two parts, but both are incomplete. The manuscripts are made by different hands but in the same age. The first part is a Latin treatise on medicine and astrology. The second part is written in Middle-High German with clearly legible letters. It is a *"Gesundheitsregel"*.[1]

2. *Scite sapienter...* codex from the 15th century. *Aristotele's* collected aphorisms on 102 pages, parchment binding. Incomplete, the last pages are missing.

3. *Arztney buch,* manuscript from 1503. The author of the work is Heinrich von Pfolspeint, the writer of the first surgical work in German. His works had several copies, one of them is the above mentioned manuscript preserved in our library.

4–5. The Dermatological Clinic in Budapest surrendered two 16th century manuscripts to the Library of the Semmelweis Medical Historical Museum. Their authors were the disciples of *Mercurialis* and *Capivaceus:* they made notes of the lectures of their masters on syphilis. The first – entitled *Tractatus de lue venerae excellentissimi Hieronymi Mercurialis* consists of 65 folios and was made in 1572. The second manuscript dates back to 1585, it is entitled *De lue venerae excellentissimi Hieronymi Capivacei.* Both Mercurialis and Capivaceus were professors at the University of Padua.[2]

INCUNABULA

From among the collection of incunabula (printed before 1500) of our library mention should be made of the following works of medical interest:

1. *Maimonides, Moses (Rabi Moises) : Aphorismi secundum doctrinam Galeni.* Bologna, 1489. The work of the famous Hebrew philosopher and physician of the 12th century appeared in 25 volumes. They contained aphorisms in Latin language based on Arabic and Greek authors, mainly those of Galen. This same volume contains furthermore the aphorisms of John of Damascus, *Abubekr Rhazes's* work entitled *De secretis in medicina* and *Hippocrates*'s prognoses.[3]

2. *Verseheung von Leib, Seele, Ehre und Gott.* This popular medical work of the 15th century was published in 1489 in Nuremberg.[4]

[1]. *E. Schultheisz,* Későközépkori orvosi kéziratfragmentum. (Late Medieval Medical Manuscript Fragment) in: Comm. Hist. Artis.Med. 18 (1960), 175–188.

[2] *Á. Herczeg,* Néhány XVI. századbeli szifiliszkézirat a budapesti Bőr- és Nemikórtani Klinika könyv- és kéziratkincseiből. (Some 16th century manuscripts on syphilis in the collection of the Dermatological and V. D. Department in Budapest) Orvosi Hetilap (Medical Weekly), 1936. 23.

[3] Catalogus incunabulorum quae in bibliothecis Hungariae asservantur. Edierung *G. Sajó–E. Soltész,* Vol. 1–2. Budapest 1970 (Further on: Cat.) Nr. 2134.

[4] Cat. 3464.

3. *Schelling, Conradus: In pustulas malas morbum quem malum de Francia vulgus appellat consilium* (Heidelberg, 1490). Schellig was private physician of the prince-elector of the Palatinate and professor in Heidelberg at the end of the 15th century. He was one of the first to write on syphilis in Germany.[5]

4. *Aurelius Cornelius Celsus's De Medicina* printed in Venice in 1493 excell with its typography. It is one of our most beautiful incunabula.[6]

5. *Dinus de Garbo: Expositio super tertia, quarta et parte quintae Fen IV. canonis Avicennae.* Venice 1496. The author of this work was professor in Bologna, Siena and Padua at the turn of the 13th and 14th centuries. His reputation as a writer is due to his commentaries on Avicenna's works. This is one example of it.[7]

6. *Gruenpeck, Josephus: De pestilentialia scorra, sive mala de Franzos.* Nuremberg, 1496–1497. Gruenpeck is one of the most significant German writers who wrotc on syphilis. This work of his – later published in German, too – was inspired by *Sebastian Brant*'s poem *"Narrenschiff"*.[8]

7. *Brunschwig, Hieronymus: Chirurgia.* Augsburg, 1497. (Fig.118.). The author, whose name occurs also as Braunschweig, was member of the surgeons' guild in Strassburg. He was well aquainted with the works of his predecessors and had a vast experience in wound surgery which he described in his book. He was mostly preoccupied with gun-shot wounds and amputation. The book is heavily illustrated with beautiful woodcuts and the special value of the book historical point of view is that it was printed by *Johann Schönsperger* (Fig.119.). The same volume contains another famous work on wound surgery, th *Feldtbuch der Wundtarztney* (Field book of wound surgery) by Johann Gerstdorff Fig.120.).[9]

8. *Widmann, Johannes: Tractatus de pustulis, sive mal de franzos.* Strassburg, 1497. The author was town physician in Ulm in the first decades of the 16th century. He is also known as *Salicetus* or *Mächinger*. In this short book of his he writes on syphilis.[10]

9. *Sermones dominicales Biga Salutis intitulati...* This incunabulum has not only medical historical interest but its Hungarian aspects deserve attention, too. Its author is by all probability *Osvaldus de Lasco*, i.e. *Ozsvát Laskai*, a Minorite monk, the superior of the convent in Pest. His work *Biga Salutis* consists of three volumes, one of which is in our possession. It was published in Hagenau in 1498 (Fig.121.). As regards medical history, two Sunday sermons are worthy of mention: CI and CII. Here he speaks on leprosy and the realistic description of the disease allows us to draw the conclusion that Laskai's medical

[5] Cat. 3044.
[6] Cat. 957.
[7] Cat. 1165.
[8] Cat. 1524.
[9] Cat. 832.
[10] Cat. 3529.

knowledge corresponded to the standards of that age. This work is considered as the first Hungarian document in the field of medical history which had been printed.[11]

10–11. Two incunabula dating from 1500 are documents of an interesting discussion between physicians. *Simon Pistoris*'s work entitled *Declaratio defensiva cuiusdam postitionis de malo franco* was published in Leipzig. The author, the rector of the University in Leipzig came into conflict with *Martin Pollich*, Saxon court physician who attacked him because he considered the Morbus Gallicus that had been devastating the country for years, an epidemic disease. *Johannes Manardus* also interferred in the discussion with his work entitled *Opus de erroribus Simonis Pistoris circa morbum gallicum* (Fig.122.) and in this rare and valuable writing he called *Pollich*'s attention to the importance of such indispensable knowledge for the doctors as languages, ancient literature, etc.[12]

COLLECTION OF RARE AND OLD BOOKS

The collection of the *rarissima-vetustissima* material is very rich, just as the medical literature of this period itself, since the invention of printing, the ideas of humanism and renaissance has a great influence on the development of medicine. The works of ancient classical writers were published in series one after the other and the activity of the 15th–16th century medical writers resulted also in a great number of publications.[13]

Here we must suffice with enumarating only a fragment of the rich collection, those which excel through the person of the author or the rarity of the book and have a special value from the point of view of the history of printing.

Mention should be made of the Latin edition of *Hippocrate*'s (460–377 B.C.) work, published in Basle in 1558. Furthermore we possess the Latin-Greek edition of it by the famous Giunta press in Venice (1588) and another bilingual edition published in Geneve in 1657. The work of Claudius Galen (131- beginning of the 3rd cent. A.D.), the must fruitful medical writer of classical medicine was published similarly by the Giunta press in 1597. One copy of it originates from the library of Joannes Rulandus (1585–1648) the famous physician in Pozsony. Another copy has beautiful blind stamp and is

[11] Cat. 2482. – *Á. Palla,* A Biga Salutis című ősnyomtatvány orvostörténeti vonatkozása (Medical aspects of the incunabulum entitled Biga Salutis.) Medical Weekly, 1954. 30. Orvosi Hetilap.

[12] Cat. 2724. and 2140/a. – *Á. Herczeg,* Manardus János magyar udvari főorvos élete és művei. (Life and Work of János Manardus Hungarian court physician in chief). Budapest 1929. 39.

[13] *V. R. Harkó–T. Vidar,* Jelentős régi orvosi művek a Semmelweis Orvostörténeti Múzeum Könyvtárában. (Significant old medical works in the Semmelweis Medical Historical Library) Orvosi Könyvtáros (Medical Librarian) 1968. 3. 129–157.

remarkable for its reachly decorated binding. *Galen*'s *Omnium operum quarta classis* was printed in another press in Venice in 1562. The work of Pedacious Dioscorides, the creator of medical botanics (middle of 1st cent. A.D.) entitled *De Medica materia libri V.* is preserved in several editions in our library. The most significant among them is Johann Soter's edition published in Cologne in 1529. Pietro Andrea Mattioli (1550–1577), an Italian physician is reputed for his comment aries on Dioscorides's writings. His book was published in Venice in 1554. This copy had several noted possessors, who left their mark on it. Mattioli's work went through many editions, its German translation, the *Kreutterbuch* was published in Frankfurt in 1586. This copy, too, bears the imprint of possessors. *Arnold of Villanova* (1235–1311) wrote a commentary on monastic medicine which rose from the Benedictine monastery of Salerno. His work is entitled *Scholae Salernitanae Opusculum* and it was published in Frankfurt in 1553. *Guy de Chauliac* (1298?–1368) was the most famous medieval writer on surgery. His *Chirurgia magna* (Great Surgery), the standard treatise on this subject can be found in our library (place and date of printing unknown). We have several volumes from the Latin edition of the work of *Philip Bombast von Hohenheim* (1493–1541), who assumed the name of *Aureolus Theophrastus Paracelsus.* The Latin edition consisted of ten volumes and was published in Basle between 1589 and 1591. We have among others his volume entitled *"Chirurgia magna". Andreas Vesalius* (1514–1564), the reformer of anatomy is represented with Fabricius's edition printed in Nuremberg in 1551 as a beautifully illustrated volume with its 40 woodcuts. (Figs. 123–124.). *Ambroise Paré* (1510–1590), the greatest surgeon of the 16th century, is present with a contemporary edition of his work. *Joannes Michael Savonarola*'s work – he was the grandfather of Giuliano Savonarola – entitled *Practica maior* was a manual of practical medicine in his age. We preserve the volume edited by the Giunta press in 1547. *Cornelius Gemma*'s (1535–1579) *De arte cyclognomica* (Antwerp, 1569) is a synthesis of medicine, mathematics and astrology. Mention should be made furthermore of the first edition of *Conradus Gesnerus*'s (1516–1565) letters on medicine published in Zurich in 1577. The author was a philologist, physician, botanist and zoologist. *Marcus Antonius Montagna* was a famous physician in Venice in the second half of the 16th century. His work entitled *Tractatus de Herpete* (Venice, 1589) can be found in the library, too.

OLD HUNGARIAN WORKS

This collection includes early Hungarian printings from the beginnings up to 1711. The material is not so rich as that of foreign medical literature for historical reasons and also due to the fact that the libriary does not possess the complete material of the period that is available.

One of the greatest early Hungarian medical writers was *János Zsámboki (Sambucus)* (1531–1584) the humanist scholar who was professor at the University of Bologna and court physician in Vienna. 44 works are attributed to him, the most significant of which are to be found in our library. His work entitled *Emblemata* was published in Antwerp in 1564 in the Plantin printing house. (Fig.125.). Zsámboki edited *Petrus Ranzanus*'s work entitled *Epitome rerum Ungaricarum* (Vienna, Rafael, Hofhalter, 1558). This volume contains Zsámboki's report on the defense of Eger in 1552 and the first siege of Szigetvár. The publication of *Antonius Bonfini's Symposion Triemeron* is also connected with his name (Basle, 1572). *Péter Melius (Horhi) Juhász* (1536–1572), one of the leading personalities of Calvinism in Hungary, beside several religious and polemical works compiled a *Herbarium* based on Galen, Pliny and Lonicerus, which was published in Kolozsvár in 1578 by Gáspár Heltai. This volume is fragmentary, the missing pages are replaced with handwritten ones. *Tamás Jordán* (1539–1585), doctor of medicine, was born at Kolozsvár and is author of the work *Pestis phenomena,* published in Francfort 1576. *János Jeszenszky (Jessenius)* (1566–1621) the famous physician, professor of medicine and diplomat is also present with his works, the most outstanding ones being his *"Anweisung zur Wundartzney* published in Nuremberg in 1674 and ... *Nove cognoscendi morbos methodus...* (Wittenberg, 1601). *Sámuel Spielenberger* was chief medical officer at Lőcse at the turn of the 16th and 17th centuries and wrote a thesis on the Morbus Hungaricus *(Theses de morbo hungarico).* It was published in Basle 1597. A significant book is *János Lippay's* work (Jesuit friar and teacher – 1606–1666) entitled *Posonikert, Veteményes kert, Gyümölcsös kert* (Pozsony garden, Kitchen garden, Fruit-garden). The composite volume written in Hungarian was published in Nagyszombat and Vienna in 1664 and 1667. Other works representing special value:
János Apáczai Csere (1625–1659): *Magyar Encyclopaedia* (Hungarian encyclopaedia) published in Utrecht in 1653; several editions of *Pax corporis* written by *Ferenc Pápai Páriz* (1649–1716) the famous doctor of medicine and professor at Nagyenyed. (The earliest edition was published at Kolozsvár in 1690); *György Felvinczi's* (150–1715) translation of the work *"De conservanda Bona valetudine liber"* written by the medical school of Salerno. The Hungarian translation was edited by the Brewer press at Lőcse in 1694; *Concilium medicum de curanda peste cum praedervationibus* written by *Ottó Moller Károly* (1670–1747), physician at Besztercebánya, in Latin (1709), its German translation was published in 1739; the Hungarian translation was made by *Dániel Perlitzi* in 1740. Mention should be made of *György Wernher's* work *De admirandis aquis hypomnemation* published in Vienna in 1561. This work by the captain of Eperjes is preserved only in photo copy in the library but it is one of the earliest sources on balneology in Hungary.

FOREIGN MEDICAL WORKS IN THE 17TH–19TH CENTURIES

Medical literature was rapidly growing in this period, consequently this collection makes up the largest part of the holdings of the library. The collection contains more than 10 000 units. Here we can only mention only a few works and authors without striving for completeness.

The following works are especially worthy from the point of view of science history: *Roger Bacon "Von der Medicine und Arztney* (1604); *Basilius Valentinus Triumpwagen Antinoii ... Allen so den grund suchen der uralten Medizin* (1604), Cappadox *Aretaeus Aetiologica* (1603) *Marcus Aurelius Severinus Vipera pythica* (1651), *Guilelmus Harveus Exercitationes de generatione animalium* (1662), *Marcello Malphigi Opera omnia* (1687) and *Thomas Sydenham Epistolae* (1683).

Some important works from the 18th century: *Émile by Jean Jacques Rousseau* (1772) *Leopoldus Auenbrugger's Inventum novum ex percussione* (1761), *Edward Jenner's Untersuchungen über d. Ursachen ...d. Kuhpocken* (1799), *Karl Linne's Systema naturea* (1767), *Hermann Boerhaave, Libellus de materia* (1727), *Albrecht Haller, Elementa physiologiae* (1757–1761), *Gerhard van Swieten's* aphorisms in five volumes (1745–1764) and *Anton de Haen's Historiae morborum"* published in 1795.

The works of the most significant medical writers of the 19th century are also preserved in our library, including writings by *Hahnemann, Bichat, Laennec, Rokitansky, Johann Müller, Moleschott, Darwin, Claude Bernard, Helmholtz, Virchow, Henle, Wunderlich, Priesnitz, Pasteur, Koch, Behring, Lister, Metchnikoff, Gordon, Billroth, Pitha, Kocher, Langenbeck, Graefe, Liebig, Purkinje, Hufeland, Skoda, Bright, Hebra, Kussmaul, Traube, Nothnager, Dubois-Reymond, Meyner, Krafft-Ebing, Forel, Lombroso, Bechterew, Charcot, Bruns, Rosas, Hegar* etc.

18TH–19TH CENTURY HUNGARIAN WORKS

The works of the Hungarian physicians of the 18th–19th centuries are almost completely represented in the holdings of the library. Here it should be sufficient to enumarate some outstanding authors and works:

18th century: *István Weszprémi, Succinta medicorum Hungariae et Transilvaniae biographia* (1774, the first Hungarian medical bio-bibliography), *Tentamen de inoculanda peste* (1754), *Károly Moller, Consilium medicum azaz Orvosi oktatás* (Consilium medicum i. e. Training of physicians)(1740), *István Mátyus, Diaetetica* (1762), *Ferenc Nyulas, Az Erdély országi orvosi vizeknek bontásáról közönségesen* (On the analysis of the medical waters of Transylvania in general) (1800).

19th century: *Ignác Semmelweis, Die Aetiologia* (1861) his basic work where he published his discovery), *Offener Brief* (1862); *Ignác Sauer, Therapia specialis* (1844–1845) (manuscript), *Agost Schoepf Merei, A gyermekgyógyászat tankönyve* (Text-book of paediatrics((1847), *Népszerű intések* (Popular warnings) (1836), *János Balassa, Gyakorlati sebészet* (Practical surgery) (1844). *Sándor Lumniczer, Orvosi sebészi értekezés a képlő sebészetről* (Medicosurgical treatise on plastic surgery) (1844), *Pál Almási Balogh, De evolutione et vita encephali* (1823), *József Fodor, Egészségtan* (Hygiene) (1886), *Endre Hőgyes, Jelentés a veszettségre vonatkozó vizsgálataink jelenlegi állásáról* (Report on the present state of our exeminations concerning rabies) (1886), *Frigyes Korányi, A belgyógyászat kézikönyve* (Handbook of internal medicine) (1894–1900) *Mihály Lenhossék, Útmutatás az anatómiai gyakorlathoz* (Guide to practical anatomy) (1900) *Ignác Hirschler, Adatok a láthártyamaradvány kórodai ismeretéhez* (Contributions to the diagnostics of the retina) (1875), *Zsigmond Purjesz, A XVI. századbeli jelesebb syphilographok* (Noted syphilographs of the 16th century) (1882), *Lajos Thanhoofer, A szövetek és szervek szerkezete és azok vizsgáló módszerei* (Structure and analysis of tissues and organs) (1894), *Lajos Markusovszky, Selected Works* (1905).

Beside the above mentioned works – partly some of them included – special collections emerged within the holdings of the library. Especially noteworthy collections exist in the field of botanics, pharmaceutics, balneology, chirurgy, venerous diseases, popular curing, magic and occultism etc.

MEDICAL DISSERTATIONS AND OFFPRINTS

The 5000 volumes of medical dissertations contain not only the older inaugural dissertations in Hungary, but also similar material from abroad: dissertations from the German and French universities up to thefforties of the 20th century. We preserve dissertations from the various stages of medical training in Hungary, those of the Nagyszombat, Buda and Pest Universities. We collected the dissertations of Hungarian students who graduated at foreign universities. The earliest one of this collection is *Sámuel Spielenberg*'s thesis entitled *Theses de morbo hungarico"* published in Basle in 1597. *István Király* obtained his doctor's degree in Halle in 1697, his dissertation entitled *De genuino et simplicissimo doloris podagrici remedio...* can also be found in our library.

The collection of offprints contains more than 15 000 units: partly Hungarian and partly foreign articles related to medicine and medical history.

The collections of books, dissertations, offprints and periodicals have specimens in several languages beside Hungarian: German, English, French, Italian, Spanish, Russian and Polish works can be found in abundance beside works written in Latin and Greek.

The material of the medical historical collection of the library is completed with the indispensable reference literature, including biographies and bibliographies, dictionaries, encyclopaedias, reference works and other material needed to procession work in the library (history of medical incunabula, manuscripts, illustrations, bindings, presses, etc.)

Considering the historical character of our library and the fact that its holdings include not only works related to medicine or pharmaceutics but to the kindred branches of science, too, the reference material reveals a wide range of interest. In addition to the basic historical source material it includes works from the field of ethnology, art history, literature, cultural history, philosophy, sociology, not to mention the rich collection of works related to chemistry, physics ant other branches of natural sciences.

The reference material to medical history consists of works published in Hungary and abroad. From the earliest sources to the most up-to-date works it covers a wide range of the relevant literature.

As to Hungarian literature, the basic source is *István Weszprémi*'s (1723–1799) *Succinta medicorum Hungariae et Transilvaniae biogpraphia* the first Hungarian medical biography. Its bilingual edition has been recently published by our Institute. The last volume (Vol IV) was published in 1971. Mention should be made of *Pál Adami*'s work on the history of epidemics published in 1784, furthermore *Francis Xav. Linzbauer*'s work in seven volumes *Codex Sanitario-medicinalis Hungariae* (Buda, 1852–1865) which is the most important encyclopaedia of Hungarian medical history containing documents referring to the history of Public Health in Hungary from King Stephen I. (St. Stephan) up to 1848. *Kálmán Demkó* wrote the first monography on Hungarian medical history. His work published in 1894 deals with the history of the Hungarian Medical Faculty up to the end of the 18th century. *Tibor Győry* discussed several basic questions of Hungarian medical history. His summarizing work on the history of the medical faculty of the Budapest University was published on account of the 300th anniversary of the Budapest University. His bibliography of Hungarian medical literature of four centuries *(Medical Bibliography of Hungary,* 1472–1899 (Budapest, 1900) is still an indispensible manual of every researcher. *Gyula Magyary-Kossa*'s life-work, a collection of data: "*Medical Relics of Hungary*" (I–IV., Budapest 1929–1940) contains an enormous material of data and has remained our most important text-book. The works of *Ferenc Kolozs Mayer* "*The History of Medical Science*" (Budapest, 1927) and Elek Hints's work of similar character (Vol. I. Prehistoric and antique medical science; Vol. II, Medieval medical science, Budapest 1939) refer not only to Hungarian medical history but reveal a universal interest in this field. *György Gortvay*'s comprehensive book entitled "*The History of Medical Culture*

and Public Health in Modern Hungary" was published in 1953. The second volume could not be published on account of the early death of the author; it is preserved in the Library of the Hungarian Academy of Sciences.

Several authors have discussed some special chapters of medical history in shorter or longer works. Here can be listed the work of *Imre Bartók, Károly Bede, János Bókay, András Daday, György Elekes, Lajos Fekete, Sándor Fritz, Árpád Herczeg, István Irsay, Gyula Jáki, Dániel Kellner, György Korbuly, Béla Molnár, Lajos Nékám, Gyula Regöly-Mérei, István Vámossy* and *Béla Varjas.*

The most important foreign publications referring to the history of medicine can also be found in our library. We obtain them either by purchase or by presentation. We can acquire recent publications in exchange for our periodical *Communicationes de historia artis medicinae.* We are granted review copies for the reviews of books published in the above mentioned periodical. In this way we receive each work edited by the Wellcome Institute in London. From among recent works related to medical history and published abroad, mention should be made of the works of *Ackerknecht, Curtius, Diepgen, Herrlinger, Erna Lesky, F. N. L. Poynter, Schouten, Schumacher, Siegrist, Singer* etc.

PERIODICALS

There are more than 20 000 volumes of periodicals in the Library. Unlike the book holdings, the limit of collection is 1945. The material of the periodicals is twofold: partly medical literature, partly medical historical literature. The material after 1945 consists of mainly the latter type, except the *Orvosi Hetilap* (Medical Weekly).

The earliest periodicals of the library date back to the second half of the 18th century and derive mainly from German territories. The most important ones are: *Acta Helvetia Physico-Mathematico-Anatomico-Botanico-Medico* (Basle 1751–1772), *Giornale di Medicina* (Venice, 1764–1765), *der Arzt* (Vienna-Leipzig, 1778), *Giornale per Servire alla Storia Regionata della Medicina de Questo* (Venice 1783–1799), *Ephemerides Meteorologica Medicina* (Vienna 1794), *Journal der Pharmacie für Arzte, Apotheker und Chemisten* (Leipzig 1795–1806), *Archiv für Physiologie* (Halle, 1796–1829), *Journal für die Chirurgie, Geburtshülfe und Gerichliche Arzneykunde* (Jena, 1797–1804). Three periodicals are especially noteworthy for their wide ranging effect in Hungary: *Medizinisch Chirurgische Zeitung* (Salzburg–Innsbruck 1790–1849), *Hufeland*'s two periodical editions entitled *Journal der Practischen Arzneykunde und Wundarzneykunst* (Jena, 1795–1844) and *Bibliothek der Practischen Heilkunde* (1790–1843).

In the course of the 19th century the number of medical periodicals greatly increased and by the second half of the century – due to the process of special-

ization in medicine – their number got multiplied. The medical weeklies, the characteristic periodicals of the age published all over Europe are significant. The majority of them is still being published. We have a considerable collection up to World War II. Such periodical is the *Wiener Medizinische Wochenschrift* (1851–1944) which was an important paper in Hungary, too in the age of the Austrian neo-absolutism following the Hungarian War of Independence of 1848–1849. Furthermore, mention should be made of the *Münchener Medizinische Wochenschrift* (1854–1944), the *Deutsche Medizinische Wochenschrift* (1854–1944), the *British Medical Journal* (1878–1949). The following periodicals were of principal importance for the Hungarian representatives of medicine: *Allgemeine Wiener Medizinische Zeitung* (Vienna 1856–1910), *Wiener Medizinal Halle* (later: *Wiener Medizinische Presse*) (Vienna 1860–1907).

The periodical edited by *Virchow* under the title *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medizin* (now: *Virchows Archiv*) had a universal significance from the view-point of medical literature. It can also be found in our collection (1847–1931).

Periodicals of great importance were the following publications: *The Lancet* (1873–1949), *Journal of the American Medical Association* (1913–1949), *Annals of Surgery* (1915–1927) and *The American Journal of Surgery* (1930–1944).

Worthy of mention are the organs of homoeopathy, the widespread healing method of the last century: c. f.: *Archiv für die Homöopathische Heilkunst* (Leipzig, 1822–1837), *Allgemeine Homöopathische Zeitung* (Leipzig, 1837–1939), *Österreichische Zeitschrift für Homoepathie* (Vienna 1844–1863) and the Hungarian *Hasonszenvi Közlöny* (Homoeopathic Review) Eger, 1864–1865 (together with its sequence the *Hasonszenvi Lapok*) Homoeopathic Journal (Pest, 1866–1876) and the *Homöopathia* (Budapest 1895–1898).

From among Hungarian periodicals mention schould be made of the first medical periodical in the strict sensce edited by Pál Bugát and Ferenc Flór under the title *Orvosi Tár* (Medical Review). The complete series from 1830 to 1849 can be found in our collection. The first Hungarian medical weekly was edited by Lajos Markusovszky in 1857 entitled *Orvosi Hetilap* (Medical Weekly) It is still being published. Its independent supplements are organs of the various fields of medicine: *Szemészet* (Ophthalmology), *Nő és Gyermekgyógyászat* (Gynaecology and Paediatrics, edited by Ignác Semmelweis). In 1861 Imre Poór established a new periodical *Gyógyászat* (Therapy) (Buda, 1861–1944). The volumes of *Egészségügyi Tanácsadó* (Guide to Public Health) (Pest, 1864–1869) can also be found in our collection. Mention should be made of the *Magyar Orvosok és Természetvizsgálók... Vándorgyűlésének Munkálatai* (Activity of the Itinerary Congress of Hungarian Physicians and Naturalists) (1841–1912, 1934) and the series of monographies of towns published on the venue of the itinerary congresses.

Following the War of Independence the periodical *Zeitschrift für Natur*

und Heilkunde in Ungarn edited by *David Wachtel* was important beside the periodicals published in Vienna. (It was published between 1851–1860). Afterwards the *Ungarisch* (later *Fester*) *Medizinische-Chirurgische Presse* (Pest, 1865–1916) became the most popular periodical of the German speaking physicians in Hungary. It was edited by *Henrik Mangold.* The volumes of both periodicals are preserved in our library.

The medical organs published in the first period of the Hungarian medical literature, preceding the Compromise of 1867, are also to be found in our collection: *Orvosi Heti Szemle* (Medical Weekly Review) – with reviews of the articles of foreign newspapers –, *Klinikai Füzetek* (Clinical Booklets), *Magyar Orvosi Archivum* (Hungarian Medical Archives), *Balneologiai Értesítő* (Balneological Review), *Bába-Kalauz* (Midwives' Guide) a *Magyar Vöröskereszt* (Hungarian Red Cross), *Magyar Orvosok Lapja* (Journal of Hungarian Physicians), *Orvosi Közlöny* (Medical Review) – just to mention the few most popular ones. The periodical literature of the period 1867–1918 is almost completely present in our collection.

In the 20th century the most significant papers were the *Budapesti Orvosi Újság* (Budapest Medical Journal) (1903–1944) and the *Orvosképzés* (Postgraduate Journal) which can also be found in the library. In the years following World War I. only a few periodicals of the earlier years could be published continuously. e. g. *Orvosi Hetilap* (Medical Weekly) *Budapesti Orvosi Újság* (Budapest Medical Journal), *Magyar Orvosi Archivum* (Hungarian Medical Archives) etc. In the post war period new periodicals were established and the process of further spezialization continued. Medical technical papers rose, too, which make ap a significant part of our collection. This period was closed by World War II, when on account of the events in 1944 all Hungarian medical papers ceased to exist.

The literature of the history of pharmacology is inseparable from Hungarian medical historiography. The periodicals of Hungarian pharmacology make up a special part within the holdings of the library. Mention should be made of the *Gyógyszerészi Hírlap* (Pharmaceutical Journal) edited by *A. Láng Ferenc* in 1848 in Nyitra. Independent pharmaceutical periodicals were: *Gyógyszerészi Közlöny* (Pharmaceutical Review) (Budapest, 1885–1944) and *Gyógyszerészi Értesítő* (Pharmaceutical Gazette) (Budapest, 1896–1936).

JÓZSEF ERNYEY PHARMACEUTICAL LIBRARY

The József Ernyey Pharmaceutical Library is under the care of our Institute since 1968. The library includes the material of the Pharmaceutical Museum which was founded in 1908 at the initiatives of József Ernyey, collaborator of the National Museum from the endowments of the pharmacist circles. Further-

Fig. 114.

Fig. 114/a. Reading-room of the Semmelweis Medical Historical Library

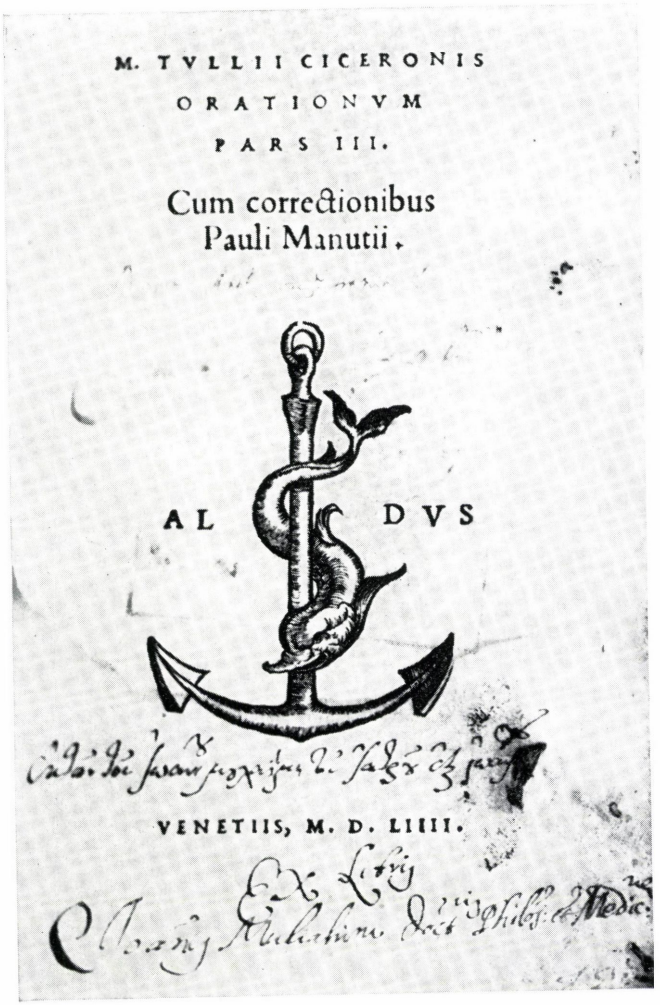
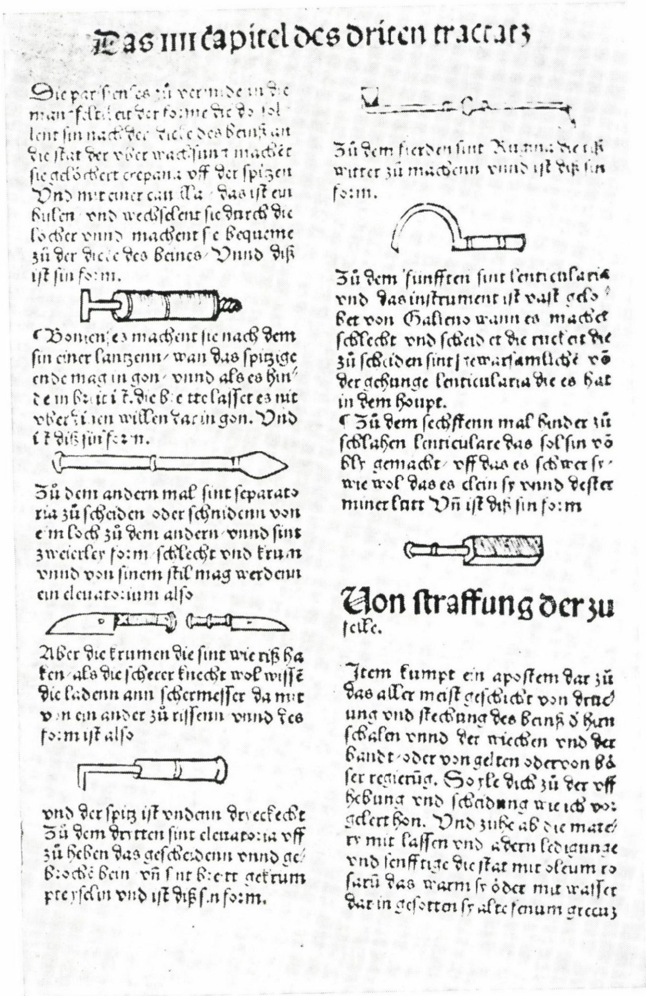


Fig. 115.
Aldus Manutius's Cicero edition (Venice 1554)

Fig. 116.
Elzevir edition published in Amsterdam in 1657

Fig. 117. 16th century original book binding

Fig. 118.



Das IIII capitel des driten tractats

Die par... es zü vermide in die man ... der forme die do sol lent sin nach der diele des beins an die stat der uber wachsung machet sie gelöchert trepana uff der spitzen Und mit einer ... das ist ein hulsen und wechselent sie durch die locher unnd machent sie bequeme zü der diele des beines / Unnd diß ist sin form.

Bomen / es machent sie nach dem sin einer lantzenn / wan das spitzige ende mag in gon / vnnd als es hin de in ... die ... lasset es nit ... willen dar in gon. Und ist diß sin form.

Zü dem andern mal sint separatoria zü scheiden oder schnidenn von ein loch zü dem andern / vnnd sint zweierley form / schlecht vnd krum vnnd von sinem stil mag werdenn ein eleuatorium also

Aber die krumen die sint wie diß haken / als die scherer knecht wol wissē die ladenn ann schermesser da mit von ein ander zü rissenn vnnd des form ist also

vnd der spitz ist vndenn dryeckecht Zü dem dritten sint eleuatoria vff zü heben das gescheidenn vnnd gebrochē bein / vñ sint breitt getrum ... vnd ist diß sin form.

Zü dem fierden sint ... witter zü machenn vnnd ist diß sin form.

Zü dem funfften sint lenticularia vnd das instrument ist vast gescherpt von Galieno wann es machet schlecht vnd scheid et die ... zü scheiden sint ... von der gehunge lenticularia die es hat in dem houpt.

Zü dem sechstenn mal sinder zü schlahen lenticulare das sol sin vō bly gemacht / vff das es schwer sy wie wol das es clein sy vnnd dester minner latt Vñ ist diß sin form

Von straffung der zu selke.

Item kumpt ein apostem dar zü das aller meist geschicht von druckung vnd steckung des beins d' hirn schalen vnnd der wiechen vnd der bandt / oder von gelten oder von böser regierūg. So sie dich zü der vff hebung vnd scheidung wie ich vor gelert hon. Vnd züch ab die materi mit lassen vnd adern ledigunge vnd senfftige die stat mit oleum rosarū das warm sy oder mit wasser dar in gesotten sy alte fenum grecum

Fig. 119.

Das nüwe distilier buoch

der rechtē kunst zü distilieren vnd auch dar zü die wasser zü brennen / mit figuren ange zöget Erstmals von meister Iheronimo brunschweick züsamen coligiert / vnd dabei von Marsilio ficino des langen gesunden lebens / als er an im selb bewert / hundert vñ sechszehen iar ruglich gelebt hat / vnd mit vil güter stuck Deré aber so vil / das mancher nicht acht / Hon doch etlich gerömbt vil versücht die in zü nutz kummen sein Hierumb ist es ietzt wider neüw getruckt zü güt allen menschen.

Fig. 120.

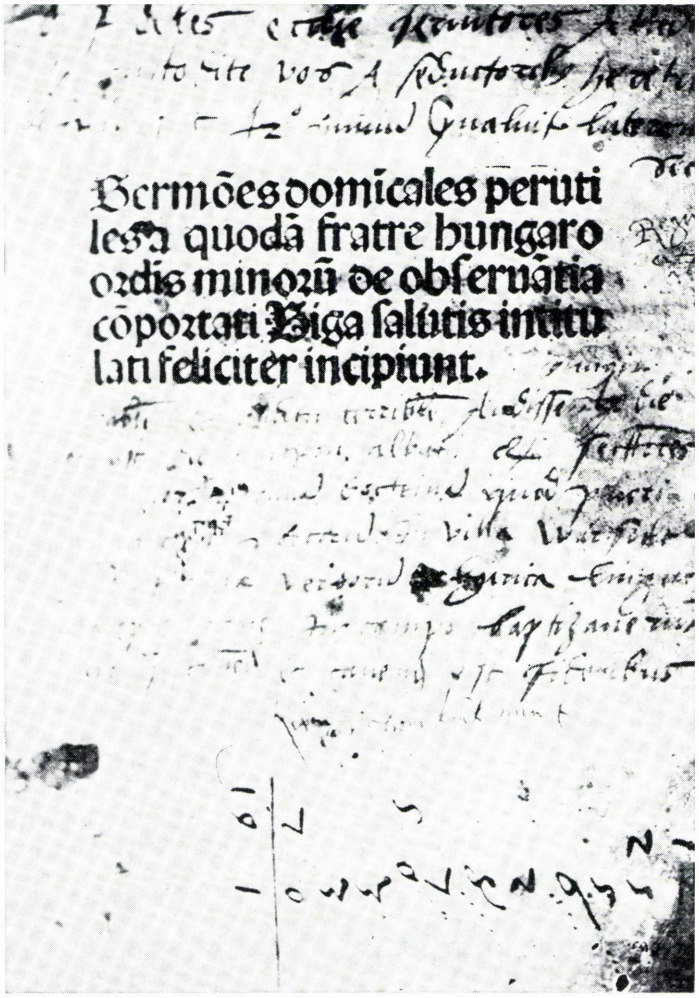

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Fig. 121.

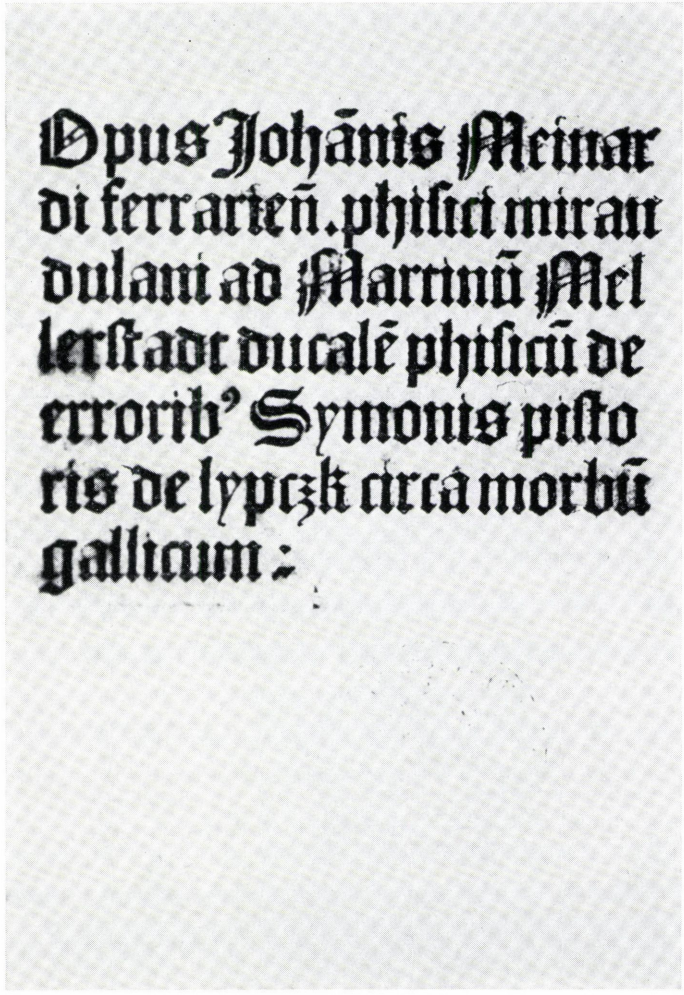
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Fig. 122.

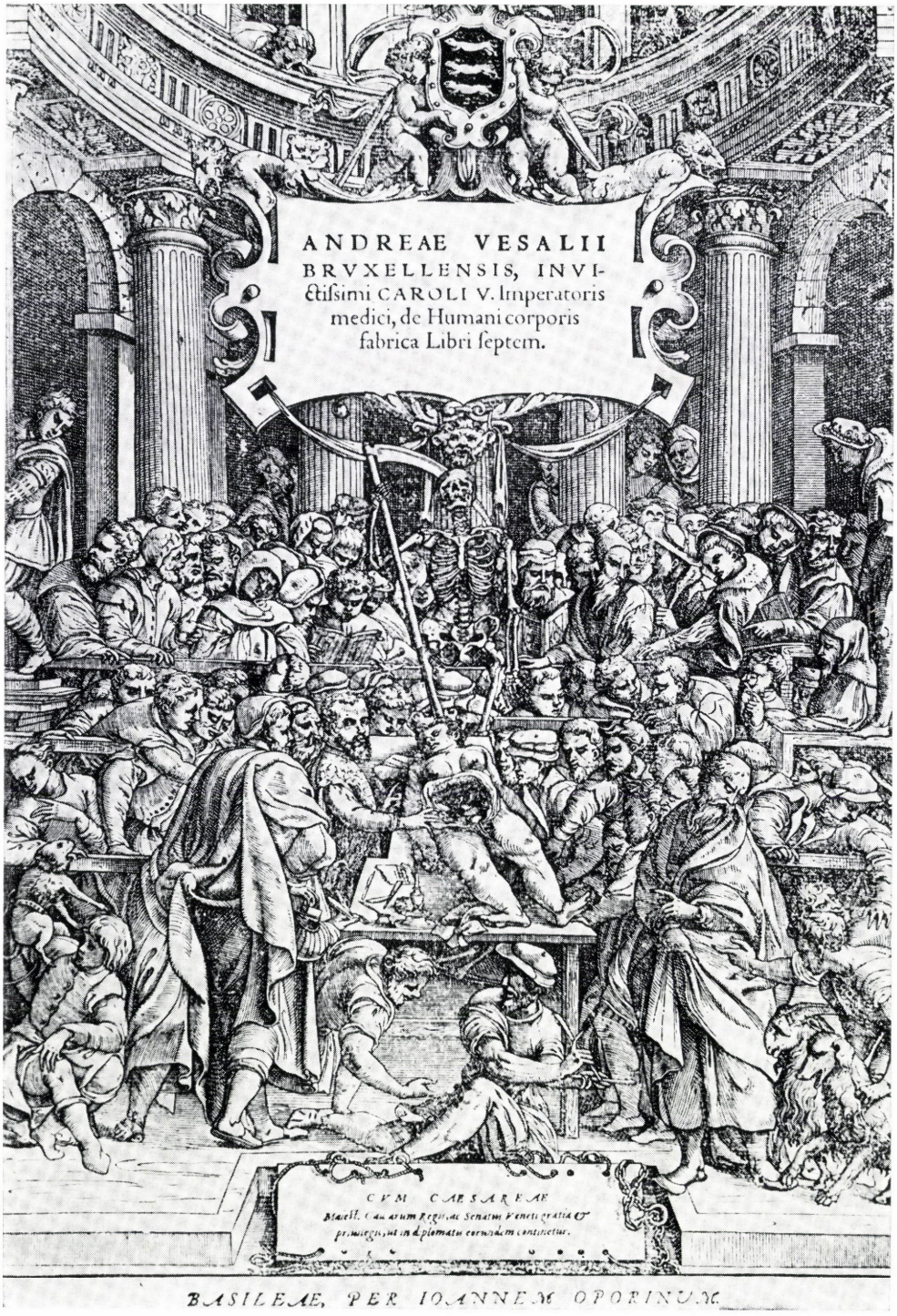
ANDREAE VESALII
BRVXELLENSIS, INVI-
ctiſsimi CAROLI V. Imperatoris
medici, de Humani corporis
fabrica Libri ſeptem.
CVM CAESAREAE
BASILEAE, PER IOANNEM OPORINUM

Fig. 123.

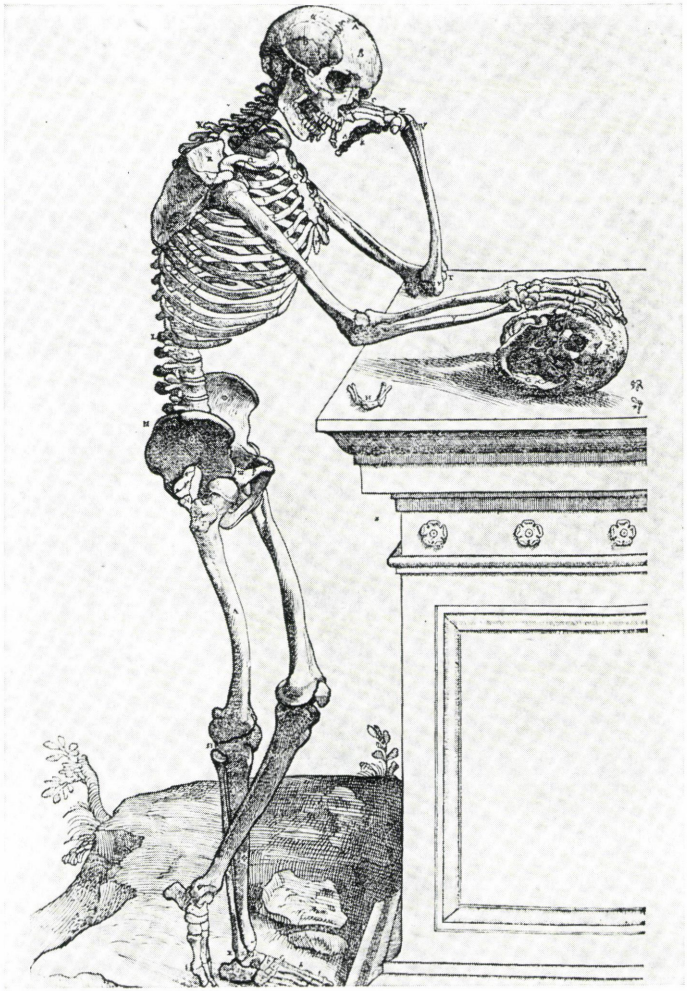

Fig. 124.

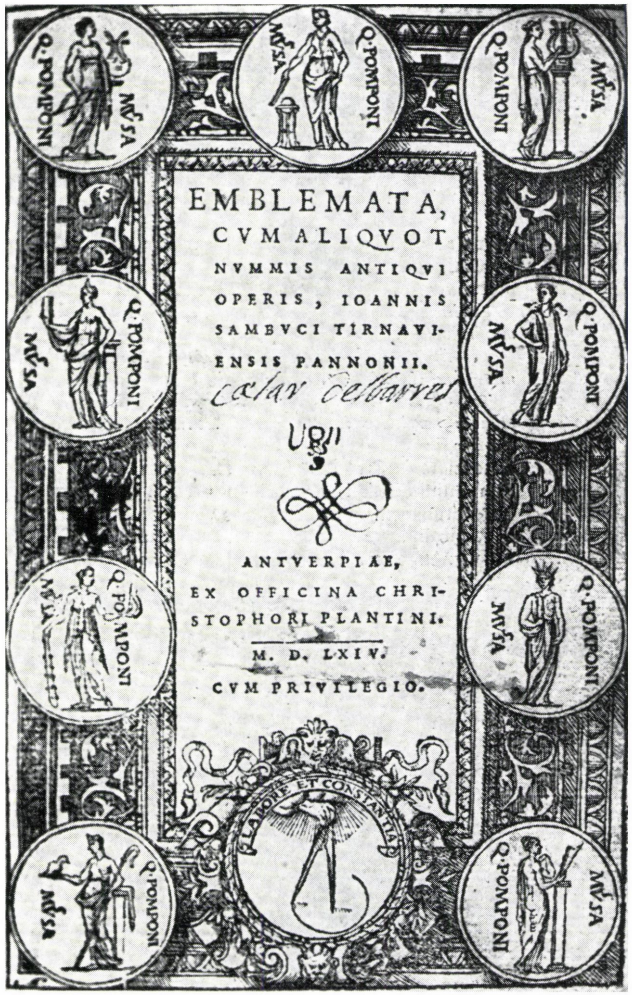

Fig. 125.

more, it preserves the material of the libraries of different Pharmacist Associations that ceased to exist. It consists of a rich material referring to pharmacy: a complete series of Pharmaceutical periodicals published in Hungary and collected by the Parmacist Associations and an almost complete periodical collection of foreign papers.

1. *Collection of Books*

The major part of the material is made up by German books published in Germany or Austria mainly from the field of chemistry, c. f. the works of *Liebig, Ehrmann, Trommsdorf, Dumas, Duflos* etc. The number of encyclopaedias is considerable, c. f. *Moeller, Mayer, Thoms, Kazay, Vondrasek* etc.) There is a complete collection of works used as text-books in pharmacist trainig in Hungary, e. g. *Felletár-Kátai, Csurgay, Győry, Schilberszky-Ströcker, Augusztin–Kőszeghy–Nagy, Dávid* etc. and books describing Hungarian-made drugs: *Karlovszky–Winkler, Kutlik, Bontka–Kéler, Putuvky, Csipke, Nemedy, Pandula* etc.

A special collection consists of the various pharmacopoeias which are especially significant from the viewpoint of pharmacology. We possess a complete series of Austrian provincial and military pharmacopoeias preceding the publishing of the first Hungarian work of similar character (1871) and beside them there are officially published German, Swiss, English, Italian, French, American, Russian, Rumanian, Croatian, Czech and Japanese pharmacopoeias. The library has a significant collection of official fees (taxes). which serve as an important sources. The Pharmaceutical Pocket Calanders published since 1870 contain important data and evidence for those who are interested in the development of pharmaceutical institutions in Hungary.

Two thirds of the dissertations of pharmacists (cca 650) who took their degree since 1860 can be found in the library, too. Besides, the library collected and still collects the treatises of professors of pharmacology and other outstanding scientists of the kindred branches of science.

II. *Collections of Periodicals*

A considerable part of the collection is made up by pharmaceutical periodicals from 1848 up to the present. Beside the *Gyógyszerészi Hírlap* (Pharmaceutical Journal) edited by *Ferenc Láng A.* in Nyitra in 1848 there is the complete series of *Gyógyszerészi Hetilap* (Pharmaceutical Weekly) edited by *Schédy* in 1862 and published until 1944, and the *Gyógyszerészi Közlöny* (Pharmaceutical Review) edited by Géza Karlovszky in 1885. Mention should be made of

the following Hungarian periodicals: *Magyar Gyógyszerész* (Hungarian Pharmacist), *Gyógyszerészi Folyóirat* (Pharmaceutical Journal), *Gyógyszerész Segédek* (Later *Gyógyszerészek Lapja*) Journal of Pharmacists Apprentices – later of Pharmacists, the *Magyar Gyógyszerésztudományi Társaság Értesítője* (Communications of the Hungarian Association of Pharmacology). From among foreign publications mention should be made of the German *Archiv der Pharmazie* (Berlin), *Pharmazeutische Post* (Vienna), *Apotheker Zeitung* (Berlin), *Chemisches Zentralblatt* (Berlin), *Pharmazeutische Zentralhalle* (Dresden), the English *The Chemist and Druggist* (London), *The Pharmaceutical Journal* (London) and the *French Journal de Pharmacie* and *L'Union Pharmaceutique.*

As regards the collection of regulations in the field of pharmaceutics mention should be made of the volumes of the *Corpus Juris Hungarici,* the *Magyar Törvénytár* (Hungarian Corpus Juris) *Budapesti Közlöny* (Budapest Gazette), *Magyar Közlöny* (Hungarian Gazette).

The material of the József Ernyey Pharmaceutical Library completes the historical material of the Semmelweis Medical Historical Library with its special collections.

COMMUNICATIONES DE HISTORIA ARTIS MEDICINAE and LIBRI HISTORIAE MEDICAE

The Semmelweis Medical Historical Library houses the Editorial Board of the *Communicationes de Historia Artis Medicinae*. The periodical is published quarterly and publishes works relating to all aspects of the history of medicine and pharmacy. It is published by the Semmelweis Medical Historical Museum and Library and the Hungarian Society of Medical History. It was first published in 1955 as Communicationes ex Bibliotheca Historiae Medicae Hungarica edited by the Hungarian Medical Historical Library. Until 1968 43 volumes were issued. Then, – when the Semmelweis Medical Historical Museum and Library were united – its sphere of contents became wider, it appeared in a new form and became known among the medical historical institutes, museums, libraries and scholars in Hungary and abroad. The aim of the periodical is to serve researches into medical history, to complete the scientific activity of the Museum and Library. Beyond its special field it contributes to Hungarian and world history and cultural history.

Since 1968 (Vol. 44.) the *Communicationes* has a mixed contents: Essays, Smaller Articles, Data, Book Reviews and Chronicle. In certain cases, however, the volumes are dedicated to the memory of some important event or anniversary and only articles relating to the special subject are published. E. g. two volumes commemorated Ignác Semmelweis: Vol. 46–47 (1968) was dedicated to the 150th anniversary of his birth, while two years later Vol. 55–56. (1970) was also dealing with him alone. Vol 51–53 (1969) commemorating the 200th anniversary of the medical faculty of Nagyszombat (now Trnava, Czechoslovakia), the predecessor of the Semmelweis Medical University of Budapest. It was followed by Vol. 57–59 published in 1971 which contained the lectures delivered in Szomolány (Smolenice, Czechoslovakia) and Budapest at the conferences and celebrations arranged on account of the anniversary.

The rest of the volumes cover a wide field. Most of the articles were on or related to the history of medicine and pharmacy in Hungary. Parallel with them several questions of foreign medical history were discussed. Among them many

articles are to be found which were written by foreign research workers, both European and American.

Each article in the periodical is published with a summary written in a foreign language, but a great number of essays appear in foreign languages: English, French, German or Russian and with a Hungarian summary. Among the authors one can find reputed authorities of Hungarian and foreign medical history.

This not inconsiderable publishing activity is completed by the publishing of books. The publication of *István Weszprémi's Magyarország és Erdély orvosainak rövid életrajza* (Succinta medicorum Hungariae et Transilvaniae biographia) in Hungarian was completed in 1971 and it appeared in four volumes. Mention should be made of the following publications: *Emil Schultheisz – Lajos Tardy: Fejezetek az orosz–magyar orvosi kapcsolatok múltjából* (Chapters in the history of Russian–Hungarian Medical Relation) (Budapest 1960) and the three volumes of *Palaeopathologia* written by *Gy. Regöly-Mérei–A. Tasnádi-Kubacska–L. Bartucz*. The Institute publishes a new series entitled *Libri Historiae Medicae. György Huszár's A magyar fogászat története* (History of Stomatology in Hungary) was published in 1965. The following works were published in 1971: *S. Fekete*'s monography on *Vilmos Tauffer*, the creater of modern gynaecology, and *L. Ruttkay*'s book on *Jessenius*.

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COMPOSITION: 6,7,3',4'-Tetraethoxy-1-benzal-1,2,3,4-tetrahydroisoquinoline hydrochloride (Drotaverine hydrochloride) 40 mg per tablet and ampoule (2 ml)

ACTIONS:

Already in small doses, No-Spa relieves or prevents spastic conditions of the smooth muscles, irrespective of their localization, function or innervation. The spasmolytic effect of No-Spa is stronger than that either of papaverine or of Perparin (two drugs with similar action), and is accompanied by less of toxic side-effects. No-Spa is easily absorbed and exerts a prolonged action. The advantageous properties of the drug assert themselves particularly in the painful affections of the biliary, urogenital and gastrointestinal tract.

INDICATIONS:

In general, to abolish or prevent pain and dysfunction caused by smooth muscle spasm. Biliary and renal colics, spasms associated with cholecystopathy, cholelithiasis, cholecystitis, nephrolithiasis, pyelitis, cystitis, as well as spasms elicited by instrumental examination. Spastic conditions of the gastrointestinal system; gastric and duodenal ulcer, laryngo-, cardio- and pylorospasm, spastic constipation, colitis, proctitis, tenesmus. In acute blood-pressure fluctuations of hypertensives, administered in conjunction with antihypertensive drugs. Coronary and cerebral vascular spasm; intermittent claudication; dysmenorrhoea; to reduce the irritability of the pregnant uterus; in spasm of the uterinal orifice during delivery, protracted first stage of labour, after-pains, threatened abortion, etc.; in case of postoperative wind colics.

DOSAGE: The average dose for adults is daily three times 1 to 2 tablets or daily once to three times 2 to 4 ml injected subcutaneously or intramuscularly. In emergency, e.g. acute stone colic, 2 to 4 ml may be given by slow intravenous injection. In case of peripheral arterial spasm or obstruction No-Spa may be injected intraarterially. Children should be given smaller doses according to age and body-weight. Small children should receive once or twice daily ¼ to ½ tablet, older children ½ to 1 tablet daily.
In peptic ulcer it is expedient to combine No-Spa with atropine or atropine-like compounds.

PACKING: 20 tablets, 40 mg
100 tablets, 40 mg
1000 tablets, 40 mg
5 ampoules, 40 mg (2 ml)
50 ampoules, 40 mg (2 ml)

CHINOIN Pharmaceutical and Chemical Works LTD
Budapest — Hungary

LIBEXIN tablets

ANTITUSSIVE

COMPOSITION: 3-(β,β-Diphenylethyl)-5-(β-piperidinoethyl)-1,2,4-oxadiazole hydrochloride 100 mg per tablet

ACTIONS:

Libexin is an antitussive with peripheral point of attack (endoanesthetic) and as such it markedly represses cough stimulus without abolishing it completely.
It has no depressive effect on the respiratory centre, it does not diminish the respiratory volume which rather becomes raised. Due to its bronchospasmolytic action, it facilitates breathing, and has a favourable influence on expectoration, too. The antitussive effect of Libexin lasts for about 3 to 4 hours.

INDICATIONS:

TO RELIEVE COUGHING OF BRONCHIAL ORIGIN: Acute and chronic bronchitis, influenza (grippe), bronchopneumonia, cough due to tumour or some foreign body in the bronchi, bronchial asthma, emphysema, nocturnal coughing of cardiac failure in preparation for instrumental examinations (bronchoscopy, bronchography).
TO RELIEVE COUGHING OF PLEURAL ORIGIN: Dry and exudative pleuritis pleuropneumonia, pulmonary embolism, spontaneous pneumothorax, pleural interventions (surgical pneumothorax, pleural punction, pleural operations).

CONTRA-INDICATIONS: Pathological conditions with excessive bronchorrhea, first of all in postoperative condition (after inhalation narcosis).

DOSAGE: Average dose for adults is 3 to 4 times daily 1 tablet, in obstinate cases 2 tablets.
The usual dose for children is proportionally lower, depending on their age and body-weight, on the average 3 to 4 times daily ¼ to ½ tablets. In premedication for bronchological interventions, Libexin should be combined with atropine, and given in doses of 0.9 to 3.8 mg per kg of body-weight one hour before the manipulation. Libexin has no unpleasant side-effects, and causes no habituation.

PACKING: 20 tablets, 100 mg
200 tablets, 100 mg

NOTE

The tablet should be swallowed as a whole or else it may cause temporary numbness and insensitivity of the oral mucosa.

CHINOIN Pharmaceutical and Chemical Works LTD
Budapest — Hungary

ADDENDA

LIST OF MEDICAL HISTORICAL STUDIES PUBLISHED BY THE RESEARCHERS OF THE SEMMELWEIS MEDICAL HISTORICAL MUSEUM, LIBRARY AND ARCHIVES (1957—1972)

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ABBREVIATIONS

Comm. Hist. Artis Med.	Orvostörténeti Közlemények (Communicationes de Historia Artis Medicinae)
ÉT	Élet és Tudomány (Life and Science)
Gysz	Gyógyszerészet (Pharmacology)
OH	Orvosi Hetilap (Medical Weekly)
Ttk	Természettudományi Közlöny (Review of Natural Sciences)
TV	Természet Világa (World of Nature)

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ABBREVIATIONS

Comm. Hist. Artis Med.	Communicationes de Historia Artis Medicinae
C.Sc	Holder of Candidate's Degree
D.Sc.	Holder of Doctor's Degree
F.H.S.H.M.	Fellow of the Hungarian Society of the History of Medicine
F.I.S.H.M.	Fellow of the International Society of the History of Medicine
F.F.S.H.S.Ph.	Fellow of the Historian Section of the Hungarian Society of Pharmacy
F.I.S.H.Ph.	Fellow of the International Society for the History of Pharmacy
M.A.	Master of Arts
S.O.M.	Semmelweis Orvostörténeti Múzeum (Budapest I., Apród u. 1–3.)
S.O.K.	Semmelweis Orvostörténeti Könyvtár (Budapest II., Török u. 12.)

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