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The ultrastructure of the cell: techniques of electron microscopy

Animal structures (ultrathin section and scanning techniques)
the liver cell; overall structure and details of cell organelles; smooth muscle fibres; muscle and nerve preparation: synapse between a motor neuron and a striated muscle fibre; small intestinal epithelium; alveolar tissue; ciliated epithelium; capillary wall; pancreatic acinar tissue; compound eye of drosophila; dividing amoeba

Bacteria (whole mount, ultrathin section, scanning and freeze fracture techniques)
whooping-cough bacillus; Salmonella DNA; Escherichia coli

Viruses
echthyma virus; herpes simplex virus; adenovirus; poliomyelitis virus; 'rota' virus; influenza virus; measles virus; bacteriophage T

Hepatoma (liver tumour) cells (ultrathin section, scanning, freeze fracture and replica techniques)

Plant structures (ultrathin section and scanning techniques)
*cell wall formation; pit; sieve plate; pollen grains; chloroplasts; elmwood transverse scanning, radial longitudinal and tangential longitudinal sections; epidermal hairs of *Renealmia* leaf*

The microstructure of the seed-bearing plant: plant anatomy

Tissue types
collenchyma, sclerenchyma, macerated vessels and fibres; xylem; phloem; secretory tissue; starch grains; sclereids

Meristem
Zea (maize) root apical meristem; dividing cells from the root apical meristem

Mitosis
various observational techniques: phase contrast, bright field, dark field; anaphase; telophase; late telophase

Stem of monocotyledon
Zea (maize) stem in bright field and polarized light; Triticum (wheat) stem; Zea (maize) vascular bundle; Triticum (wheat) stem vascular bundle; Juncus (rush) stem

Stem of dicotyledon
Helianthus (sunflower) stem and vascular bundle

Root of monocotyledon
Smilax (liana); Zea (maize)

Root of dicotyledon
Ranunculus (buttercup); Helianthus (sunflower)

Secondary growth
Aristolochia (birthwort) young stem and secondarily thickened stem; Sambucus (elder) secondarily thickened stem, development of cork cambium, formation of a lenticel; Salvia (sage) formation of secondary xylem; Hedera (ivy) secondarily thickened stem

The woody twig
Ulmus (elm); Tilia (lime); Ribes (blackcurrant); Quercus (oak)

Secondary growth of root
Sarothamnus (broom); Rheum (rhubarb)

Wood
Pinus (pine) transverse, tangential longitudinal and radial longitudinal sections; Quercus (oak) transverse, radial and tangential sections

Leaf
Tulipa (tulip) epidermis with stomata; Ficus (fig) lithocyst with cystolith; Pinus (pine) needle transverse section; leaf crystals; Zea (maize) leaf transverse section; Ficus (fig) leaf transverse section; Syringa (lilac) leaf transverse section

Flower
Lilium (lily) flower bud; pollen grains; Pinus (pine) ripe pollen grains; Lilium (lily) ripe anther, dividing pollen mother cells, ovary, ovules, embryo sac mother cell; Capsella (shepherd's purse) fruit; Ricinus (castor oil) endosperm

The microstructure of the mammalian body: histology

Tissue types
bone; cartilage; ossification; striated muscle; smooth muscle; motor end plates; nerve fibres

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| 78 | Liver <i>structure of lobules; histochemical appearance</i> |
| 80 | The respiratory organ <i>wall of bronchus; lung tissue</i> |
| 82 | The kidney <i>overall structure; Bowman's capsule; ureter</i> |
| 84 | Lymph glands <i>spleen with lymphatic nodules</i> |
| 85 | Blood and blood vessels <i>blood cells; heart muscle; artery wall; capillary network</i> |
| 87 | Endocrine glands <i>pituitary gland; thyroid gland; adrenal gland; islets of Langerhans</i> |
| 91 | Reproductive system <i>vagina; penis; oviduct; follicle; ovary; testis; epididymis; spermatozoa</i> |
| 96 | Skin <i>human head skin; sebaceous gland; hair follicles</i> |
| 97 | Nervous system <i>ganglion; spinal cord; nerve fibres; cerebellum; Purkinje cells; synapses; pyramidal cells</i> |
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