

**APPENDIX 4: GLOSSARY of HISTOLOGICAL & MICRO-ANATOMICAL TERMS
including historical origins and eponyms,**

(compiled by Dr. B. Freeman, School of Anatomy, UNSW, revised 2000)

Abbreviations:	()	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

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: Eileithyia 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 + *bull* = 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*

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

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.

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 + *crecere* = 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 hammock; 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-Louis; 1768-1844; French naturalist, zoologist, geologist, and anatomist. He is best known for his work on comparative anatomy and paleontology. He was the first to propose the theory of catastrophism, which held that the Earth's history was marked by sudden, short-lived, and relatively infrequent but more powerful and disruptive events, which he called catastrophes, that altered the Earth's geology and life. He is also known for his work on the classification of animals and plants, and for his discovery of the fossilized remains of the mammoth.

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.

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 prophecies.

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. *folliculus*).

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 extrafusul/intrafusul.

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,

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. 5cs

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).

haustrum (-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, Friedrich 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, membranous labyrinth.

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.

Lantermann, A. J. (no dates) American anatomist at Strasbourg; clefts of Schmidt-Lantermann = 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

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lien L. = the spleen (? from G. *leios* = a membb (ag

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,

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*

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.

pachymenix G. *pachys* = thick + *menix* = 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 Giralaldès, 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 cellu Tf of e.4 10 Tuto maiiptilage; connective t

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.

prepuce L. *praeputium* = prepuce or covering of glans penis (? from G. *pro* + *posthe* = penis; or ? L.

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*

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.

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 TfhF1 10 Tf 3terygoid canal

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.