

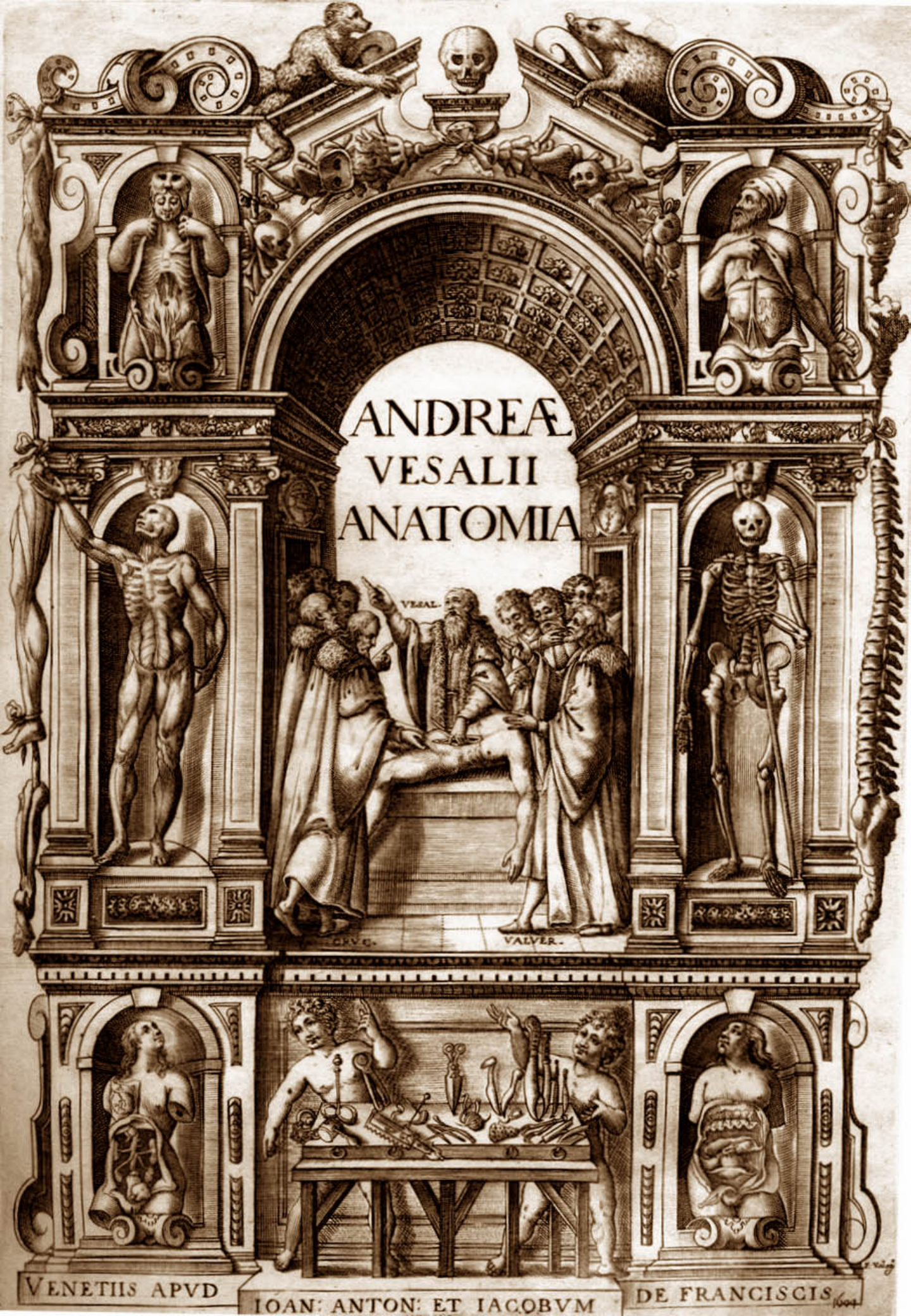
Daide Zaffe

ON THE
GREAT ANATOMISTS

A memory e-book



BMN - MODENA (Italy)



ANDREA
VESALII
ANATOMIA



VENETIIS APVD

IOAN: ANTON: ET IACOBVM

DE FRANCISCIS

Davide Zaffe

Great Anatomists

1400-1900
(Arranged by date of birth)

3rd version

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BMN
Modena
Italy

Leonicenus translated ancient Greek and Arabic medical texts, and wrote the first scientific paper on *sypillis*. He was the leader of the Humanistic Medicine, which overcame the Medieval Medicine, and composed the first criticism of the Natural History of Pliny the Elder, pointing out his medical errors. Brasavola, Bembo and, according to some people, Paracelsus were his pupils.

(Nicolò da Lonigo) **LEONICENUS**
1428 Lonigo VI (I) - 1524 Ferrara (I)



As a successful artist, Leonardo dissected several human corpses to observe and paint the anatomical features. Leonardo's anatomical drawings include studies on the skeleton and muscles, prefiguring the modern science of biomechanics, the vascular system, the internal and sex organs, also making the first scientific draws of a fetus *in utero*. Leonardo made more than 200 drawings and prepared to publish a theoretical work on anatomy, but the book *Treatise on painting* was published only in 1680.

LEONARDO da Vinci
1452 Vinci FI (I) - 1519 Cloux (F)

Sylvius was a very popular teacher of anatomy. His most distinguished student was Andreas Vesalius, but later Sylvius contrasted the innovative and revolutionary view of the Anatomy of Vesalius' *Fabrica*. Sylvius gave a name to the muscles, previously referred only by numbers. Sylvius described satisfactorily the *sphenoid bone* and the *vertebrae*, but wrongly the *sternum*. Sylvius introduced a number of anatomical terms that have persisted, such as *crural*, *cystic*, *gastric*, *popliteal*, *iliac*, and *mesentery*.

Jacques (Dubois) **SYLVIUS**
1478 Loeuilly (F) - 1555 Paris (F)



Pupil of Leonicenus, Brasavola was a leading exponent of the Ferrara Medical School, thanks to own great anatomical knowledge. He performed the first successful *tracheotomy*. He studied botany and medicine, which became independent scientific subjects. His most distinguished student was Gabriele Falloppio.

Antonio (Brasavola) MUSA
1500 Ferrara (I) - 1555 Ferrara (I)



Personal physician of Francis I of France, before, and then of Cosimo dei Medici, He studied the mechanism of articulation in the human body, and elaborated devices for setting fractures and reducing dislocations. Vidius carried out important anatomic investigations at Pisa, and discovered the *Vidian nerve*, the *Vidian canal*, and the *Vidian artery*. Vidius also studied the mechanisms of articulation in the human body resulting from its vertical position in relation to the mechanisms of quadruped articulations and gave clearer pictures and descriptions of the *vertebrae* than any of his predecessors.

(Guido (Guidi) VIDIVS
1508 Firenze (I) - 1559 Pisa (I)

Professor of Anatomy and Medicine at Napoli, and the at Palermo, he was student of Vesalio and Falloppio. Ingrassia investigated and described the *sutures* of the skull in minute detail. Particularly knowledgeable about the auditory ossicle, the stapes, calling it *stapha* (stirrup). Ingrassia is considered a founder of *osteology*. He was also a pioneer in the study of *forensic medicine*, *hygiene*, *surgical pathology*, and *teratology*.

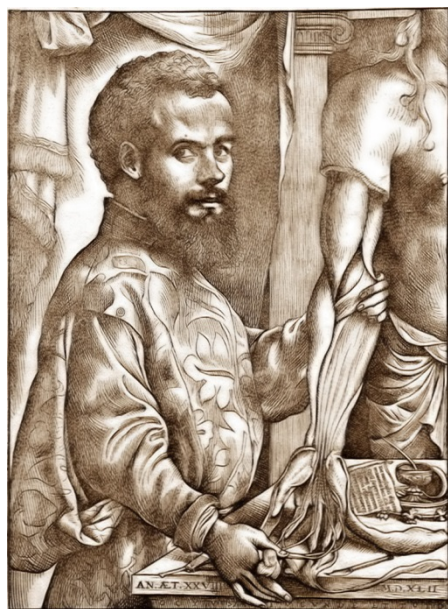
Giovanni Filippo INGRASSIA
1510 Regalbuto EN (I) - 1580 Palermo (I)



Professor of Anatomy at the “Sapienza” of Rome, he studied the internal ear and describing correctly the *tube* that bears his name. Eustachio produced a remarkable series of treatises on the *kidney*. He discovered the *adrenal glands*, the *coronary valve*, the *thoracic duct*, and was the first who studied accurately the *anatomy of the teeth*, and the phenomena of the *first* and *second dentition*. For this studies, Eustachio is referred to as the initiator of the modern *dental anatomy*.

Bartolomeo EUSTACHIO

1510 S. Severino MC (I) - 1574 Fossato di Vico PG (I)



Professor at the University of Padua, and later Imperial physician of Charles V, Vesalius is referred to as the founder of *modern human anatomy*. Vesalius studied the theories of Galen, but contrasted them: in his seven-volume *De humani corporis fabrica*, illustrated by Titian's pupil Johal van Calcar, Vesalius emphasized the priority of dissection, seeing the human internal functioning of three-dimensional arranged organs.

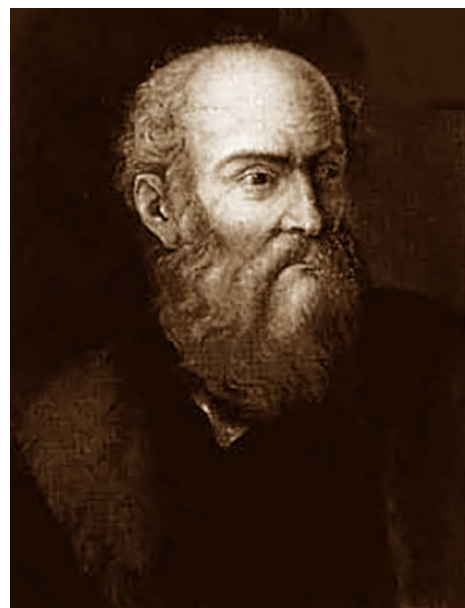
Andreas (van Wesel) VESALIUS

1514 Bruxelles (B) - 1564 Zakynthos (GR)

Professor of anatomy and surgeon at the University of Padua, he went to the University of Pisa, and later of Rome. Colombo discovered the *pulmonary circuit* and that the main action of the heart was contraction, rather than dilation as had previously been thought. In his book *De Re Anatomica*, Colombo coined for the first time the term *placenta*. Much cited is Columbo's naming and description of the *clitoris*.

Matteo Realdo COLOMBO

1516 Cremona (I) - 1559 Roma (I)



Botanist, physician and anatomist, he was professor of medicine at Pisa. Cesalpino's principal contribution to science lies in botany, he nonetheless gave a description of the *cardiac valves* and of the *pulmonary vessels* connected to the heart. Cesalpino recognized that the heart was the *center of the circulation of the blood*, and the existence of the *synanastomoses* of the arteries with the veins.

Andrea CESALPINO
1519 Arezzo (I) - 1603 Roma (I)



Professor of Anatomy at Ferrara, then at Pisa, and later at Padova. Falloppio provided for the first time a clear description of *primary dentition*, the *follicle of the tooth bud*, and the manner of *growth and replacement of the primary by the secondary tooth*. He described in detail the *tympanum*, the *circular and oval windows* and their communication, the *aquæductus Fallopii*, and the *lacrimal ducts*. He studied the reproductive organs in both sexes, and described the *Fallopian tube*, which leads from the ovary to the uterus and now bears his name.

Gabriele FALLOPPIO
1523 Modena (I) - 1562 Padova (I)

Professor of Anatomy at Bologna, he studied the cavities of the heart, the valves and the great vessels (*Arantius ligament*). Aranzio discovered the *pedes hippocamp* (coining the term *hippocampus*), the *cerebellum cistern*, first described the *ammon horns*, and the *fourth ventricle*, the *arterial duct* and the *ductus venosus* (Arantii). He indagated on the anatomical peculiarities of the fetus, and was the first to discover that the blood of the mother and fetus remain separate during pregnancy.

Giulio Cesare ARANZIO
1530 Bologna (I) - 1589 Bologna (I)



Professor of Anatomy in Padova, he contrived the first permanent anatomical theater for public dissections. Casserio, Spigelius and Harvey were his students. Fabrizio is considered the father of *embriology*. Fabrizio investigated the formation of the fetus, the structure of the esophagus, stomach and intestines, and the peculiarities of the eye, the ear, and the larynx (*Bursa of Fabricius*, the site of hematopoiesis in birds). He described the *valves of veins*, and the *cerebral fissure* separating the temporal lobe from the frontal lobe (erroneously attributed to Sylvius).

Girolamo FABRIZIO D'ACQUAPENDENTE
1537 Acquapendente VT (I) - 1619 Padova (I)



Professor of Anatomy in Bologna, then in Roma. During his short life Varolio wrote two books. He was the first to examine the brain from its base upwards, describing many of the brain's structures for the first time, including the *Pons Varolii*, the *crura cerebri*, and the *cranial nerves*. His studies concerned also the ileocecal valve, and the mechanism of erectile function.

Costanzo VAROLIO
1543 Bologna (I) - 1575 Roma (I)

Professor of Anatomy in Padova, he wrote three anatomical works, but the *Tabulae anatomicae*, published posthumously in Venice in 1627, probably was the most important anatomical treatise in the seventeenth century. Casserio studied the mechanism of *phonation*, describing clearly the *larynx*, the anatomy of the *ear*, the auditory function, and the physiology of hearing.

Giulio Cesare CASSERIO
1552 Piacenza (I) - 1616 Padova (I)



Flemish anatomist, pupil of Fabrizio, he succeeded Casserio as professor of Anatomy in Padova, and he's considered to be the last of the great Paduan anatomists. Spigelius described first the *Spigelian hernia* an uncommon hernia, and a first comprehensive description of the malaria. He has written *De humani corporis fabrica*, published posthumously in 1627. The *Spigelian line* (Linea semilunaris), the *Spigelian fascia*, and the *Spiegel's lobe* (caudate lobe of the liver) now bears his name.



Adriaan (van den Spiegel) **SPIGELIUS**
1578 Bruxelles (B) 1625 Padova (I)



English physician, he was a Fabrizio' student. He was a great physician, becoming also *Physician Extraordinary* of King James I. Harvey described firstly the *full circulation of the blood in the human body*, providing experiments to support this suggestion, and published in Frankfurt his treatise *De Motu Cordis* (also known as *On the motion of the hearth and blood*). Harvey's other major work was a dissertation on the animal embryology.

William **HARVEY**
1578 Folkestone (GB) - 1657 Roehampton (GB)

Professor of Medicine in Paris, he was personal physician of Marie de Medici. He contrasted Harvey theory on the circulatory system, and the Batholin theory on the lymphatic system. Rioloano described the *articular meniscus of the knee*, the *mesentery*, the *spermatic duct*, and the *styloid muscles*. The eponymous *anastomosis of Riolan*, *Riolan's muscle* (palpebral part of the orbicularis oculi muscle), and the *Riolan* (cremasteric) *muscle* were named after him.

Jean (Riolan) **RIOLANO**
1580 Paris (F) - 1657 Paris (F)



Lecturer of Surgery and Anatomy in Napoli, he introduced the recent Harvey theories on blood circulation. Severino showed the similarity of function in the anatomy of different animals. He studied also inflamed or swollen lymph nodes, and described abnormal formations of tissue and growths such as abscesses, and tumors. His most distinguished student was Giovanni Alfonso Borelli.

Marco Aurelio SEVERINO
1580 Tarsia CS (I) - 1656 Napoli (I)



Italian physician, he became professor of Anatomy and Surgery at Pavia. Aselli discovered the *lacteal vessels* of the lymphatic system. Aselli made a systematic study of these vessels in different species of animals, and erroneously conjectured that the vessels led to the liver. The process of absorption was clearly established only after the discovery of the *thoracic duct* and its continuity with the lacteal vessels by Jean Pecquet.

Gaspare ASELLI
1581 Cremona (I) - 1626 Milano (I)



German anatomist, he was prosector in Padova for many years. He discovered the main duct of the pancreas. The duct, whose function was never known to Wirsung, was eventually named after him and is now termed the *duct of Wirsung*. He was murdered by a Belgian student named Giacomo Cambier, probably as a result of a quarrel over who was the first to discover the duct.

Johann Georg WIRSUNG
1589 Augsburg (D) 1643 Padova (I)



Regius Professor of Physic at Cambridge, he was the first to describe the *ricketts* (Glisson's disease). He studied the liver, and in his book Glisson gave the first description of the capsule of the liver and described its blood supply its capsule (*Glisson's capsule*, and *triangle*, *Glissonian cirrhosis*, *Glissonitis*). His work on the stomach, and intestines contains the Glisson's original concept of *irritability* not only as the prime cause of muscular contraction but as a property of all human tissues.

Francis GLISSON

1599 Bristol (GB) - 1677 London (GB)



Renaissance Italian physiologist, physicist, and mathematician, in 1657 he was the founder of the *Accademia del Cimento* (Italian scientific academy) with the man of letters L. Magalotti. In his work *De motu animalium* (About the movement of animals), Borelli compared the human body to a machine based on geometrical principles, so he can be considered as the father of the *modern biomechanics* (Borelli Award of the American Society of Biomechanics). He studied also the blood circulation, and the hearth mechanics.

Giovanni Alfonso BORELLI

1608 Napoli (I) - 1679 Roma (I)

English surgeon and anatomist, he conducted experiments on embryonic development of the chick. He wrote a textbook first accepting the Harvey's theory of the blood circulation. He described the largest of the *paranasal sinuses* occupying the body of the maxilla, communicating with the middle meatus of the nose on the same side (*antrum of Highmore*), even if the sinus was illustrated by Leonardo da Vinci and noticed by Giulio Casserio. He also described the *mediastinum of testis* (Highmore body) and the *scrotal septum*.

Nathaniel HIGHMORE

1613 Fordingbridge (GB) - 1685 Sherburne (GB)



German physician and anatomist, Schneider first published an account of the *sinonasal mucous membrane* in his work *Dissertatio de osse cribriforme, et sensu ac organo odoratus*, where against Galen's theory of mucus production and olfaction, Schneider argued that the nasal mucosa, and neither the ventricles nor the brain, is the source of nasal secretions. Schneider also studied the *catarrhal affections* and published *Liber primus de catarrhis*, in which he provides an analysis of the interior structure of the nose. The mucosal lining is called the *Schneiderian membrane* in honor of Schneider

Konrad Viktor SCHNEIDER
1614 Bitterfeld (D) - 1680 Wittemberg (D)



Dutch anatomist and scientist, he was Professor of Medicine at the Leiden University. Great anatomist, Sylvius attracted several students from all over Europe, including De Graaf, Stensen and T. Bartholin. The lateral sulcus of the cerebrum (*Sylvian fissure*), and the mesencephalic canal (*Sylvian aqueduct*) were named after his studies on the brain. Sylvius was actually the first to describe the *cavum septum pellucidi* that is sometimes known as the *Sylvian ventricle* or the fifth ventricle of the brain. He founded the Iatrochemical School of Medicine.

Franciscus (de le Boë) SYLVIUS
1614 Hanau (D) - 1672 Leiden (NL)

English physician and anatomist, Wharton published, at his own expense, his Latin treatise *Adenographia; sive glandularum totius corporis descriptio* where described accurately the glands, explaining the role of saliva in mastication and digestion. Wharton discovered of the *duct* of the *submandibular gland* and the *jelly* of the *umbilical cord*, both of which are named for him. He made the first adequate description of the *thyroid* and gave it that name.

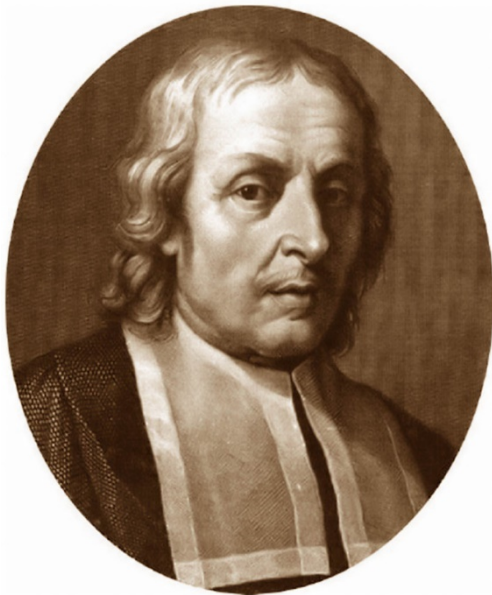
Thomas WHARTON
1614 Winston (GB) - 1673 London (GB)



English physician and anatomist, he was one of the founders the philosophical "Clubb" that became the Royal Society of London. Willis studied the brain, nervous system and muscles describing them in a very minute way in the book *Cerebri anatomae*. He was the first to number the cranial nerves. He coined the terms *thalamus opticus*, *nucleus lentiformis*, *corpus striatum*, *neurology*, and *diabetes mellitus* (Willis's disease). The circle of arteries at the base of the brain (*Circle of Willis*) was his most notable discovery

Thomas WILLIS

1621 Great Bedwyn (GB) - 1675 London (GB)



Professor of Medicine in Pisa, then in Bologna and later in Rome, Malpighi was the founder of the *microscopic anatomy*, and many structures are named after him: *Malpighi layer* (skin), *Malpighi pyramids* (kidney), *Malpighi corpuscle* (kidney and spleen), *Malpighi tubules* (insects). Malpighi was the first to see *capillaries*, linking artery with a vein. His microscopic studies concerned humans (anatomy and pathology), animals (embryology) and plants (*Anatomia Plantarum*, two botany volumes published by the Royal Society).

Marcello MALPIGHI

1628 Crevalcore BO (I) 1694 Roma (I)

Danish bishop and scientist, Steno was professor of anatomy at Padova, then physician in Florence and Rome. Steno discovered the duct (*ductus Stenonianus*) of the parotid salivary gland, and established that the *heart* was an *ordinary muscle* and not the center of warmth as believed. The Stensen's name is also associated with the discovery of the lateral foramina of the anterior hard palate (*Stensen's foramina*) and the vorticose veins of the eye (*Stensen's veins*). Pope John Paul II declared him *Beatus* in 1988.

Niels (Stensen) STENO

1638 Copenhagen (DK) - 1686 Schwerin (D)



Dutch botanist, zoologist and anatomist, Sylvius' student, Ruysch was praelector of Anatomy in Amsterdam. Ruysch discovered the *valves* in the lymphatic system, the *central artery* of the eye, and the *vomer nasal organ* in snakes. He was a clever anatomic preserver and assembled one of Europe's most famous anatomical collections, bought by Peter the Great. In the III volume of his *Thesaurus Anatomicus*, Ruysch introduced the term *epithelia*. He created the term from the Greek *epi*, which means on top of, and *thela*, which means nipple, to describe the type of tissue he found when dissecting the lip of a cadaver.

Frederik **RUYSCH**

1638 Den Haag (NL) - 1731 Amsterdam (NL)



Dutch chemical physician and anatomist, Kerckring described the *Kerckring ossicle*, secondary ossification center of the occipital bone, and the folds (*plicae circulares* or *valvulae conniventes*) of the mucous membrane of the small intestine (*Valves of Kerckring*).

Theodor **KERCKRING**

1640 Amsterdam (NL) - 1693 Hamburg (D)

Dutch physician and anatomist, Sylvius' student, during his short life de Graaf studied the pancreas and described several aspects of the reproductive biology. He introduced the term *ovary*, to refer to the female mammalian gonad, in which he discovered the follicles (*Graafian follicles*) during the changes undergoing to the ovulation.

Regnier de **GRAAF**

1641 Schoonhoven (NL) - 1673 Delft (NL)



French physician and anatomist, Vieussens was a pioneer in the fields of cardiology and neurology. His pioneering work showed that the white matter is not a homogeneous and indistinct substance, but rather a complex structure, rich with fibers that are interconnected with different parts of the brain. Several structures were named after Vieussens: superior medullary velum (V. valve), cavity of septum pellucidum (V. ventricle), subclavian loop (V. ansa), celiac ganglia (V. ganglia) limbus of fossa ovalis (V. isthmus), and the Vieussen valve of the coronary sinus (Great cardiac vein).

Raymond de VIEUSSENS
1641 Vigan, Lot (F) - 1715 Montpellier (F)



Professor of Anatomy at Pisa, he has done several researches on the structure of the kidneys. In *Exercitatio anatomica de structura et usu renum* (Anatomical exercise of the structure and function of the kidney), published when he was a 19-year-old student, Bellini showed for the first time that the kidney consists of an immense number of tiny canals. Bellini described the taste organs and stressed the value of the analysis of urine as an aid to diagnosis. He described the ending portion of the collecting tubules of the kidney, papillary tubules, known as Bellini's duct.

Lorenzo BELLINI
1643 Firenze (I) - 1704 Firenze (I)

Italian physician, epidemiologist and anatomist, Lancisi was the physician of three Popes. Lancisi published monographs on the influenza, cattle plague and malaria epidemics, correlating the presence of mosquitoes with the latter. Lancisi performed extensive cardiological studies. He also written an autoptic manuscript, the first suggesting that myocardial disease was a factor in a 1706 sudden death epidemic in Rome. Lancisi's most notable anatomical contribution was the description of the medial longitudinal striae (nerves of Lancisi) of the corpus callosum of the brain.

Giovanni Maria LANCISI
1654 Roma (I) - 1720 Roma (I)



Danish physician and anatomist, and young philosophy professor, Bartholin came from an eminent family of anatomists. His studies were mostly the processing of other authors' studies, but he discovered the two bean-sized tubuloalveolar glands (bearing his name) situated one in each lateral wall of the vestibulum vaginae.

Caspar (the Younger) **BARTHOLIN**
1655 Copenhagen (DK) - 1738 Copenhagen (DK)



Italian surgeon and anatomist, he was appointed lecturer and demonstrator in anatomy at the University of Bologna. His most famous work, *De aure humana tractatus*, became a standard on the subject for over a century, contains his anatomical, physiological, and pathological observations of organs. Valsalva showed a method of inflating the middle ear (Valsalva's maneuver). He described a muscle on the outer surface of the ear (Valsalva's muscle), the three longitudinal muscular bands of the large intestine (teniae of Valsalva), and dilatations in the wall of the aorta behind the flaps of the semilunar valves (sinus of Valsalva).

Antonio Maria **VALSALVA**
1666 Imola BO (I) 1723 Bologna (I)

English surgeon and anatomist, he published *The Anatomy of the Human Bodies*, one of the most authoritative and comprehensive atlases of human anatomy, which gained him great fame and notoriety, and a number of works on topics ranging from surgery and pathology to physiology and anatomy. Cowper's magnificent atlas of human myology, the *Myotomia Reformata*, is a showcase for exquisitely rendered illustrations of muscles and bones. He finely described the two small bulbourethral glands (Cowper glands) of males.

William **COWPER**
1666 Petersfield (GB) - 1709 Petersfield (GB)



Danish anatomist, he became Professor of Anatomy in Paris. Winsløw published nearly thirty treatises on a variety of subjects. Winsløw described the passage (*Winsløw's foramen*) connecting the greater and lesser sacs of the peritoneal cavity, and the cordlike oblique ligament in the back of the knee (*Winsløw's ligament*). He also showed that single muscles did not function alone, but work in groups as synergists, and always in relation to antagonists. Winsløw coined the term *nervus sympathicus*, and much of the terminology he proposed (olfactory, optic, trochlear, trigeminal, auditory and hypoglossal nerves) is still used.

Jacob Benignus **WINSLØW**
1669 Odense (DK) - 1760 Paris (F)



Italian anatomist, Santorini published many works, but his most important work was *Observationes anatomicae*, a valuable exposition of details of human anatomy. He described several structures as the corniculate (Santorini's) cartilage of the larynx, the superior nasal (Santorini's) Concha, the secondary pancreas (Santorini's) duct and its duodenum opening location (Santorini's minor caruncle), the (Santorini's) veins connecting the superior sagittal sinus with the scalp, and the (Santorini's) plexus of vein in the cave of Retzius.

Giandomenico **SANTORINI**
1681 Venezia (I) - 1737 Venezia (I)

Italian anatomist, he became professor of Anatomy in Padova. Morgagni is held the father of the Pathological Anatomy. Morgagni was the first to demonstrate the necessity of basing diagnosis, prognosis, and treatment on a comprehensive knowledge of anatomical conditions. The enormously wide-ranging work concerned both sound and pathologic anatomical structures that several of them bears his name: Morgagni's caruncle, Morgagni's cataract, Morgagni's columns, Morgagni's concha, Morgagni's foramen, Morgagni's hernia, Morgagni's hydatid, Morgagni's lacunas, Morgagni's sinus, Morgagni's ventricle.

Giovanni Battista **MORGAGNI**
1682 Forlì (I) 1771 Padova (I)



German physician and professor of Anatomy in Wittenberg. Vater was the first to describe the hepatopancreatic ampulla (the juncture of the pancreatic duct and the common bile duct) and is now referred to as the *ampulla of Vater*. Vater was also the first to notice oval-shaped organs of concentric layers of connective tissue wrapped around nerve endings in the skin, later rediscovered by F. Pacini (Vater-Pacini corpuscles).

Abraham VATER
1684 Wittenberg (D) - 1751 Wittenberg (D)



Professor of Physics in Bologna, Galeazzi was able to demonstrate that iron particles were assimilated by the organism, and he first ascertained the presence of iron in the human blood. His most important anatomical discoveries were in the gastrointestinal system. He defined the positions of the three layers of muscle fibers in the stomach. He described the two layers of muscle fibers in the small intestine and the glands now called Lieberkühn's glands.

Domenico Maria Gusmano GALEAZZI
1686 Bologna (I) - 1775 Bologna (I)

German physician and anatomist, he is known for his studies of the coronary circulation. His name is attached to the eponymic *Thebesian veins* (venae cordi minima), and the *Thebesian valve* guarding the exit of the coronary sinus into the right atrium of the heart.

Adam Christian THEBESIUS
1686 Sandenwalde (PL) 1732 Hirschberg (PL)



Professor of Surgery and Anatomy at Montpellier, and in Paris, Ferrein described the rays of straight tubules shooting up into the cortex, since known as the *pyramids of Ferrein*. Ferrein studied the physiology of the voice, coined the term *vocal cords*, postulating that were analogous to the cords on a violin. Many eponyms were attributed to his name: Ferrein's canal, Ferrein's foramen, Ferrein's ligament, and Ferrein's vasa aberrantia.

Antoine FERREIN
1693 Frespech (F) 1769 Paris (F)



Swiss scientist, he was professor of Anatomy, Surgery and Medicine in Göttingen. Haller is held the father of the Physiology. Haller is said to have written more than 1300 scientific papers. He was the first to recognize the mechanism of respiration, the autonomous function of the heart, he discovered that bile helps to digest fats, and he wrote original descriptions of embryonic development. He also summarized anatomical studies of the genital organs, the brain, and the cardiovascular system.

Victor Albrecht von HALLER
1708 Bern (CH) - 1777 Bern (CH)

Professor of Anatomy in Amsterdam, and later in Groningen, Camper invented the measure of the facial angle. One of the first to interest himself in comparative anatomy and paleontology. His name is attached to the eponymic Camper's angle, Camper's chiasma, Camper's fascia, Camper's instrument, Camper's ligament, Camper's plane.

Pieter CAMPER
1722 Leiden (NL) - 1789 Den Haag (NL)



Professor of Pathology in Paris, he was a pioneer ocular anatomist. Tenon provided a description of the *capsule of Tenon*, a membrane that envelops the posterior five-sixths of the eyeball. Tenon published a treatise on French hospitals, concerned with aspects such as hygiene, patient care and environmental conditions of hospitals.

Jacques René TENON
1724 Sépeaux (F) - 1816 Paris (F)



German anatomist, ophthalmologist, and botanist, Zinn was professor of Medicine in Göttingen. Zinn made a great contribution to the study of anatomy, providing a first detailed and comprehensive anatomy of the human eye. His publication *Descriptio anatomica oculi humani* is a fundamental work in the history of ophthalmology. Several finer structures of the eye bear his name: Zinn's artery, Zinn's ligament, Zinn's membrane, Zinn's zone.

Johann Gottfried ZINN
1727 Schwabach (D) - 1759 Göttingen (D)

Scottish anatomist and surgeon, Hunter is considered one of the great anatomists of all time and the founder of experimental pathology in England. In his first paper *The State of the Testis in the Foetus*, Hunter names the *gubernaculum testis*. He was busy studying the routes by which the branches of the *olfactory nerve* leave the skull, traced the course of the *nasopalatine nerve*, and the *rambling nerve* known as the nasal branch of the ophthalmic division of the fifth nerve.

John HUNTER
1728 East Kilbride (GB) - 1793 London (GB)



Italian physiologist, Fontana was professor of Physics at the University of Pisa. Fontana is credited with launching modern toxicology and investigating the human eye. The *Fontana's spaces* are irregularly shaped endothelial-lined spaces between the processes of *ligamentum pectinatum* of the iris. Fontana described the nucleolus after finding it in the slime from an eel skin. A highly specialized wax modeling laboratory produced wax models of the human anatomy, prepared under Fontana's supervision.

Felice FONTANA

1730 Pomarolo TN (I) - 1805 Firenze (I)



German surgeon and physiologist, Wolff was one of the founders of embryology. Wolff, with the famous dissertation *Theoria generationis*, revived the Harvey's doctrine of epigenesis. Wolff discovered the primitive kidneys (*mesonephros* - Wolffian body) and its excretory duct (Wolffian duct), and he described the Wolff's (blood) islands and the Wolff's cyst, lying in one of the broad ligaments of the uterus, near the ovary or the uterine tube.

Caspar Friedrich WOLFF

1733 Berlin (D) - 1794 Sankt Peterburg (RUS)

Spanish surgeon and anatomist, Gimbernat became professor of Anatomy in Barcelona. Gimbernat is known throughout the world because of the contribution to knowledge of the anatomy of the diaphragm. He demonstrated the lacunar (Gimbernat's) ligament of the femoral canal as well as his technique for hernia repair (Gimbernat's operation). He also invented a lithotom for renal lithiasis which was very popular in his time.

Don Manuel Louise Antonio de GIMBERNAT

1734 Cambrils (E) 1816 Madrid (E)



Professor of Surgery and Anatomy in Naples, Cotugno discovered the *Aquaeductus Cotunii*, and described the labyrinthine system and its fluids, and formulated a theory of resonance and hearing. He also discovered the nasopalatinus nerve, formulated a theory on hearing, and wrote a classic monograph on sciatica. Cotugno, in the publication *De Ischiade Nervosa Commentarius*, first discovered and described cerebrospinal fluid. Cotugno described the presence of the cerebrospinal fluid under the dura mater, within ventricular chambers, surrounding the spinal cord and cerebral.

Domenico COTUGNO

1736 Ruvo di Puglia BA (I) - 1822 Napoli (I)



Professor of Medicine and Obstetrics in Göttingen, Wrisberg contributed much to the field of anatomy through his research and publications and was regarded as an “excellent” anatomist. Wrisberg is probably most remembered for his descriptions of the *nervus intermedius* (Wrisberg’s nerve). He studied the sympathetic nervous system, described the (Wrisberg’s) ganglion of the cardiac plexus. Wrisberg was the first to clearly illustrate the fibers connecting the motor and the sensory roots of the trigeminal nerve (Wrisberg’s lingula). The cuneiform cartilages are sometimes called the *Wrisberg cartilages*.

Heinrich August WRISBERG

1739 Sankt Andreasberg (D) - 1808 Göttingen (D)

French physician and anatomist, Vicq d’Azyr was the originator of Comparative Anatomy. Vicq d’Azyr first described the mamillo-thalamic tract (bundle of Vicq d’Azyr), and identified the occipito-parietal and calcarine fissures, the cingulate gyrus, the precuneus and cuneus, the uncus, the anterior and posterior perforated substances, the insula, the spino-thalamic tract, various cerebellar sulci, the claustrum and the internal structure of the spinal cord. His studies of the cerebral convolutions became a classic and Vicq d’Azyr was one of the first neuroanatomists to name the gyrus.

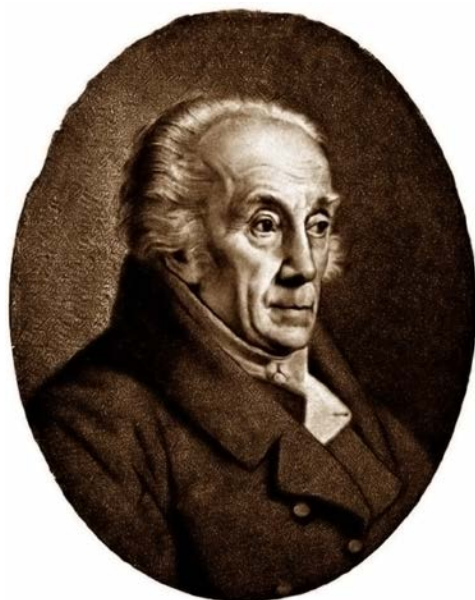
Félix VICQ d’AZYR

1746 Valognes (F) - 1794 Paris (F)



German physician, naturalist, and physiologist, Blumenbach was professor of Medicine in Göttingen. Blumenbach may be considered the founder of the Anthropology. He studied the skull (Blumenbach's clivus, Blumenbach's process). In his *Collectionis suae Craniorum Diversarum Gentium Illustratae Decades*, Blumenbach classified and subdivided the races of mankind. Blumenbach was the first to utilize facial configuration as well as skin color, and his system has survived to the present with but little modification.

Johann Friedrich BLUMENBACH
1752 Gotha (D) - 1840 Göttingen (D)



Professor of Anatomy in Modena, then also of Surgery in Pavia, Scarpa was a skilful draughtsman who illustrated his own textbooks, and his list of medical eponyms is one of the longest. He founded the subject of orthopedic surgery, and introduced the concept of arteriosclerosis. Scarpa studied the ear and the cranial nerves. He first described the nerve supply to the heart, the clubbed foot, and worked on the hernia. Scarpa published several studies, including works in otolaryngology, orthopaedics, ophthalmology, neuro-anatomy, and surgery.

Antonio SCARPA
1752 Lorenzaga TV (I) - 1832 Pavia (I)

Professor of Anatomy in Pisa, then at the University of Firenze, Mascagni published an exceedingly rare elephant-sized folio of handcolored anatomical plates known as the *Anatomia universa*. Mascagni has written *Vasorum lymphaticorum corporis humani historia et iconographia*, containing the first systematic and definitive description of the lymphatic system in man, a work that soon made him famous throughout Europe.

Paolo MASCAGNI
1755 Pomarance PI (I) - 1815 Chiusdino SI (I)



German physician and anatomist, Sömmering investigated on the brain, nervous system, the sensory organs. Sömmering was the first to draw attention to the white matter of the brain. Sömmering demonstrated the crossing of the optic nerve fibers, and gave the *hypophysis* its current name, replacing the *glandula pituitaria*. Sömmering discovered the *macula lutea* and the *fovea centralis* in the retina, investigated the embryo and its malformations, on the structure of the lungs, etc. Many eponyms were attributed to his name: Sömmering's (zygomatic) bone, cataract, (fovea c.) foramen, (s. nigra) ganglion, (lacrimal gland) ligament, (thyroid) muscle, (pudendal) nerve, (m. lutea) spot.



Samuel Thomas von SÖMMERING

1755 Thorn - Toruń (PL) - 1830 Frankfurt am Main (D)



German physician, physiologist, anatomist and psychiatrist, Reil he was professor of clinics in Halle. Reil was the first to describe the white fiber tract now called the *arcuate fasciculus*, and the *locus coeruleus*. Reil discovered the *insula* of the cerebral cortex (Islands of Reil), and the medical conditions, including Reil's finger, Beau-Reil cross furrows on the fingernails. Reil coined the term psychiatry.

Johann Christian REIL

1759 Rhaude (D) - 1813 Halle (D)

English surgeon and anatomist, Cooper become professor of Comparative Anatomy at the Royal College of Surgeons. Cooper identified several new anatomical structures, many of which were called after him: *Cooper's fascia* (a covering of the spermatic cord), *Cooper's ligaments* (the suspensory ligaments of the breasts), *Cooper's pubic ligament* (the superior pubic ligament), *Cooper's stripes* (a fibrous structure in the ulnar ligaments).



Sir Astley Paston COOPER

1768 Brooke (GB) - 1841 London (GB)

French surgeon and anatomist, Bichat studied the postmortem changes induced in various organs by disease. Bichat refused to use the microscope, but he was the first to introduce the notion of tissues as distinct entities, and maintained that diseases attacked tissues rather than whole organs or the entire body, causing a revolution in pathological anatomy, so Bichat is held the father of the modern histology and descriptive anatomy.

Marie François Xavier **BICHAT**
1771 Thoirette (F) - 1802 Paris (F)



Professor of Anatomy and Surgery in Leipzig, Rosenmüller was the author of several treatises on anatomy and surgery. The following anatomical terms named after him: *Rosenmüller's fossa* (the lateral nasopharyngeal recess), *Rosenmüller's gland* (the palpebral portion of the lacrimal gland), *Rosenmüller's organ* (also known as the *parovarium*).

Johann Christian **ROSENMÜLLER**
1771 Veilsdorf (D) - 1820 Leipzig (D)

Scottish physician and professor of Anatomy in Edinburgh, Monro published a treatise in which he showed that the lymphatics were absorbents and distinct from the circulatory system. Monro is well known for the *Monro's foramen* (point of communication between the third and lateral ventricles of the brain), the *Monro's sulcus* (The hypothalamus sulcus), and the *Monro's doctrine* (The cranium is a *rigid box* whose total volume tends to remain constant. Changes in volume of one element must occur at the expense of volume of the others).

Alexander (II) **MONRO**
1773 Edinburgh (GB) - 1817 Edinburgh (GB)



Professor of Anatomy, Surgery and Physiology in Dublin, he described distal radial fractures (*Colles' fracture*), was far ahead of its time, being published decades before X-rays came into use. Colles is regarded as the first surgeon to successfully ligate the subclavian artery. He also described the membranous layer (*Colles' fascia*) of the subcutaneous tissue of the perineum. Colles also extensively studied the inguinal ligament (*Colles' ligament*).

Abraham COLLES

1773 Milmont (IRL) - 1843 Dublin (IRL)



Professor of Anatomy in Torino, Rolando is known for his pioneer research in *brain localization* of function. Rolando stated that a fiber network to peripheral nerves connected the several organs that make up the brain and spinal cord. A range of entities is named after him: *fissure of Rolando* (central sulcus), *pre-Rolandic artery* (precentral sulcal artery), *Rolandic area* (primary motor cortex), *Rolandic artery*, *Rolandic operculum* (post-central operculum), *Rolandic vein*, *substantia gelatinosa of Rolando*, and *Rolandic epilepsy*.

Luigi ROLANDO

1773 Torino (I) - 1831 Torino (I)

Professor of Anatomy and Surgery in London, then in Edinburgh, Bell performed important works in the fields of research on the brain and the nerves. In the book *New Anatomy of the Brain*, Bell discussed the functions of the brain and the cerebellum, and demonstrated that the ventral roots of spinal nerves are motor, the dorsal roots are sensory. Bell also described the long thoracic nerve (Bell's nerve), the paralysis of facial muscles (Bell's paralysis) and the corresponding eye movements (Bell's phenomenon).

Sir Charles BELL

1774 Edinburg (GB) 1842 Hallow Park (GB)



German anatomist, Burdach was a professor of Physiology in Königsberg. Burdach described the basal ganglia and differentiated the *caudate nucleus* from the *putamen*. The *Burdach' column* (continuation of the dorsolateral column of the spinal cord into the medulla oblongata), ends in a bulbous rostral extremity (*cuneate tubercle*) corresponding to the cuneate nucleus (*Burdach' nucleus*). Burdach coined the term *morphology*, and then the term *biology*, suggesting that this term be used to denote the study of human beings from a morphological, physiological, and psychological perspective.

Karl Friedrich BURDACH

1776 Leipzig (D) - 1847 Königsberg - Kaliningrad (RUS)



Professor of Normal and Pathological Anatomy, Surgery and Obstetrics in Halle, Meckel was a pioneer in the science of teratology. The *Meckel's cartilage* (a cartilaginous bar from which the mandible is formed), *Meckel's diverticulum* (an out-pouching of the ileum, part of the small intestine), *Meckel's ganglion* (pterygopalatine ganglion), and *Meckel's syndrome* (A congenital complex of multiple malformations) are eponymous terms named after him.

Johann Friedrich MECKEL

1781 Halle (D) - 1833 Halle (D)

German biologist, he published several works, being the most important a comparative morphology of the skulls of many different animals, including men, apes, reptiles, birds and others. Spix is remembered in the science of Odontostomatology thanks to his discovery of a pointed tongue of bone overlapping the mandibular foramen, giving attachment to the sphenomandibular ligament. The *spine of Spix* (lingula of mandible) was named after him.

Johann Baptist Ritter von SPIX

1781 Höchststadt a.d. Aisch (D) 1826 München (D)



English surgeon, Howship was a highly recognized surgeon and gave the Hunterian Lecture at the College of Surgeons. The *Howship's lacunae* (tiny depressions, pits, or irregular grooves in the bone that are being resorbed by osteoclasts), and *Howship's syndrome* (nerve pain in the legs resulting from the presence of an obturator hernia, a type of abdominal hernia) are eponymous terms named after him.

John HOWSHIP

1781 London (GB) - 1841 London (GB)



French physiologist, Magendie is considered a pioneer of experimental physiology and his experiments marked the beginning of modern pharmacology. Magendie definitively discovered that the anterior root is motor and that the dorsal root is sensory (*Magendie-Bell law*). Magendie was also a well-known vivisector. He gave one of the earliest descriptions of the cerebro-spinal fluid, and described the *Magendie's foramen* (in front of the cerebellum and behind the Pons Varolii) connecting the fourth ventricle with the subarachnoidal space medially.

François MAGENDIE

1783 Bordeaux (F) - 1855 Sannois (F)

Danish surgeon, Jacobson invented several appliances which proved of great benefit to the surgical profession. Jacobson identified a hitherto unknown absorptive organ in the human nose, the vomeronasal organ (later named after him *the Jacobsonian organ*), a neural structure forming part of olfactory system that functions in the detection of pheromones. Jacobson also described the tympanic nerve (*nerve of Jacobson*), a branch of the glossopharyngeal nerve found near the ear.

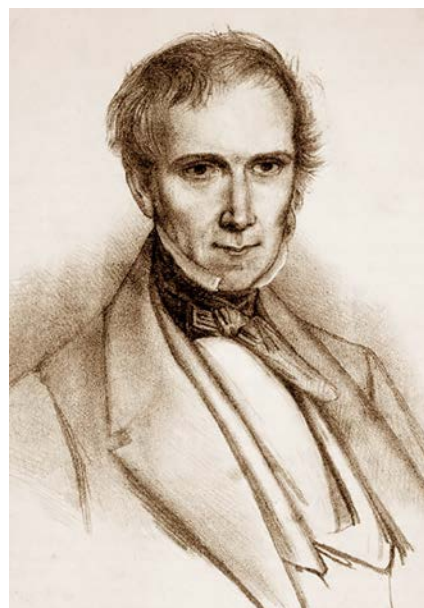
Ludwig Lewin JACOBSON

1783 Copenhagen (DK) - 1843 Copenhagen (DK)



Italian microscopist, Amici became professor of mathematics at Modena. Amici is best known for the improvements he effected in the mirrors of reflecting telescopes and especially in the construction of the microscope. The *Amici's striae* (Z line) is a cross-striation bisecting the I band of striated muscle myofibrils and serving as the anchoring point of actin filaments at either end of the sarcomere.

Giovanni Battista AMICI
1785 Modena (I) 1863 Firenze (I)



Professor of Anatomy at Pavia, Panizza left a fundamental contribution to neuroanatomy and neurophysiology, and had as most prominent pupil the Nobel Laureate Camillo Golgi. Panizza was the first physician to attribute the vision function to the thalamus and occipital lobe of the cerebrum. He described the *foramen of Panizza*, a hole with a valve connecting the left and right ventricle in the crocodilian heart. He identified the glossopharyngeal nerve as the special nerve of taste. Panizza's eponym was given to two plexuses in the lateral fossae of the frenulum of the prepuce.

Bartolomeo PANIZZA
1785 Vicenza (I) - 1867 Pavia (I)

Professor of Physiology at Breslau, Purkinje coined the term *protoplasm* for the fluid substance of a cell. He described the *Purkinje cells*, large neurons with many branching dendrites found in the cerebellum, the *Purkinje fibers*, the fibrous tissue that conducts electrical impulses from the atrioventricular node to all parts of the ventricles of the heart, and the *Purkinje's vesicle*, the nuclear portion of an ovum.

Jan Evangelista PURKINJE
1787 Libochowitz (CZ) 1869 Prag (CZ)



French physician and surgeon, Cloquet became professor of Surgical Pathology at the Medical Faculty of Paris. Cloquet was a skilled artist; in his *Anatomie de l'homme*, he drew most of the 1300 illustrations. The *Cloquet's hernia* (of the femoral canal), the *Cloquet's septum* (a fibrous membrane bounding the annulus femoralis at the base of the femoral canal), the *Cloquet's gland* (small lymphatic nodes in the femoral canal) are eponymous terms named after him.

Jules Germain **CLOQUET**
1790 Paris (F) - 1883 Paris (F)



French surgeon and gynecologist. The *Lisfranc's fracture* (injury of the foot in which one or more of the metatarsal bones are displaced from the tarsus), the *Lisfranc's joint* (tarsometatarsal articulations in the foot), *Lisfranc's ligament* (connecting the superior, lateral surface of the first cuneiform to the superior, medial surface of the base of the second metatarsal), and the (scalene) *Lisfranc's tubercle* (a small spine on the inner edge of the first rib, giving attachment to the scalenus anterior muscle) are named after him.

Jacques **LISFRANC** de St. Martin
1790 St. Paul en Jarez (F) - 1847 Paris (I)

German embryologist and anatomist, Rathke was professor of Zoology and Anatomy at Königsberg. Rathke is recognized as one of the founders of modern embryology. Rathke was the first to describe the *brachial clefts* and *brachial arches* in the embryos of mammals and birds, and the depression in the roof of the embryonic mouth (*Rathke's pouch*), in front of the buccopharyngeal membrane, from which the anterior lobe of the pituitary gland develops.

Martin Heinrich **RATHKE**
1793 Danzig – Gdańsk (PL) - 1860 Kaliningrad (RU)



Professor of Anatomy in Berlin, he was known for his pathological studies on cadavers. He was the first to discover the corneal nerves of the eye. He is known today for the eponymous *Schlemm's canal*, also named Fontana's canal, which is a channel in the eye that collects aqueous humor from the anterior chamber and delivers it into the bloodstream.

Friedrich SCHLEMM
1795 Salzgitter (D) - 1858 Berlin (D)

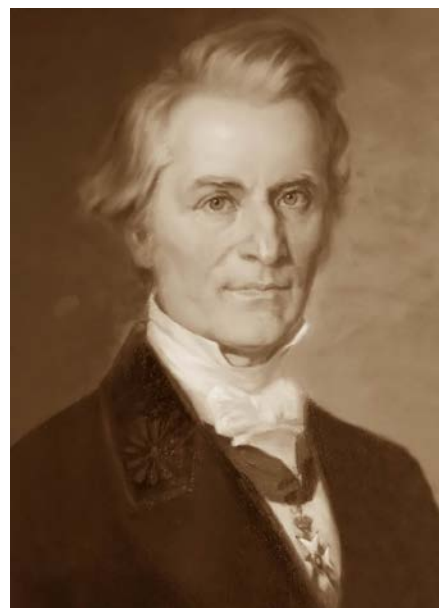


Professor of Human Anatomy in Leipzig, Weber is considered one of the founders of experimental psychology. Weber is known chiefly for his work on sensory response to weight, temperature, and pressure; Weber described a number of his experiments in this area in *De Tactu* (Concerning touch). He described the muciparous glands (*Weber's glands*) at the border of the tongue on either side, posteriorly. He enunciated the *Weber's paradox*: if a muscle is loaded beyond its power to contract, it may elongate.

Ernst Heinrich WEBER
1795 Wittenberg (D) - 1878 Leipzig (D)

Swedish physician and professor of Anatomy in Stockholm, Retzius is credited with defining the cephalic index, which is the ratio of width to length of one's head. Craniometric and anthropometric methods were soon widely adopted and developed, and new indexes were introduced. Thus, there emerged a new branch of science - *physical anthropology*. The *Retzius's cavity* (prevesical space or retropubic space), the *Retzius's gyrus* (intralimbic gyrus in the cortical portion of the rhinencephalon), and the *Retzius's veins* (anastomoses of veins in the walls of retroperitoneal viscera) were named after him.

Anders Adolf RETZIUS
1796 Lund (S) - 1860 Stockholm (S)



Professor of Anatomy and Physiology in Berlin, Müller discovered what is now known as the *Müllerian duct* (pronephros), which forms the female internal sexual organs. He contributed to knowledge of the composition of the blood and lymph, the process of coagulation, the formation of images on the retina of the eye, and the propagation of sound in the middle ear. His magnum opus, *Handbuch der Physiologie des Menschen* (Elements of Physiology) marked the beginning of a new period in the study of physiology.

Johannes Peter MÜLLER
1801 Koblenz (D) 1858 Berlin (D)



Professor of Anatomy and Physiology in London, Sharpey is well known for the bone perforating fibers (*Sharpey's fibers*), bundles of collagenous fibers that pass into the outer circumferential lamellae of bone, alveolar bone proper of the alveolus of teeth, or the cementum of teeth.

William SHARPEY
1802 Arbroath (GB) - 1880 London (GB)



Professor of Anatomy and Physiology in Heidelberg. The *Arnold's bundle* (projection fibers from the temporal lobe of the cerebral cortex to the basilar part of the pons), the *Arnold's canal* (hiatus for the lesser petrosal nerve), the *Arnold's foramen* (opening in the greater wing of the sphenoid bone), the *Arnold's ganglion* (otic ganglion), the *Arnold's nerve* (auricular branch of the vagus nerve) are eponymous terms named after him.

Friedrich ARNOLD
1803 Edenkoben (D) - 1890 Heidelberg (D)



Italian physician, Calori was Professor of Human Anatomy in Bologna for over 50 years. Calori produced a great volume of anatomy works, in many areas including normal anatomy, pathological anatomy, teratology and comparative anatomy. His collection of over two thousand skulls dates from the middle Ages to the contemporary era. The *Calori's bursa* (a bursa between the arch of the aorta and the trachea), and (craniopharyngeal) *Calori's canal* (a communication through the nasopharynx and the pituitary fossa) were named after him.

Luigi CALORI

1807 S. Pietro in Casale BO (I) - 1896 Bologna (I)



Professor of Surgery and Anatomy in Paris, Denonvilliers was a pioneer of facial reconstructive surgery. Denonvilliers first described and demonstrated the membranous tissue between the rectum and seminal vesicles, the *Denonvilliers' (rectoprostatic) fascia*, that with the *Denonvilliers' (rectovesical) septum* and the *Denonvilliers' (puboprostatic) ligament* are eponymous terms named after him.

Charles Pierre DENONVILLIERS

1808 Paris (F) - 1872 Paris (F)

Professor of Anatomy in Zürich, then in Göttingen, Henle published the first descriptions of the structure and distribution of human epithelial tissue and of the fine structures of the eye and brain. Henle's name is best known today for the loop-shaped portion (*Henle ansa*) of the nephron named for him, but he described several structures: *crypts of Henle*, *Henle ampulla*, *Henle fenestrated elastic membrane*, *Henle fiber layer*, *Henle fissures*, *Henle glands*, *Henle layer*, *Henle ligament*, *Henle membrane*, *Henle nervous layer*, *Henle reaction*, *Henle sheath*, *Henle spine*, *Henle tubules*, and *Henle warts*.

Friedrich Gustav Jakob HENLE
1809 Furth (D) - 1885 Göttingen (D)



Professor of Anatomy in Paris, Sappey anatomical preparations were highly valued, as were his literary works. Particularly important are his description of the lymphatic vessel system. The *Sappey's plexus* (lymphatic network in the areola of the nipple), the *Sappey's veins* (paraumbilical veins of the accessory portal venous system), the *Haller-Sappey Ansa* (anastomosis of the glossopharyngeal nerve with the auricular branch of the vagus nerve) are eponymous terms named after him.

Marie Philibert Constant **SAPPEY**
1810 Cernon (F) - 1896 Paris (F)



German surgeon and anatomist, Stilling made important contributions in the field of neurology. The *Stilling (hyaloids) canal* (A minute canal running through the vitreous from the discus nervi optici to the lens), the *Stilling column* (posterior thoracic nucleus), the *Stilling gelatinous substance* (central and lateral intermediate substances), the *Stilling raphe* (fiber bundles across the anterior median fissure of the medulla oblongata) are eponymous terms named after him.

Benedict **STILLING**
1810 Kirchhain (D) - 1879 Kassel (D)

Professor of Anatomy in Wien, Hyrtl published the *Handbook of Topographical Anatomy*, establishing the argument as a separate discipline. Hyrtl was primarily interested in bone structure and blood circulation. His monograph for the reform of anatomical terminology *Onomatologia Anatomica*, attracted widespread attention. The *Hyrtl's epitympanic recess* (middle ear), the *Hyrtl's foramen* (sphenoid bone), the *Hyrtl's loop* (communicating loop between hypoglossal nerves), the *Hyrtl's sphincter* (a band in the rectum) were named after him.

Joseph **HYRTL**
1810 Kismarton (Eisenstadt) (A) - 1894 Wien (A)



German physiologist, Schwann became professor of Anatomy in Leuven. Schwann founded modern histology by defining the cell as the basic unit of animal structure. He discovered the *Schwann cells* in the peripheral nervous system, the *pepsin*, the *organic nature of yeast*. Schwann coined the term *metabolism*, formulated the basic principles of embryology, and developed the *Schwann' cell theory*.

Theodor Ambrose Hubert **SCHWANN**
1810 Neuss (D) - 1882 Köln (D)

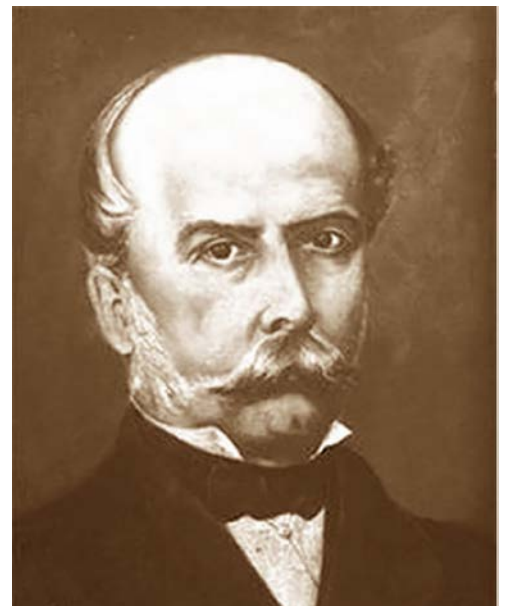


Professor of Laryngology in Wien, Türck introduced the Laryngoscope into medicine. His name is lent to the *Türck's column* or *tract* (uncrossed fibers of a small bundle in the anterior funiculus of the spinal cord), the *Türck's degeneration* (degeneration of a nerve fiber and its sheath distal to the point of injury or section), and *Türck's bundle* (temporo-occipito-parietal-pontine projection).

Ludwig **TÜRCK**
1810 Wien (A) - 1868 Wien (A)

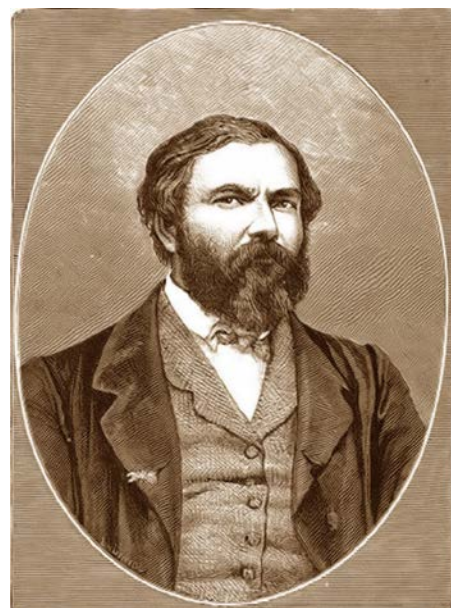
Professor of General and Topographic Anatomy in Firenze, Pacini was primarily interested in microscopical research, advocating the teaching of microscopic anatomy. Pacini constructed a microscope, which he called *inverted*, instrument for photographic and chemical use. Pacini discovered small sensory organs in the nervous system that can detect pressure and vibrations (*Pacinian corpuscles*). He published several studies on the retina of the human eye, the electric organs in electric fishes, the structure of bone, and the mechanics of respiration. Pacini first isolated the cholera bacillus.

Filippo **PACINI**
1812 Pistoia (I) - 1883 Firenze (I)



Professor of Zoology in Paris, Gratiolet main researches were devoted to the structure of the brain. Gratiolet introduced the demarcation of the brain's cortical surface into five lobes, (frontal lobe, temporal lobe, parietal lobe, occipital lobe and insular cortex). The geniculocalcarine tract (*Gratiolet's radiation*) is the massive, fan-like fiber system passing from the lateral geniculate body of the thalamus to the visual cortex..

Louis Pierre GRATIOLET
1815 S.te Foy la Grande (F) - 1865 Paris (F)



British neurophysiologist, Waller demonstrated the *cilio-spinal center* in the spinal cord and the *vasoconstrictor action* of the sympathetic. Using the *Waller method*, that is changes undergone by the distal portion after sectioning to trace the pathway of a nerve fiber, he demonstrated the *Wallerian degeneration* of the distal segment of a peripheral nerve fiber undergoes when its continuity with its cell body is interrupted. The Waller's work preceded the neuron doctrine, but showed that the cell body was the trophic center of the neuron (*Waller law*).

Augustus Volney WALLER
1816 Faversham (GB) - 1870 Genève (CH)

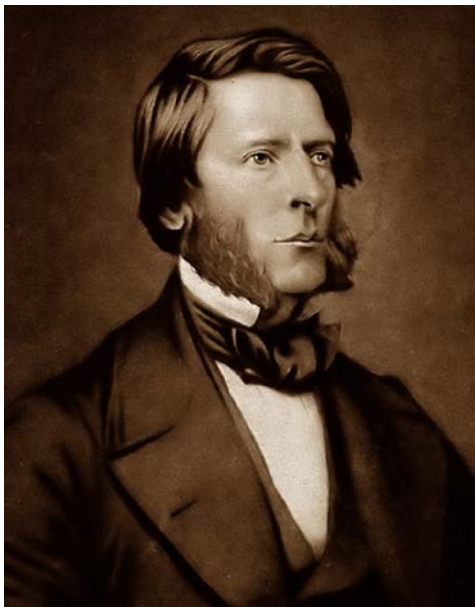
Professor of Physiology and General and Morbid Anatomy in London, Bowman identified the microscopic formation, then known as the *Bowman's capsule* and *space*, a key component of the nephron. Other anatomical structures named after him include the *Bowman's disc* (striated muscular tissue), *Bowman's glands* (olfactory mucosa), *Bowman's membrane* (anterior limiting lamina of the cornea), *Bowman's muscle* (ciliary), and *Bowman's probe* (for the lacrimal duct). .

Sir William BOWMAN
1816 Nantwich (GB) - 1892 Dorking (GB)



British physician, physiologist, histologist and neurologist, Clarke published several works on the medulla oblongata and spinal cord. Clarke established the presence of the *nucleus dorsalis* (*Clarke's nucleus or column*) of the spinal cord, and described the *nucleus intermediolateralis*. He was the first to differentiate the *medial cuneate nucleus* from the *lateral cuneate nucleus*. He introduced the histological technique of mounting sections in balsam media, a major advance in histological technique.

Jacob Augustus Lockhart **CLARKE**
1817 London (GB) 1880 Balham (GB)



British physician, chemist and microscopist, Hassall is known for his work in public health and food safety. Twenty-nine years before Koch, Hassall demonstrated the vibrio to be the cause of cholera. Two medical terms are named after him: *Hassall's corpuscles*, which are spherical bodies (concentric lamellated corpuscles) in the medulla of the thymus gland, and *Hassall-Henle bodies*, which are abnormal growths in the posterior limiting lamina of the cornea.

Arthur Hill **HASSALL**
1817 Teddington (GB) - 1894 San Remo IM (I)

Professor of Comparative Anatomy in Zürich, and then in Würzburg, Kölliker chosen later to be professor of Anatomy. Kölliker was greatly interested in the field of Electrophysiology. Kölliker first demonstrated that smooth muscle is made up of distinct units, of nucleated muscle cells. Kölliker also first noticed the arrangement of granules, which is the mitochondria, in the sarcoplasm of striated muscle (sarcosomes), and supplied the clear proof that nerve fibers are continuous with nerve cells.

Rudolph Albert von **KÖLLIKER**
1817 Zurich (CH) - 1905 Würzburg (D)



Professor of Pathological Anatomy in Prag, Treitz described the suspensory muscle of the duodenum (*muscle of Treitz or ligament*), and the fold of peritoneum over the muscle of Treitz, known today as the *ligament of Treitz*. Other anatomical terms include the *Treitz's angle* (sharp curve at the duodenojejunal junction), *Treitz's arch* (paraduodenal fold), *Treitz's fascia* (behind the head of the pancreas), and *Treitz's fossa* (subcaecal fossa). Treitz also described a paraduodenal retroperitoneal hernia that occurs at the paraduodenal recess, just lateral to the ligament of Treitz.

Václav (Wenzel) **TREITZ**
1818 Hostomice (CZ) - 1872 Prag (CZ)



Professor of Physiology in Königsberg, then in Wien, Brücke made researches on the nature of cells, works dealing with the physiology of language, investigations on the effect of electricity on the muscles, and studies of albumin. His name is lent to the *Brücke lines* (broad bands alternating with Z bands in the fibrils of the striated muscles), *Brücke muscle* (the part of the ciliary muscle formed by the meridional fibers), *Brücke tunic* (the layer of rods and cones of the retina). .

Ernst Wilhelm Ritter von **BRÜCKE**
1819 Berlin (D) - 1892 Wien (A)

Professor of Anatomy in Tübingen, Luschka lent his name to several structures, including the *Luschka's bursa* (pharyngeal), *Luschka's cartilage* (vocal cord), *Luschka's ducts* (gallbladder), *Luschka's fibers* (prerectal muscle), *Luschka's foramen* (lateral aperture of 4th ventricle), *Luschka's glands* (of cystic duct), *Luschka's joints* (uncovertebral), *Luschka's ligaments* (sternopericardial), *Luschka's muscle* (Levator ani), *Luschka's sinus* (in petrosquamous suture), *Luschka's tonsils* (lymphoid nodules of nasopharynx roof).

Hubert von **LUSCHKA**
1820 Konstanz (D) - 1875 Tübingen (D)



Professor of Pathological Anatomy in Wurzburg, then in Berlin, Virchow is known as the father of modern pathology. He named several diseases and coined terms as *chromatin*, *agenesis*, *parenchyma*, *osteoid*, *amyloid degeneration*, and *spina bifida*. *Virchow's angle*, *Virchow's cells* (bone lacuna), *Virchow's corpuscles* (thymus), *Virchow's crystals* (hematoidin), *Virchow's disease* (megacephaly), *Virchow's node* (signal lymph node), and *Virchow-Robin space* (perivascular of central nervous system) are eponyms named after him.

Rudolf VIRCHOW

1821 Schivelbein – Świdwin (PL) 1902 Berlin (D)



Professor of Zoology in Tübingen, then in Bonn, Leydig discovered the interstitial cell (*Leydig's cells*), a body enclosed in a smooth endoplasmic reticulum and holding lipid granules and crystals, which occur adjacent to the seminiferous tubules of the testes. Leydig had described the interstitial cells, and the *Leydig cell tumor*, in his detailed account of the male sex organs.

Franz von LEYDIG

1821 Rothenburg o.d. Tauber (D) 1908 Rothenburg (D)

Italian histologist, Corti was one of the biologists who sought to explain the fine structure of organs. Corti introduced carmine staining into microscopic technology. Corti described the *ganglion spirale cochleae* with its bipolar cells (*organ of Corti*), the *lamina spiralis membranacea* the columns, the hair cells, and the *membrana tectoria*; he even saw the vascular epithelium of the *stria vascularis ductus cochlearis* and recognized it as the source of the endolymph. Corti was unsure only how and where the fibers of the *nervus cochlearis* end.

Alfonso Giacomo Gaspare CORTI

1822 Gambarana PV (I) - 1876 Corvino S. Quirico PV (I)



Baltic german Professor of Anatomy in Dorpat (Tartu – EE), Reißner performed studies on embryos of birds and farm animals, determining individual stages involving the formation of the inner ear labyrinth. His name is lent to *Reissner's membrane* (membrane inside the cochlea of the inner ear), and *Reissner's fiber* (a refractive longitudinal nerve fiber in the central canal of the spinal cord).

Ernst REIßNER

1824 Riga (LV) - 1878 Schloss Ruhenthal (LV)



Professor of Clinical Surgery in Paris, Broca was the founder of modern brain surgery. Broca made important contributions to anatomy, physiology and anthropology. Broca was the first to present anatomical proofs for the localization of a particular brain function. The *Broca's angle* (parietal bone), *Broca's aphasia*, *Broca's area* (region of the frontal lobe is involved with the articulated language), *Broca's diagonal band* (precommissural septum), *Broca's parolfactory area* (of frontal lobe), *Broca's pouch* (pudendal sac), *Broca's visual plane* (of eyes) has been named after him.

Paul Pierre BROCA

1824 Sainte-Foy-la-Grande (F) - 1880 Paris (F)

Professor of Pathological Anatomy in Wien, Heschl was the first to describe the transverse temporal gyrus (*Heschl's gyrus*), convolution running transversely on the upper surface of the temporal lobe bordering on the lateral (Sylvian) fissure, in the primary auditory cortex. This anatomical structure, processes incoming auditory information.

Richard Ladislaus HESCHL
1824 Welsdorf (A) -1881 Wien (A)



Professor of Psychiatry in Zürich, and then in München, he made many contributions in the field of care of the mentally ill, craniology, and cerebral anatomy. Gudden devised a microtome for sectioning the whole human brain. The *Gudden's commissure* (commissural fibers of the optic tract, lying above and behind the optic chiasm), *Gudden ganglion* (interpeduncular nucleus), *Gudden tegmental nuclei*, *Gudden tract* (transverse peduncular tract) are eponymous terms named after him.

Johannes Bernhard Aloys von **GUDDEN**
1824 Kleve (D) - 1886 Starnberger See (D)



Professor of Anatomy and Histology in Bonn, Schultze is known for his work on the cell theory. The *Schultze cells* (olfactory receptor cells), *Schultze membrane* (olfactory region of nasal mucosa), *Schultze sign* (in latent tetany), *comma bundle of Schultze* (semilunar fasciculus, the bundle of fibers located near the border between the fasciculi gracilis and cuneatus) were named after him.



Max Johann Sigismund **SCHULTZE**
1825 Freiburg (D) - 1874 Bonn (D)

French physician, Charcot is remembered as the first Professor of Neurology. The *Charcot's arteries* (lenticulostriate), *Charcot's arthropathy* (neuropathic joint), *Charcot's disease* (amyotrophic lateral sclerosis), *Charcot's gait* (of hereditary ataxia), *Charcot's syndrome* (intermittent claudication), *Charcot's triad* (nystagmus, tremor and scanning speech), *Charcot's vertigo* (cough syncope) are eponymous terms named after him.

Jean Martin **CHARCOT**
1825 Paris (F) - 1893 Lac des Settons (F)



Professor of Neuropathology in Breslau, Auerbach was the first to diagnose the nervous system using histological staining methods. Auerbach performed studies on muscle irritation, the lymph vessels of various organs and muscle hypertrophy. He discovered the *Auerbach's plexus (myenteric plexus)*, a plexus of unmyelinated fibers and postganglionic autonomic cell bodies lying in the muscular coat of the esophagus, stomach, and intestines; it provides control of movements of the gastrointestinal tract..

Leopold AUERBACH

1826 Breslau - Wroklaw (PL) - 1897 Wroklaw (PL)



French neurologist, Luys published *Iconographie photographique des centres Nerveux*, the first photographic atlas of the brain and nervous system. Luys was the first to describe certain sensory, neuroendocrine and motor brain structures: the *centro-median nucleus of the thalamus*, the *hypothalamic gray matter* close to the third ventricle, and the *subthalamic nucleus*, concluding it was a center for the dispersion of cerebellar influence upon the striatum, and tracing the projection from the *Globus pallidus* to the *subthalamic nucleus* (of Luys).

Jules Bernard LUYS

1828 Paris (F) 1897 Divonne les Bains (F)

Professor of Surgery in Wien, Billroth produced his first monograph and numerous works on pathology of cystoid tumors in the testis, blood vessel development and comparative anatomy of the spleen. His name is lent to the *Billroth's cords* (the tissue occurring between the venous sinuses in the red pulp of the spleen.), *Billroth's operation* (intestinal continuity), *Billroth's venae cavernosae* (of splenic vein).

Christian Albert Theodor BILLROTH

1829 Bergen auf Rügen (D) - 1894 Opatija (HR)



Professor of Anatomy in Kiel, Königsberg, and then München, Kupffer conducted studies on the development of the brain, spleen, pancreas and kidneys, exocrine glands and differentiation of mesoderm. Kupffer discovered the stellate macrophages (*Kupffer cells*), specific cells of endothelium capable of phagocytizing foreign materials.

Karl Wilhelm von KUPFFER
1829 Lesten - Jelgava (LV) - 1902 München (D)



Swiss neuroanatomist, Goll became professor of Pharmacology in Zürich. Goll discovered the *fasciculus gracilis*, the smaller medial subdivision of the posterior funiculus (*tract of Goll* or *Goll's column*), which is bundle of axon fibers in the spinal chord. Goll also described the *nucleus of Goll*, the medial one of the three nuclei of the dorsal column.

Friedrich GOLL
1829 Zofingen (CH) - 1903 Zurich (CH)

Professor of Physiology in Göttingen, Meissner developed a technique for preserving whole organs without the use of disinfectants. Meissner wrote largely on physiological-chemical problems. He was mainly concerned with the nature and the breakdown of proteins into smaller protein components in the digestive system. His name is associated with *Meissner's corpuscles*, which are mechanoreceptors that are responsible for sensitivity to light touch, and with *Meissner's plexus*, being described as the plexus submucosus of the alimentary tract.

Georg MEISSNER
1829 Hannover (D) 1905 Göttingen (D)



Austrian neurologist, Meynert was professor of Neurology in Wien. Meynert studied the cellular architecture of the brain. The *Meynert's basal nucleus* (in the *substantia innominata*), *Meynert's cells* (solitary pyramidal cells in the cortex of the calcarine fissure), *Meynert's retroflex bundle* (fibers from habenula to the interpeduncular nucleus), *Meynert's commissure* (fibers that lie above and behind the optic chiasm), *Meynert's decussation* (tegmental, left and right tectospinal and tectobulbar tracts), *Meynert's layer* (Layer 3 and 5 of the *cortex cerebri*) are eponyms named after him

Theodor Hermann MEYNERT
1833 Dresden (D) - 1892 Klosterneuburg (A)



Ukrainian anatomist and histologist, Betz was professor of Anatomy and Histology in Kyiv. Betz performed studies on the hepatic blood circulation, suprarenal glands, lungs, bone, and on the brain. Betz's revolutionary methods of fixation and staining were the result of his motivation to improve histological technique and to exploit the latest microscope technology. Betz described the largest cells in the central nervous system, sometimes reaching 100 μm in diameter. These cells are *giant pyramidal cells* (*Betz's neurons*) located within the fifth layer of the gray matter in the primary motor cortex.

Vladimir Alekseyevich BETZ
1834 Tatarovshina – Oster (UA) – 1894 Kyiv (UA)

French anatomist and histologist, Ranvier was professor of General Anatomy in Paris. Ranvier maintained the importance of learning the relation between structure and function. The *Ranvier's crosses* (cross-shaped figures of nodes), *Ranvier's discs* (tactile nerve endings, of cupped disk-like form, in the skin), *Ranvier's nodes* (constriction in the myelin of nerve fibers), *Ranvier's plexus* (subbasal stroma plexus of the cornea), *Ranvier's segment* (portion between two nodes), are eponymous named after him.

Louis Antoine RANVIER
1835 Lyon (F) - 1922 Vendrages (F)



German scientist, Hensen was professor of Physiology at Kiel. Hensen was a leading zoologist and coined the term *plankton*, but he also worked in Embryology and Anatomy. He discovered the *Hensen canal* (communication of the *sacculle* with the *cochlear duct*), *Hensen cell* (supporting cell of Corti's organ), *Hensen disc* (paler area of the A band of a striated muscle fiber), *Hensen knot* (primitive node, organizer at the cephalic of the embryo), *Hensen stripe* (a band on the undersurface of the membrana tectoria of the cochlear duct).

Victor HENSEN

1835 Schleswig (D) - 1924 Kiel (D)



German physician, Eberth was professor of Pathological Anatomy in Zürich, then in Halle. Eberth discovered the bacillus that causes typhoid fever (*Eberth's bacillus*), now *Salmonella typhi*. He also described the *Eberth's lines* (lines appearing between the cells of the myocardium when stained with silver nitrate), and the *Ebert's perithelium* (an incomplete layer of connective tissue cells encasing the blood capillaries).

Karl Joseph EBERTH

1835 Würzburg (D) - 1926 Berlin (D)

German anatomist, Waldeyer was professor of Anatomy in Strasbourg, then in Berlin. Waldeyer proposed the neuron theory of the nervous system and coined the terms *neuron* and *chromosome*. The *Waldeyer's fossae* (duodenal), *Waldeyer's glands* (coil glands near the margins of the eyelids), *Waldeyer's space* (space between the bladder wall and the intramural portion of the ureter), *Waldeyer's throat ring* (pharyngeal lymphatic ring), and *Waldeyer's tract* (*dorsolateral fasciculus*), are eponyms named after him.

Heinrich Wilhelm Gottfried von WALDEYER-HARTZ

1836 Hehlen (D) - 1921 Berlin (D)



American gynecologist, Skene was professor of Gynecology in New York. Skene described the glands on the floor of the urethra (*Skene's glands*). The eponymous terms *Skene's ducts* (that convey the mucoid secretion of the urethral glands to the vestibule), *Skene's glands* (in the wall of the female urethra), *Skene's tubules* (the embryonic urethral glands which are the female homolog of the prostate) are eponyms named after him.

Alexander Johnston Chalmers **SKENE**
1837 Fyvie (GB) 1900 Catskills NY (USA)



Italian anatomist, Giannuzzi was professor of Experimental Physiology in Siena. Giannuzzi is remembered for giving the name to the *Giannuzzi's demilunes*, the serous cells at the distal end of a mucous, tubuloalveolar secretory unit of certain salivary glands (e.g., sublingual).

Giuseppe Oronzo **GIANNUZZI**
1838 Altamura BA (I) - 1876 Siena (I)



Italian physician, Todaro was professor of Anatomy in Messina, then in Roma. Todaro described the *tendon of Todaro*, an inconstant tendinous structure that extends from the right fibrous trigone of the heart toward the valve of the inferior vena cava.

Francesco **TODARO**
1839 Tripi ME (I) - 1918 Roma (I)



Italian anatomist, Giacomini was professor of Anatomy in Torino. Giacomini made significant contributions in anthropology and embryology. The eponymous *band of Giacomini* (a slender, whitish band, the attenuated anterior continuation of the dentate gyrus (fascia dentata), crossing transversely the surface of the recurved part of the uncus gyri parahippocampalis), *Giacomini's vein* (a lower limb vein), and *vertebrae Giacomini* ((from the fifth to the eighth thoracic vertebra) are named after him.

Carlo GIACOMINI

1840 Sale AL (I) - 1898 Torino (I)



Italian physiologist and histologist, Sertoli was professor of Physiology in Milano. Sertoli discovered the *Sertoli's cells* (elongated cells in the seminiferous tubules that ensheath spermatogenic cells, providing a microenvironment that supports spermiogenesis and spermatocytogenesis), and *Sertoli-cell-only syndrome* (the absence from the seminiferous tubules of the testes of germinal epithelium, only Sertoli cells are present).

Enrico SERTOLI

1842 Sondrio (I) - 1910 Sondrio (I)

Swedish anatomist and anthropologist, Retzius was professor of Histology, and then of Anatomy in Stockholm. Retzius studied the anatomy of the brain and the nervous system. The *calcification lines of Retzius* (incremental lines of enamel), *foramen of Retzius* (lateral aperture of 4th ventricle), *Retzius striae* (concentric lines crossing the enamel prisms), *sheath of Key and Retzius* (endoneurium) are eponyms named after him.

Magnus Gustav RETZIUS

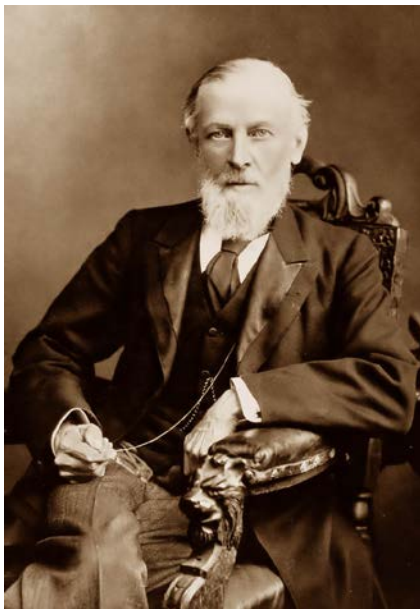
1842 Stockholm (S) - 1919 Stockholm (S)



Italian physician, histologist and cytologist, Golgi was professor of Histology and Pathology at Pavia. Golgi shared the Nobel Prize with Santiago Ramón y Cajal. His name is lent to several eponyms such as the *Golgi's apparatus* (a membranous system of cisternae and vesicles), *Golgi's cells* (neurons), *Golgi's corpuscles* (encapsulated sensory nerve ending), *Golgi's reagent* (for nervous material), *Golgi's reproduction cycles* (Sexless reproduction of malaria parasites), *Golgi's stain* (silver impregnation), *Golgi's tendon organ* (proprioceptive sensory nerve), *Golgi's zone* (part of the cytoplasm occupied by the Golgi apparatus).

Camillo GOLGI

1843 Corteno BS (I) - 1926 Pavia (I)



British neurologist, Gowers made a classical description of epilepsy. Gowers invented the first practical haemoglobinometer, and designed a blood cell counting chamber. The *Gowers' column or tract* (anterior spinocerebellar tract), *Gowers' contraction* (front-tap reflex), *Gowers' disease* (a distal type of progressive muscular dystrophy), *Gowers' sign* (identified principally with Duchenne muscular dystrophy), *Gowers' syndrome* (disturbances in gastric motility) are eponyms named after him.

Sir William Richard GOWERS

1845 London (GB) - 1915 London (GB)

German anatomist, Merkel was professor of Anatomy in Göttingen. Merkel published a multivolume textbook on human anatomy and originated the color scheme used today: red for arteries, blue for veins, and yellow for nerves. Merkel experimented with osmium tetroxide staining. His name is lent to the *Merkel cell tumor* (a rare malignant cutaneous tumor), *Merkel corpuscle or tactile cell* (a nerve ending in the epidermis of an intraepidermal axon in contact with the base of a single Merkel cell).

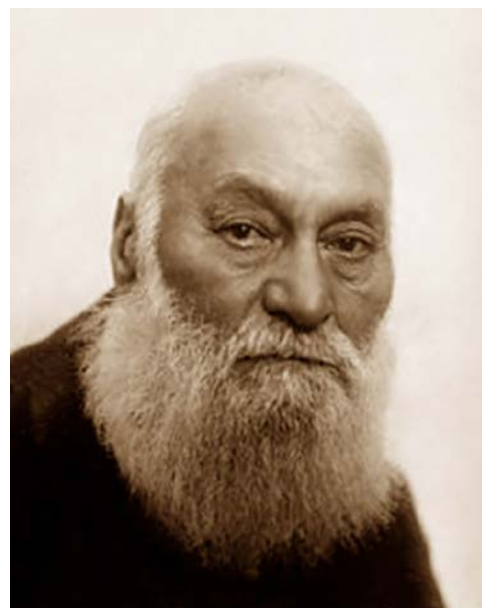
Friedrich Sigmund MERKEL

1845 Nürnberg (D) - 1919 Göttingen (D)



Austrian physiologist, Exner was professor of Physiology in Wien. Exner conducted important studies on the functional architecture of the visual cortex. The *Exner's area* (An area of the brain just above Broca's area and anterior to the primary motor control area), *Exner's plexus* (Nerve from the pharyngeal plexus to the cricothyroid membrane), *Exner's plexus* (a plexus formed by tangential nerve fibers in the superficial plexiform or molecular layer of the cerebral cortex) are eponyms named after him.

Siegmund EXNER
1846 Wien (A) - 1926 Wien (A)



German pathological anatomist, Langerhans became professor of Pathological Anatomy in Freiburg. Langerhans was the first to explore the new area of research with novel methods and staining techniques. His name is lent to *Langerhans' adenoma* (proliferation of dendritic cells), *Langerhans' cells* (dendritic macrophage cells of the skin), *Langerhans' cell histiocytosis* (A rare disorder that primarily affects children), *Langerhans' islands* (Clusters of cells of the pancreas producing insulin and glucagon).

Paul LANGERHANS
1847 Berlin (D) - 1888 Funchal (P)

German neurologist, Flechsig was professor of Psychiatry in Leipzig. Flechsig is mainly remembered today for his research of myelinogenesis. The *Flechsig's area* (division of each lateral half of oblongata), *Flechsig's fasciculi* (ascending and descending spinothalamic association fiber systems), *Flechsig's tract* (posterior spino cerebellar tract), *Flechsig's oval area* (descending fibers between the fasciculi gracilis and cuneatus), *Flechsig's semilunar nucleus* (arcuate nucleus of the thalamus) are eponyms term named after him.

Paul Emil FLECHSIG
1847 Zwickau (D) - 1929 Leipzig (D)



Swiss neuroanatomist, Forel was professor of Psychiatry in Zürich. Forel was the first to achieve histological preparations of human brain specimens. In his paper in 1877, major contribution to the anatomy of the brain, Forel described several previously unknown brain structures in the tegumental region. The *Forel's bodies* (Nucleus hypothalamicus), *Forel's decussation* (of the left and right rubrospinal and rubrobulbar tracts, in the mesencephalon), *Forel's fields* (of the subthalamus), *Forel's word salad* (confused speech occurring in schizophrenia) are eponyms terms named after him.

Auguste Henri FOREL
1848 Morges (CH) - 1931 Yverne (CH)



French physician and anatomist, Testut was professor of Anatomy in Lyon. Testut wrote on comparative anthropology, paleopathology, archaeology, and local history. He published the four-volume *Traité d'anatomie humaine* (with André Latarjet), considered the standard anatomy textbook in medical schools. He also published a *Précis d'anatomie descriptive* and a two-volume *Traité d'anatomie topographique* (with Octave Jacob), translated and used throughout the world.

Jean Léo TESTUT
1849 Saint-Avit-Sénieur (F) - 1825 Caudéran (F)

Polish physician and pathologist, Adamkiewicz was professor of General and Experimental Pathology in Kraków. Adamkiewicz is remembered for his pathological examinations of the central nervous system. He is credited with describing the major anterior segmental medullary artery (*artery of Adamkiewicz*), and to establish a color (quantitative) colorimetric reaction to detect proteins (*Adamkiewicz's reaction*).

Albert Wojciech ADAMKIEWICZ
1850 Zerków (PL) - 1921 Wien (A)



German dermatologist, Unna became professor of Dermatology in Hamburg. Unna was the first to describe the *stratum granulosum* of the skin. The *Unna's disease* (seborrheic dermatitis), *Unna's nevus* (a persistent form of *nevus flammeus nuche*), *Unna's stain* (an alkaline methylene blue stain for plasma cells), *Unna-Pappenheim stain* (a methyl green-pyronin solution; originally used for gonococci) were eponyms terms named after him.

Paul Gerson UNNA

1850 Hamburg (D) - 1929 Hamburg (D)



Italian anatomist, Romiti was professor of Anatomy in Siena, then in Pisa. Romiti made observations on the development of the Batrachian egg, on the structure and development of the placenta and ovary, on the Wolffian duct, on the origin of the dorsal cord, skull-pharyngeal canal, on the pocket of Ratchke, and on the development and the variety of the occipital bone.

Guglielmo ROMITI

1850 Pisa (I) - 1936 Carrarasì MS (I)

German anatomist, Disse was foreign teacher at the University of Tokio, and professor of Anatomy in Marburg. Disse was specialized in the fields of microscopic anatomy, embryology and histology. His name is associated with the *space of Disse*, which is a perisinusoidal space, the potential extravascular space between the liver sinusoids and liver parenchymal cells.

Joseph DISSE

1852 Brakel (D) - 1912 Oberstdorf (D)



Spanish neuroanatomist, Ramón y Cajal was professor of Anatomy in Madrid, and Nobel laureate. Ramón y Cajal made several major contributions to neuroanatomy. Ramón y Cajal discovered the *Cajal's cell I* (astrocytes), *Cajal's cell II* (horizontal cell of the cerebral cortex), *Cajal astrocyte stain* (a method for demonstrating astrocytes), *interstitial cell of Cajal* (of the gastrointestinal tract), and the *interstitial nucleus of Cajal* (of the upper mesencephalic tegmentum).

Santiago **RAMÓN Y CAJAL**
1852 Petilla de Aragón (E) - 1934 Madrid (E)



German neurologist, Edinger was professor of Neurology in Frankfurt. Edinger was the founder of comparative neuroanatomy. Edinger was the first to describe the vertebral and the dorsal spinocerebellar tract and to distinguish the paleoencephalon from the neoencephalon and the paleocerebellum and neocerebellum. His name was lent to the *Edinger's tract* (conductive pathway for basic perceptions of pain, temperature, pressure, and touch, belonging to the anterior string system of the spinal marrow), and the *Edinger-Westphal nucleus* (the accessory nucleus of the third cranial nerve).

Ludwig **EDINGER**
1855 Worms (D) - 1918 Frankfurt am Main (D)

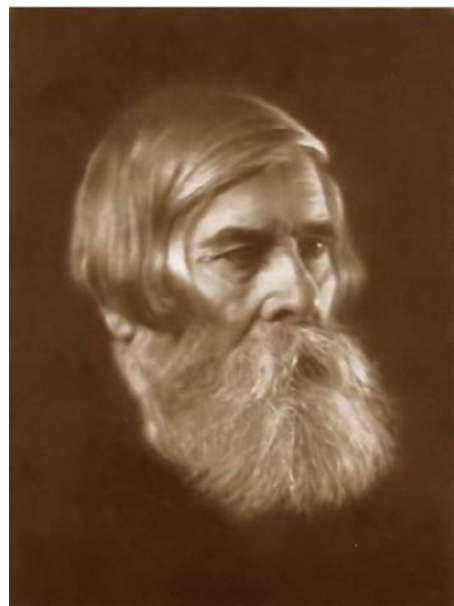
Austrian physiologist, Paneth is remembered for his description of *Paneth cells*, which are cells, located at the base of intestinal glands of the small intestine, which contain large acidophilic refractile granules and may produce lysozyme. These cells provide host defense against microbes in the mucosa.

Joseph **PANETH**
1857 Wien (A) - 1890 Wien (A)



Russian neurologist, Bekhterev became professor of Psychiatric Diseases in Kazan, then in Petrograd (St. Petersburg). Bekhterev greatly contributed to the current understanding of the brain. Bekhterev discovered the superior vestibular nucleus (*Bekhterev's nucleus*). The *Bekhterev's disease* (spondylitis deformans), *Bekhterev's sign* (paralysis of automatic facial movements), *band of Kaes- Bekhterev* (horizontal fibers in the most superficial part of the 3rd layer of the isocortex), *Bekhterev-Mendel reflex* (of foot) are also eponyms named after him.

Vladimir Mikhailovich **BEKHTEREV**
1857 Sorali, Kirov (RUS) - 1927 Moscow (RUS)



English neurophysiologist, Sherrington was professor of Physiology at Oxford. Sherrington laid the foundations for modern neurophysiology. He defined the *Sherrington's motor unit* (a single motor neuron innervates a number of muscle fibers) and the two laws: (*Sherrington's I*) Every posterior spinal nerve root supplies a particular area of the skin, (*Sherrington's II*) when contraction of a muscle is stimulated, there is a simultaneous inhibition of its antagonist.

Sir Charles Scott **SHERRINGTON**
1857 Islington (GB) 1952 Eastbourne (GB)

Russian neurologist, Darkshevich was professor of Neurological Diseases in Moscow. Darkshevich is remembered for his description of the *nucleus of Darkshevich*, an ovoid cell group in the anterior central gray substance rostral to the oculomotor nucleus, receiving fibers from the vestibular nuclei by way of the medial longitudinal fasciculus; projections are not known, although some cross in the posterior commissure.

Liverij Osipovich **DARKSHEVICH**
1858 Yaroslavl (RUS) - 1925 Moscow (RUS)



Italian anatomist, Chiarugi was professor of Anatomy in Firenze. Chiarugi was the first to demonstrate that the activity of the heart begins in the very first stages of ontogeny, when the nerve connections are not organized. He published the three-volume *Istituzioni di Anatomia dell'Uomo* and the four-volume *Trattato di Embriologia*, and was the founder of the *Italian Journal of Anatomy and Embryology*, a journal devoted to the progress and diffusion of science in the fields of Anatomy, Histology and Embryology.

Giulio CHIARUGI

1859 Castelletto di Chiusdino SI (I) - 1944 Firenze (I)



German psychiatrist and neuropathologist, Nissl was professor of Psychiatry in Heidelberg. Nissl was a great neuropathologist. His name is lent to the *Nissl's bodies*, granules or substance (the material consisting of granular endoplasmic reticulum and ribosomes that occurs in nerve cell bodies and dendrites), *Nissl's degeneration* (degeneration of the cell body after transection of the axon), *Nissl's stain* (method for staining the Nissl's bodies).

Franz NISSL

1860 Frankenthal (D) - 1919 München (D)

Italian anatomist, Valenti was professor of Human Anatomy in Bologna. Valenti finally organized the famous anatomical wax collection on the first floor of the new Institute, in via Irnerio 48. He worked on the development of the adrenal glands, the histogenesis of nerve cells, the origin and meaning of the pituitary, the meaning and the origin of the lateral processes of the vertebrae and ribs.

Giulio VALENTI

1860 Siena (I) - 1933 Bologna (I)



German anatomist, Spalteholz was professor of Physiology in Leipzig. Spalteholz stated methods of anatomical preparations, and studied the anastomoses between the coronary arteries of the heart. He published the three-volume *Handatlas der Anatomie des Menschen*, one of the most elegantly illustrated anatomical atlases of all time, translated and used throughout the world.

Karl Werner SPALTEHOLZ
1861 Dresden (D) - 1940 Leipzig (D)



Hungarian zoologist and histology, Apáthy was professor of Zoology in Szeged. Apáthy particularly studied neurofibrils, and was known for improving microscopic techniques for dealing with tissue samples. He also theorized on the "social and political aspects" of eugenics. The Apáthy's book, *Die Mikrotechnik der thierischen Morphologie*, was an indispensable handbook for two generations of histologists.

István APÁTHY
1863 Budapest (H) - 1922 Szeged (H)

Swiss internist and cardiologist, His was professor of Internal Medicine in Berlin. His was one of the first to recognize that *the heartbeat has its origin in the individual cells of heart muscle*. His name is lent to *His' band* or *bundle* (of modified cardiac muscle fibers), *His' spindle* (a fusiform dilation of the aorta), *His-Tawara system* (the complex system of interlacing Purkinje fibers within the ventricular myocardium), and *Werner-His disease* (trench fever).

Wilhelm HIS, Jr
1863 Basel (CH) - 1934 Brombach (D)



Italian anatomist and surgeon, Oddi was professor of Physiology in Genova. Oddi described a small group of circular and longitudinal muscle fibers that wrapped around the end of the bile and pancreatic ducts (*sphincter of Oddi*). The sphincter was initially identified by Francis Glisson two centuries earlier; however, it was Oddi, who was first able to characterize its physiological properties. His name is also lent to the *Oddi's syndrome* (Spasm of the sphincter of Oddi) and *Odditis* (Inflammation of the sphincter of Oddi).



Ruggero ODDI
1864 Perugia (I) - 1913 Tunis (TN)



Italian histologist and embryologist, Ruffini was professor of Embryology in Siena. Ruffini was a pioneer in the study of amphibian gastrulation, providing a comprehensive and detailed description of the formation of bottle cells. His name is lent to the *Ruffini's corpuscle* (sensory end structures in the subcutaneous tissues of the fingers), and the *flower-spray organ of Ruffini* (one of the two types of sensory nerve ending associated with the neuromuscular spindle).

Angelo RUFFINI
1864 Pretara AP (I) - 1929 Baragazza BO (I)

German physician and pathologist, Aschoff was professor of Pathology in Freiburg. Aschoff was interested in the pathology and pathophysiology of the heart. His name is lent to the *Aschoff's bodies* (a form of granulomatous inflammation), *Aschoff's cell* (a large component of rheumatic nodules in the myocardium), *Aschoff's organ* (Organ in the paradidymis), and to the *node of Aschoff and Tawara* (a small node located near the ostium of the coronary sinus; it gives rise to the atrioventricular bundle of the conduction system of the heart).

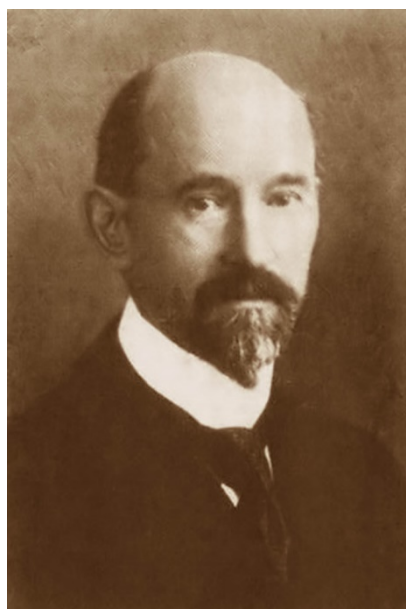
Karl Albert Ludwig ASCHOFF
1866 Berlin (D) - 1942 Freiburg (D)



Scottish anatomist and physical anthropologist, Keith was president of the Anatomical Society and editor of the *Journal of Anatomy*. Keith was a leading figure in the study of human fossils. He noted that where the superior vena cava entered the right auricle (*the sulcus terminalis*) there was a localized area of tissue in which nerve fibers terminated. Martin Flack had been working with him on the anatomy of the heart, and together they published the discovery of the *sinoatrial node*.

Sir Arthur KEITH

1866 Quarry Farm (GB) - 1955 Downe (GB)



German neurologist, Brodmann was professor of Histology in München. Brodmann argued that the human cortex is organized anatomically in the same way as the cortex of all other mammals. Brodmann published his original research on cortical cytoarchitectonics in *Vergleichende Lokalisationslehre der Großhirnrinde in ihren Prinzipien dargestellt auf Grund des Zellenbaues*. He postulated that the areas with different structures (52 areas grouped into 11 histologic areas), he depicted on the brain (*Brodman areas*), had different functions.

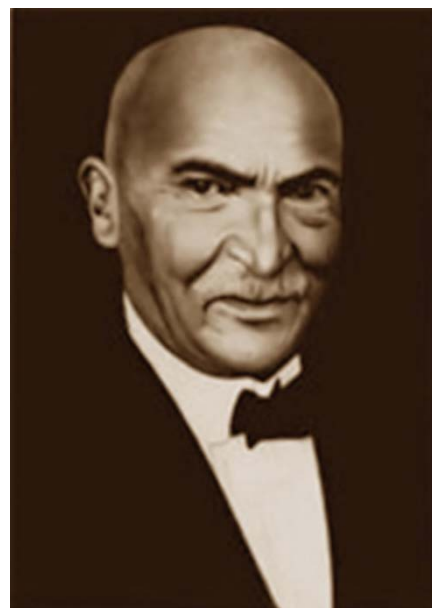
Korbinian BRODMANN

1868 Hohenfels (D) - 1918 München (D)

Italian/Brazilian anatomist, Bovero was professor of Anatomy in Cagliari (I), then in São Paulo (BRA). He studied the *Bovero's muscle* (cutaneo mucous muscle), and described a median sagittal salience in tongue that named *torus lingualis longitudinalis*. Bovero was the founder of the Anatomical Museum of the University of São Paulo. He developed an intense academic activity, and was one of the exponents of Brazilian anatomy and germ for the consolidation of surgical position of the University of São Paulo.

Alfonso BOVERO

1871 Pecetto TO (I) - 1937 Torino (I)



Italian anatomist and histologist, Levi was professor of Anatomy in Sassari, Palermo, and then in Torino. Levi is unanimously considered one of the major figures of Italian biomedical sciences in the 20th century. Levi was a pioneer of in vitro studies of cultured cells. He contributed to the study of the nervous system, especially on the plasticity of sensory ganglion cells. The so-called *Law of Levi* defined that the size of pericaryon (i.e. the cell body of the neuron) is proportional to the extension of its axon and its arborization.

Giuseppe LEVI
1872 Trieste (I) - 1965 Torino (I)



Japanese pathologist, Tawara was professor of Pathology in Fukuoka. Tawara worked on pathology and anatomy of the heart. His name is lent to the *node of Ashoff and Tawara*. The node is a remnant of primitive fibers found in all mammalian hearts at the base of the interauricular septum, and forming the beginning of the auriculoventricular bundle or bundle of His.

Sunao TAWARA
1873 Ōita (J) - 1952 Fukuoka (J)

Italian anatomist, Vitali was professor of Anatomy at Pisa. Vitali described the constant presence of small ganglia on orbital branches of the sphenopalatine ganglion in humans. He reported the discovery of the *paratympanic organ*, a sense organ in the middle ear of birds. He was the first to postulate that the *paratympanic* and *spiracular sense organs* were homologous organs that originate from homologous placodes.

Giovanni VITALI
1876 Foiano della Chiana AR (I) 1963 Pisa (I)



Italian biologist, Beccari became professor of Comparative Anatomy in Firenze. Beccari authored several researches on histology, comparative anatomy, embryology (origin of sex cells in vertebrates, sex differentiation in amphibians), and several studies on the nervous system of vertebrates. He published also a work on the theory of the neuron, a treatise on the nervous system, a handbook of microscopic techniques.

Nello **BECCARI**

1883 Bagno a Ripoli FI (I) - 1957 Firenze (I)



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