

**APPENDIX 4: GLOSSARY of HISTOLOGICAL & MICRO-ANATOMICAL TERMS**  
**including historical origins and eponyms,**  
 (compiled by Dr. B. Freeman, School of Anatomy, UNSW, revised 2000)

<b>Abbreviations:</b>	( )	plural form in brackets	OF.	Old French
	A.	Arabic	abb.	abbreviation
	F.	French	adj.	adjective
	G.	Greek	c.	circa (= about)
	Ge.	German	cf.	compare
	L.	Latin	dim.	diminutive
	NA.	Nomina anatomica	q.v.	which see

**A-band** abb. of **anisotropic band** G. *anisos* = unequal + *tropos* = turning; meaning having not equal properties in every direction; transverse bands in living skeletal muscle which rotate the plane of polarised light, cf. I-band.

**Abbé**, Ernst. 1840-1905. German physicist; mathematical analysis of optics as a basis for constructing better microscopes; devised oil immersion lens; Abbé condenser.

**absorption** L. *absorbere* = to suck up.

**acervulus** L. = sand, gritty; brain sand (cf. psammoma body).

**acetylcholine** an ester of choline found in many tissue, synapses & neuromuscular junctions, where it is a neural transmitter.

**acetylcholinesterase** enzyme at motor end-plate responsible for rapid destruction of acetylcholine, a neurotransmitter.

**acidophilic** adj. L. *acidus* = sour + G. *philein* = to love; affinity for an acidic dye, such as eosin staining cytoplasmic proteins.

**acinus (-i)** L. = a juicy berry, a grape; applied to small, rounded terminal secretory units of compound exocrine glands that have a small lumen (adj. acinar).

**acrosome** G. *akron* = extremity + *soma* = body; head of spermatozoon.

**actin** polymer protein filament found in the intracellular cytoskeleton, particularly in the thin (I-) bands of striated muscle.

**adenohypophysis** G. *ade* = an acorn + *hypophyses* = an undergrowth; anterior lobe of hypophysis (cf. pituitary).

**adenoid** G. " + *-oeides* = in form of; in the form of a gland, glandular; the pharyngeal tonsil.

**adipocyte** L. *adeps* = fat (of an animal) + G. *kytos* = a container; cells responsible for storage and metabolism of lipids, found in white fat and brown fat.

**adipose** adj. L. *adeps* = fat + G. *osis* = a condition of.

**adluminal** adj. L. *ad* = towards + *lumen* = a hole; adjacent to lumen.

**adnexa** L. *ad* = to + *nexus* = bound; accessory parts of a structure, e.g., the adnexa of the eye.

**adrenal** L. *ad* = to, at + *ren* = kidney; the suprarenal gland.

**adrenergic** adj. L. " + " + G. *ergon* = work; applied to nerves which release "noradrenalin" (norepinephrine) at their terminals.

**adventitia** L. *adventicius* = coming from the outside; outermost connective tissual covering of an organ, e.g., the outer coat of a blood vessel is its tunica adventitia.

**afferent** adj. L. *ad* = to + *ferre* = to bear, carry, produce; passing towards, centripetal, e.g., sensory nerves are afferent nerves with respect to the brain and spinal cord; afferent arteriole of the renal glomerulus.

**agranulocyte** L. *a* = without; a white blood cell without large numbers of cytoplasmic granules but containing some azurophilic granules, e.g., monocyte, lymphocyte.

**albicans** adj. L. = whitish; e.g., *corpus albicans* (*corpora albicantia*) of the ovary.

**albuginea** adj. L. *albus* = white; firm white fibrous tissue, e.g., near the surface of the testis or ovary (first used to describe aqueous humour, then sclera, of eye).

**Alcian blue** commercial name for dye indicating mucins.

**aldehyde fuschin** purple dye for elastin.

**alimentary** L. *alimentum* = nourishment.

**alpha cell** acidophilic cell of adenohypophysis; acidophilic cell secreting glucagon of pancreatic islets of Langerhans

**alveolus (-i)** L. = a small hollow, basin or flask (dim. of *alveus* = a belly, tub); applied to air-cell in lungs; large terminal secretory units of some exocrine glands with relatively thin walls (cf. acinus); tooth socket; adj. alveolar.

**amacrine** G. *a* = without + *makros* = long; a cell in the inner nuclear layer of retina without a long (axonal) process.

**ameloblast** OF. *esmail* = enamel + G. *blastos* = germ; cell giving rise to tooth enamel.

**amitosis** G. *a* = without + *mitos* = thread; direct cell division without appearance of visible chromosomes.

**amnion** G. *Amnion* = nickname for a goddess of childbirth: Eileithya of Amnisus (or Amnias), which was the port of the land of Knossos in Crete; *amnion* is also Greek for a little lamb; inner of the fetal membranes forming a thin sac around embryo or fetus, and subsequently fusing with chorion.

**amoeboid** G. *amiobe* = change + *-oeides* = form of; having motion like an amoeba, a protozoon which continually changes its shape; of the movements of a leucocyte.

**amorphous** G. *a* = not + *morphe* = form; lacking structural definition.

**ampulla** L. *ampla* = full + *bulla* = vase; a jar or flask; a local widening in a tube; duodenal ampulla of Vater, q.v.

**amylacea** cf. corpus amylaceum.

**anaphase** G. *ana* = up, back, again + *phasis* = phase, stage; mitotic phase where chromatids separate.

**anastomosis** G. " + *stoma* = an opening; natural communication between two vessels (adj. anastomotic).

**androgen** G. *andros* = man + *gennan* = to produce; male hormone.

**aneuploidy** G. *an* = without + *eu* = good + *ploos* = folded + *-oeides* = shape of; of a cell nucleus with more or less than the correct diploid number of chromosomes.

**angiology** G. *angeion* = a vessel + *logos* = study; first used to describe a surgical procedure for exposing temporal artery; later, the study of blood vessels.

**Angström**, Anders Jonas. 1814-1879. Swedish physicist; unit of measurement; 1 Angström (symbol Å) = 0.1 nanometer.

**aniline blue** A. *anil*, indigo plant; dye for collagen etc.

**anisotropic** G. *anisos* = unequal + *tropos* = a turning; having properties that are not the same in all directions; able to change the plane of polarization of light.

**anlage (-n)** Ge. *an* = on + *legen* = to lay, place; a primordium; an incipient structure.

**ansa nephronis** L. *ansa* = bucket handle, sandle loop + *nephronis* = of a nephron; hair-pin bend in the straight tubules of a nephron of the kidney; cf. Henle; also ansa subclavia; ansa hypoglossi.

**ansa subclavia** L. = sympathetic nerve loop passing anterior and posterior to subclavian artery.

**antrum (-ra)** L. = a cave, cavity; a nearly-closed cavity or bulge.

**anulus (or annulus)** L. = a little ring, dim. L. *anus*; a finger-ring; the fourth finger itself.

**anulus fibrosus (anuli fibrosi or annuli fibrosi)** L. = little ring of fibres; lamellae of collagen fibres surrounding nucleus pulposus of intervertebral disc.

**aorta** G. *aeiro* = I lift up (something), then G. *aorter* = the strap of a knapsack hung from the shoulders; a butcher's "pluck" of thoracic viscera; largest artery of the thorax (the heart being like a sac, and the aorta, a strap).

**apical** adj. L. = apex, tip.

**apocrine** G. *apo* = from, away + *krinein* = to separate; budding-off of apical cytoplasm in secretory cells.

**aponeurosis** G. " + *neuron* = tendon, sinew (later, nerve); an expanded flat connective tissue sheet to which muscle fibres are attached (Galen, 180)

**apoptosis** G. *apo* = from + *ptosis* = a falling off (of a leaf); naturally occurring cell death; adj. apoptotic (second p is silent).

**appendix testis** L. *ab* = from + *pendere* = to hang + *testis* = of the testis; hydatid of Morgagni, q.v.

**appendix vermiformis** L. *ab* = from + *pendere* = to hang + *vermis* = worm + *forma* = form; a worm-shaped attachment at the beginning of the large intestine.

**appendices epiploicae** L. " + G. *epiploon* = a net; small pockets of peritoneum filled with fat attached to the colon; cf. epiploic.

**apposition** L. *ad* = to + *ponere* = to set, place; placed in contiguity; juxtaposition.

**appositional growth** L. " ; growth on a pre-existing surface; growth at periphery.

**APUD** amine-precursor uptake and decarboxylation; class of endocrine cells.

**aqueous humour** L. *aqua* = water + *humour* = fluid; fluid of low viscosity in anterior and posterior chambers of eye.

**arachnoid** adj. G. *arachne* = spider + *-oeides* = form; resembling a web; first applied to scum on urine; applied to cobweb-like middle layer of the three meninges of the brain (Amsterdam, 1664).

**arachnoid granulations** protrusions of arachnoid into superior sagittal sinus whereby cerebrospinal fluid can pass into the blood, cf. Pacchionian bodies.

**arbor vitae** L. *arbor* = tree + *vitae* = of life; cedar tree; the white matter seen in a median section of the cerebellum.

**arbor vitae uteri** cf. palmate folds (of uterine cervical canal).

**arborisation** from L. *arbor* = tree; branching as in a tree.

**area cribrosa** L. *area* = a space + *cribrum* = a sieve; surface of renal papilla perforated by papillary ducts of Bellini, q.v.; cf. cribriform.

**areola** corruption of L. *aureolus* = golden; pigmented area around nipple of breast.

**areolar** L. *areola* = a small open space (dim. of L. *area* = a space); loose, as in loose connective tissue.

**argentaffin** L. *argentum* = silver + *affinis* = associated with; of cells which can reduce silver from its salts without special pretreatment; e.g., some entero-endocrine cells producing serotonin.

**argyrophilic** G. *argyros* = silver + *philein* = to love; of cells or structures reducing silver from its salts after special pretreatment with a reducing agent; e.g., reticular fibres.

**arrector pili (arrectores pilorum)** L. *arrector* = raiser + *pilus* = hair; autonomically innervated smooth muscles oriented obliquely in dermis, creating "gooseflesh".

**artefact** L. *arte* = by art + *factus* = made; inadvertent abnormality in tissue arising during histological processing; also artifact.

**arteriole** a small artery, q.v.

**artery** G. *aer* = air + *terein* = to keep; hence L. *arteria* = windpipe; arteries after death often were seen to be empty of blood, i.e., to contain air.

**articular** L. *articulatus* = a little joint (dim. of L. *artus* = a joint); of cartilage covering the surface of bones at synovial joints.

**Asselli**, Gaspar. 1581-1626. Pavia anatomist, surgeon; discovered lacteals in 1622 during vivisection of a dog.

**astrocyte** G. *astron* = a constellation, a single star + *kytos* = hollow vessel (cell); star-shaped neuroglial cell.

**atavistic** L. *atavus* = great grandfather's grandfather, ancestor.

**atelectasis** G. *a* = without + *telos* = completion, end + *ektasis* = expansion; imperfect expansion, collapsed condition of lungs.

**atresia** G. *a* = without + *tresis* = perforation; refers to a congenital absence or closure of a normal opening.

**atretic follicle** an ovarian follicle that fails to mature and dies.

**atrophy** G. *a* = without + *trophe* = food; a wasting or reduction in organ size.

**Auerbach**, Leopold. 1828-1897. Breslau neuropathologist & anatomist; Auerbach's nerve plexus in external muscle layer of intestinal wall (1862).

**autolysis** G. *auto* = self + *lysis* = dissolution; self-digestion of cells, tissues.

**autonomic** G. " + *nomos* = law; self-controlling part of nervous system.

**Avicenna** 980-1073. Arabian physician; celebrated author whose book *Al-qanun fi 't-tibb (Canon medicinae)* was used in European universities until about 1650

**axis cylinder** neurite (q.v.) or axon (q.v.) of a nerve cell.

**axon** G. = axis; neurite or long process of a neurone, usually conducting efferent nerve signals from the cell body (soma) to the peripheral terminals of the cell; contains axoplasm.

**axon hillock** cone-shape region of the neuronal soma from which the axon arises.

**Azure** a commercial name for a type of blue dye.

**azurophilic** OF. *azur* = blue + G. *philein* = to love; refers to reddish-purple granules in some leucocytes when stained by Romanowsky method.

**bacterium (-ia)** G. *bakterion* = a rod.

**Baillarger**, Jules Gabriel François. 1806-1890. French neurologist; striae of Baillarger are two bands of fibres in grey matter of cerebral cortex running parallel to its surface; cf. Gennari.

**Barr**, Murray. 1908- ? Canadian anatomist; B. body = intranuclear satellite = sex-chromatin mass seen in a certain proportion of the cells of a female.

**Bartholin**, Thomas. 1616-1680. Danish mathematician and philosopher, doctor in Basel, anatomist at Copenhagen; discovered thoracic duct and lymphatic system in 1653; wrote a textbook of anatomy.

**Bartholin**, Casper. 1655-1738 (son of Thomas). Philosopher professor, then Deputy of Finances (civil service) in Copenhagen; Bartholin's mucous glands of vestibule and labia minora in female reproductive system (1677).

**basal body** G. *basis* = base; the root of a cilium.

**basal lamina** G. *basis* = base + L. *lamina* = thin plate; term for a layer seen in the electron microscope of thick glycocalyx at base of epithelial cells; a sublayer of the basement membrane.

**basement membrane** histological term for extracellular layer at base of epithelium, seen in the light microscope after use of certain dyes; includes basal lamina; constitutes the interface between epithelium and connective tissue.

**basilic** A. *al-basiliq* = vein on inner aspect of arm (G. *basilikos* = royal, hence prominent?); vein used for blood-letting.

**basket cell** a type of cell partially enclosing another like a basket; e.g., stellate myo-epithelial cells enclosing an acinus of a gland; cerebellar nerve cells whose branches form a basket around the Purkinje cells.

**basophil** type of leucocyte characterised by basophilic cytoplasmic granules.

**basophilic** G. *basis* = base + *philein* = to love; affinity for a basic dye, e.g. haematoxylin, gallocyanin, toluidine blue.

**Bellini**, Lorenzo. 1643-1704. Mathematician, anatomist at Pisa; terminal collecting tubules of B. in kidney (1662).

**Berengarius of Carpi**. 1470-1530. Anatomist at Bologna & Pavia; described pineal gland and sphenoidal air sinuses.

**Bernard**, Claude. 1813-1878. Sorbonne physiologist; suggested idea of internal secretions and established science of endocrinology; developed concept of constancy of internal environment of body (*milieu interne*).

**Bertin**, Exupère Joseph. 1712-1781. French anatomist; renal columns of Bertin; conchae of sphenoid bone.

**beta cell** basophilic cell of adenohypophysis; basophilic cell secreting insulin of pancreatic islets of Langerhans.

**Betz**, Vladimir Alexandrovich. 1834-1894. Kiev anatomist; Betz cells are large pyramidal cells in 5th layer of motor cortex (1874), giving rise to a small number of fibres in the pyramidal tract.

**Bichat**, Marie François Xavier. 1771-1802. Paris anatomist, a founder of histology; classification of 23 basic tissues; Bichat's tunica intima; B's internal elastic lamina; B's fat pad in cheek.

**bicornuate** L. *bis* = twice + *cornua* = horns; uterus with 2 horns found in many animals, and occasionally in woman.

**bicuspid** L. *bis* = twice + *cuspis* = a point; of lymphatic valves, mitral valve, premolar tooth.

**Bielschowsky**, Max. 1869-1940. Berlin neurologist; developed staining and silver impregnation techniques for histological study of nervous system.

**bifurcate** L. *bis* = twice + *furca* = fork; divide into two branches.

**bile** L. *bilus* = bile; cf. choledochus.

**Billroth**, C.A. Theodor. 1829-1894 Austrian surgeon; B.'s cords = the components of red pulp occurring between the venous sinuses of the spleen.

**bipolar cell** L. *bis* = twice + *polus* = pole; nerve cell with two processes, one being a neurite (q.v.) and the other, a dendrite (q.v.). NB. all sensory nerve cells of the embryo are initially bipolar, becoming pseudounipolar (q.v.) with growth, except for the vestibulocochlear ganglion cells.

**blastema** G. = a sprout; embryonic tissue giving rise to a particular structure; an anlage, q.v.

**body cavity** a coelom, q.v.

**body wall** the part of the body which surrounds a coelom, q.v.; paries, q.v.

**Boerhaave**, Hermann. 1668-1738. Leiden physician; sweat glands; wrote famous textbook *Istitutiones medicae* (1708).

**Botallo**, Leonardo. 1530-? Pavia anatomist, surgeon; duct of B. = ductus arteriosus.

**bouton terminal (boutons terminaux)** F. = terminal button or knob; bulb-like expansion at a synapse of the tip of an axon.

**Bowman**, William (Sir). 1816-1892. London physician, anatomist & ophthalmologist; B's capsule and B.'s space of renal corpuscle (1842); B's elastic membrane of anterior corneal epithelium (1847).

**brain sand** acervulus, q.v.; corpora arenaceum, q.v.; psammoma bodies, q.v.

**Broca**, Pierre Paul. 1824-1880. Paris surgeon, pathologist, anthropologist; B's convolution = area for motor speech is posterior part of inferior frontal gyrus of left hemisphere (1861).

**Brodmann**, Korbinian. 1868-1918. Armenian anatomist; described 52 allegedly discrete areas of human cerebral cortex by transferring results of studies in monkey brain to human.

**bronchiole** L. *bronchiolus* = small bronchus; air passage in lung.

**bronchus (-i)** G. *bronchos* = windpipe; later, branches of the trachea.

**Brown**, Robert. 1773-1858 British Museum botanist; described nucleus of plant cells; Brownian movement.

**Bruch**, Karl Wilhelm Ludwig. 1819-1884. Anatomist at Basle & Giessen; B's membrane = glassy basement membrane of the retinal (pigment) epithelium (1844); lymphatic follicles of palpebral conjunctiva.

**Brücke**, Ernst Wilhelm von. 1819- 1892 Vienna physiologist and microscopic anatomist; B.'s muscle = meridional fibres of ciliary muscle.

**Brunn**, Albert von. 1849-1895 German anatomist; B's membrane = the olfactory epithelium; B.'s cell nests = glandlike invaginations of epithelium forming cell masses, or cell pearls, in lower urinary tract.

**Brunner**, Johann Konrad. 1653-1727. Professor of Medicine at Heidelberg; B's glands = compound mucus-secreting glands of duodenal submucosa (1687).

**brush border** term of light microscopy for taller (coarser) microvilli, e.g., on kidney tubule cells; cf. striated border.

**buccal** L. *bucca* = cheek; related to cheek or mouth.

**buccinator** L. *buccina* = trumpet; muscle which prevents the vestibule of the mouth being distended in trumpet playing.

**buffer** Mid. Eng. *buffe* = to deaden the shock of; applied to a substance which when added to an acid or a base, preserves the hydrogen ion concentration.

**bulbar** L. *bulbus* = a swollen root; of eye-ball; of urethra; of olfactory tract; of aorta; of a hair; of embryonic heart.

**Burdach**, Karl Friedrich. 1776-1847. Anatomist at Dorpat, Königsberg & Breslau; B's column = cuneate fasciculus of spinal cord (1819).

**bursa (-ae)** L. from G. = a leather sac, a purse; a sac associated with tendons or muscles, containing synovial fluid.

**Cajal**, Santiago Ramon y. 1852-1934. Anatomist at Valencia, histologist at Madrid; shared Nobel Prize in 1906 with Golgi, q.v. for comprehensive work on the histology of the nervous system using the Golgi impregnation technique.

**calcification** L. *calx* = lime + *facere* = to make.

**calcitonin** calcium + L. *tonus* = a stretching, a strengthening; hormone of thyroid C-cells which elevates blood calcium levels.

**calculus (-i)** L. = a little stone, a pebble (dim. L. *calx* = stone); applied to stones that form in gall bladder, kidney, ureter, salivary glands, pancreas, etc.

**calix or calyx (-ices)** G. *kalyx* = cup; applied to any cup-shaped structure.

**calvaria** L. *calvus* = bald; the vault of the skull.

**Camper**, Petrus. 1722-1789 Professor of Medicine, Anatomy, Surgery & Botany in Gronningen; C.'s fascia = superficial layer of superficial fascia of skin of abdomen (1801).

**canaliculus (-i)** L. = a small channel (L. *canalis* = a channel, a water-pipe; dim.L. *canna* = a reed).

**cancellous** adj. L. *cancellus* = lattice; of spongy bone with numerous interconnecting cavities.

**canine** L. *canis* = dog; tooth shaped like dog's fang; a unicuspid tooth.

**canthus** G. *canthos* = metal rim on a wooden wheel; later, the rim of the eyelids; the angle at either end (i.e., nasal = inner, and temporal = outer) of the slit between the eyelids.

**capillary** L. *capillus* = hair (from L. *capitis pilus* = hair of the head); a very narrow ("hair-like") blood vessel.

**capillus** L. = a hair (of scalp).

**capsule** L. *capsula* = a little box (dim. L. *capsa* = a box, from L. *capio* = I receive).

**cardia** G. *kardia* = heart; adj. cardiac; as a noun, cardia = entrance to stomach.

**cardinal** adj. L. *cardo* = a hinge; on which something important hinges; cardinal veins of embryo; cf. duct of Cuvier.

**caries** L. = decay; gradual decay of a tooth or bone.

**carina** L. = a keel; last ring of trachea has a keel-like projection in the fork between the bronchi.

**carmine** a red dye.

**carneae** L. *carneus* = fleshy; trabeculae carneae, q.v.

**carotid** G. *karoëin* = to send to sleep, stupefy; compression of carotid arteries believed by Aristotle (c. 350 BC) to cause coma.

**cartilage** L. *cartilago* = gristle; adj. cartilaginous (Celsus, c. 10 AD).

**caruncle** L. *caruncula* = small fleshy mass (dim. L. *caro* = flesh); a small fleshy elevation of epithelium, e.g., lacrimal caruncle, q.v.; sublingual caruncle; urethral caruncle; accessory pancreatic caruncle of Santorini, q.v.

**caveola (-ae)** from L. *cavus* = a hollow; small, pinocytotic depressions in plasma membrane.

**cavernous** adj. L. *cavernosus* = containing hollow spaces.

**cell** L. *cella* = a small room.

**celloidin** synthetic embedding medium.

**cementum** L. = rough quarried stone; modified bone between dentine and periodontal ligament in the root of a tooth.

**central artery** a small artery (more often, an arteriole) in the white pulp of the spleen.

**central canal** a small canal in spinal cord filled with cerebrospinal fluid and lined by ependyma, q.v.

**central nervous system** brain and spinal cord; abb. CNS.

**central vein** smallest root of hepatic vein, located in centre of an hepatic lobule.

**centriole** G. *kentron* = a sharp point, centre + L. *-olus* = a diminutive ending; minute organelle at cell centre, involved in mitosis.

**centro-acinar cell** cell with pale-staining cytoplasm at start of an intercalated duct in the pancreatic acinus.

**centrosome** G. *kentron* = a sharp point, centre + *soma* = body; pair of centrioles in centre zone of a cell soma.

**cephalic** G. *kephale* = head, from A. *al-kifal*; of vein in arm from which blood-letting was thought to reduce headache.

**cerebellum** L. = little brain (dim. of L. *cerebrum* = brain); largest part of hind-brain.

**cerebral cortex** L. *cerebrum* = brain + *cortex* = rind; the grey matter of the forebrain.

**cerumen** L. *cera* = wax; sebaceous secretion of ear canal.

**cervix (-ices)** L. = the neck (of an organ); e.g., cervix uteri = neck of uterus.

**chelation** G. *chele* = a claw; binding of metal ions by heterocyclic ring compounds.

**chief cells** main cells; of the stomach, those producing pepsinogen, q.v.; of the parathyroid; those producing parathormone.

**cholecystokinin** G. *chole* = bile + *kystis* = bladder + *kinein*, = to move; gut hormone stimulating movement of bile from gall bladder, and exocrine pancreas activity.

**choledochus** G. *chole* = bile + *dochos* = receptacle; the bile duct (melancholy = black bile).

**chondroblast** G. *chondros* = cartilage + *blastos* = germ; immature cartilage cell.

**chondrocyte** G. " + *kytos* = hollow vessel, monk's cell; mature cartilage cell.

**chorion** G. = skin, leather; outer membrane of the conceptus, forming chorionic villi (Galen, c. 180 AD).

**choroid** or **choroidea** G. " + *-ooides* = similar to; skin-like; brown vascular part of eye coat (like a shell of a peeled grape); part of uvea, q.v.; Haller's layer.

**choroid plexus** G. " + L. *plexus* = woven; a network of blood vessels derived from pia mater and covered by ependymal cells, projecting into ventricles of brain (similar in appearance to the chorion).

**chromaffin** G. *chroma* = colour + L. *affinis* = with affinity for; stained with chromium salts; epinephrine-producing cells; para-aortic bodies of Zuckerkandl.

**chromatin** G. *chroma* = colour; material in cell nucleus staining strongly with basic dyes.

**chromatolysis** G. " + *lysis* = a lessening; loss of stainable Nissl substance in injured neuronal somas.

**chromatophore** G. " + *phorous* = bearing; pigment-containing cell.

**chromophil** G. " + *philein* = to love; cells or granules taking up dye readily.

**chromophobe** G. " + *phobos* = fear; cells or granules not taking up any dye readily.

**chromosome** G " + *soma* = body; an intensely staining, discrete linear body containing DNA, etc. in nucleus.

**chyle** G. *chylos* = juice; milk-like contents of lacteals and intestinal lymphatics.

**chylomicrons** G. " + *mikros* = small; small particles of fat in lacteals; visible in light microscope.

**chyme** G. *chymos* = juice.

**ciliary** adj. L. *ciliaris* = related to eyelash; also to bulbar ciliary body, q.v.

**ciliary body** thickened part of the uvea of the eye at the base of the iris, consisting of ciliary zonule and ciliary smooth muscle.

**ciliary zonule** the suspensory ligament of the lens consisting of multiple fibres extending from folds of ciliary body to capsule of lens; zonule of Zinn, q.v.

**cilium (-ia)** L. = eyelash; also hair-like projections on epithelial cells.

**circumvallate** adj. L. *circum* = around + *vallare* = to wall; of largest lingual papilla, surrounded by a moat-like depression.

**cisterna** (-ae) L. = a reservoir, dilated sac; e.g., cisternae of rough endoplasmic reticulum in muscle cells.

**Clarke**, Jacob Augustus Lockhart 1817-1880; London physician; C.'s column = nucleus dorsalis of grey matter of spinal cord (1851).

**Claudius**, Friedrich Matthias. 1822-1869. Kiel anatomist; cells of C. = sustentacular cells in organ of Corti, q.v.

**clavicle** L. *clavicula* = a little key, dim L. *clavis* = a key; from A. *alchiab* = collar bone (Avicenna, c. 980 AD) locking shoulder-girdle to body; Roman *clavis* was also an S-shaped metal bar used to strike a doorbell or gong.

**clearing** process of making tissues transparent through use of chemicals with similar refractive index as specimens.

**clitoris** G. *kleio* = I close; labia minora enclose clitoris; also G. *kleitorizein* = to tickle; G. *der Kitzler* = the tickler (clitoris).

**cochlea** L. from G. *kokhlos* = land-snail; cone of inner ear containing organ of Corti for hearing; described by Fallopius (1552).

**coeliac** (celiac) G. *koilia* = a belly; related to abdominal organs.

**coelom** G. *koilos* = a hollow, belly; an internal sac; the single coelom inside the embryo gives rise to the pleural, pericardial and peritoneal sacs of the body lined by mesothelium.

**Cohnheim**, Julius Friedrich. 1839-1884 German experimental pathologist; described amoeboid movement of leucocytes; C.'s fields or areas = polygonal mosaic-like groups of myofibrils seen in cross-section of a single skeletal muscle fibre; end artery (q.v.) of C.; also fetal cells, dormant, persisting in adult organs.

**collagen** G. *kolla* = glue + *gennan* = to produce; insoluble fibrous protein component of almost all connective tissue; boiling it yields gelatine, q.v.

**collateral** L. *con* = together + *lateralis* = of a side; accessory or accompanying branch of something; side branch of a neurite or axon; branch of a blood vessel.

**colloid** G. *kolla* = glue + *-oeides* = in form of; glutinous; of material in thyroid follicles, or in pars intermedia of hypophysis.

**colon** G. *kolon* = large intestine, possibly from G. *koilos* = empty (as is often state of colon on dissection).

**colostrum** L. = thin yellow secretion of mother's breast two to three days after childbirth; also L. for a term of endearment.

**Columbia jar** a small jar for staining sections, cf. Coplin jar.

**Columbus**, Realdus. 1516-1559 Italian anatomist; studied under Vesalius at Padua; professor in Rome; discovered pulmonary circulation; described role of lens correctly (previously lens was thought to function as the retina does).

**complement** L. *complere* = to complete; enzymatic proteins in serum combining with antigen-antibody complex.

**comitans** L. = accompanying; e.g., *venae comitantes* = two or more small veins which often accompany and artery.

**conarium** L. *conus* = a cone; the pineal body, q.v.

**concha** L. = shell (of an oyster); formerly, the pinna of the ear and external auditory meatus; the three small bony projections on the lateral wall of the nasal cavity.

**concretion** L. *concretus* = solid + *crescere* = to grow; a calculus.

**condenser** L. *con* = with + *densare* = to make thick; lens for focussing light on specimen in a microscope.

**cone** terminal part of the dendrite of a sensory neuron in the retina, responsible for perception of colours.

**conjunctiva** L. barbarism from *con* = with + *jungere* = to join; mucous membrane which joins together the eyelid (palpebral) and the eyeball (bulbar).

**Coplin jar** staining jar holding five standard slides.

**copula** L. = a link, from L. *copulare* = to copulate; median elevation in floor of embryonic pharynx uniting ventral ends of third pharyngeal arches, cf. His (the elder).

**corium** L. = leather, skin; the dermis, consisting of papillary & reticular components; tanning corium of animals yields leather.

**cornea** L. *corneus* = horn-like; outer layer of anterior segment of eyeball.

**corneum** L. " ; outer layer of epidermis is the *stratum corneum*.

**cornified** L. " ; conversion of squamous epithelial cells to horny material (see keratin).

**corona** L. = crown; coronal plane, a vertical plane dividing body into front and back (frontal plane).

**corona radiata** 1. = radiating fibres of the internal capsule of the brain; 2. = layer of cells of cumulus oophorus remaining attached to zona pellucida of ovum after ovulation.

**corpora quadrigemina** (cf. **corpus**) L. = the four-fold bodies (strictly, the eight-fold bodies, since L. *quadri-* = four + *geminus* = twin, double); four oval masses in roof of midbrain, the upper two (superior colliculi) being called the nates (= buttocks), the lower two (inferior colliculi), the testes.

**corpus (-ora)** L. = body.

**corpus albicans (corpora albicantia)** L. " + *albicans* = whitish; a degenerating corpus luteum in ovary.

**corpus amylaceum (corpora amylacea)** L. " + *amylum* = starch; starchy grains, or having the structure of starch grains with concentric layers; found in prostate gland (= prostatic concretions).

**corpus arenaceum (corpora arenacea)** L. " + *arena* = sandy (floor of an arena); a particle of brain sand.

**corpus cavernosum (corpora cavernosa)** L. " + *caverna* = a hollow; penis has two similar erectile structures, and a third corpus spongiosum, q.v.

**corpus luteum** L. " + *luteum* = yellow; major endocrine organ which is the remains of ovarian follicle after ovulation; yellow in ovary of cow where de Graaf (q.v.) first saw it.

**corpus spongiosum** L. " + *spongiosa* = spongy; erectile tissue surrounding urethra.

**corpuscle** L. *corpusculum* = little body (dim. of L. corpus).

**cortex (-ices)** L. = rind, or bark; outer layer of an organ.

**Corti**, Alfonso (Marquis). 1822-1888 Italian, anatomist with no academic post in Germany, Hyrtl's prosector in Vienna; retired to become a viticulturalist in Casteggio; organ of C. = spiral organ for sensory transduction in cochlea (1851); membrane of C. = tectorial membrane, q.v.

**coverglass** or **coverslip** thin disc or rectangle of glass to cover histological preparation for light microscopy (e.g., Grade 1\_ is 0.16 - 0.19 mm thick).

**Cowper**, William. 1666-1709 London surgeon and anatomist. C.'s glands = bulbo-urethral glands (1697).

**cremaster muscle** G. *kremaster* = a suspender, a hamock; the muscles by which the testis is suspended (Galen, 180).

**crenated** adj. L. *crenatus* = notched or scalloped; of appearance of a red blood cell in a hypertonic solution.

**cribriform** L. *cribrum* = sieve + *forma* = form; c. plate of ethmoid bone; c. fascia; area cribrosa of renal papilla.

**crista ampullaris** L. = crest + *ampulla* = little jar; sensory component of semicircular canal.

**cryostat** G. *kryos* = cold + *statikos* = in equilibrium; refrigerated device to maintain constant temperature, often with a cryotome inside for cutting frozen sections.

**cryotome** G. " + *tome* = a cutting; a microtome in a cryostat.

**crypt** G. *kryptos* = hidden.

**cumulus oophorus** L. *cumulus* = a little mound + G. *oon* = egg + *phorus* = bearing; part of the wall of an ovarian follicle surrounding and carrying the ovum.

**cupula** L. = a little tub (or upside down, a little dome; dim L. *cupa* = cup); gelatinous mass forming cap over crista ampullaris; a dome at apex of cochlea duct.

**cutaneous** from L. *cutis* = skin.

**cuticle** L. *cuticula* = a little skin (dim. of L. *cutis*); e.g., of a nail, of a tooth, of a hair, capsule of lens of eye.

**cutis** L. = skin; cutis anserina (L. *anserinus* = of a goose) = "goose-flesh".

**Cuvier**, Georges Léopold Chrétien Frédéric Dagobert (Baron de la). 1769-1832 famous French naturalist; President of Council of State; duct of C. = common cardinal vein from union of inferior and superior cardinal veins in embryo (1805).

**cyst** G. *kystis* = bladder, sac; hence, cystic duct = duct of gall bladder.

**cytochemistry** G. *kytos* = hollow vessel (cell) + *chemeia* = chemistry; application of specific chemical reagents to a histological section, or to a cell smear, or to an ultrathin section (requiring electron microscopy), to reveal the cytoplasmic location (topography) of natural substances; cf. histochemistry.

**cytology** G. " + *logos* = study; study of cells and their organelles, usually with electron microscope.

**cytoplasm** G. *kytos* = hollow vessel (cell) + *plasma* = a formed substance; main component of cell other than nucleus & plasma membrane.

**cytotrophoblast** G. " + *trophe* = nourishment + *blastos* = germ; inner layer of embryonic trophoblast (Langhan's layer).

**dartos** G. = skinned, flayed; a tunica surrounding the testes (Rufus, c. 100 AD).

**Darwin**, Charles Robert. 1809-1882 Famous English naturalist; D.'s theory of evolution; D.'s ear = congenital deformity of ear; D.'s tubercle = small projection from upper part of helix (first noticed by Thomas Woolner, sculptor, 1825-1892).

**Deaver**, John. 1855-1931 American surgeon; D.'s windows = fat-free portions of mesentery framed by vascular arcades adjacent to the attached margin of the intestine.

**decidua basalis** L. *deciduus* = falling off, from L. *decidere* = to fall off; that part of the endometrium invaded by the chorionic villi; unites with the chorion to form the placenta.

**deciduous** adj. L. " ; d. teeth = milk or primary teeth.

**deferens** L. = carrying away or down; cf. ductus deferens.

**dehiscence** L. *dihiscere* = to gape (open); a bursting open, as of a Graafian follicle, a surgical wound, a dying mast cell as it loses its granules.

**Deiters**, Otto Friedrich Karl. 1834-1863 Bonn anatomist & histologist; D.'s cells = phalangeal cells = outer sustentacular cells in organ of Corti (1860); D.'s nucleus = lateral vestibular nucleus.

**demilune** L. *dimidius* = half + *luna* = moon; crescent-shaped cap of serous cells over mucous alveolus in some salivary glands.

**dendraxon** G. *dendron* = a tree + axon, q.v., obsolete term for the terminal part of an axon; see telodendron.

**dendrite** G. *dendron* = a tree; a structure with a tree-like pattern; centripetal (= afferent conducting) process of a nerve cell soma.

**dendritic spines** gemmules, q.v.

**dens** L. = a tooth; hence dentate = toothed, with a serrated outline; denticulate ligament of spinal canal.

**dentine** L. *dens* = a tooth; apatite (calcified tissue) of a tooth surrounding the pulp cavity, and covered by enamel.

**dermis** G. *derma* = skin; connective tissue bed for the epidermis; corium, q.v.

**dermatoglyphics** G. " + *glypho* = I carve; the impression left by moist sweat gland secretions on the epidermal ridges of fingers, toes, etc., which impression can be later revealed by finger-printing methods.

**Descemet**, Jean. 1732-1810 Paris anatomist, surgeon & botanist; D.'s membrane = basement membrane of corneal (posterior) endothelium (1758).



**desmosome** G. *desmos* = a bond, anchor rope + *soma* = body; intercellular bridge; patch component (i.e., macula adherens) of terminal bar.

**desquamation** shedding of squames, or shedding of cells from any epithelium.

**detrusor** L. *detrudo* = I thrust away; of the smooth muscle of wall of urinary bladder effecting micturition.

**diapedesis** G. *dia* = through + *pedan* = to leap; normal passage of red or white blood cells across an endothelium of a capillary.

**diaphysis** G. *dia* = apart + *physis* = growth; a gap between teeth; point of branching of a plant; shaft or mid-region of long bone between the growing ends.

**diarthrosis** G. *dia* = throughout + *arthron* = a joint; a perfect joint; a completely movable joint (Galen).

**differentiation** 1. embryological process by which different tissues and organs arise in ontogeny; 2. histological process of distinguishing different tissual components.

**diploid** G. *diplo* = to repeat (a process); having a (normal) double set of chromosomes = twice the haploid number (all somatic cells are diploid).

**Disse, Joseph.** German anatomist 1852-1912; space of D. in liver, between sinusoidal endothelium and hepatocytes (perisinusoidal space).

**distal** L. *distare* = to stand apart; away from the centre; opposite to proximal, q.v.

**diverticulum** (-a) L. = a by-road, from L. *devertere* = to turn aside; a blind-ended sac or pouch in wall of an organ.

**Dobbie, William Murray.** 1828-1915 English physician; D.'s line = Z-band of a striated muscle.

**Dogiel, Alexander Stanislavovic.** 1852-1922 Russian neurologist & histologist; D.'s corpuscle = encapsulated sensory ending.

**DPX** a 1939 synthetic mounting medium of distrene, plasticizer and xylene.

**ductule** L. *ductulus* = a little duct (dim. L. *ductus*); bile ductules; efferent ductules; prostatic ductules.

**ductus (-us)** L. = passage from L. *ducere* = to lead; tube lined by epithelium for exocrine glandular secretions to reach surface.

**ductus arteriosus** L = arterial duct; a fetal vessel connecting left pulmonary artery with descending aorta; Botallo's duct; Arantius's duct.

**ductus cochlearis** L. = cochlear duct; scala media of membranous labyrinth.

**ductus epididymidis** L. duct of the epididymis; the duct is the main component of the epididymis, q.v.

**ductus deferens** L. = the duct carrying down (sperm to be ejaculated); secretory duct running from the epididymis to the prostatic urethra (actually carries sperm upwards!); the vas deferens.

**ductus venosus** L. = venous duct; the continuation of the fetal umbilical vein through the liver to the inferior vena cava.

**duodenum** L. *duodenarius* = containing twelve; first part of small intestine, 12 finger-widths long.

**dura mater** L. *durus* = hard + *mater* = mother, i.e., a protector; tough, collagenous membrane enveloping spinal cord & brain.

**Ebner, Victor (Ritter von Rosenstein).** 1842-1925 Innsbruck & Vienna histologist; E.'s glands = serous lingual glands; E.'s lines = fibrils in dentine and cementum of teeth; E.'s reticulum = network of cells in seminiferous tubules.

**eccentric** G. *ek* = out(side) + *kentron* = centre.

**eccrine** G. " + *krinein* = to separate; of sweat secretion, or of sweat glands.

**ectoderm** G. *ek* = outside + *derma* = skin; outer cell layer of embryo giving rise to CNS, skin, glands, etc.

**ectopic** G. *ek* = out + *topos* = placed; displaced; in an abnormal position; opposite to entopic.

**ectoplasm** G *ektos* = outside + *plasma* = a thing formed; outermost layer of cytoplasm.

**Edinger, Ludwig.** 1855-1918 Frankfurt-am-Main anatomist & neurologist; skilled violinist; bequeathed his own brain for study; nucleus of Edinger-Westphal = oculomotor nucleus (1885); cf. Westphal.

**efferent** L. *ex* = away + *ferre* = to carry; centrifugal; e.g., motor nerves are efferent with respect to central nervous system; efferent arteriole of renal glomerulus; opposite to afferent, q.v.

**effete** worn out.

**Ehrlich, Paul.** 1854-1915 German pathologist & bacteriologist; named mast cells, q.v.; E.'s haematoxylin.

**elastin** G. *elastikos* = impulsive (as in elastic recoil); protein component of yellow fibres of elastic tissue.

**electron-dense** appearing dark in electron microscope; scatters electrons.

**electron-lucent** appearing light in electron microscope; transmits electrons; opposite to electron-dense.

**eleidin** G. *elaia* = oil; acidophilic substance in oily granules in cells of stratum lucidum of epidermis.

**embolus** G. *embolos* = wedge, something inserted; something blocking the lumen of a blood vessel.

**embryo** G. *embryon* = fruit of womb before birth, from *bryein* = to grow, swell out.

**emphysema** G. *emphysan* = to inflate; pathological distension of tissues by gas.

**en bloc** F. = in the block; of dyeing tissues in the block before sectioning the block in a microtome.

**en face** F. = face on; e.g. an aerial view of a surface.

**enamel** OF. *esmail* = enamel, from L. *smatto* = I smelt; hard prismatic white substance covering crown of tooth, like the enamel fused to surface of objects.

**enarthrosis** G. *en* = in + *arthron* = a joint; a ball-and-socket joint.

**encephalon** G. *enkephalos* = brain, from *en* = in + *kephalos* = head.

**end artery** a small artery that ends in branches which do not have sufficient anastomoses other arteries to keep the organ alive if the end artery is occluded, e.g., artery to the vermiform appendix (Cohnheim, c. 1860).

**end-bulb** the sensory corpuscle at the peripheral end of a sensory nerve, e.g., end-bulb of Krause.

**endo- or ento-** G. *endon* = within.

**endocardium** G. " + *kardia* = heart; the tunica intima of the heart.

**endochondral** G. " + *chondros* = cartilage; of ossification taking place in a cartilage model.

**endocrine** G. " + *krinein* = to separate; formation of internal secretions (= hormones) with release into blood or lymph stream.

**endoderm or entoderm** G. " + *derma* = skin; inner cell layer of embryo giving rise to digestive system, glands, liver, part of urinary system, etc; also called entoderm.

**endolymph** G. " + L. *lympa* = clear fluid, water; fluid inside the membranous labyrinth of the inner ear.

**endometrium** G. " + *metra* = womb; mucosal lining of uterus.

**endomysium** G. " + *mys* = muscle; fine connective tissue supporting single muscle cells within a muscle fascicle.

**endoneurium** G. " + *neuron* = sinew (nerve); delicate connective tissue supporting individual nerve fibres within a peripheral nerve fascicle.

**endoplasm** G. " + *plasma* = a thing formed; central, more fluid part of cytoplasm.

**endoplasmic reticulum** G. " + *plasma* = a thing formed + *reticulum* = a small net (-work), diminutive of L. *rete*, q.v.; a connecting network of membranous channels and sacs in cytoplasm; of two types: rough e.r. with many ribosomes on surface, and smooth e.r., without ribosomes; cf. ergastoplasm.

**endosteum** G. " + *osteon* = bone; vascular membrane and osteoblasts lining medullary cavity of a bone.

**endotendineum** G. " L. *tendo* = sinew; connective tissue within a sinew (also endotenon).

**endothelium** G. " + *thele* = nipple; the special name for epithelium (q.v.) lining blood and lymph vessels.

**enteroendocrine** G. *enteron* = intestine + *endon* = within + *krinein* = to separate.

**entoderm** G. *entos* = within + *derma* = skin; see endoderm.

**enzyme** G. *en* = in + *zyme* = leaven (an early use of biotechnology!).

**Eosin** G. *eos* = dawn, rose-coloured; an acidic dye staining the basic cytoplasmic proteins pink.

**eosinophil** G. " + *philein* = to love; a type of blood cell with distinct cytoplasmic granules which stain pink with eosin.

**eosinophilic** having an affinity for eosin dye.

**ependyma** G. *epi* = upon + *endyma* = a garment, an upper garment, a wrap; a vest or singlet, hence an inner garment; cellular layer lining cerebral ventricles and central canal of spinal cord.

**epi-** G. = upon, on.

**epicardium** G. " + *kardia* = heart; outer layer of heart, including connective tissue (i.e., its tunica adventitia) and mesothelium of the serous visceral pericardium.

**epidermis** G. " + *derma* = skin; superficial layer of skin.

**epididymis (-dymides)** G. " + *didymos* = twofold, double, testis; hence an organ on the posterosuperior aspect of the duplicated organ, the testis, with a duct through which spermatozoa pass; cf. ductus epididymidis.

**epidural space** space external to the dura mater in the spinal cord.

**epiglottis** G. " + *glottis* = throat, larynx; leaf-shaped structure of the upper part of larynx at root of tongue.

**epimysium** G. " + *mys* = muscle; loose connective tissue investing several muscle fascicles = muscle fascia, q.v.

**epineurium** G. " + *neuron* = sinew; loose connective tissue investing several nerve fascicles.

**epiphysis (-ses)** G. *epi* = upon + *physis* = a growth; extremities of long bones, covering the actual sites of growth (= metaphysis); also *epiphysis cerebri* = pineal gland.

**epiploic** G. *epiploon* = a net; relating to greater omentum, resembling a net with adipose tissue deposits (Galen, c. 180 AD).

**epithelioid cells** G. *-oeides* = like; cells that appear like those of an epithelium but are not, e.g., lymphocytes around the germinal centre of an active lymphatic follicle; juxtaglomerular cells of an afferent arteriole in the kidney.

**epithelium (-ia)** G. *epi* = upon + *thele* = nipple, ridge of the lip; cells that cover the ridges of the lip (Ruysch, c. 1700); cells covering organs and structures, or lining spaces, tubes (Henle, c. 1870); many epithelia separate the inside the body from the outside world and its inward extensions.

**eponychium** G. " + *onyx* = nail; horny structure (i.e., stratum corneum) of skin fold covering root of a nail; cuticle of a nail.

**epoöphoron** G. " + *oöphoron* = ovary; minute tubules in mesosalpinx derived from upper part of embryonic mesonephros.

**ergastoplasm** G. *ergon* = work + *plasma* = a thing formed; cytoplasmic ribonucleic acid as a site of protein synthesis; synonym for rough endoplasmic reticulum.

**erythroblast** G. *erythros* = red + *blastos* = germ; early stage in development of an erythrocyte.

**erythrocyte** G. " + *kytos* = hollow vessel; red blood cell (without a nucleus).

**erythropoiesis** G. " + *poiesis* = making; process of erythrocyte production in bone marrow, liver, etc.

**euchromatin** G. *eus* = good + *chroma* = colour; chromatin rich in nucleic acid.

**Eustachio**, Bartolomeo. ?1513,1524-1574 Rome anatomist & physician to Pope; studied teeth; described thoracic duct (*vena alba magna*), cochlea, larynx; Eustachian tube = the cartilaginous part of auditory tube (1562).

**evagination** L. *evaginare* = to unsheath; protrusion of an organ or a surface.

**exocrine** G. *exo* = outside + *krinein* = to separate; of glands retaining connection with epithelial surface (opposite to endocrine).

**extrafusal** L. *extra* = out + *fusus* = a spindle; of normal skeletal muscle fibres other than the intrafusal (q.v.) fibres of the muscle spindle.

**extravasation** L. *extra* = out + *vas* = vessel; leakage, e.g., of urine from urinary tract.

**exudate** L. *ex* = out + *sudare* = to sweat.

**Fabricius** of Aquapendente, Hieronymus. ?1533,1537-1619 Studied under Fallopius; Padua anatomist; taught William Harvey; described valves in veins; bursa of F. = peritoneal blind pouch near anus in birds, producing lymphocytes.

**facet** F. *facette* = a face.

**Fallopius**, Gabriele. 1523-1563 Ferrara, Pisa & Padua anatomist & botanist; described accurately the inner ear, ethmoid bone, lacrimal duct, vagina, placenta; disproved earlier notion that ovarian ligaments conducted ovum to uterus; Fallopian tube = uterine tube (1561).

**fascia (-ae)** L. = a band, bandage; fibrous membrane covering and supporting muscles, cf. epimysium; hypodermis.

**fascia adherens** L. " + *adhaerere* = to stick to; most prominent component of the intercalated disc joining two cardiac muscle cells; resembles zonula adherens of epithelium.

**fascicle** L. *fasciculus* = a little bundle, dim L. *facis* (*fascies* was a symbolic bundle of rod with an axe in the middle); e.g., a bundle of nerve fibres, of muscle fibres.

**fasciculata** adj. L. " ; e.g., *zona fasciculata* = middle zone in adrenal cortex where cells are arranged in columns.

**Fast green** a synthetic dye resistant to fading used in histology & cytology.

**fenestrated** adj. L. *fenestra* = window; 1. of an aperture in a cell membrane (e.g., in a capillary endothelial cell) often closed by a membrane; 2. of an aperture in an elastic sheet in tunica media of an artery.

**Ferrein**, Antoine. 1692-1769 Paris surgeon & physician. F.'s processes = medullary rays of kidney.

**fibre** L. *fibra* = fibre (Vesalius, c. 1550); original meaning was a lobe, e.g., of lung, liver, or bowels examined for prophesies.

**fibril** L. *fibrilla* = a small fibre (from L. *fibra* = fibre); subunit of a fibre, i.e., many fibrils bundle together to form a fibre; cf. microfibril.

**fibroblast** L. *fibra* = fibre + G. *blastos* = germ; young flat, elongated cell forming collagen.

**fibrocartilage** L. " + *cartilago* = gristle; a type of cartilage with many collagen fibres.

**fibrocyte** L. " + *kytos* = a vessel; mature form of the fibroblast, especially in tendon.

**field of view** the circular field seen when looking into an optical device.

**filiform** L. *filum* = a thread + *forma* = form; hair-like, of thread of keratin emerging from the apex of a filiform lingual papilla.

**fimbria** L. = a fringe; e.g., fimbria at ovarian end of uterine tube; fimbria of 3rd ventricle of brain.

**flavum** L. *flavus* = yellow (often due to presence of large amount of elastic tissue); ligamentum flavum of vertebral column.

**Flechsig**, Paul Emil. 1847-1929 Leipzig psychiatrist; named pyramidal tract; nucleus of F. = superior vestibular nucleus; fasciculus of F. = fasciculus lateralis proprius of spinal cord; F.'s law of myelination.

**flocculus** L. = a little tuft, dim. L. *floccus*; small lobe beneath each cerebellar hemisphere.

**folium** (-ia) L. = a leaf; 1. folds of cerebellar cortex; 2. leaf-like foliate papillae of tongue.

**follicle** L. *folliculus* = little bag (dim. of L. *follis*).

**Fontana**, Abbada Felice ?1720,1730-1805. Pisa philosopher; Director, Florence Museum of Natural Science; F.'s spirals = spiral pattern of nerves in a peripheral nerve fascicle; spaces of F. = spaces in the pectinate ligament of the iridocorneal angle of the iris through which the aqueous humour flows into the scleral venous canal (of Schlemm).

**formalin** fixative; aqueous solution of 37% formaldehyde, possibly with trace amounts of methanol.

**fornix (-ices)** L. = a cellar, a vault, the arch of a vault, a prostitute's cellar or brothel (hence fornication); conjunctival fornix = recess where palpebral conjunctiva joins to bulbar conjunctiva; vaginal fornices = vaults surrounding intravaginal part of cervix; fornix of the brain = arched bundle of fibres.

**fossa (-ae)** L. = a trench or ditch; axillary fossa = armpit; fossa ovalis = opening in thigh through which saphenous vein passes; fossa ovalis cordis = remnant of embryonic foramen ovale in heart; navicular fossa, q.v.

**fourchette** F. = fork; fold of mucous membrane at junction of posterior parts of labia majora.

**fovea** L. = a pit or depression.

**fovea centralis** L. = central depression; pit in retina which is site of maximum acuity.

**foveola (-ae)** L. = a little pit (dim. of L. *fovea*).

**foveola gastrica** L. = a little pit of the stomach; a gastric pit = a groove into which several gastric glands drain.

**frenulum** L. = a small bridle, dim L. *frenum*; frenulum linguae (when short - "tongue-tied").

**fundus** L. = bottom, base (as in fundamental); refers to region of organ (e.g., stomach, uterus, eye), gland (e.g., gastric glands).

**fungiform** L. *fungus* = mushroom + *forma* = a shape; of lingual papillae.

**funiculus (-i)** L. = a little cord (dim. L. *funis* = cord); a cordlike structure composed of longitudinally oriented fibres, vessels, etc., e.g., funiculi of white matter of spinal cord; funiculus spermaticus = spermatic cord; funiculus umbilicus = umbilical cord

**fusiform** L. *fusus* = spindle + *forma* = shape; see extrafusil/intrafusil.

**Galen**, Claudius? Clarissimus. ?129,130-200,201 AD Rome physician to Marcus Aurelius; famous early anatomist (however many statements based on animal dissections); great cerebral vein of Galen; collected medical works of Galen.

**Gallocyanin** a purple synthetic basic dye used to staining nuclei acids.

**gamete** G. = a wife, from *gamein* = to marry; a mature male germ cell (spermatozoon) or female germ cell (ovum); their union produces a zygote, q.v.

**ganglion (-a, -ions)** G. = knot, swelling; an accumulation of nerve cell somas outside the central nervous system; also applied to cells forming optic nerve axons within the central nervous system; also small synovial swelling under skin.

**gap junction** intercellular junction for communication between cells (see nexus).

**Gärtner**, Hermann Treschow. 1785-1827 Copenhagen physician & anatomist; G.'s duct = longitudinal duct of epoöphoron (q.v) = remains of mesonephric duct.

**Gasser**, Johann Ludwig. 1757-1765 Vienna anatomist; Gasserian ganglion = semilunar ganglion of trigeminal nerve (actually described by a student of Gasser, Raimund Hirsch, 1765).

**gastric** adj. L. *gastricus*, from G. *gaster* = stomach, belly; relating to the stomach.

**gastric pit** foveola gastrica, q.v.

**gelatine** L. = protein derived by hydrolysis (boiling) of collagen present in skin, bone and joints.

**gemmules** L. *gemmula* = a little bud; minute processes on dendrites of a neuron.

**genital** adj. L. *genitalis* = of birth.

**Gennari**, Francesco 1750-? Parma anatomist; stria of G. = the distinct outer stria of Baillarger (q.v.) in the visual part of the cerebral cortex (1782); hence striate cortex, q.v.

**Gerlach**, Joseph von. 1820-1896 Erlangen anatomist; invented method of injecting cadavers with carmine & gelatine; G.'s tonsil = tubal tonsil; G.'s valve = a fold of mucosa sometimes seen at entrance to vermiform appendix; G.'s valvulae = trabecular meshwork of pectinate ligament.

**germinal** L. *germen* = an offshoot; germinal epithelium of ovary (but not a source of germ cells!).

**germinativum** L. *germinare* = to sprout; deepest layer or stratum of epidermis = Malpighian layer.

**Gerota**, Dumitru. 1867-1939 Roumanian anatomist; G.'s fascia = perirenal fascia.

**gingiva (-ae)** L. = the gum.

**Giraldès**, Joachim Albin Cardozo Cazado. 1808-1875 Paris surgeon from Portugal; died of a wound acquired during an autopsy; organ of G. (1859) = paradidymis, q.v.

**glabella** L. *glaber* = smooth; space between eyebrows, often devoid of hair.

**glabrous** adj. L. *glaber* = smooth; of non-hairy skin.

**gland** L. *glandula*, dim of L. *glans* = an acorn, a pellet; term used to describe mesenteric lymph nodes (Herophilus, c. 300 BC).

**glia** G. *glōia* = glue; neuroglia is the non-nervous supporting tissue of central nervous system; gliosis = hyperplasia of astrocytes, q.v.

**Glisson**, Francis. 1597-1677 Cambridge classicist & physician; described bile duct and its sphincter (cf. Oddi); G.'s capsule = fibrous capsule of liver.

**glomerulosa** adj. L. = like a little ball; e.g., *zona glomerulosa* = superficial zone in adrenal cortex where cells are arranged in small clusters.

**glomerulus (-i)** L. = a little ball, dim. of L. *glomus* (from L. *glomerare* = to roll up, as in conglomerate); renal glomerulus = a cluster of capillaries in kidney cortex = Malpighian corpuscles; olfactory glomerulus = a ball of nerve cells and fibres in the olfactory bulb, where primary olfactory fibres synapse with mitral cells, q.v.

**glomus (-mera)** L. = a ball; cluster or conglomeration of small arteries or arterioles and nerve fibres, e.g., carotid glomus, at bifurcation of common carotid; choroidal glomus, at site where choroid plexus enters inferior horn of lateral ventricle; coccygeal glomus (or body) = glomus coccyxgeum, associated with median sacral artery at coccyx, cf. glands of Luschka.

**glottis** G. = larynx; now the space between the vocal cords.

**glycan** G. *glykos* = sweet.

**glycocalyx** G. " + *kalyx* = cup; layer like a husk rich in carbohydrates outside cell plasma membrane.

**glycogen** G. " + *gennan* = to produce; a polysaccharide ("animal starch") in liver, muscle, etc. yielding glucose on hydrolysis.

**glycosaminoglycan** (abb. GAG) chemical constituent of glycocalyx.

**Goethe**, Johann Wolfgang von. 1749-1832 German poet & scientist; G.'s bone = premaxilla; G.'s theory of vertebral origin of skull; G.'s theory of colour.

**Golgi**, Camillo. 1844-1926. Italian histologist; shared Nobel prize in 1906 with Cajal, q.v.; Golgi apparatus (or G. complex) = an organelle consisting of a system of cytoplasmic membranes; G. technique = a histological staining technique for impregnation of single neurons (cf. Cajal); G. cells of nervous system; G. corpuscle = a sensory receptor in tendon, tendon; axon collaterals of G; Golgi-Mazzoni corpuscles = corpuscular nerve endings.

**Goll**, Friedrich. 1829-1903 Zurich pharmacologist; column of G. = funiculus gracilis of spinal cord (1860).

**Gomori**, George. American histochemist 1904- ; trichrome and histochemical stains.

**gomphosis** G. *gomphos* = wedge-shaped nail or bolt used in ship-building; a peg-in-socket joint (Galen, c. 180 AD); junction of tooth in alveolar socket.

**gonad** G. *gone* = seed; organs containing germ cells, i.e., ovary and testis.

**Gowers**, William Richard (Sir). 1845-1915 London physician & neurologist; tract of G. = superficial anterolateral fasciculus of spinal cord = anterolateral spinocerebellar tract.

**Graaf**, Regnier de. 1641-1673 Delft physician, anatomist; contemporary of Swammerdam & Leewenhoek; described corpus luteum; Graafian follicle = a mature ovarian follicle (1672).

**granulosa** L. *granulum* = little grain; cells around ovarian oocyte.

**granulosum** L. " ; referring to granule-containing cells in epidermis.

**gray matter** parts of central nervous system where there are relatively fewer myelinated fibres; central part of spinal cord; cortex of cerebrum and cerebellum; cf. white matter.

**ground substance** colloidal material, with variable viscosity, of the intercellular spaces of connective tissue; usually homogeneous and scarcely stainable.

**Guérin**, Alphonse F.M. 1816-1895 French surgeon; G.'s valve = fold of mucous membrane in navicular fossa of urethra.

**gyrus** G. *gyros* = circle, arc; one of the coils or convolutions of cerebral cortex, separated by sulci or fissures.

**H-band** abb. of **Hell-band** Ge. *hell* = light + band; also Henle's band; light band within A-band of the myofibril.

**haematocrit** G. *haima* = blood + *krinein* = to separate; the proportion by volume of erythrocytes (packed by centrifugation of a thin tube containing blood).

**Haematoxylin** a basic dye from a South American tree; its oxidation product haematein is used with mordants for histological staining of nucleic acids.

**haemopoiesis** G. *haima* = blood + *poiein* = to make; production of the cellular elements of blood, in bone marrow, etc. (also haematopoiesis).

**Haller**, Albrecht von. 1708-1777 Göttingen anatomist, surgeon & botanist; eminent scientist & poet; dissected over 400 cadavers and wrote extensive anatomical bibliography; ductulus aberrans of H. = a diverticulum of the canal of the ductus epididymidis; H.'s layer = vascular lamina of the choroid, q.v.; H.'s rete = rete testis.

**haploid** G. *haplos* = plain, simple; having the simplest (i.e., single) set of self-contained chromosomes in germ cells; cf. diploid.

**Hartmann**, Robert. 1831-1893 German anatomist; H.'s pouch = outpouching of gall bladder near its junction with cystic duct.

**Hassall**, Arthur Hill. 1817-1894 London chemist, botanist & physician; H.'s corpuscles = concentrically laminated corpuscles of thymus (1846).

**haustum (-a)** L. *haurire* = to draw water in a bucket; sacculated pouches of colon.

**Havers**, Clopton. ?1655,1657-1702 London physician & anatomist; Haversian canals = minute vascular canals in compact bone (1691); Haversian glands = pads, folds or fringes containing fat in a synovial membrane (1691); Haversian lamellae = bony lamellae in an osteon (1691); Haversian system = an osteon (1691), q.v.; cf. Leeuwenhoek's canals.

**Heidenhain**, Martin. 1864-1949 Tübingen pathologist & histologist; H.'s azan = a histological dye; H.'s crescent cells = serous demilunes.

**Heidenhain**, Rudolph Peter Heinrich. 1834-1897 Breslau physiologist & histologist; described gastric parietal cells.

**Heister**, Lorenz. 1638-1758 Altdorf anatomist, surgeon & botanist; Helmstädt surgeon & botanist; H.'s valve = spiral folds of cystic duct.

**helicine** adj. G. *helix* = coil, snail; e.g. helicine arteries of ovarian medulla, penis, etc.

**helicotrema** G. " + *trema* = a hole; union of scala tympani and scala vestibuli at apex of cochlear canal.

**hemidesmosome** G. *hemi* = half + *desmosome*; found in cells of basal stratum of stratified epithelia.

**Henle**, Freidrich Gustav Jacob. 1809-1885 Zurich, Heidelberg & Göttingen anatomist; loop of H. = ansa nephronis (q.v.) of renal tubule (1866); endoneurium; H.'s layer = outer layer of cells of inner root sheath of hair follicle.

**Hensen**, Victor. 1835-1924 Kiel physiologist & embryologist; H.'s duct = ductus reuniens of membranous labyrinth; H.'s knot (or node) of embryonic disc; H.'s line = light band in middle of dark band of sarcomere = H-band, q.v.

**hepatocyte** G. *hepar* = liver + *kytos* = hollow vessel; liver parenchymal cell.

**Herring**, Percy T. 1872-1967 St. Andrews physiologist; H. bodies = axonal varicosities containing granules of neurophysins (q.v.) in pars nervosa of hypophysis.

**heterochromatin** G. *heteros* = other + *chromatin*; other than euchromatin.

**Highmore**, Nathaniel. 1613-1685 Dorsetshire physician; body of Highmore = mediastinum testis (1651).

**hilum** or **hilus (-a)** L. = a trifle; depression in a seed; a depression at vascular entrance/exit of a gland or organ.

**hircus (-ci)** L. = a he-goat; hair of arm-pits which had a goat-like smell; tragus of pinna with its tuft of goat's-beard-like hairs.

**His**, Wilhelm (the elder). 1831-1904 Basle, Leipzig anatomist; copula of H. = bond joining ventral ends of third pharyngeal arches in embryo (1880).

**His**, Wilhelm (the younger). 1863-1934 Leipzig, Basle, Göttingen & Berlin anatomist; bundle of H. = atrioventricular bundle of conducting tissue in heart (1893).

**histiocyte** a macrophage, q.v.

**histochemistry** G. *histos* = web, tissue + *chemeia* = chemistry; application of specific chemical reagents to a histological section to reveal the location (topography) of natural substances within the various tissues of the section; cf. cytochemistry.

**histology** G. *histos* = web, woven material, sail of a ship + *logos* = knowledge, study; microscopic anatomy, as opposed to macroscopic anatomy.

**Hoboken**, Nicolas van. 1632-1678 Harderwyck anatomist; valves of H. = internal valve-like folds of umbilical vessels.

**holocrine** G. *holos* = entire + *krinein* = to separate; a type of secretion where entire cell forms the secretory product, as in sebaceous glands.

**Hooke**, Robert. 1635-1703 English scientist; skilled in use of compound microscope; described cells in cork.

**Howship** John, 1781-1841, English surgeon; H.'s lacunae or foveolae= small depressions in bone where resorption of bone by osteoclasts takes place.

**humour** L. *umor* = a fluid; aqueous humour and vitreous humour of the eye.

**Huxley**, Thomas Henry. 1825-1895 English anatomist & naturalist; H.'s layer = the layer of cells lying inside Henle's layer (q.v.) in root-sheath of hair follicle,

**hyaline** adj. G. *hyalos* = glassy, translucent, crystalline; hyaline cartilage with its glassy appearance.

**hyaloid** adj. G. " + *-oeides* = form of.

**hyaluronidase** testicular enzyme, present in semen, depolymerises hyaluronic acid of ground substance.

**hydatid** G. *hydatis* = watery vesicle; a cyst; e.g., appendix testis is the hydatid of Morgagni.

**hydroxyapatite** crystalline, inorganic component of matrix of mature bone.

**hymen** G. = a membrane, also Greek god of marriage; membrane partially covering entrance to vagina (Vesalius, c. 1550).

**hyperplasia** G. *hyper* = above, an excess of + *plassein* = to form; growth of organ due to increase in cell number.

**hypertrophy** G. " + *trophe* = nourishment; growth of organ or tissue (e.g., muscle) due to increase in cell size.

**hypodermis** G. *hypo* = under, a lack of + *dermis*; subcutaneous connective tissue = superficial fascia.

**hyponychium** G. " + *onyx* = nail; thickened stratum corneum under the free end of a nail.

**hypophysis** G. = an undergrowth; pituitary gland under the brain; cf. epiphysis.

**hypoplasia** G. " + *plassein* = to form; reduction in tissue or organ size.

**hypothalamus** G. " + *thalamus*; below the thalamus, q.v.

**I - band** abb. of **isotropic band** G. *isos* = equal + *tropos* = a turning, direction; equal properties in every direction; of transverse bands in skeletal muscle which do not rotate the plane of polarised light, cf. A-band.

**-iculus** L. = a diminutive suffix.

**ileum** G. *eilein* = to twist; distal part of small intestine (1618).

**ilium** L. = the flank.

**immunoglobulin** L. *immunis* = free from service, exempt + *globulus* = a little sphere; one of a class of proteins consisting of two polypeptide chains and functioning as an antibody.

**incisor** adj. L. *incidere* = to cut into, to notch; of the four front upper and lower teeth.

**incus** L. = an anvil; middle ossicle of middle ear (Vesalius, c. 1550).

**infundibulum** L. = a funnel, from L. *infundere* = to pour into; funnel-shaped part of an organ.

**inspissated** L. *inspissatus* = thickened; concentrated by absorption.

**insulin** L. *insula* = island; hormone secreted by beta cells in the pancreatic islets of Langerhans.

**integument** L. *in* = on + *tegere* = to roof, to cover (L. *tegmen* = a roof) ; a covering, hence the skin, consisting of epidermis, dermis and hypodermis.

**intercalated** L. *inter* = between + *calare* = to proclaim, *calatus* = inserted; of a duct inserted between the end of the gland (acinus, or alveolus) and a larger duct; of a disc inserted between the ends of two cardiac fibres.

**interneuron** abb. of internuncial neuron, q.v.

**internode** L. " + *nodus* = knot; a segment of myelinated nerve fibre between adjacent nodes of Ranvier, q.v.

**internuncial neuron** L. " + *nuncius* = a messenger; a nerve cell relaying an impulse from one cell to the next; an interneurone.

**interstice (-es)** L. " + *sistere* = to set; a space or gap in a tissue or in an organ.

**interstitial** adj. L. " ; located inbetween, e.g., cells of Leydig.

**interstitium** L. " ; the interstices, q.v.

**intestine** contraction of L. *quod intus est* = that which is inside; L. *intestina* = the guts, entrails (Celsus, c. 10 AD).

**intima** L. = innermost; cf. tunica intima.

**intrafusil** L. *intra* = with + *fusus* = spindle; of the fibres in a muscle spindle = neuromuscular spindles.

**intramural** L. *intra* = within + *murus* = wall; within the wall of an organ.

**intussusception** L. *intus* = within + *suscipere* = to receive; an invagination; the slipping ("telescoping") of one part of the intestine into a lower part.

**invagination** L. *invaginare* = to ensheath; process of pushing inwards and thereby creating a sheath.

**involution** L. *in* = into + *volvere* = to roll; retrogressive change with size decrease.

**iris** L. = a rainbow; the coloured membrane around the pupil in anterior segment of eye; a diaphragm in a microscope that can open or close a central pupil-like aperture.

**isotropic** G. *iso* = same + *tropos* = a turning; having the same properties in all directions.

**isthmus** G *isthmos* = a narrow passage, a land-bridge; a connecting band.

**iter** L. = a journey, a passage-way; a way between two anatomical structures, e.g., iter of Sylvius = midbrain aqueduct; iter chordae tympani (anterior, posterior).

**Jacobson**, Ludwig Levin. 1783-1843 Copenhagen anatomist & physician; military surgeon; organ of J. = vomeronasal o., q.v.

**jejunum** G. *nestis* = fasting, translated into L. *jejunos* = empty, fasting; second part of small intestine emptier than the rest (Galen, c. 180 AD).

**junctional complex** EM term for terminal bar of epithelial cells.

**juxtaglomerular** adj. L. *iuxta* = near, adjacent to + *glomerulus* = a little ball; e.g., epithelioid cells containing renin granules close to the glomerulus.

**juxtaglomerular complex** or **apparatus** a cluster of structures outside a glomerulus in the renal cortex, consisting of juxtaglomerular cells (see above), the polkisson cells (q.v.) and the macula densa (q.v.).

**karyon** G. = nucleus, nut.

**karyolysis** G. " + *lysis* = a loosening; disappearance of nucleus on cell death.

**karyorrhexis** G. " + *rhexis* = rupture; fragmentation of a nucleus during cell death and apoptosis.

**karyotype** G. " + *typos* = mark; a photomicrograph of all chromosomes from a nucleus arrested in metaphase, which chromosomes are then cut out and arranged in order of size.

**keratin** G. *keras* = horn; protein of hair, nails, horny tissue.

**keratohyaline** protein (derived from eleidin) in granules in cells of stratum granulosum of epidermis.

**Kerckring**, Theodorus. 1640-1693 Amsterdam & Hamburg physician; valves of K. = plicae circulares (q.v.) in small intestine.

**kinocilium** G. *kinesis* = movement + *cilium* = eyelash; unique long cilium on hair cells of sensory epithelium of labyrinth.

**Krause**, Karl Friedrich Theodor. 1797-1868 Hannover anatomist; glands of K. = accessory lacrimal glands near superior fornix of conjunctiva; K.'s membrane = Dobbie's line = Z-disc of sarcomere of striated muscle cell; K.'s corpuscles = sensory end-bulbs in skin.

**Kupffer**, Karl Wilhelm von. 1829-1902 Kiel, Munich anatomist; K. cell = a stellate, sinusoidal macrophage of the liver (1876).

**labial** adj. L. *labialis* = of the lips, L. *labium* = lip, rim of a vessel.

**labyrinth** G. *labyrinthos* = maze; canals (bony labyrinth - Fallopius, c. 1550) and ducts (membranous labyrinth) of inner ear; renal labyrinth = mass of convoluted tubules of the kidney cortex; hepatic labyrinth = all sinusoidal spaces in liver.

**lakis cells** polkissen cells, q.v.

**lacrimal** adj. L. *lacrima* = a tear-drop.

**lacrimal caruncle** caruncle found on the conjunctiva of the inner canthus of the eye.

**lacteal** L. *lac* = milk (*lacteus* = of milk, *lactare* = to suckle); intestinal lymphatic, containing chyle after a fatty meal.

**lactiferous** L. " + *ferre* = to carry.

**lacuna (-ae)** L. = a pit, a small hollow space, a dimple, dim L. *lacus* = lake.

**lagena** L. *lagynos* = a flask; closed apex of cochlear duct.

**lamella (-ae)** L. = a little plate, a scale, dim. L. *lamina*.

**lamellar bone** secondary bone; of collagen & osteocytes arranged into Haversian systems & interstitial laminae.

**lamina (-ae)** L. = plate or layer; hence adj. laminated.

**lamina propria (-ae -ae)** L. " + *propria* = belonging to; layer of connective tissue under epithelium.

**Langer**, Carl Ritter von Edenberg. 1819-1887 Vienna anatomist; L.'s lines = natural cleavage lines of skin due to pattern of fibres in dermis (1862).

**Langerhans**, Paul. 1847-1888 Freiburg anatomist & pathologist; islets of L. = endocrine tissue in pancreas (1869); L. cell = a cell type of epidermis.

**Langhans**, Theodor. 1839-1915 German anatomist & pathologist; L. layer = cytotrophoblast layer of chorionic villi.



**Lanterman**, A. J. (no dates) American anatomist at Strasbourg; clefts of Schmidt-Lanterman = oblique clefts in myelin sheath (1877); internodes of L.; cf. Schmidt.

**lanugo** L. = down (from L. *lana* = wool); downy hair of body, especially cheeks; hair of fetus from fifth month of development.

**Leeuwenhoek**, Antony van. 1632-1723 Dutch draper, civil servant & amateur microscopist; perfected the simple microscope with a single glass bead as a lens; described accurately the form of spermatozoa; described striations in skeletal muscle, bacteria, dental canals, bony canals, optic nerve fascicles, etc.; L.'s canals = Haversian canals (Havers, q.v.).

**Leishman**, William B. 1865-1926 British medical officer; L.'s stain for parasites, and blood films.

**lens** L. = a lentil; referring to shape of crystalline structure in the eye.

**leptomeninges** (pl.) G. *leptos* = thin + *menix* = a membrane; pia mater & arachnoid taken together (opposite to pachymeninx, q.v.)

**leucocyte** G. *leukos* = white + *kytos* = hollow vessel; white blood cell (also leukocyte).

**leucopoiesis** G. " + *poiein* = to make; production of white blood cells.

**Leydig**, Franz von. 1821-1908 Würzburg, Bonn histologist; a founder of comparative histology; L. cells = interstitial cells of testis.

**Lieberkühn**, Johann Nathanael. 1711-1756 Berlin anatomist & physician; crypts of L. = simple tubular intestinal glands (1745).

**lien** L. = the spleen (? from G. *leios* = soft, smooth).

**ligamentum nuchae** L. *ligamen* = a bandage + *-mentum* = a suffix denoting an instrument of the action + corruption of A. *nukha* = upper end of spinal cord (medulla oblongata), later the neck itself; the dense elastic ligament found in neck of grazing animals, e.g., cattle.

**limbus** L. = border, edge; e.g., limbus of the cornea at its junction with sclera; spiral limbus, q.v.

**limen** L. = threshold, a still; limen insulae = medial part of apex of insula; limen nasi = ridge marking entrance to nasal cavity.

**lingual** adj. L. *lingua* = tongue.

**lipofuscin** G. *lipos* = fat + L. *fuscus* = brown; yellow-brown intracellular pigment accumulating in old muscle cells & neurons.

**liquor folliculi** L. = fluid of a follicle (ovarian).

**Lissauer**, Heinrich. 1861-1891 Breslau physician; L.'s tract = marginal zone of dorsal horn of spinal cord.

**Littre**, Alexis. 1658-1726 Paris anatomist & surgeon; glands of L. = mucous glands in penile urethra (1700).

**lobule** L. *lobulus* = a small lobe, dim. L. *lobus* = lobe, from G. *lobos*.

**locule** L. *loculus* = a small place; dim. of L. *locus*; a cavity or chamber; used to describe unilocular & multilocular adipocytes.

**locus cinereus** L. *locus* = a place + *cinereus* = grey; a pigmented area in superior part of floor of 4th ventricle; also called *locus coeruleus* (L. *coeruleus* = dark blue).

**Lower**, Richard. 1631-1691 London physician; experimented with blood transfusion; described vortex of cardiac muscle; L.'s tubercle = a crest between the inferior and the superior venae cavae in the posterior wall of the right atrium.

**lumen** L. = light; space enclosed by tubular or vesicular structure; hence luminal.

**Luschka**, Hubert. 1820-1875 Tübingen anatomist; foramina of L. = two lateral apertures of fourth ventricle (1855, 1863); glands of L. = glomus coccygeum, q.v.; tonsil of L. = pharyngeal tonsil.

**lutein cells** L. *luteus* = yellow; cells of corpus luteum containing much lipid and appearing yellowish.

**luteum** L. *luteus* = yellow; cf. corpus luteum.

**Luxol fast blue** stain for myelin sheath of nerve fibres.

**lymph** L. *lympa* = pure spring water, transparent fluid; found in lymphatics (appears milky in intestinal lymphatics).

**lymph node** L. " + *nodus* = knot; first described as lymph glands; organs filtering lymph and producing lymphocytes.

**lymphatic** adj. L. *lymphaticus* = frantic, panic-stricken (related to rabies or hydrophobia); now related to lymph; also a lymphatic capillary.

**lymphocyte** L. *lympa* = transparent fluid + *kytos* = hollow vessel; a type of white blood cell, found in tissues and organs, also found in blood and lymph.

**lymphoid** adj. L. *lympa* + G. *-ooides* = form of.

**lymphokine** L. " + G. *kinesis* = movement; chemotactic substance produced by T-lymphocytes attracting macrophages to site of infection.

**lysis** G. = dissolution.

**lysosome** G. " + *soma* = body; membrane-bound cell organelle, part of intracellular digestive system.

**M-line** Ge. *mitte* = middle; centre line of H-band of a sarcomere.

**maceration** L. *macerare* = to make soft; process of softening a solid by steeping it in a liquid.

**macrophage** G. *makros* = large + *phagein* = to eat, hence big-eater; connective tissue cell (derived from monocyte) digesting foreign particles, etc.

**macroscopic** G. " + *skopein* = to examine; pertaining to the anatomy seen with the naked eye, i.e., gross anatomy.

**macula adherens (maculae adherentes)** L. = a spot, a mark + *adhaerere* = to stick to.

**macula cribosa** L. " + *cribrum* = a sieve; site of foramina transmit nerves to saccule, utricle & ampullae of membranous labyrinth.

**macula densa** L. " + *densa* = thick; local accumulation of nuclei in distal convoluted tubule of kidney; cf. juxtaglomerular complex.

**macula lutea** L. " + *luteus* = yellow; yellow region in the fundus of the eye containing the fovea centralis.

**macula sacculi** L. " + *sacculus* = little sac; plaque of thickened sensory epithelium in wall of saccule of membranous labyrinth.

**macula utriculi** L. " + *utriculus* = little bag; plaque of thickened sensory epithelium in wall of utricle of membranous labyrinth.

**Magendie**, François. 1783-1855 Paris pathologist & physiologist; foramen of M. = median aperture of fourth ventricle (1828).

**Maier**, Rudolf. 1824-1888 German physician; sinus of M. = a depression in lacrimal sac into which open the canaliculi of the lacrimal gland.

**malleus** L. = a hammer; one of auditory ossicles shaped like round-headed Roman hammer used by butchers for stunning oxen.

**Mallory**, Frank. 1862-1941 American pathologist; histological stains; M.'s trichrome.

**Malpighi**, Marcello. 1628-1694 Rome and Bologna anatomist, a founder of microscopic anatomy; Malpighian capsule = splenic capsule; M. corpuscles = white pulp of spleen (1669); M. corpuscles = renal corpuscles; rete Malpighii = stratum germinativum of epidermis; pulmonary alveoli of M.; canal of M. = longitudinal duct of epoöphoron.

**mammary** adj. L. *mamma* = breast.

**mamillary** adj. L. = like a little breast.

**manchette** F. = a wristband or cuff; collar-like structure forming at neck of developing spermatozoon during spermiogenesis.

**Masson**, C.L. Pierre. Montreal pathologist 1880-1959; histological trichrome stain.

**mast cell** Ge. *masten* = to (over-) feed; connective tissue cell (cf. Ehrlich) filled with many granules of heparin, histamine.

**matrix** L. = a female animal kept for breeding purposes; a synonym for L. *uterus* = womb; later, the material which harbours something, as in "mother-of-pearl"; the ground substance of cartilage harbouring the chondrocytes.

**Mayer**, Paul. German histologist 1848-1923; stain of haematoxylin, alum and iodate.

**Meckel**, Johann Friedrich (the elder). 1724-1774 Berlin anatomist, botanist & gynaecologist; M.'s cave = dural space lodging the trigeminal ganglion (1748); M.'s ganglion = pterygopalatine ganglion.

**Meckel**, Johann Friedrich (the younger, grandson of above). 1781-1833 Halle anatomist & surgeon; M.'s cartilage = a bar of cartilage around which embryo's mandible develops (1820); M.'s diverticulum = congenital diverticulum of ileum.

**meconium** G. *mekonion* = discharge from bowels of a newborn infant, from G. *mecon* = poppy (discharge thought by Aristotle to resemble poppy juice).

**mediastinum** probably a contraction of L. *per medium tensum* = that which is tight down the middle (not from L. *mediastinus* = a subordinate domestic slave, a servant at the public baths in Rome); now refers to the mass of connective tissue in the central zone of a region or organ; the central region of the thorax.

**mediastinum cerebri** an early term for falx cerebri.

**mediastinum testis** thickened portion of tunica albuginea on the posterior surface of the testis, making a keel-like projection into the region of the rete testis in the interior; body of Highmore, q.v.

**medulla (-ae)** L. = pith, marrow, inner portion of an organ (from L. *medius* = in the middle), in contrast to cortex.

**medulla oblongata** L. " + a barbarism from L. *oblongus* = rather long; enlarged portion of spinal cord as it enters foramen magnum of occipital bone; a term introduced by Heister (c. 1740) and Haller (c. 1750) which replaced the earlier, more correct term *medulla prolongata* (L. *prologatus* = prolonged); cf. ligamentum nuchae.

**medulla spinalis** L. = spinal cord.

**megakaryocyte** G. *megas* = large + *karyon* = nucleus + *kytos* = hollow vessel; giant cell in bone marrow with multilobed nucleus.

**Meibom**, Heinrich. 1638-1700 Helmstädt physician, historian & poet; Meibomian glands = tarsal glands of eyelid (1666).

**meiosis** G. *meion* = less; 1. contraction of the pupil; 2. division of a germ cell (gamete) where the number of chromosomes is halved from diploid to haploid.

**Meissner**, Georg. 1829-1905 Basle histologist & Göttingen physiologist; M.'s corpuscles = sensory corpuscles in dermal papillae of glabrous skin (1852); M.'s plexus = submucosal plexus in intestine (1862).

**melanin** G. *melas* = black; natural intracellular brown pigment in eye, skin, etc. (*melancholia* = black bile, one of four humours).

**melanocyte** G. *melas* = black + *kytos* = hollow vessel.

**melanosome** G. " + *soma* = body; intracellular melanin pigment granules.

**membrane** any structure in the form of a sheet that separates one region from another, e.g., a layer of cells, a thin layer of connective tissue, a layer of glycocalyx, etc.; plasma (q.v.) membrane = cell membrane.

**meniscus** G. *meniskos* = crescent; intra-articular fibrocartilage with crescentic shape.

**menix (meninges)** G. *menix* = a membrane, skin on old wine; a membrane in general; specifically, the three membranes around the central nervous system.

**menopause** G. *men* = month + *pausis* = cessation; end of menstrual activity.

**menstrual** adj. L. *menstruus* = monthly, from G. *men* = month; relating to the monthly female sexual cycle.

**Merkel**, Friedrich Sigmund. 1849-1919 German anatomist; M. cell or M. disc = sensory epithelial cell in stratum basale of epidermis.

**merocrine** G. *meros* = a part of + *krinein* = to separate; exocrine secretion where bulk of cell remains intact during secretion process.

**mesangial** adj. G. *mesos* = between + *ageion* = a blood vessel (G. "gg" is pronounced "ng"); 1. the mesentery suspending a developing blood vessel; 2. the extravascular tissue of the renal glomerulus.

**mesenchyme** G. *mesos* = middle + *enchyma* = infusion; cells, fibres & fluids derived from mesoderm (middle layer) of embryo.

**mesentery** G. *mesenterion* from G. " + *enteron* = intestine; peritoneal fold encircling most of intestine and reflected onto posterior abdominal wall.

**mesoderm** G. " + *derma* = skin; middle cell layer of embryo giving rise to connective tissues, most muscle, circulatory system, urogenital system, etc.

**mesonephros** G. " + *nephros* = kidney; embryonic kidney (or Wolffian body) whose function is eventually replaced by metanephros (definitive kidney); middle of 3 stages in animals whose embryos have a pronephros as the first stage.

**mesosalpinx** G. " + *salpinx* = tube, trumpet; free margin of broad ligament containing uterine tube.

**mesothelium** G. " + *thela* = nipple; epithelium lining coelomic body cavities; most superficial layer of a serous membrane (tunica serosa).

**mesovarium** NA. = mesentery of the ovary, q.v. ("ovarium" is not Latin).

**meta-** G. = after, beyond, over.

**metachromasia** G. " + *chroma* = colour; change in colour of a dye when it binds to different components of tissue; a metachromatic dye may stain one component differently to the background (or ground substance).

**metaphase** G. " + *phasis* = to appear; mitotic stage after prophase when chromosomes appear and line up in equatorial plane.

**metaphysis** G. " + *phyein* = to grow; growth region of a long bone, situated between epiphysis and diaphysis.

**metaplasia** G. " + *plasma* = something formed; transformation of one kind of tissue into another.

**Methyl green** a green dye.

**microfibril** a subunit of a fibril, q.v.

**microglia** G. *mikros* = small + *glia* = glue; a small migratory, phagocytic neuroglial cell of central nervous system.

**microscope** G. " + *skopein* = to examine; adj. microscopic, relating to the anatomy seen with a microscope, as opposed to macroscopic anatomy.

**microsome** G. " + *soma* = a body; particles derived from centrifugation (at 10,000 times force of gravity) of endoplasmic reticulum.

**microtome** G " + *tome* = a cutting, incision; machine for cutting sections for LM.

**microvillus** G. " + L. *villus* = tuft of hair; the electron microscopic structure forming striated border of intestinal epithelial cells (Granger & Baker, 1950).

**mitochondrion** G. *mitos* = thread + *chondrion* = grain, granule; cell organelle of variable shape, sometimes thread-like, sometimes granular (Benda, 1897).

**mitosis** G. " + *osis* = a condition of; indirect division of somatic cells, in which chromosomes become threads (W. Fleming, 1882); cf. amitosis.

**mitral** adj. L. *mitra* from G. = a scarf, a waistband, a turban, a snood (a scarf with strings which could be secured to head); mitral cell = a cell in an olfactory glomerulus, q.v.; mitral valve = the bicuspid left atrioventricular valve.

**modiolus** L. = a serrated screw or borer; bony axial pillar of cochlea (Eustachius, 1563).

**molar** L. *mola* = mill (for grinding).

**molecular** L. *molecula* = a little mass;

**molecular layer** a layer of cerebellar layer consisting mostly of unmyelinated fibres and only a few scattered cells, like the molecules of a gas.

**Moll**, Jacob Anton. 1832-1914 The Hague ophthalmologist; glands of M. = ciliary glands = apocrine sweat glands of the eyelashes at border of eyelid.

**Monro**, Alexander (Primus). 1697-1767 Edinburgh anatomist; bursa of M. = bursa intratendinea olecrani.

**Monro**, Alexander (Secundus). 1733-1817 Succeeded his father (Primus) as Edinburgh anatomist; foramen of M. = interventricular foramen between lateral and third ventricles of brain (1783).

**Monro**, Alexander (Tertius). 1773-1859 Succeeded his father (Secundus) as Edinburgh anatomist; hypothalamic sulcus of M.

**Montgomery**, William Fetherston. 1797-1859 Dublin obstetrician; M.'s glands or tubercles = enlarged sebaceous glands projecting from surface of areola of nipple during early pregnancy.

**mordant** L. *mordere* = to bite; a substance (e.g., ferric chloride) which allows dye (e.g., Haematoxylin) to bind more efficiently to tissue components.

**Morgagni**, Giovanni Battista. 1682-1771 Padua anatomist; columns of M. = anal columns; foramen of M. = foramen caecum of tongue; fossa of M. = navicular fossa of urethra; hydatid of M. = appendix testis; lacunae of M. = urethral lacunae; sinus of M. = laryngeal ventricle.

**morphology** G. *morphe* = form + *logos* = study, knowledge.

**motile** L. *motilis* = moving; able to move.

**motor end-plate** a plaque-like site of multiple synapses between a motor nerve and a muscle.

**mucin** L. *mucus* from G. *muxa* = snot, slime; protein constituent of all mucus; occurs as granules in secretory cells.

**mucoïd** L. " + G. *-oeides* = form; of a type of connective tissue with much mucus; Wharton's jelly.

**mucosa** (-ae) L. = mucous membrane.

**mucus** L. = slime (adj. mucous).

**Müller**, Heinrich. 1820-1864 Würzburg anatomist; M.'s cells or fibres = radial glial cells of retina (1856); M.'s muscle = 1. tarsal or palpebral muscle, 2. circular fibres of ciliary muscle.

**Müller**, Johannes Peter. 1801-1858 Famous anatomist & physiologist at Berlin (son of a Koblenz bootmaker); teacher of Henle, Virchow, Kölliker, Helmholtz, etc.; Müllerian duct = paramesonephric duct of embryo (1825).

**multiparous** adj. L. *multus* = much, many + *parire* = to bear children.

**multipolar** L. " + *polus* = pole; cell with many processes, e.g., a ventral horn motor neurone.

**muralium** L. *murus* = a stone wall; system of cells or tissues in interconnected sheets.

**muralium osseum** L. *murus* = a stone wall + *os* = bone; network of cancellous bone.

**muscle** L. *musculus*, dim. from G. *mys* = a mouse, a rat (whose body represents the belly of a muscle, with head and tail representing the tendons).

**musculotendinous junction** a junction between skeletal muscle and tendon involving endomysium.

**myelin** G. *myelos* = marrow; lipoprotein sheath around axons (Virchow, 1854).

**myelocoele** G. " + *koilos* = hollow; the marrow cavity of the spine; pathological protrusion of spinal medulla.

**myeloid** adj. G. " + *-oeides* = form; of bone marrow tissue.

**myenteric** G. *mys* = muscle + *enteron* = intestine (cf. Auerbach).

**myo-** G. *mys* = a mouse, a muscle, q.v.

**myocardium** G. "+ *kardia* = heart.

**myoepithelial** a contactile cell derived from ectoderm (as opposed to mesoderm).

**myofibril** G. *mys* = a mouse, a muscle + L. *fibrilla* = small fibre; intracellular arrangement of contractile proteins in myocytes.

**myofilament** muscle protein filament, made mainly of actin, or myosin.

**myometrium** G. " + *metra* = uterus.

**Naboth**, Martin. 1675-1721 Leipzig physician and anatomist, chemistry professor; Nabothian glands or cysts = swollen uterine cervical mucous glands (1707).

**Nasmyth**, Alexander. ?-1848. London dentist; N.'s membrane = cuticle of dental enamel (1839).

**navicular fossa** L. *navicula* = a little ship, a skiff + *fossa* = a ditch; hollowed out proximal surface of the tarsal equivalent of the carpal scaphoid, i.e., the navicular bone; navicular fossa of urethra = dilated terminal portion of urethra in penis; navicular fossa of vaginal vestibule.

**necrosis** G. *nekrosis* = a killing; cell death due to external cause.

**nephron** G. *nephros* = kidney; functional unit of kidney; adj. nephric.

**nerve** L. *nervus* from G. *neuron* = a fibre, sinew (N.B. Hippocrates and other early anatomists called all fibres "neurons", not distinguishing sinews from peripheral nerves; later Aristotle used term to describe a nerve in the modern sense); cf. neuron, cf. aponeurosis.

**nervus vasi (nervi vasorum)** L. *nervus* = nerve + *vas* = blood vessel; in tunica adventitia.

**nest** a group or collection of similar objects, e.g., a cell nest, a keratin pearl, q.v.

**neurilemma (or neurolemma)** G. *neuron* = nerve (q.v.) + *lemma* = husk; delicate layer external to myelin sheath of a Schwann cell around nerve fibre.

**neurite** G. *neuron* = nerve (q.v.); axon (= axis cylinder, q.v.) of nerve cell, conducting signals away from soma; cf. dendrite.

**neuroglia** see glia.

**neurokeratin** G. " + *keras* = horn; protein component of myelin sheath.

**neurophysin** G. " + *physis* = growth; intra-axonal protein of pars nervosa of hypophysis.

**neuron (or neurone)** G. *neuron* = sinew; nerve cell including its processes; cf. nerve; cf. aponeurosis.

**neuropil** G " + *pilos* = felt; tangled network of neural and glial structures around neuronal somas.

**neurotubules** protein tubules found in axoplasm.

**neutrophil** L. *neuter* = neither + *philein* = to love; of cells with no strong affinity for acidic or basic dyes; specific type of leucocyte.

**nexus** L. = a bond; gap junction between cells.

**Nissl**, Franz. 1860-1919 Heidelberg neurologist; N. bodies = chromatophilic granules or tigroid bodies in neuronal soma, consisting of rough endoplasmic reticulum.

**nuclear fast red** a basic dye.

**nucleolus** L. = a little kernel, dim. of L. *nucleus* = a nut (G. Valentin, 1836).

**nucleus** L. = a kernel; 1. central component in a soma (R. Brown, 1831), 2. cluster of nerve cells in central nervous system.

**nucleus pulposus** NA. = central gelatinous mass inside an intervertebral disc, remnant of notochord.

**Nuhn**, Anton. 1814-1889 Heidelberg anatomist; gland of N. = anterior lingual glands.

**nulliparous** L. *nullus* = none + *pario* = I bear (children).

**numerical aperture** product of refractive index of medium between coverglass and objective and sine of half aperture angle of objective lens, i.e., angle between optical axis and the most inclined ray accepted by the objective lens.

**Oddi**, Ruggero. (19th century, no dates) Perugia physiologist; sphincter of O. (1887) = circular smooth muscle fibres at termination of bile duct, first described by Glisson, q.v. (1654)

**odontoblast** G. *odons* = tooth + *blastos* = germ; cells which produce and maintain dentine.

**oedema (-mata)** G. *oidema* = swelling; excessive accumulation of fluid in tissue spaces.

**oesophagus** G. *oiso* = future of *phero* = I carry + *pahgein* = to eat; G. *oisophagos* = gullet, or tube carrying food from pharynx to stomach.

**oligodendrocyte** G. *oligos* = a little + *dendron* = tree + *kytos* = hollow vessel; a type of glial cell with few processes, responsible for making myelin sheaths in the central nervous system (del Hortega, 1921); cf. Schwann cell.

**oncocyte** G. *oncos* = mass + *kytos* = hollow vessel; solitary large glandular cell.

**oocyte** G. *öon* = egg + *kytos* = hollow vessel (cell); germ cell in ovary.

**oolemma** G. *öon* = egg + *lemma* = sheath; the zona pellucida, q.v.

**ora serrata** L. *ora* = sea-shore, extremity of something + *serra* = saw; notched anterior border of neural part of retina.

**oral** adj. L. *os, oris* = mouth; e.g. *os uteri*.

**orbicularis oculi** L. *orbiculus* = small circle, dim. L. *orbis* = a circle + *oculus* = eye; muscle around eye.

**orbicularis oris** L. " + *oris* = of a mouth; muscle around mouth.

**organelle** dim. of G. *organon* = a living part of body with special function, hence a little body; an intracellular component, e.g., a mitochondrion.

**orthochromatophilic** G. *ortho* = straight, correct + *chroma* = colour + *philein* = to love; of a type of erythroblast with a normal staining reaction for haemoglobin.

**os** L. *os, ossis* = a bone, e.g. *os innominatum*.

**osmium tetroxide** chemical staining lipids black.

**ossicle** L. *ossiculum* = a little bone, dim. L. *os*.

**ossification** L. *os* = bone + *facere* = to make.

**osteoblast** G. *osteon* = bone + *blastos* = germ; immature bone-producing cell.

**osteoclast** G. " + *klan* = to break; multinucleated bone cell that can reabsorb bone.

**osteocyte** G. " + *kytos* = hollow vessel, cell; mature bone cell.

**osteogenic** adj. G. " + *gennan* = to produce; of cells and conditions leading to ossification.

**osteoid** G. " + *-oeides* = of the form of; uncalcified, organic extracellular matrix of immature bone laid down by osteoblasts.

**osteon** G. = bone; system of concentric bony lamellae surrounding a canal containing nerves, blood vessels, etc.; cf. Havers.

**ostium** L. = a door.

**otolith** G. *otikos* = of the ear (G. *ous* = the ear) + *lithos* = stone; crystals embedded in mucus of maculae of utricle and saccule.

**ovary** L. *ovum* = egg, L. *ovarius* = a skilled and respected slave who looked after chickens and their eggs; the female gonad (Stensen, 1667). NB. "*ovarium*" is not Latin.

**oviduct** L. *ovum* = egg + *ductus* = a path; salpinx; uterine tube; cf. Fallopius.

**ovum** L. = an egg; oocyte.

**oxyntic** adj. G. *oxyntos* = making acid; parietal cells in gastric mucosa.

**oxyphil** G. *oxys* = sour, sharp + *philein* = to love; staining readily with acidic dyes.

**oxytocin** G. *oxys* = sharp, swift + *tokos* = childbirth; a hormone producing strong contractions of the uterine muscle.

**Pacchioni, Antonio.** 1665-1726 Rome & Tivoli anatomist; Pacchionian bodies = arachnoid granulations (1705), q.v.

**pachymeninx** G. *pachys* = thick + *meninx* = a membrane; the dura mater.

**Pacini, Filippo.** 1812-1883 Pisa & Florence anatomist; lamellated (onion-like) corpuscles of Vater-Pacini in skin (1840); tendon sheaths.

**palate** L. *palatum* = roof of mouth.

**palisade** L. *palus* = stake; like a fence of stakes.

**palmate folds** cf. *plicae palmatae*.

**palpebral** adj. L. *palpebra* = eyelid, from L. *palpitare* = to move quickly.

**pampiniform** adj. L. *pampineus* = full of vine tendrils + *forma* = shape; a tangled mass of veins in spermatic cord.

**pancreas** G. *pan* = all + *kreas* = edible flesh; a sweetbread (though less of a delicacy than the thymus); intestinal exocrine & endocrine gland.

**pancreatic islets** small islands or clusters of endocrine cells in pancreas; cf. Langerhans.

**panniculus adiposus** L. = a little piece of cloth, a rag + L. *adeps* = fat (*adiposus* is a L. corruption); the hypodermis (Berengarius, 1524).

**Paneth, Josef.** 1857-1890 Breslau & Vienna physiologist; P. cells (1887) = eosinophilic cells at base of intestinal crypts of Lieberkühn.

**papilla (-ae)** L. = a teat, a nipple; a nipple-like projection, e.g., on the tongue (Malpighi, c. 1670; cf. circumvallate, filiform, foliate, fungiform, vallate); duodenal papilla (containing duodenal ampulla); optic papilla; renal papilla (Berengarius, c. 1480-1550).

**papillary** adj. L. "; of the most superficial layer of the dermis, containing fine collagen fibres immediately under the epidermis; of cardiac muscle fibres that form eminences on the inner surface of the ventricles.

**para-** G. = beyond, beside, near.

**paradidymis** G. " + *didymos* = testicle; remains of mesonephros situated on the spermatic cord above the epididymis= organ of Giraldu, q.v.; also = organ of Waldeyer.

**paraganglion (-ia)** G. " + *ganglion* = a swelling; clumps of chromaffin tissue scattered alongside sympathetic nerves in thorax and abdomen; cf. Zuckerkandl.

**parakeratin** G. " + *keras* = horn; a type of keratin formed in superficial cells at sites of abrasion and rapid epithelial renewal, e.g., gingiva, tongue, tonsillar crypts, palate.

**parametrium** G. " + *metra* = womb, uterus; loose, fatty connective tissue in the broad ligament around uterus.

**parathyroid** G. " + *thyreos* = a shield (cf. thyroid gland); gland lying "alongside" the thyroid.

**parenchyma** G. " + *enkeim* = to pour in; the essential functional cells of an organ as opposed to its stroma, q.v. (NB. the accent is on the "e", not the "y").

**paries (-ities)** L. *paries* = a wall; cf. body wall around a coelom q.v.

**parietal** adj. L. *parietalis* = relating to walls; the outer region or wall as opposed to visceral.

**paroöphoron** G. *para* = beside + *öon* = egg + *phoros* = bearing; minute tubules of the mesosalpinx lying adjacent to the uterine tube, derived from caudal part of embryonic mesonephros.

**parotid** G. *para* = beside + *otos* = of the ear; a salivary gland.

**parous** L. *pario* = I bear (children).

**pars** L. = a part; a part of an organ, or structure, e.g., pars iridica retinae; pars nervosa; pars distalis, etc.

**PAS** periodic acid & Schiff's reagent; histochemical stain for carbohydrates involving production of aldehyde groups by initial treatment with periodic acid, then reaction of these groups with Schiff's reagent to produce a magenta colour.

**pearl** 1. a concretion formed around a grain of sand, etc.; 2. a small tough mass of material, e.g., a keratin pearl, an enamel pearl, a pearl of mucus in sputum.

**pectinate** adj. L. *pecten* = a comb; muscoli pectinati = muscular bands passing forwards from crista terminalis in wall of right atrium (including the crista, resembles a comb).

**pedicel** L. *pediculus* = a little foot, dim. L. *pes*; stem attached to growing process; pedicles of podocytes in renal glomerulus.

**pedicle** L. *pediculus* = a little foot (dim. of L. *pes* = a foot); stem or connecting stalk of a tumour; bony process connecting the lamina of a vertebra to its body; renal pedicle = renal "stalk".

**pellucidum** L. *per* = through + *lucere* = to shine; translucent; e.g., zona pellucida of ovarian follicle; septum p. of brain.

**pelvis** L. = a basin.

**penicillar** adj. L. *penicillum* = a paint-brush, from L. *penna* = a feather; branching into many short segments, as in the penicillar arterioles of the spleen

**penis** L. = a tail.

**pepsinogen** G. *pepis* = digestion + *gennan* = to produce; a precursor of pepsin = enzyme that aids digestion.

**peri-** G. = around, about.

**pericardium** G. " + *kardia* = heart; of two types: visceral (covering the heart) and parietal (lining the pericardial sac).

**perichondrium** G. " + *chondros* = granule, gristle, cartilage; connective tissue and cellular layer surrounding cartilage.

**pericyte** G. " + *kytos* = hollow vessel; mesenchymal cell adjacent to capillaries.

**perikaryon** G. " + *karyon* = nucleus; body of a nerve cell surrounding its nucleus; soma, q.v.

**perilymph** G. " + L. *lymph* = clear fluid; a bastard term (from G. & L.) for fluid in bony labyrinth surrounding the membranous labyrinth; cf. endolymph.

**perimysium** G. " + *mys* = muscle; connective tissue around a muscle fascicle.

**perineurium** G. " + *neuron* = sinew; a lamellated sheath of connective tissue and cells around a nerve fascicle.

**periodontal ligament or membrane** G. " + *odons* = tooth; fibro-elastic tissue (including Sharpey's fibres) joining the tooth to its alveolar socket in the bone.

**periodontium** G. " ; all the tissue around the root of a tooth.

**periosteum** G. " + *osteon* = bone; fibrous membrane covering bone, attached to bony matrix by Sharpey's fibres.

**peripheral nervous system** nerves and nerve cells outside the central nervous system; abb. PNS.

**peristalsis** G. " + *stalsis* = a contraction, from *stellein* = to constrict; progressive contractile wave along body tubes (Culpeper, 1655); adj. peristaltic.

**peritoneum** G. *peri* = around + *teinein* = to stretch around; membrane stretched around the lining of the abdominal sac and ensheathing some viscera; adj. peritoneal.

**Perls, Max, 1843-1881** German pathologist; Perls' test for hemosiderin using the Prussian blue reaction/stain.

**Peyer**, Johann Konrad. 1653-1712 Schaffhausen, professor of Logic, Rhetoric & Natural Science; P.'s patches = aggregated lymphatic nodules in terminal ileum (1673).

**phagocytosis** G. *phagein* = to eat + *kytos* = cell + *osis* = a condition of; process by which a cell engulfs foreign particles, dead material, etc.

**phalangeal** adj. G. *phalanx* = a band of soldiers (a Greek army division in battle order); phalangeal cells = sustentacular cells in organ of Corti whose processes extend upwards between the hair cells like fingers; Deiters, q.v.

**pharynx** G. = throat; adj. pharyngeal (? G. *pharanx* = a cleft, chasm).

**pheomelanin** G. *phaios* = dusky red + *melas* = black; pigment found in red hair.

**phlegm** G. phlegma = thick mucus; one of four humours of early physiology; thought to be a discharge from brain; cf. pituitary.

**Phloxine** red cytoplasmic dye.

**photoreceptor** G. *phos* = light + L. *recipio* = I receive; bastard term for light-sensitive cells in retina.

**physic** G. *physikos* = natural; the art of medicine.

**pia mater** L. *pius* = soft, faithful (L. *pietas* was one of the cardinal virtues) + *mater* = mother; delicate vascular membrane which adheres to surface of brain and spinal cord, faithfully following their contours.

**picric acid** a yellow dye.

**pilomotor** L. *pilus* = a hair + *motor* = mover; causing hair movement; cf. arrector pili.

**pineal** L. *pinea* = pine cone; cone-shaped gland of the brain; cf. conarium.

**pinocytosis** G. *pinein* = to drink + *kytos* = cell + *osis* = a condition of; process by which a cell takes in droplets of fluid.

**pituitary** L. *pituita* = phlegm, snot; gland at base of brain thought to be responsible for nasal secretion, via perforations in cribriform plate of ethmoid (Vesalius, c. 1560).

**placenta** L. = a flat cake, from G. *plax-* = flat-; (Ge. *Mutterkuchen* = "mother-cake" = placenta).

**plasma** G. = a thing formed; liquid component of lymph, blood; NB. plasma membrane = cell membrane.

**plasmodium** G. " + *-oeides* = like; a continuum of protoplasm in which many nuclei are embedded, e.g., placental plasmodium = syncytiotrophoblast.

**plasmolysis** G. " + *lysis* = solution; shrinkage of a cell due to osmotic pressure.

**platelet** OF. *plate* = flat; small, non-nucleated discoids in circulating blood derived from fragmentation of megakaryocytes.

**pleomorphic** G. *pleon* = more + *morphe* = form; varying in shape and size.

**pleura (-ae)** G. = rib, side; serous membrane covering lungs and lining thorax; parietal and visceral pleurae.

**plexus (-i)** L. = a braid; a woven network of linear structures, especially nerves.

**plica (-ae)** a corruption from L. *plicare* = to fold; in 13th century a scalp infection endemic in Poland was called *plica polonica* (Polish plait); any kind of fold.

**plicae circulares** L. = circular folds; actually transverse folds that are not circular in small intestine = valves of Kerckring, q.v.

**plicae palmatae** L. " + *palmatae* = like palm trees; flat mucosal folds like palm fronds in uterine cervical canal.

**podocyte** G. *podos* = foot + *kytos* = hollow vessel (cell); cell in renal glomerulus with many feet (foot processes) and pedicels.

**-poiesis** G. = making or producing; suffix as in haemopoiesis, leucopoiesis.

**polar body** the smaller daughter nucleus of a fertilised dividing ovum.

**polkissen** Ge. = pole cushion; extraglomerular mesangial cells at vascular pole.

**polychromatophilic** G. *polys* = many + *chroma* = colour + *philein* = to love.

**polymorphonuclear** (abb. **polymorph**) adj. G. " + *morphe* = form; having a nucleus with different shapes (multiple lobes), e.g., a neutrophilic leucocyte.

**polyploid** G. " + *-oeides* = form of; G. = manifold; having several sets of chromosomes; cf. diploid, haploid, aneuploid.

**polysome** aggregation of ribosomes.

**pore** L. *porus* = hole, aperture; nuclear pore = aperture in nuclear envelope.

**porta hepatis** L. *porta* = door + *hepatis* = of liver; fissure at hilum of liver; NB. portal vein was vein entering porta hepatis.

**porta lienis** L. *porta* = door + L. *lienis* = of the spleen; fissure at hilum of spleen.

**portal** adj. L. *portare* = to carry; of a vascular system carrying blood between infundibulum and adenohypophysis = hypothalamohypophyseal portal system. (NB. portal vein is named from L. *porta* = door).

**postcapillary venules** smallest vessels which drain capillary beds into collecting venules.

**postsynaptic membrane** region of membrane on a second cell opposite a synaptic terminal of the first cell; cf. synapse.



**prepuce** L. *praeputium* = prepuce or covering of glans penis (? from G. *pro* + *posthe* = penis; or ? L. *puteo* = I stink, from smell of smegma, q.v.; thus uncleanness is figuratively termed *praeputia*).

**presynaptic membrane** region of a nerve cell at the synapse of a terminal bouton; cf. synapse.

**progesterone** G. *pro* = before + L. *gerere* = to bear; hormone from corpus luteum preparing the uterus for pregnancy.

**prophase** G. *pro* = before + *phasis* = phase, from *phainein* = to appear, to show; first stage in mitosis of somatic cells.

**prostate** G. *pro* = before + G. *istanai* = to stand, or ? L. *statum* = stood; standing before; male gland at base of ("before") bladder; Aristotle uses *prostatai chirsoedeis* = varicose prostate = seminal vesicles; Herophilus (c. 300 BC) uses *prostatai adenoideis* = glandular prostate; Galen (c. 180 AD) uses *prostatai* for whole complex of seminal vesicles and prostate, based on animal dissections.

**protoplasm** G. *protos* = first + *plasma* = a thing formed; living matter (Purkinje).

**proximal** L. *proxime* = nearest (to the head, to a source, etc.); opposite to distal, q.v.

**psammoma** G. *psammos* = sand + *oma* = tumor; laminated concretions found in the pineal gland (cf. brain sand, acervulus)

**pseudopodium (-ia)** G. *pseudos* = false, fraud + *podos* = foot; temporary extension of a cell.

**pseudostratified** G. *pseudos* = false, fraud; simple epithelium where not all apical borders of cells reach lumen, thereby appearing to be stratified.

**pseudounipolar** G. " ; of a sensory ganglion cell, bipolar in embryo, but in adult having one axon which bifurcates into a central and a peripheral branch, the peripheral branch behaving as a dendrite, q.v.; cf. bipolar.

**PTAH** phosphotungstic acid and haematoxylin stain.

**pubes** L. = signs of manhood; hair of genital region.

**pulmonary** L. *pulmo* = lung.

**pulp** L. *pulpa* = soft, fleshy; central part of a tooth; parts of spleen; central part of a finger.

**pulvinar** L. = a cushioned couch (used by the gods); the raised posterior part of the thalamus, q.v.

**punctum lacrimale** L. = a point + of tears; opening of lacrimal duct at inner canthus of the eye.

**pupil** L. *pupa* = a girl, damsel, a doll (as in puppet); L. *pupillae* = small doll-like images seen mirrored in the eye, led to term *pupilla* for the central aperture of the iris (Cicero).

**Purkinje (Purkyne)**, Johannes Evangelista, Ritter von. 1787-1869 Breslau pathologist, Prague physiologist; famous microscopist; early use of microtome; recognized importance of fingerprints (1823); P. cells = largest cerebellar neurones with extensive dendrites (1837); P. cells = conducting heart cells (1845); P. phenomenon = casting shadows of retinal blood vessels.

**pyknotic** G. *pyknos* = thick, close, compact + *osis* = condition; a nucleus with very condensed chromatin; a shrunken nucleus.

**pylorus** G. *pyle* = a gate + *ouros* = a guard; a gate-keeper, a janitor; distal, sphincteric orifice of stomach (Galen, c. 180 AD).

**pyramidal cell** G. *pyramis* = pyramid; cell in the cerebral cortex with a pyramid-shaped soma.

**racemose** L. *racemosus* = full of clusters (like a bunch of grapes); of compound exocrine glands whose grape-like acini are attached to branching ducts.

**radicle** L. *radicula* = a small root, dim L. *radix*; adj. radicular.

**ramification** L. *ramus* = a branch + *facere* = to make; branching.

**Ramon y Cajal** cf. Cajal.

**ramus** L. = a branch.

**Ranvier**, Louis Antoine. 1835-1922 Paris physician & histologist; nodes of R. (1875) = constrictions in nerve fibre between adjacent internodes; R.'s cross (1875) = intersection of stained glycocalyx & axoplasm forming a cross at site of node.

**Rathke**, Martin Heinrich. 1793-1860 Dorpat physiologist & pathologist, Königsberg anatomist & zoologist, embryologist; R.'s pouch = a recess anterior to the buccopharyngeal membrane in the embryo (1838).

**RBC** red blood cell or corpuscle.

**rectum** L. *rectus* = straight; terminal part of large intestine. NB. the rectum is straight in a rhesus monkey dissected by Galen (c. 180 AD), but curved in man.

**refractile** L. *refractus* = ability to turn back, i.e., bend the path of light.

**refractive index** 1. a measure of the extent to which a transparent object may bend the incident light path; 2. the ratio of velocity of light in vacuum (or air) to its speed in another medium; symbol  $n$  = 1.33 for water, 1.413 for lens of eye.

**Reinke**, Friedrich B. 1862-1919 German anatomist; crystalloids of R. = intracellular rod-shaped crystal-like structures in interstitial cells of testis (Leydig cells).

**Reisseisen**, Franz D. 1773-1828 R.'s muscle = smooth muscle fibres of microscopic bronchial tubes, i.e., bronchiolar muscle.

**Reissner**, Ernst. 1824-1878 Dorpat & Breslau anatomist, also Berlin; R.'s membrane (1851) = vestibular membrane of cochlea between scala media & scala vestibuli; R.'s duct = cochlea duct; R.'s fibre = fibre of jelly in central canal of spinal cord.

**Remak**, Robert. 1815-1865 German physician & neurologist; R.'s fibres (1838) = unmyelinated nerve fibres; R.'s ganglion = autonomic (as opposed to sensory) ganglion cells in heart; showed cell proliferation is due to division of existing cells, contrary to teaching of Schleiden & Schwann.

**renal** adj. L. *ren* = kidney.

**renculus** L. = a little kidney (dim. L. *ren*); a lobe of the kidney, defined partly by its papilla in the medulla.

**resolving power** closest distance between two points at which each can be seen separately, using naked eye or a magnifier.

**rete (-tia)** L. = a net (-work); a snare.

**rete Malpighii** L. " ; the stratum germinativum of epidermis, called rete because of all the criss-crossing tonofilaments which it contains; cf. Malpighi.

**rete mirabile** L. " + L. = marvellous; sudden division of a vessel into a large number of capillaries which then reunite to a single vessel, as in a renal glomerulus, or swim bladder of some fish. Galen, dissecting animals, also thought it erroneously to be present around the internal carotid of man.

**rete peg** downward projection of stratum germinativum, which appears peg-like in 2-dimensions, but is really part of a ridge.

**rete testis** network of spaces in the mediastinum testis.

**reticular** adj. L. *reticula* = a little net; of a type of extracellular fibres that form a network and can be impregnated with silver salts; of a type of connective tissue with a network of many fine branching reticular fibres; thickest and strongest layer of dermis with many dense irregular collagen fibres.

**reticulata** (or **reticularis**) adj. L. " ; e.g., *zona reticulata (reticularis)* = deepest zone of adrenal cortex where cells are arranged in an irregular network.

**reticulocyte** L. " + *kytos* = hollow vessel; young red blood cell with network of basophilic protein in an acidophilic cytoplasm

**reticulum** L. *reticula* = a little net; cf. stellate.

**retina** from L. *rete* = a net, based on an inappropriate translation of Galen where G. *amphiblestron* = 1. that which surrounds the vitreous; 2. a fisherman's net; the light-sensitive coat of eye (not like a net!).

**Retzius**, Magnus Gustav. 1842-1919 Stockholm anatomist; lines of R. = concentric brown lines in tooth enamel.

**ribosome** ribose + G. *soma* = body; small cytoplasmic particle containing ribonucleoprotein (G. Palade).

**rima** L. = a cleft, fissure; *rima glottidis* = gap between vocal cords; *rima palpebrarum* = gap between eyelids (later, margins of eyelids).

**Riolan**, Jean, the son. ?1577,1580-1657 Paris anatomist, botanist & pharmacologist; R.'s muscle = 1. ciliary muscle (palpebral part of orbicularis oculi), 2. cremaster muscle.

**Robin**, Charles Philippe. 1821-1885 Paris histologist; described osteoclast; also cf. Virchow-Robin spaces = perivascular spaces around arterioles and arteries of central nervous system.

**rod** terminal part of the dendrite of a photoreceptor (sensory neuron) in the retina, responsible for perception of grey tones at low light intensities.

**Rolando**, Luigi. 1773-1831 Turin anatomist; fissure of R. = central sulcus of cerebral hemisphere (named eponymously by François Leuret after Rolando had shown it to him, 1839-1857); substantia gelatinosa of spinal cord.

**Romanowsky**, Dimitri L. 1861-1921 Russian physician; R.'s stain = a stain for parasites and cells of a blood film.

**Rosenmüller**, Johann Christian. 1771-1820 Leipzig anatomist & surgeon; organ of R. = epoöphoron; pharyngeal recess.

**rouleaux** F. = rolls (of erythrocytes).

**Ruffini**, Angelo. 1874-1929 Italian anatomist; R.'s nerve endings or bodies or corpuscles = varicose sensory nerve endings surrounded by a fibrous capsule found deep in connective tissues (1898).

**ruga (-ae)** L. = a fold or wrinkle, e.g., in stomach, in vagina.

**Ruysch**, Frederick. 1638-1731 Amsterdam anatomist; master of the preparation of injected specimens; described bronchial blood vessels, lymph valves; established a superb anatomical museum, which was purchased by Peter the Great, but was destroyed en route to St. Petersburg when the sailors drank the alcohol used as a fixative and preserving fluid.

**Sabin**, Florence Rena. 1871-1953 American anatomist; studied development of blood, lymphatics & blood vessels.

**sac** L. *saccus* = sack, bag, from G. *sakkos*.

**sacculle** L. *sacculus* = a little bag, a purse; 1. smaller of two sacs of membranous labyrinth of inner ear, 2. sacculle of larynx.

**salivary** L. *saliva* = spittle.

**salpinx** G. = a trumpet; the uterine tube.

**Santorini**, Giovanni Domenico. 1681-1737 Venice anatomist; pupil of Malpighi; caruncula of S. = orifice of accessory pancreatic duct into duodenum; duct of S. = accessory pancreatic duct; superior nasal concha.

**Sappey**, Marie-Philibert-Constant. 1810-1896 Paris anatomist; S.'s plexus = plexus of lymphatic vessels in areola of breast (caput medusae); para-umbilical veins.

**sarcolemma** G. *sarkos* = flesh + *lemma* = rind, husk; plasma membrane plus basement membrane of a single muscle cell.

**sarcomere** G. " + *meros* = a part; repeating unit (segment) of myofibril from one Z-disc to the next.

**sarcoplasm** G. " + *plasma* = a thing formed; cytoplasm of a muscle cell.

**sarcoplasmic reticulum** endoplasmic reticulum of a muscle cell.

**satellite cell** modified neurilemmal (Schwann) cells which surround a cell soma in a ganglion.

**Sattler**, Hubert. 1844-1928 Austrian ophthalmologist; S.'s layer = elastic lamina in the tunica vasculosa of choroid.

**scala (-ae)** L. = stairs, spiral staircase, from L. *scandere* = to climb; any one of three spiral passages of cochlea which lead to helicotrema, or to cupula.

**scala media** G. " + L. *medius* = middle; spiral of middle cochlear duct lying between scala vestibuli and scala tympani, containing endolymph.

**scala tympani** G. " + *tympanon* = drum; the spiralling cochlear duct below spiral lamina, containing perilymph and ending at round window near tympanic membrane.

**scala vestibuli** G " + L. *vestibulum* = cavity at beginning of canal; the spiralling cochlear duct above spiral lamina, containing perilymph, beginning near the vestibule and ending where it communicates with the scala tympani at the helicotrema.

**Scarpa**, Antonio. 1747-1832 Moderna, Pavia anatomist & surgeon, pupil of Morgagni; excellent medical artist; S.'c canals = lesser incisive canals of teeth; S.'s fascia = membranous layer of superficial fascia of abdomen (1823); S.'s ganglion = vestibular ganglion.

**Schiff**, Hugo. 1834-1915 German biochemist; S.'s reagent is Basic Fuchsin bleached with sulphurous acid, used for detection of aldehydes; cf. PAS.

**Schleiden**, Matthias 1804-1881 Jena, Dorpat & Frankfurt botanist; early supporter of Darwin; plant microscopist and discoverer of the universality of the cell in plant structure (1838), cf. Schwann.

**Schlemm**, Friedrich. 1795-1858 Berlin anatomist; canal of S. = sinus venosus sclerae draining aqueous humour at corneo-scleral junction of eye (1830).

**Schmidt**, Henry D. 1823-1888 New Orleans pathologist; Schmidt-Lanterman clefts in myelin sheath; internodes.

**Schneider**, Conrad Viktor. 1610-1680 Wittenberg physician; discovered location of olfactory nerve endings (1655); membrane of S. (Schneiderian membrane) = nasal mucous membrane = nasal mucosa.

**Schwalbe**, Gustav A. 1844-1916 German anatomist; S.'s ring = anterior limiting ring = limbus marking edge of cornea at termination of Descemet's membrane and anterior border of trabecular meshwork, q.v.

**Schwann**, Theodor. 1810-1882 Student of Johannes Müller in Berlin; Louvain & Liège anatomist & physiologist; discovered pepsin (1835); recognized cell is basic unit of life (1838, founder of cell theory with Schleiden, q.v.); showed bile is essential for digestion (1844); S. cells = neurilemma cells making myelin sheath; sheath of S. = neurilemma = myelin sheath (1839).

**sclera** G. *skleros* = hard; tough, fibrous outer layer of eyeball.

**scrotum** a corruption of L. *scortum* = a skin, hide; *scrotum cordis* = early term for pericardium.

**sebaceous** adj. L. = fatty; of skin glands producing sebum.

**sebum** L. = tallow, suet, grease; the secretion from sebaceous glands.

**secretion** L. *secretus* = separated; production of materials by glandular activity.

**seminal vesicle** L. *seminalis* = of seed + *vesicula* = a little bladder; accessory gland of male reproductive system, which does not normally contain semen, but may do so due to a post-mortem reflux.

**seminiferous** adj. L. *semen* = seed + *ferre* = to produce; of a tubule in testis which produces spermatozoa.

**septum (-a)** L. *saeptum* = fenced in; hence, a flat partition; e.g., septum pellucidum.

**serosa** L. *serum* = whey; a pale fluid; a serous membrane lining body cavities.

**serous** adj. L. = having nature of serum.

**serratus** L. = notched like a saw.

**Sertoli**, Enrico. 1842-1910 Milan physiologist, histologist; S. cells = sustentacular cells of seminiferous tubules.

**serum** L. = whey (watery part of curdled milk); yellowish watery fluid remaining after blood clotting; adj. serous.

**sesamoid** G. *sesamooides* = like grains of sesame; of small bones formed inside tendons (Galen, c. 180 AD).

**Sharpey**, William. 1802-1880 London anatomist & physiologist; S.'s penetrating fibres = collagen fibres penetrating into bone from periosteum or tendon, or into dentine of tooth from periodontal membrane (1848).

**Sherrington**, Charles Scott (Sir). 1857-1952 Liverpool & Oxford physiologist; Nobel Prize (1932); dermatomes, the segmental skin fields of sensory nerves (1892).

**Shrapnell**, Henry Jones. ?-1834 military surgeon, London; S.'s membrane = flaccid part of tympanic membrane (1832).

**sinus** L. = a hollow, a curved space; usually a larger vessel, or space, which may contain air, blood, or lymph.

**sinusoid** L. " + G. *-ooides* = like; a tiny vessel with a tortuous path and many connections to similar vessels, e.g., hepatic sinusoids, bone marrow sinusoids.

**skeleton** G. *skeletos* = dried.

**Skene**, Alexander Johnston Chalmers. 1838-1900 American gynecologist; S.'s glands = para-urethral glands of female (1880).

**smegma** G. = soap; an accumulation of sebum and desquamated epithelial cells under the prepuce in the male.

**soma (-ata)** G. = body, mortal part of body (as opposed to G. *psyche* = soul); cell body.

**somatic** adj. G. " ; of cells of the body excluding cells of the viscera and sex cells.

**spermatogenesis** G. *sperma* = seed + *gennan* = to produce; process by which sperms mature.

**spermatogonium (-ia)** G. " + *gone* = generation; the immature male germ cell.

**spermatozoon (-oa)** G. " + *zoon* = animal; mature male germ cell (abb. sperm).

**spermiogenesis** process whereby spermatid is transformed to spermatozoon, the last stage of spermatogenesis.

**sphincter** G. *sphinkter* = a binder, from *sphingo* = I strangle; a ring-like muscle controlling an aperture.

**spicule** L. *spiculum* = a dart; a hard, needle-like structure, e.g., spicules of bone in cancellous bone (most spicules are lamellae).

**spinousum** L. *spina* = thorn.

**spiral lamina** a double plate (upper & lower) of thin bone projecting from modiolus into cochlear canal of bony labyrinth; site of inner attachment for basilar membrane; dendrites of cochlear nerve run between the two bony plates.

**spiral limbus = limbus of spiral lamina** the thickened periosteum of the upper plate of the bony spiral lamina

**spleen** L. *splen*, or (by dropping "sp") *lien* = spleen.

**splenic corpuscle** elongated mass of lymphoid tissue forming a cuff around a central artery or arteriole of the spleen.

**spongiose** G. *spongia* = a sponge, e.g., corpus spongiosum.

**spongy bone** cf. cancellous bone which has numerous interconnecting spaces.

**squamous** adj. L. *squama* = scale (of a fish), a paving stone; of an epithelium with flat cells.

**stapes** L. = a stirrup, from L. *stare* = to stand + *pes* = a foot (prior to c. 4th century AD, Greeks & Romans did not have stirrups); smallest of middle ear ossicles.

**stellate** adj. L. *stella* = star; star-shaped; stellate reticulum is the pulp of the enamel organ of a developing tooth.

**Stensen (Steno)**, Niels. 1638-1686 Copenhagen anatomist; wrote extensively on anatomy in Rome; became a catholic, Bishop of Titiopolis; travelled widely; S.'s canals = greater incisive canals; S.'s duct = parotid duct.

**stereocilia** G. *stereos* = solid + L. *cilia* = hairs; long, branching microvilli on epithelial cells of ductus epididymidis.

**stereology** G. " + *logos* = study, knowledge; interpretation of three dimensional form based on study and mathematical analysis of two dimensional sections.

**steroid** G. " + *-ooides* = form; sex hormones and adrenal cortex hormones.

**stomach** G. *stomachos* = gullet or oesophagus, from G. *stoma* = a mouth + *cheo* = I pour; lower end of the gullet; organ attached to lower end. NB. Greeks used *gaster* for stomach.

**stratum (-a)** L. = layer, bed-covering, sheet; of layers in the skin: cf. *basale*, *spinosum*, *germinativum*, *granulosum*; *lucidum*, *corneum*; *rete Malpighii*.

**stria** L. = a channel, a furrow, a flute in a column.

**striate cortex** = visual part of cerebral cortex, so named because of distinct stria of Gennari, q.v.

**striated border** L. *striatus* = striped; light microscopic term for the fine microvilli on intestinal absorptive cells.

**striated duct** L. "; duct in an exocrine gland characterised by radial streaks in basal region of epithelial cells.

**stroma** G. = a cover, table-cloth, bedding; strictly, an incorrect term for the internal supporting frame-work of a tissue, or organ, as opposed to its parenchyma.

**subcutis** L. *sub* = under + *cutis* = skin; hypodermis = superficial fascia = *tela subcutanea*.

**submandibular** adj. L. " + *mandibula* = jaw.

**succus entericus** L. = juice + of the intestine.

**succus gastricus** L. = juice + of the stomach.

**sulcus** L. = a furrow, from *sulcare* = to plough.

**superciliary** adj. L. *super* = above + *cilium* = eyelid; relating to eyebrow.

**sustentacular** L. *sustentaculum* = a support, a prop; of nurse cells supporting the activity of a principal cell type.

**suture** L. *sutura* = a seam (in sewing).

**Swammerdam**, Jan. 1637-1680 Dutch physician, became a melancholic and religious mystic; described blood cells (1658), valves of lymphatics (1664); constancy of muscle volume during contraction.

**Sylvius** (= François de la Boë). 1614-1672 Amsterdam & Leiden physician; aqueduct or iter of S. = cerebral aqueduct (1660); fissure of S. = lateral fissure of cerebral hemisphere (1641).

**symphysis** G. *syn* = with, together + *physis* = growth; a growing together; a line of fusion between two bones; a type of joint where bones are separated by fibrocartilage.

**synapse** G. *syn* = with, together + *aptein* = to touch, to join; point of contact; of junction for chemical/electrical transmission between contiguous cells, usually neurones (Sherrington); cf. neuromuscular junction; postsynaptic membrane.

**synapsis** G. " ; the junction of two homologous chromosomes during meiosis, to form bivalents.

**synarthrosis** G. *syn* = together + *arthrosis* = of a joint; an immovable joint.

**synchondrosis** G. " + *chondros* = gristle + *osis* = state of; a junction of two bones by cartilage, usually the epiphyseal disc which gradually ossifies.

**syncytiotrophoblast** G. *syn* = together + *kytos* = hollow vessel + *trophe* = nourishment + *blastos* = germ; outer layer of epithelium covering chorionic villi of conceptus.

**syncytium** G. *syn* = together + *kytos* = hollow vessel; a single multinucleated mass of protoplasm with many nuclei.

**syndesmosis** G. " + *desmos* = bond, ligament + *osis* = state of; a junction of two bones by fibrous tissue, e.g., inferior tibiofibular joint.

**synostosis** G. " + *osteon* = bone; junction between two bones made of bone, e.g., bones of skull after sutures are complete (c. 26 years), junction of a diaphysis with an epiphysis when growth of a long bone has ceased.

**synovia** G. " + L. *ovum* = egg; like egg-white; fluid in a freely moveable joint (Paracelsus, c. 1520, first used the term for any watery fluids from any organ).

**synovial membrane** the lining of a joint space (other than the articular cartilage) which produces synovia.

**taenia coli** L. = a tape, ribbon + G. *kolon* = colon.

**tanning** F. *tannin* = acid substance in tree bark; to make brown.

**tapetum** L. = a carpet, from G. *tapes*; fibres of posterior part of corpus callosum; *tapetum choroideae* = iridescent layer in choroid of eye of certain animals, e.g. a cat's eye.

**tarsus** G. *tarsos* = a broad flat frame of wickerwork (for drying cheeses on); supporting plate of fibrous tissue in eyelid; skeletal frame of foot.

**Tartrazine** a synthetic yellow dye.

**Tawara**, Sunao. 1873-1952 Tokyo anatomist & pathologist; node of T. (1906) = atrioventricular node.

**tectorial** adj. L. *tectum* = a roof, a cover; tectum = roof of midbrain with the corpora quadrigemina; tectorial membrane = spiral gelatinous layer in cochlear duct covering the organ of Corti.

**tegmen** L. = a covering; cf. integument.

**tela** L. = a web, a fabric woven in a loom; of any web-like structure or layer; e.g., *tela submucosa*, *tela choroidea* (part of choroid plexus of ventricles of CNS); *tela subcutanea*.

**telodendron** (-ia) G. *telos* = end + *dendron* = tree; arborization at the end of an axon.

**telophase** G. " + *phasis* = a phase; final stage of somatic cell division when daughter cells separate.

**tendon** L. *tendo* = I stretch out; a tendon.

**Tenon**, Jacques-René. 1724-1816 Paris pathologist, surgeon & oculist; T.'s capsule = fascia bulbi = fascia of eyeball (1806).

**terminal bar** light microscopic term for junctional complex.

**terminal web** light microscopic term for intracellular protein filaments in apical cytoplasm of some epithelial cells.

**testicle** L. *testiculus* = testis, dim. L. *testis* = a witness (in Roman law, witness was legally admissible only if testicles present).

**thalamus** G. *thalamos* = a bed-chamber, a temple; pre-Vesalian use: *thalami cordis* = heart chambers; *thalami penis* = cavernous spaces; nuclear mass in lateral wall of 3rd ventricle.

**Thebesius**, Adam Christian. 1686-1732 Hirschberg (Silesia) physician; Leiden anatomist & pathologist; Thebesian valve = valve of coronary sinus (1708); T. veins = *venae cordis minimae* = small veins of the heart (1708).

**theca** L. = a sheath, an envelope, from G. *theke*; e.g., theca folliculi interna & externa of Graafian follicle.

**theory** G. *theoreo* = I contemplate, consider.

**thrombocyte** G. *thrombos* = a lump, a blood clot obstructing a vessel + *kytos* = hollow vessel; a platelet (non-nucleated element of blood).

**thrombus (-i)** L. from G. *thrombos* = a lump, a blood clot obstructing a vessel.

**thymus** G. *thymos* = thyme; also soul, vital force; lymphocyte-producing organ in thoracic mediastinum; sweetbread (origin is obscure: possibly resembling the buds of the thyme herb; or close to the heart, the seat of the soul).

**thyroid** G. *thyreos* = shield + *-oeides* = form; endocrine gland of neck, shaped like a shield (Galen c. 180 AD).

**tigroid** G. *tigroides* = like tiger spots.

**Tomes**, John (Sir). 1815-1895 English dental surgeon; T.'s fibres = odontoblast processes continued into tubules in dentine.

**tonofilaments** intracellular protein filaments attached to desmosomes; cf. rete Malpighii.

**tonsil** L. *tonsilla* (origin obscure); mass of lymphocytes close to an epithelium, e.g., lingual tonsil, palatine tonsil (the "tonsil"), pharyngeal tonsil (adenoid, tonsil of Luschka, q.v.), tubal tonsil (of auditory tube); also cerebellar tonsil.

**trabecula (-ae)** L. = a little beam, dim. L. *trabs*, from G. *trapes* = beam, rib of a ship; 1. bundles or sheets of fibres giving internal support to an organ, 2. bony lamellae in cancellous bone.

**trabeculae carnae** L. = fleshy beams; thick bands of cardiac muscle on inner wall of ventricles.

**trabecular meshwork** = trabeculae at angle of anterior chamber of eye where aqueous humour flows = valvulae of Gerlach, q.v.

**trachea** G. *tracheia* = rough; respiratory tube which, in relaxed state, has corrugations due to cartilage rings.

**tract** L. *tractus* = a flock of wool drawn out for spinning, a long piece of pastry dough, a wide expanse; a bundle of nerve fibres in central nervous system.

**tragus** G. *tragos* = goat; cartilaginous projection anterior to external auditory meatus (which may carry a goat-beard-like tuft of hairs on its internal aspect).

**trigeminal** L. *tres* = three + *geminus* = twin, triplets; fifth cranial nerve with three main branches.

**trophoblast** G. *trophe* = nourishment + *blastos* = germ; outermost layer of chorion in a growing conceptus; with two sublayers (cytotrophoblast and syncytiotrophoblast).

**tuba auditiva** L. *tuba* = trumpet + *auditio* = hearing; trumpet-shaped auditory tube.

**tuba uterina** L. " + *uterus* = womb; salpinx; oviduct.

**tubulus** L. = a small pipe of more or less constant diameter (dim. L. *tubus* = pipe).

**tunica (-ae)** L. = a shirt, a sheath.

**tunica adventitia** L. " + *adventicius* = coming from abroad; outer layer of a tube.

**tunica intima** L. " + *intima* = innermost; inside layer of a tube such as a blood vessel.

**tunica vaginalis** L. " + *vagina* = a sheath; serous membrane surrounding sides and front of testis.

**tympanic** adj. G. *tympanon* = a tambourine, a drum; referring to ear-drum (Fallopian, q.v.).

**ultrastructure** the structure of the smallest elements, components of a cell or tissue as seen with the electron microscope.

**ultratome** special microtome for cutting ultrathin sections for electron microscopy.

**umbilicus** L. = navel, from G. *omphalos*.

**uncus** L. = a hook; uncinat process = hook-like part of pancreas.

**ungual** adj. L. *unguis* = a claw, talon, finger-nail.

**ureter** G. *ouron* = urine + *tereo* = I preserve; a tube carrying urine from kidney to bladder (Galen, c. 180 AD).

**urethra** G. *ourethra* = tube from bladder to exterior (Hippocrates).

**urine** G. *ouron* = urine.

**uterus** L. = womb (especially in pregnancy), from L. *uter* = a large goatskin bag used as a wine-skin.

**utricle** L. *utriculus* = a little womb, dim. L. *uterus*; 1. larger of two sacs in membranous labyrinth of inner ear; 2. *utriculus prostaticus* = sac in prostate.

**uvea** L. *uva* = grape; the middle vascular coat of the eye (when peeled out of the eye, the uvea resembles the empty shell of a peeled concord grape), includes choroidea, ciliary body and iris.

**uvula** L. = a little grape; pendulous posterior end of soft palate used to produce guttural consonants (1695).

**vacuole** L. *vacuum* = an empty space; a clear space in cell cytoplasm.

**vagina** L. = a sheath, a scabbard (L. *gladius* = sword was a common Roman term for penis); cf. evagination, invagination.

**vallate** L. *vallatus* = walled, from L. *vallum* = a rampart; of largest lingual papillae, surrounded by groove & wall; cf. circumvallate.

**valve** L. *valva* = a fold, a leaf of a folding door.

**van Gieson, Ira.** 1865-1913 American histologist & bacteriologist; v. G.'s stain = a mixture of acid fuchsin in saturated picric acid staining collagen bright pink.

**varicose** adj. L. *varicosus* = like a twisted vein, from L. *varix* (-ices) = a twisted vein.

**varicosity** L. " ; 1. a dilatation in a vein; 2. a dilatation in a nerve fibre.

**Varolio, Costanzio.** 1543-1575 Bologna, Rome physician & anatomist; pons Varolii = pons of brainstem.

**vas (-a)** L. *vas* = a dish, a vessel.

**vas nervi (vasa nervorum)** L. " + *nervi* = of a nerve; blood vessels supplying a nerve fascicle.

**vas rectus (vasa recta)** L. " + *rectus* = straight; straight blood vessels in renal medulla.

**vas vasi (vasa vasorum)** L. " + *vasi* = of a vessel; blood vessels supplying wall of a blood vessel.

**vascular** adj. L. *vasculum* = a small vessel, dim L. *vas*.

**vasopressin** L. " + OF. *presser* = to press; hormone from pars nervosa of hypophysis increasing blood pressure.

**Vater, Abraham.** 1684-1751 Wittenburg anatomist, botanist & pathologist; ampulla of Vater = hepato-pancreatic ampulla at end of bile duct (1720); corpuscles of Vater-Pacini = lamellated corpuscles in skin; tubercle of Vater = greater duodenal papilla (1710).

**ventral** adj. L. *venter* = belly; bellywards.

**ventricle** L. *ventriculus* = a small belly, dim. L. *venter*; cavities of brain; largest two chambers of heart.

**Verga, Andrew.** 1811-1895 Milan psychiatrist; ventricle of V. = posterior extension of the cavity of the septum pellucidum; canal of V. = small tunnel in petrous temporal bone containing a vein.

**Verhoeff, Frederick H.** 1874-1968 Boston ophthalmologist; stain for elastic tissue.

**vermiform** L. *vermis* = worm + *forma* = shape.

**Vernier Pierre.** 1580-1637 Paris physicist; vernier scale.

**Vesalius (Wesel), Andreas.** 1514-1564 Flemish (studied at Louvain & Paris) anatomist of Padua, Bologna & Pisa; founder of scientific, topographical anatomy; conducted public dissections at Padua; criticised Galen; wrote *De corporis humani fabrica* (1543).

**vesica** L. = bladder.

**vesicle** L. *vesicula* = a little sac, blister or bladder; e.g., seminal vesicle.

**vesicular** adj. L. " ; like blisters; of pale dispersed chromatin in a nucleus, a vesiculated nucleus.

**vestibule** L. *vestibulum* = entrance hall (where one takes off L. *vestes* = garments); entrance to nose, mouth, larynx, inner ear, female reproductive system.

**vibrissa (-ae)** L. *vibrare* = to vibrate; hairs in nasal vestibule which vibrate to air currents during snoring.

**Vicq d'Azyr, Felix.** 1748-1794 Paris physician & comparative anatomist; bundle of V. d'A. = mamillothalamic tract of diencephalon (1781).

**Vidus Vidius (= Guido Guidii)** 1500-1569 Paris physician, Pisa philosopher; Vidian nerve = nerve of pterygoid canal (1611).

**Vieussens, Raymond de.** 1641-1716; Montpellier, Paris physician; anulus of V. = ansa subclavia; limbus fossa ovalis; valve of V. = superior medullary velum.

**villus (-i)** L. = a hair, (? from L. *pilus* = a tangled mass of hair); a thin projection of the lining of the small intestine, which resemble the nap of a cloth.

**Virchow**, Rudolph. 1821-1902 German pathologist & politician involved in public health issues; a founder of German anthropological society; developed understanding of the cellular basis of pathological processes; Virchow-Robin spaces = perivascular spaces around arterioles and arteries of central nervous system.

**visceral** adj. L. *viscera* = body organs; as opposed to somatic structures.

**viscus** L. = any internal organ in a cavity, from L. *visco* = I make sticky.

**vitelline** adj. L. *vitellus* = a little calf, a term of endearment; the yolk of an egg (Celsus, c. 10 AD)

**vitreous** L. *vitreus* = glassy; gelatinous mass inside the eyeball with glassy transparency.

**Volkman**, Alfred Wilhelm. 1800-1877 Dorpat & Halle physiologist; V.'s canals = oblique vascular channels in compact bone (1873); cf. Havers.

**vomer** L. *vomere* = to vomit & L. *vomer* = a ploughshare (which throws the earth to either side like vomit) + *nasus* = nose; small tubular epithelial organ located on antero-inferior surface of nasal septum; organ of Jacobson, q.v.

**vorticose** adj. L. *vortex* = eddy, vortex; *venae vorticosae* = veins with whirl-like disposition around eyeball.

**Waldeyer**, Heinrich Wilhelm Gottfried. 1836-1921 Brelau & Berlin anatomist; W.'s fascia = rectal fascia (1899); W.'s organ = paradidymis; W.'s ring = ring of lymphatic tissue at junction of oro- and nasopharynx (1884); W.'s tract = tract of spinal cord white matter; eyelid sweat glands; neuron doctrine = theory that each neuron was a separate entity without structural continuity at a synapse (1891).

**Weigert**, Karl. 1843-1904 Frankfurt pathologist; stains for bacteria, elastin (1882), myelin, cell nuclei.

**Westphal**, Karl Friedrich Otto. 1833-1890 Berlin psychiatrist; nucleus of Edinger-Westphal = oculomotor nucleus (1885).

**Wharton**, Thomas. 1616-1673 London anatomist & physician; studied thyroid gland; W.'s jelly = embryonic connective tissue of umbilical cord (1656); W.'s duct = duct of submandibular gland (1656).

**white matter** parts of central nervous system where there are relatively large numbers of glistening-white myelinated fibres and few if any neurons; outer part of spinal cord; deep part of cerebrum and cerebellum.

**white pulp** the lymphoid tissue of the spleen; cf. Malpighian corpuscle.

**whole mount** a name for a histological preparation where the whole specimen is mounted or spread on the glass slide; e.g., w. m. of retina; w. m. of mesentery.

**Winslow**, Jacob Benignus. 1669-1760 Danish anatomist, Paris anatomist, renown teacher; named many muscles; foramen of W. = epiploic foramen (1732); pancreas of W. = uncinat process of pancreas.

**Wirsung**, Johann Georg. 1600-1643 (assassinated due to a quarrel of anatomy!); Padua prosector; duct of W. = main pancreatic excretory duct (1642).

**Wolff**, Caspar Friedrich. 1733-1794 St. Petersburg anatomist & physiologist, founder of modern embryology; against idea that embryo was preformed; Wolffian duct = mesonephric duct (1759); Wolffian body = mesonephros (1759).

**Wolfring**, Emilj F. von. 1832-1906 Polish ophthalmologist; glands of W. = accessory lacrimal glands.

**working distance** distance between front of microscope objective lens & upper surface of coverglass, with specimen in focus.

**Worm**, Olaus 1588-1654 Copenhagen classicist & anatomist; Wormian bones = tiny irregular bones in the cranial sutures (also known to ancient anatomists).

**woven bone** primary bone; a term for immature bone (formed by direct or indirect ossification) where the collagen and osteocytes are not organised into Haversian systems and interstitial lamellae.

**xiphoid** G. *xiphos* = a sword + *-oeides* = form of.

**xylene** G. *xylon* = wood; hydrocarbons from wood; a clearing agent.

**Z-disc** (or **Z-band**, **Z-line**) abb. for **Zwischenscheibe** Ge. *Zwischenscheibe* = a between-disc; dark disc in centre of I-band; end disc of a sarcomere; Dobbie's line; Krause's line.

**Zeis**, Eduard. 1807-1868 German surgeon; glands of Z. = sebaceous ciliary glands of eyelid.

**Zeiss**, Carl. 1816-1888 German optician; commercial development of light microscope; with Abbé, founded Zeiss optical manufacturing company



**Zinn**, Johann Gottfried. 1727-1759. Göttingen professor of Medicine, director Botanical Garden; anulus of Z. = common tendinous ring of orbit; zonule of Z. = ciliary zonule, q.v. = suspensory ligament of lens.

**zona** L. = a girdle, a marriage belt; e.g., in cortex of adrenal gland: z. fasciculata, q.v.; z. glomerulosa, q.v., z. reticulata, q.v.

**zona pellucida** L. *zona* = a girdle + *perlucere* = to shine through; refractile layer of glycoelax surrounding ovum in a growing ovarian follicle.

**zonula adherens (zonulae adherentes)** L. *zonula* = a small girdle + *adherens* = sticking; component of junctional complex.

**zonula occludens (zonulae occludentes)** L " + *occludens* = ; component of junctional complex.

**Zuckerkandl**, Emil. 1849-1910 Graz, Vienna anatomist; bodies of Z. = aortic paraganglia = para-aortic masses of chromaffin tissue, q.v.

**zygote** G. *zygoein* = to yoke together; fusion of male and female germ cells.

**zymogenic** adj. G. *zyme* = leaven, ferment, sour dough + *gennan* = to produce; of the granules in glandular cells producing enzymes.

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