

Preface	3
Contents	4
Acknowledgements	6

Section 1 **7**

8	
16	
16	
19	
20	

Section 2 **25**

26	
28	
30	
32	
30	
36	
39	
40	
47	
52	
54	
57	
60	

Section 3 **65**

66	
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Contents

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
ecchyma virus; herpes simplex virus; adenovirus; poliovirus; rotavirus; influenza virus; measles virus; bacteriophage 1

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 Ronealmia leaf

The microstructure of the seed-bearing plant: plant anatomy

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

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 (flax); 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
Rheum (rhubarb); Arum (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) lenticel; 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

70	Alimentary canal <i>oesophageal wall; stomach wall; small intestine; large intestine; intestinal villi; autoradiography</i>
76	Exocrine glands <i>salivary gland; Brunner's glands; pancreas; mammary gland</i>
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>
100	Sense organs <i>olfactory epithelium; taste buds; eye; cochlea</i>

Section 4

105 The development of the mammalian body: embryology

106	External development
107	Maturation division and fertilized egg cell
108	Blastocyst and embryo
109	Organogenesis and the formation of somites
110	Section through anterior embryo
111	Sagittal section through embryo
113	Origin of the eye
114	Origin of the teeth and head organs

Section 5

115 X-ray photography of the human body: radiography

116	The skeleton <i>hand and foot; ossification of wrist joint; shoulder and hip joints; knee and elbow joints; mature and child's pelvis; pelvis of pregnant woman with foetal skeleton; vertebral column: erect and bent; bone fracture and healing process; skull and teeth</i>
128	Thorax (chest organs) <i>normal and abnormal</i>
129	Mammography and galactophtogram (mammary gland)
130	Bronchography (air passages)
131	Arteriography (blood vessels) <i>head and arms; heart; kidneys</i>
134	Pyelography (renal pelvis) <i>normal and abnormal</i>
135	Gall bladder <i>normal and abnormal</i>
136	Oesophagus
137	Stomach <i>normal and abnormal</i>
138	Small and large intestine
139	Sonography
140	