

# 2011/12

## MEDICAL & SCIENCE MEDIA



### Medical OVERHEADS

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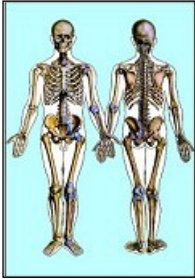
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Cat #: JL-1MT

## Anatomy and Physiology of the Human Body Overheads, Volume 1



### 36 Overheads

A comprehensive presentation of the construction, biology and function of the human body in three volumes. Volume I comprises the human skeleton, the muscular system, the respiratory organs, circulatory system, blood and lymphatic organs, heart and blood vessels, the digestive system, and the urinary organs. These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.

### CONTENTS:

- 36 Overhead-Transparencies, size 22 x 28 cm, comprising 110 colour pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The colour pictures were prepared by university illustrators specialising in this field.
- Sketch and work-sheets with semi-diagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.
- Brochure with depicted explanatory comments for the teacher. All in strong plastic file with ring-mechanism

**The Human Skeleton** - The human skeleton, front and rear view - Fine structure of bone, diagram - Structure of a long bone - Joints: diagram, hinge, ball-and-socket joint - Spinal column, cervical and thoracic vertebrae - Lumbar vertebrae, sacrum and coccyx - Articulations of the skull: skull, atlas, axis - Thorax and shoulder girdle - Skeleton of the arm, pronation and supination of the hand - The elbow joint - The skeleton of the hand - The skeleton of the foot - The pelvic girdle with and without its ligaments - The knee joint, menisci - The skull, anterior and lateral view - Skull with separated bones - X-ray of a dislocation - X-ray of a fracture.

**The Human Muscular System** - Human body showing the skeletal muscles, front and rear views - The structure of a skeletal muscle - The sensory and motor innervation of a muscle - The muscles of the head and the neck - The muscles of the trunk - The superficial and the deeper muscles of the back - The muscles of the shoulder, pairs of antagonists - Pronating and supinating muscles of the forearm - The muscles of the hand - The muscles of the leg and foot - The muscles of the pelvis - Flexors and extensors of the leg - Muscles for lifting and lowering the arm - Example of a complex muscular action.

**The Human Respiratory System** - General view - Position of the lungs in the thorax. Thorax with trachea, bronchi, and lungs - X-ray of human thorax, inspired and expired position - The larynx; front view, dorsal view, I.S. - Swallowing and breathing - Function of the arytenoid cartilages, glottis and vocal cords - Respiratory duct and air passages - Nasal cavity with its sinuses - Intercostal muscles during inspiration and expiration - Detailed structure of the lungs - Comparison of inspired and expired air - Diagram of gaseous exchange in the pulmonary alveoli - Volume of air respired - Connection between work and respiration per minute - Regulation of respiration - Absorption of carbon monoxide and oxygen by haemoglobin - Smoke and sulphur dioxide-content of the air.

**The Circulatory System I: Blood and Lymphatic Organs** - Shape and size of an erythrocyte - Serum reactions to show hereditary relationship - Leucocytes with phagocytosed bacteria - Composition of the blood - The steps of blood clotting, diagram - The ABO blood group determination - Positive and negative reactions - Diagram to understand agglutination of the ABO-blood groups - Diagram to understand Rh-incompatibility - The human lymphatic system - Human immune system - Structure of a lymph node - The vascular system of the human spleen - Exchange of substances between blood capillaries, tissue, and lymph capillaries - Development of lymphocytes. Memory cells, plasma cells.

**The Circulatory System II: Heart and Blood Vessels** - The heart and the big vessels - Human heart, I.S. - Arterio-ventricular and semilunar valves - Endocardium, myocardium, epicardium - The cardiac cycle - Cycle of pressure and volume of the left ventricle. Blood pressure in the aorta, cardiac sounds - Heart, pulmonary and systemic loop - Stimulation and coordination of the heart. Sinoatrial node, atrioventricular node - Human electrocardiogram - Diagram of human blood circulation. Big vessels and capillary networks - Arrangement for taking the human blood pressure - Diagram to explain the pulse during reduction of the pressure in the bag - The heart in the circulatory system of vertebrates - Artery and vein, three-dimensional designs.

**Digestive System: Mouth, Oesophagus and Stomach** - The human organs of nutrition - The deciduous and the permanent set of teeth - The types of teeth - Position and structure of the salivary glands - Human oesophagus,

spatial diagram and section - Position and fixation of the human abdominal digestive organs. - Human stomach, spatial diagram, sections, gastric glands.

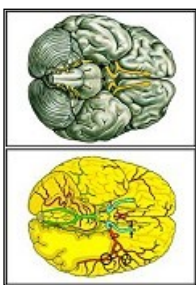
**The Intestine** - Small intestine, sections, mucous glands, principle of peristaltic movement - Structure of an intestinal villus - Human colon, l.s., low magnification - Human colon, spatial colour design and transverse section.

**The Liver and the Pancreas** - General structure of a liver lobule- Structure of a hepatic cord - Vascular systems of a liver lobule - Liver, t.s. showing liver lobules, bile ducts, diagram - Blood supply, exchange of substances of liver and small intestine - The venous system of the liver, portal vein and hepatic vein.

**The Urinary Organs** - The urinary organs, situs - Kidney, l.s., diagram - The blood vessels of the kidney - Nephron and glomerulus - Function of the kidney, the course of renal tubules, renal corpuscle.

[Cat #: JL-2MT](#)

## Anatomy and Physiology of the Human Body Overheads, Volume 2



### 32 Overheads

A comprehensive presentation of the construction, biology and function of the human body in three volumes. Volume II comprises the The Nervous Tissue, The Human Spinal Cord, The Human Brain and the transmission of information, The Autonomic Nervous System, and Reproduction, sex education and Genetics. These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.

### CONTENTS:

- 32 Overhead-Transparencies, size 22 x 28 cm, comprising 101 colour pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The colour pictures were prepared by university illustrators specialising in this field.
- Sketch and work-sheets with semi-diagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.
- Brochure with depicted explanatory comments for the teacher. All in strong plastic file with ring-mechanism.

**Reproduction, Sex Education and Genetics** - Asexual reproduction of Amoeba - Sexual reproduction of Hydra - Reproduction of the sea urchin - Reproduction in fishes - The reproductive organs of the human male; lateral view of situs and diagram - Testis, epididymis, spermatogenesis - Spermatozoa - Human hair, egg, and spermatozoa; comparison of sizes - The reproductive organs of the human female; lateral and front view of situs and diagram - The maturation of the oocyte - Oogenesis, ovulation, fertilization, cleavage of fertilized egg, and implantation of blastocyst in the uterine wall - Changes of the endometrium during menstrual cycle and after fertilization - The menstrual cycle of the woman - The fertilization of the egg, first development in the fallopian tube and imbedding in the uterus - Hereditary transmission of the sex and sex-linked inheritance - The human chromosomes - Normal karyotype with banding pattern - Growth of embryo and foetus in the uterus - Full term baby in maternal abdomen - Beginning of birth, entrance of amniotic sac into the birth canal - The chromosomes as carriers of the hereditary factors - Oogenesis, spermatogenesis fertilization and cleavages in animals - Fertilization and maturation divisions in Ascaris - Fertilization of the sea urchin egg and development - Development of the central nervous systems of Branchiostoma (Amphioxus) and frog, from. Closing of neural groove to neural tube - Chicken embryo, 48 hour, t.s. with neural tube and chorda - Development of the human heart - Graduation of vertebrate hearts - Graduation of the vertebrate lungs - Development of the human eye.

**The Nervous Tissue** - Human nervous system, entire view - Motor nerve cells of the grey matter, cell body, dendrites, axon - Nerve fibres, t.s. Axons and myelin sheaths - Various shapes of human neurons - Diagram of a neuron - Various neurons from human nervous system - Medullated nerve fibres, showing Ranvier's nodes - The nervous systems - The evolution of the nervous system in worms - The nervous system of the earthworm - Concentration of ganglia in insects - The head of a locust l.s. - Position of the brain - The nervous system in arthropods: lobster, crab, spider, scorpion - The nervous system of a freshwater mussel, a snail and a starfish - Embryonic development of the spinal cord in frog and human - Human vertebra. Superior and lateral view of three vertebrae with intervertebral discs - Brains of vertebrates (shark, bony fish, amphibian, reptile, bird, mammal), dorsal views and sagittal sections - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Human spinal cord in the spinal canal, lateral view. Opened dural sac, surface view with segments - Human

spinal cord and medulla oblongata. Lateral, dorsal and ventral view with spinal nerves - Comparison of the masses of brain and spinal cord in Branchiostoma, frog, rabbit, cat, ape, human - Cranial nerves of frog and sheep - Human brain, ventral view with cranial nerves - Proportion between brain and head in vertebrates and in mammals.

**The Human Spinal Cord** - Position of the spinal cord in the spinal canal, transection - Spinal cord of mammal, t.s. silver stained, photomicrograph - Portion of the spinal cord with roots, ganglia, and branches of spinal nerves, three dimensional diagram - Simple reflex arc - Tactile corpuscle, spinal cord, motor end plate on muscle fibre - Polio: syndrome of the ventral gray matter - Tabes, tertiary syphilis: syndrome of the dorsal white matter - Sclerosis of the pyramidal tracts - Complete section of the spinal cord: Paraplegia.

**The Human Brain and the Transmission of information** - The human brain, lateral view - Sagittal section of the human brain, view on the right half showing cut surfaces - Frontal section of human brain - The hierarchic structure of the brain, archipallium and neopallium - Electrotonic or resting potential and action potential - Receptors receive various types of sensory input and transduce them into action potentials of equal magnitude - Intensity of stimulus is reported by impulse frequency - Propagation of action potential along unmyelinated axon - Fine structure of a Ranvier's node (after Krstic) - Nerve cell body from the cerebrum with dendrites, axon, and synapses - Exciting and inhibiting synapses, their location and structure - Synapsis, spatial picture - Synaptic transmission, diagram - Brain stem, ventral and dorsal view - The blood supply of the brain, ventral and lateral view - Lesion caused by diving accident - Lesion caused by haemorrhage (stroke) - Cerebral cortex, t.s. silver stained to show the pyramidal cells and their connections - The lobes and areas of the left cerebral hemisphere - Areas and tracts of the cerebrum, diagram - Views of the cerebellum from various sides, and sagittal section - Fine structure of the cerebellar cortex, neuronal connections, diagram - Tracts connecting the cerebrum with the cerebellum.

**The Autonomic Nervous System** - Effect of atropine on one eye, both eyes exposed to equal incidence of light - Innervation of the iris muscles. Antagonism of sympathetic and parasympathetic nervous system - Antagonistic effect of the sympathetic and parasympathetic system on glands and involuntary muscle - The location of the spinal cord, spinal nerves, sympathetic trunk, and sympathetic ganglion II - Transmitter and inhibiting substances of synapses and motor end plates in the somatic, sympathetic, and parasympathetic nervous system - Typical courses of sensory and motor tracts of the autonomic nervous system - Regulation of the body temperature - Location of the receptors and controlling centres in the body, negative feedback system.

[Cat #: JL-3MT](#)

### Anatomy and Physiology of the Human Body Overheads, Volume 3



#### 37 Overheads

A comprehensive presentation of the construction, biology and function of the human body in three volumes. Volume III comprises the Eye and Vision, Ear and Auditory Mechanism, Sense of Equilibrium, Sensory Perception: Smell, Taste, Touch, Perception of Temperature and Movement, Hormones and Hormone Systems. These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.

#### CONTENTS:

- 27 Overhead-Transparencies, size 22 x 28 cm, comprising 75 colour pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The colour pictures were prepared by university illustrators specialising in this field.
- Sketch and work-sheets with semi-diagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.
- Brochure with depicted explanatory comments for the teacher. All in strong plastic file with ring-mechanism.

**Eye and Vision** - Range of visible light in the electromagnetic spectrum - The human eye. Eyeball, eye muscles, eyelid, sagittal section - Human retina, t.s. detail view. Rods, cones, bipolar cells, ganglion cells, photomicrograph - Human retina. Chief synaptic connections, diagram - Retina, t.s. for detail of rods and cones - Orbital muscles of the eyeball - Optic pathways, optic chiasm, diagram - Retina seen through the ophthalmoscope. Central fovea, optic disc - Formation of an image in a normal eye - The eye as a camera - Accommodation for distant and near vision - Pupillary light reflex - Image produced by "normal" and astigmatic glasses - Eye with pathological turbidity of the lens (cataract) - Defects of vision: short-sighted and far-sighted eye - Image produced by an astigmatic cornea - Tests for colour-blindness. Red-green deficiency and blue weakness - Optical illusions by ambiguous information - Optical illusions caused by the influence of the surrounding areas - Optical illusions caused by non-conformity of

rational interpretation and optical perception - Trichromatic triangle. Different combinations of three primary colours give all other colours - Spectral sensitivity of rods and cones (dominator system), three pigment colour vision (modulator system).

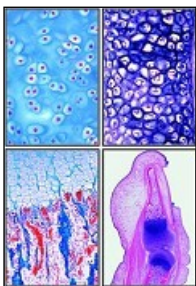
**Ear and Auditory Mechanism, Sense of Equilibrium** - The formation of sound waves. Areas of rarefaction and areas of compression caused by a tuning fork. - Anatomy of the human ear. Ear concha, external auditory canal, middle ear, internal ear - Movement of the eardrum, auditory ossicles, oval window and round window - Position of epithelia of the internal ear - Organ of Corti, diagram - Movement of Reissner's membrane and basilar membrane. Stimulation of the hair cells by the hairs in the tectorial membrane - Broadening of the basilar membrane from the base of the cochlea to the helicotrema - Formation of damped waves in the membranous labyrinth - Displacement of the membranous labyrinth by the waves generated by sound vibrations - Amplitude pattern of vibration of the membranous labyrinth for high and low frequencies - Detection of sound direction by the time difference between the entry of sound into the ears - Diagram of main auditory pathways. Acoustic centres in the brain - Function of the vestibular system.

**Sensory Perception: Smell, Taste, Touch, Perception of Temperature and Movement** - Section through nasal cavity and pharyngeal cavity - Location of the olfactory mucous membrane and respiratory pathway - Nasal conchae of human and deer. Microsmates, macrosmates - Olfactory and respiratory mucous membrane t.s. - Detail view of olfactory epithelium with sensory cilia - Tongue of rabbit, t.s. of papilla foliata with taste buds - Human skin from palm, v.s. showing cornified epidermis, germinative zone, sweat glands, diagram - Human scalp, vertical section showing l.s. of hair follicles, sebaceous glands, epidermis - Human skin with cutaneous receptors of touch, pressure and thermal sensation - Tactile hair, median l.s. and t.s. - Ruffini's warmth receptor - Krause's corpuscle, cold receptor - Meissner's corpuscle from human finger - Back of human hand marked with warmth and cold spots - Sensitivity differences caused by touch-stimulation: excitation nearby or far away, weak or strong - Proprioceptors: muscle spindle and Golgi tendon apparatus. Conscious awareness of the position and movements of the joints.

**Hormones and Hormone Systems** - The human hormone glands, position, shape, size - The human thyroid gland, situs - Exocrine and endocrine glands, diagram - Thyroid gland, sec. showing glandular epithelium and colloid - Acceleration of tadpole development caused by thyroxine - Effect of thyroxine therapy on a child - Cretinism caused by insufficiency of thyroid gland - Relation between iodine and goitre - The parathyroid glands - Pancreas showing islets of Langerhans - Regulation of blood sugar level by A- and B-cells of the islands of Langerhans - Control of the blood sugar level by insulin and glucagon - Human kidney and adrenal gland - Adrenal gland, t.s. through cortex and medulla - Interstitial cells of Leydig, t.s., high magnification photomicrograph - Corpus luteum, t.s., photomicrograph - Castrated fowl, effect of castration on rooster and hen - Secondary sex characters in humans - Processes during the menstrual cycle - The anti-baby pill, hormonal contraception - Relations between endocrine glands, diagram - Location of pituitary gland and pineal body - Thymus of juvenile and adult person.

[Cat #: JL-13MT](#)

### Histology and Human Science Overheads



#### 30 Overheads

Atlas of 30 Overhead-Transparencies size 22 x 28 cm, comprising over 170 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. In strong plastic file with ring-mechanism. - By Dr. Karl-Heinrich Meyer B.S. and Johannes Lieder.

**Tissues and Skin:** - Squamous epithelium, isolated cells - Squamous epithelium, colour drawing and three dimensional design - Cuboidal epithelium in l.s. of kidney tubules - Columnar epithelium, human t.s. - Simple ciliated columnar epithelium, oviduct, t.s. - Pseudostratified ciliated columnar epithelium, trachea, t.s. - Areolar connective tissue, human - Areolar connective tissue, schematic colour design - Adipose tissue, human, stained for fat - Adipose tissue, development, schematic colour design - White fibrous tissue, tendon, human, l.s. - Yellow elastic connective tissue (Ligamentum nuchae), t.s. - Hyaline cartilage, human t.s. - Yellow elastic cartilage, human, sec. - White fibrous cartilage, human sec. - Compact bone, human tibia, t.s., low magnification - Compact bone, human t.s., high magnification showing Haver's system - Spongy bone, human t.s., low magnification - Spongy bone, human t.s., high magnification for finer details - Bone development, l.s. of foetal finger - Striated (skeletal) muscle, human l.s., high magnification showing the striations - Striated muscle, t.s. of muscle bundle - Striated muscle t.s. high magnification for finer details - Smooth (involuntary) muscle, human l.s. - Smooth (involuntary) muscle, schematic colour design - Heart (cardiac) muscle, human l.s. - Skin from finger tip, human, l.s. - Scalp, human, shows l.s. of hair follicles, - Scalp, shows t.s. of hair follicles, low magnification - Hair follicles from human scalp, high magnification.

**Circulatory, Respiratory and Endocrine System:** - Artery, human, t.s. stained for elastic fibres - Vein, human, t.s. stained for elastic fibres - Aorta, human, t.s. - Artery and vein, human t.s., routine stained - Artery and vein,

human t.s., schematic colour design - Blood smear, human, Giemsa stain - Blood smear, human, schematic colour design - Frog blood smear, nucleated erythrocytes - Red blood cells (erythrocytes) of 12 species of animals for comparison, colour design - Nasal region of small mammal, t.s. - Trachea, human t.s., low magnification - Trachea, human t.s., high magnification - Lung, human, t.s. - Lymph node, human t.s., general view, low magnification - Lymph node, human t.s., high magnification for fine details - Spleen, human t.s. - The vascular system of the human spleen, colour diagram - Tonsil (Tonsilla palatina), human t.s. - Red bone marrow, human, smear - Thymus from human child, t.s. - Thyroid gland (Gl. thyroidea), human t.s. - Adrenal gland (Gl. suprarenalis), human t.s. - Pituitary gland sag. l.s. of complete organ - Pituitary gland (Hypophysis), human t.s. - Location of pituitary gland and pineal body, sagittal l.s. of human head - Pineal body (Epiphysis), human t.s. - Islets of Langerhans in the pancreas, human, sec.

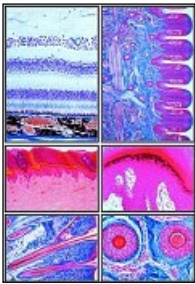
**Digestive System:** - Lip, human foetus, t.s. - Tooth, human, t.s. of crown - Tooth, human, t.s. of root embedded in the jaw - Tooth development from human foetus, l.s. early stage - Tooth development from human foetus, l.s. later stage - Tongue, human, t.s. - Tongue of mouse, l.s. showing cornified papillae - Oesophagus, human t.s., low magnification of the whole organ - Oesophagus, human t.s. high magnification for fine detail - Stomach, fundic region, human t.s. - Duodenum, human t.s. - Jejunum, human t.s. - Vermiform appendix, human t.s. - Colon, human t.s., low magnification - Tubulous glands of the colon, detail, l.s. - Tubulous glands of the colon, detail, t.s. - Submaxillary gland (Gl. submandibularis), human t.s. - Sublingual gland (Gl. sublingualis), human t.s. - Parotid gland (Gl. parotis), human t.s. - Pancreas, human t.s. - Liver, human, t.s. - Liver, human, sec. staining of glycogen - Liver, of pig with liver lobules, t.s. low magnification - Liver lobule, t.s. with injected bile canaliculi - Vascular systems of a liver lobule, three dimensional colour diagram - Gall bladder, human t.s.

**Urinary and Genital System:** - Kidney, human l.s., low magnification - Kidney of mouse, sagittal l.s. through complete organ - Structure of kidney, colour diagram - Human renal cortex, l.s., higher magnification - Human renal medulla, l.s. - Renal corpuscle (Malpighian corpuscle), high magnification - Kidney, sec. with injected blood vessels - Ureter, human t.s. - Urinary bladder, human t.s. - Ovary, mature, t.s. low magnification for general survey - Egg development: primary follicle - Egg development: secondary follicle - Egg development: mature Graafian follicle with germ hillock and egg cell - Egg development: Ruptured Graafian follicle after the oocyte has been discharged l.s. - Egg development: mature ovulated egg with corona radiata - Ovary with corpus luteum, human t.s. - Uterus, human, t.s. - Oviduct (fallopian tube), human, t.s. - Uterus of rat with embryo in situ, t.s. - Embryo of mouse, sagittal l.s. of entire specimen - Embryo of mouse, sagittal l.s. of head - Embryo of mouse, t.s. of thoracic region - Placenta, human t.s. - Structure and function of the placenta; diagram - Umbilical cord (navel string), human t.s. - Vagina, human t.s. - Mammary gland, human t.s. - Testis from human adult, mature stage t.s. - Testis t.s. stained to show all stages of spermatogenesis, high magnification - Interstitial cells of Leydig, in human testis t.s. - Testis, epididymis, spermatogenesis; colour diagrams - Epididymis, human t.s. - Sperm smear of bull - Penis, t.s. - Seminal vesicle, t.s. - Prostate of young man, t.s. - Spermatic cord (Ductus deferens), human t.s.

**Nervous System and Sensory Organs:** - Cerebral cortex, human, t.s. routine stained - Cerebral cortex, human, t.s. silvered for pyramidal cells - Cerebellum, human, t.s. routine stained - Cerebellum, human, t.s. silvered for Purkinje cells - Human brain, ventral view with cranial nerves - Brain of mouse, l.s. of the complete organ - Human spinal cord and medulla oblongata. Lateral and dorsal view with spinal nerves, ventral view without nerves - Brain stem with cranial nerves, ventral and dorsal view - Human vertebrae. Superior view and lateral view of three vertebrae with intervertebral discs - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Spinal cord, t.s. routine stained - Spinal cord, t.s. silver stained - Gray matter of spinal cord, t.s. showing nerve cell bodies - White matter of spinal cord, t.s. showing nerve fibres - Portion of the spinal cord with roots, ganglia, and branches of spinal nerves, three-dimensional diagram - Sympathetic ganglion, human t.s. - Pseudounipolar neuron (T-cell) from spinal ganglion - Peripheral nerve, human sciatic nerve, t.s., low magnification - Peripheral nerve, bundle from sciatic nerve, t.s., medium magnification - Peripheral nerve, nerve fibres, t.s., high magnification, axons and medullary sheaths - Peripheral nerve, teased material of osmic acid fixed material with Ranvier's nodes - Optic nerve, human t.s. - Motor nerve cells, smear from spinal cord of ox shows nerve cells and their appendages - Various shapes of human neurons, 5 figures - Nerve cell body from the cerebrum with dendrites, axon, and synapses. Diagram - Synapsis, spatial picture - Motor nerve endings, muscle stained with gold chloride showing the motor end plates - Motor end plates (neuromuscular junction), diagram, 2 figures - The human eye. Eyeball, eye muscles, eyelid, sagittal section - Eye, anterior part with iris, ciliary body, cornea, l.s. - Eye, posterior part with retina and entrance of optic nerve, l.s. - Retina from eye, t.s. for all details - Human retina, chief synaptic connections, colour diagrammatic design - Cornea from eye, human t.s. - Eyelid of cat, t.s. showing Meibomian gland - Cochlea (internal ear) from guinea pig, l.s. showing organ of Corti - Morphology of the human ear. Ear concha, external auditory canal, middle ear, internal ear - Organ of Corti, two colour spatial diagrams - Olfactory region from nose of rabbit, t.s. - Olfactory epithelium with sensory cilia, t.s. detail view - Tongue of rabbit with papilla foliata shows abundant taste buds, t.s. - Papilla foliata t.s., detail view of taste bud, high magnification - Vallate papilla of the human tongue t.s., detail view - Tactile hairs with blood sinus, l.s. - Tactile hairs with blood sinus, t.s. - Touch corpuscles in human skin, t.s. - Grandry corpuscles in t.s. through beak of duck - Pacinian corpuscles in mesentery or pancreas - Meissner's corpuscle from human finger - Krause's corpuscle, cold receptor.

[Cat #: JL-15MT](#)

## Histology of Humans and Animals Overheads



### 30 Overheads

Atlas of 30 Overhead-Transparencies size 22 x 28 cm, comprising 120 pictures of colour photomicrographs and photomacrographs. With comprehensive interpretation text and 122 drawings and designs. In strong plastic file with ring mechanism. - By Prof. Dr. Kurt Fiedler and Johannes Lieder.

**Cells:** Liver cells, simple animal cells - Liver parenchyma, stained with PAS-Weigert - Pigment cells, skin of salamander larva - Neuroglia cells. Golgi impregnation.

**Epithelial Tissues:** Simple columnar epithelium - Endothelium, surface view, cell boundaries revealed by silver impregnation - Cuboidal epithelium - Ciliated epithelium - Transitional epithelium - Cornea of the eye - Buccal mucous membrane, man - Skin of human finger.

**Connective and Supporting Tissues:** Mesenchyme or embryonic connective tissue, mammalian embryo - Reticular connective tissue, lymph nodes of the cat, silver impregnation of reticular fibres - Embryonic mucous connective tissue, umbilical cord of calf - Loose connective tissue, stretch preparation of mesentery - Tendon - Fibrocartilage - Elastic cartilage, pinna of ear, resorcin-fuchsin - Hyaline cartilage - Long bone, longitudinal section, general plan - Bone, transverse section, Haversian systems, thionin-stained preparation - Long bone, removal of cartilage, deposition of bone tissue - Primary bone in marrow cavity of a long bone.

**Teeth :** Development of teeth - Development of teeth, detailed structures - Root and alveolus of tooth, transverse section - Incisor tooth, longitudinal section.

**Muscular Tissue:** Smooth muscle, urinary bladder - Striated muscle, longitudinal section - Striated muscle, transverse section - Cardiac muscle, longitudinal section.

**Nervous Tissue:** Peripheral nerve, transverse section, picoblue-black - Peripheral nerve, transverse section, at greater magnification - Myelinated nerve fibres, longitudinal section. Osmium tetroxide - Motor end plates. Gold chloride method - Spinal cord, transverse section, with motor nerve cells, silver impregnation after Bodian - Motor neuron, spinal cord, silver impregnation after Bodian - Cells of spinal ganglia - Pyramidal cells, cerebral hemispheres, Golgi impregnation.

**Digestive Organs:** Tongue, longitudinal section - Oesophagus, transverse section - Stomach, fundus region, longitudinal section - Gastric glands proper, fundus region, longitudinal section - Small intestine (duodenum), longitudinal section - Villi of the duodenum, at greater magnification - Small intestine of dog, blood vessels injected - Small intestine of cat, longitudinal section, crypts of Lieberkühn - Large intestine (colon) - Colon, longitudinal section - Colon of man, longitudinal section - Appendix (processus vermiformis).

**Glands:** Sublingual salivary gland (glandula sublingualis) - Submandibular gland (glandula submandibularis) - Parotid gland - Islet of Langerhans in pancreas of monkey - Liver of pig - Liver, injection of blood vessels - Liver lobule in transverse section, injected bile canaliculi - Liver, impregnation of reticular fibres.

**Respiratory Organs:** Trachea, transverse section for general survey - Trachea of guinea-pig, layers of tracheal wall - Lung, transverse section for general survey - Bronchial tree, section.

**Blood and Blood Vessels:** Human blood film, blood platelets, Pappenheim's stained - Blood film of frog, Pappenheim's stain - Red bone marrow - Artery and vein of cat - Wall of aorta, elastic fibre stain - Wall of vein, elastic tissue stain - Large omentum (mesentery), guinea-pig, aldehyde fuchsin stained.

**Lymphatic System:** Palatine tonsil of man - Thymus of cat - Spleen of cat.

**Urinary Organs and Excretion:** Kidney of mouse, longitudinal section - Renal corpuscles - Cortex of kidney, transverse section - Medulla of kidney, transverse section - Kidney, showing storage of trypan blue - Ureter of rabbit.

**Genital Organs, Spermatogenesis, Oogenesis:** Testis, iron haematoxylin-eosin stained - Testis, germinal epithelium, under higher magnification, iron haematoxylin-eosin stained - Spermatozoa of bull - Epididymis (ductus epididymis), transverse section - Prostate gland - Ovary of cat - Secondary follicle of cat ovary - Mature Graafian follicle from ovary of cat - Mature oocyte in ovary of cat - Corpus luteum in ovary of cat - Oviduct - Uterus of sheep in transverse section - Resting mammary gland.

**Endocrine Glands:** Thyroid gland - Pituitary gland (hypophysis), general view - Pituitary, anterior lobe - Pineal body (epiphysis) of ox, transverse section - Adrenal (suprarenal) gland of monkey.

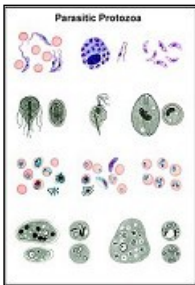
**Scalp and Hair:** Human scalp in transverse section - Human scalp in longitudinal section - Human hair bulb in longitudinal section - Vibrissae of pig in longitudinal section - Developing nail in human embryo, sagittal section

**Organs of Sense:** General plan of the eye - Retina of monkey - Optic nerve in transverse section - Eimer's organ of mole, Bodian silver preparation - Corpuscles of Grandry and Vater - Pacinian corpuscles from beak of duck - Vater-Pacinian corpuscles from pancreas of cat - Papilla foliata of rabbit tongue - Taste buds from tongue of rabbit - Olfactory mucous membrane - Cochlea, longitudinal section.

**Central Nervous System:** Spinal cord in transverse section, general view, from a Cajal silver impregnation - Motor neurons in spinal cord of cat, stained to show Nissl's bodies - Cerebellum of cat - Purkinje cells of cerebellar cortex of cat, Cajal silver impregnation.

[Cat #: JL-16MT](#)

### Bacteria, Parasites and Human Diseases Overheads



#### 32 Overheads

Atlas of 32 Overhead-Transparencies size 22 x 28 cm, comprising over 230 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, life cycles, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. In strong plastic file with ring-mechanism. - By Dr. K.-H. Meyer B.S. and Johannes Liedler.

**USEFUL AND HARMFUL BACTERIA:** Spherical bacteria, cocci - *Neisseria gonorrhoeae*, causing gonorrhoea, diplococci methylene blue stained - *Staphylococcus aureus*, pus organism, smear from culture, Gram stained - *Streptococcus pyogenes*, smear from pus showing long chains,

Gram stained - *Streptococcus lactis*, milk souring organisms, smear from culture showing short chains stained with methylene blue - *Sarcinalutea*, Gram stained - *Gaffkya tetragena*, meningitis, occurring in tetrads, Gram stained - **Rod-shaped bacteria, non spore-forming, gram-positive** - *Mycobacterium tuberculosis*, smear from positive sputum, doubly stained after Ziehl-Neelsen - *Mycobacterium leprae*, causing leprosy, direct smear from lesion, Ziehl-Neelsen stained - *Corynebacterium diphtheriae*, Gram stained - **Rod-shaped bacteria, non spore-forming, gram-negative** - *Azotobacter*, soil organisms, Gram stained - *Bacterium prodigiosum* (*Serratia marcescens*), chromogenic organisms, Gram stained - *Aerobacter aerogenes*, intestinal bacteria, Gram stained - *Proteus vulgaris*, causing putrefaction, smear from culture Gram - *Acetobacter aceti*, manufacture of vinegar, Gram stained - *Escherichia coli*, colon bacillus, Gram stained - *Eberthella typhi*, causing typhoid fever, Gram stained - *Salmonella paratyphi*, causing paratyphoid fever, smear Gram stain - *Salmonella enteritidis*, causes meat poisoning, smear Gram stained - *Klebsiella pneumoniae* (*B. friedlanderii*), causing pneumonia, special stained to show bacteria and capsules - *Pasteurella pestis*, causing plague, smear Gram stained - *Hemophilus influenzae* (Pfeiffer), smear Gram stained - *Rhizobium radicola*, nitrogen fixing organisms, t.s. through root nodules of lupin with bacteria in situ (symbiosis) - *Rhizobium radicola*, smear Gram stained - *Bacterium erysipelas*, causing erysipelas, Gram stained - **Rod-shaped bacteria, spore-forming (bacilli)** - *Bacillus subtilis*, hay bacillus, bacilli and spores doubly stained with carbolfuchsin and methylene blue - *Bacillus mycoides*, large soil organisms growing in chains. Metachromatic staining of internal particles with gentian violet - *Bacillus mesentericus*, smear Gram stained - *Bacillus anthracis*, causing wool sorters disease, direct smear from infected spleen, Olt's stain - *Bacillus anthracis*, spores stained - *Clostridium septicum*, spores stained - *Clostridium tetani*, causing lockjaw, special stained to show the terminal spores by the Ziehl-Neelsen method - *Clostridium perfringens*, special stained to show the central spores - **Spiral bacteria and spirochaetes** - *Vibrio comma*, causing Asiatic cholera, smear Gram stained - *Rhodospirillum rubrum*, chromogenic rods, smear Gram stained - *Spirillum volutans*, a very large flagellate spirillum, special stained to show the flagella - *Spirochaeta duttoni* (*Borellia recurrentis*), causes Central African relapsing fever, blood smear stained for spirochaetae - *Treponema pallidum*, section through syphilitic lesion, the spirochaetae are stained by Levaditi's silver method - **Miscellaneous groups** - Bacteria from human intestine, mixed species Gram stained - Bacteria from mouth, cocci, bacilli, spirilli, and spirochaetae are shown. Gram stained for Gram positive and Gram negative organisms - Bacteria from mouth, cocci, bacilli, spirilli, and spirochaetae are shown, color raphic design - Bacteria from bread, methylene blue stained - Bacteria from yoghurt, carbolfuchsin stained - *Streptomyces griseus*, branched organisms (streptomycin), smear Gram stained - *Actinomyces*, causing lumpy jaw, smear stained - *Sphaerotilus natans*, from putrid water, long chains within sheaths - Bacteria of caries in I.S. of diseased human tooth, doubly stained.

**PARASITES OF HUMAN AND ANIMALS:** Protozoa - Parasitic Protozoa: *Trypanosoma*, *Leishmania*, *Toxoplasma*, *Giardia lamblia*, *Trichomonas*, *Balantidium*, *Plasmodium vivax*, *Plasmodium falciparum*, *Babesia*, *Entamoeba histolytica*, *E. coli* - Indirect Fluorescent Antibody Test (IFAT). Fluorescein isothiocyanate, negative reaction - Indirect Fluorescent Anti-body Test (IFAT). Fluorescein isothiocyanate, positive reaction - *Trypanosoma brucei gambiense*,

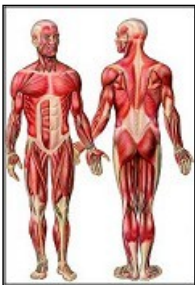
Giemsa stained - Apathogenic trypanosomes, Giemsa stained - *Trypanosoma brucei gambiense* - Life Cycle - *Trypanosoma cruzi* - Life Cycle, Chagas disease - *Trypanosoma cruzi*, Chagas disease, blood smear, Giemsa stained - *Trypanosoma cruzi*, Chagas disease, l.s. of heart muscle with amastigotes - *Rhodnius prolixus*, Cone Nose Bug, the vector of Chagas disease - *Leishmania* - Life cycle - *Leishmania tropica*, Oriental Sore - *Leishmania donovani*, Kala Azar, in smear of spleen, Giemsa stained - *Leishmania donovani*, Kala Azar, in section of spleen - *Trichomonas vaginalis*, Giemsa stain - *Giardia lamblia* (syn. *Lamblia intestinalis*), Trophozoite, Iron hematoxylin stained - *Giardia lamblia* (syn. *Lamblia intestinalis*), Cyst, Iron hematoxylin - *Sarcocystis tenella*, section of infected muscle tissue showing the parasites in Miescher's tubes - *Entamoeba histolytica* - Life-Cycle - *Entamoeba histolytica*, trophozoites, Iron hematoxylin stained - *Entamoeba histolytica*, 4-nucleate cyst, Iron hematoxylin stained - *Entamoeba histolytica*, section of infected intestine showing the parasites in situ - *Entamoeba coli*, trophozoite, Iron hematoxylin - *Entamoeba coli*, 8-nucleate Cysts, Iron hematoxylin stained - *Plasmodium falciparum*, Life Cycle - *Plasmodium berghei*, blood smear, Giemsa stained - *Plasmodium falciparum*, blood smear, Giemsa stained - *Plasmodium cynomolgi*, exoerythrocytic meront (schizont) in the liver of a monkey - *Plasmodium spec.*, l.s. of the intestine from a mosquito showing numerous oocysts resp. sporocysts on its outer surface - *Plasmodium spec.*, section of the salivary gland from an infected mosquito showing numerous thread-shaped sporozoites in the glandular cells - *Plasmodium vivax*, trophozoite in an erythrocyte - *Plasmodium vivax*, mature meront (schizont) with merozoites and granules of the malarial pigment - *Plasmodium malariae*, characteristically "band form"-shaped trophozoite - *Plasmodium malariae*, young meront - *Plasmodium falciparum*, (signet) typical ring form stages, typical, in the peripheral blood - *Plasmodium falciparum*, gametocyte in the peripheral blood, malarial pigment and the membrane of the dehemoglobinized erythrocyte - *Plasmodium gallinaceum*, chicken malaria, blood smear with infected erythrocytes - *Plasmodium cathemerium*, bird malaria, blood smear with infected erythrocytes - *Toxoplasma gondii*, Pseudocyst, Giemsa stained - *Toxoplasma gondii*, Cyst - *Nosema apis*, honey bee dysentery. Section of diseased intestine with parasites - *Monocystis lumbrici*, smear from seminal vesicles of earthworm with sporocysts - Gregarina, from mealworm intestine - *Eimeria stiedae*, causes rabbit coccidiosis, section of liver shows life cycle of the parasite: schizogony, gametes, mature oocysts etc. - *Babesia bigemina* in a thin blood film of a cow, Giemsa stained - *Balantidium coli*, Iron hematoxylin stained - **Platyhelminthes:** - *Dicrocoelium lanceolatum* (dendriticum), sheep liver fluke. W.m. of entire specimen showing suckorial discs, testis, vitellaria, uterus with eggs etc. - *Fasciola hepatica*, beef liver fluke, w.m. of entire specimen showing digestive system, gonads and all details - *Fasciola hepatica*, ova w.m. - *Fasciola hepatica*, miracidium w.m., infective ciliated larva - *Fasciola hepatica*, t.s. of infected snail liver (intermediate host) with sporocysts and redia - *Fasciola hepatica*, isolated sporocyst containing redia w.m. - *Fasciola hepatica*, isolated redia containing cercaria w.m. - *Fasciola hepatica*, isolated cercaria w.m. - *Schistosoma* spp. - Life Cycle - *Schistosoma mansoni*. Fork-tailed cercaria with penetration glands (stained blue) - *Schistosoma mansoni*, t.s. of two pairs in a cross sectioned vein - *Schistosoma mansoni*, copulating male and female, carmine stained - *Schistosoma haematobium*, egg with terminal spine w.m. - *Schistosoma japonicum*, egg without spine w.m. - *Schistosoma mansoni*, egg with subterminal spine w.m. - *Taenia saginata* and *Taenia solium* - Life Cycles - *Taenia saginata*, tapeworm, scolex without hooklets w.m. - *Taenia saginata*, mature proglottid stained and flat mount to show the branched uterus filled with eggs w.m. - *Taenia saginata*, proglottid t.s. to show cuticle, testis, uterus, and excretory canals - *Taenia saginata*, ova with six-hooked embryos w.m. - *Taenia solium*, tapeworm, scolex with hooklets w.m. - *Taenia solium* cysticercus (*Cysticercus cellulosae*), bladderworm of pig tapeworm with scolex extended, w.m. - *Taenia pisiformis*, mature proglottid w.m., showing the full developed sexual organs - *Hymenolepis nana*, dwarf tapeworm of man, scolex with protruded rostellum and suckers w.m. - Circular row of hooklets from the scolex of *Hymenolepis nana* (top view) - *Hymenolepis nana*, proglottids w.m. - *Diphyllobothrium latum*, fish tapeworm, proglottids w.m. - *Echinococcus granulosus*, dog tapeworm (also harmful to man), complete specimen with scolex and a few proglottids, w.m. - *Echinococcus granulosus*, t.s. of hydatid cyst showing brood capsules, scolices and cyst wall - *Echinococcus granulosus*, free protoscolices from a hydatid. Dark-field photograph - *Echinococcus multilocularis*. Section through a multivesicular or spongy hydatid containing numerous protoscolices. PAS-reaction - **Nemathelminthes:** - *Trichinella spiralis*, section of infected muscle showing encysted larvae, triply stained - *Trichinella spiralis*, infected muscle piece flattened and w.m. to show entire encysted larvae - *Ascaris lumbricoides* and *Enterobius vermicularis* - Life Cycles - *Ascaris lumbricoides*, roundworm of man and pig, t.s. of female in region of reproductive organs - *Ascaris lumbricoides*, t.s. of male in region of reproductive organs - *Ascaris lumbricoides*, egg w.m. - *Enterobius vermicularis* (*Oxyuris*), thread worm of man, adult female filled with ova w.m. - *Enterobius vermicularis*, ovum w.m. - *Trichuris trichiura*, egg w.m. - *Heterakis spumosa*, intestinal worm of chicken, adult specimen w.m. - *Ancylostoma duodenale*, hookworm, posterior end of male shows detail of bursa w.m. - *Ancylostoma duodenale*, adult female w.m. low magnification - *Ancylostoma duodenale*, adult male and female in copula w.m. - *Ancylostoma duodenale*, t.s. of adult female - *Ancylostoma duodenale*, egg w.m. - *Dracunculus medinensis*, macrophotograph - *Onchocerca volvulus*, filaria in subcutaneous node, t.s. - *Wuchereria bancrofti*, sheathed microfilaria in a "thick blood film", Giemsa stained - **Arachnida:** - *Ornithodoros moubata*, the transmitter of the tropical African type of Relapsing Fever - *Borrelia duttoni* (the pathogen causing the tropical African type of Relapsing Fever). Giemsa stained - *Ixodes ricinus*, Hard Tick w.m. - *Neotrombicula autumnalis*, Harvest Mite or Autumnal Chigger w.m. - *Demodex folliculorum*, follicle mite of humans, adult specimen w.m. carmine stained - *Demodex folliculorum*, human skin with parasites, section - *Sarcoptes scabiei*, penetrate through the epidermis, sec. of skin - **Insecta:** - *Lipoptena cervi*, louse fly, adult specimen w.m. - *Pediculus humanus*, human louse, adult w.m. - *Phthirus pubis*, pubic or crab louse, adult w.m. - *Phthirus pubis*, egg attached to hair, w.m. - *Cimex lectularius*, bed bug, w.m. - *Haematopinus suis*, pig louse, w.m. of adult - *Stomoxys*, stable fly, piercing sucking mouth parts - *Culex pipiens*, pupa w.m. - *Culex pipiens*, posterior end of larva w.m., high magnification - *Culex pipiens*, common mosquito, adult w.m. low magnification for general study - *Culex pipiens*, head and mouth parts of female w.m. - *Culex pipiens*, head and mouth parts of male w.m. - *Culex pipiens*, t.s. through the mouth parts of adult female shows labrum, mandibles, labium, maxillae, hypopharynx with the salivary duct - *Culex pipiens*, eggs w.m. - *Anopheles*, malaria mosquito, adult w.m. low magnification for general study - *Anopheles*, head and mouth parts of female w.m. - *Anopheles*, head and mouth parts of male w.m. - *Pulex irritans*, human flea, adult

w.m. - Xenopsylla cheopis, rat flea, carrier of the bubonic plague, adult w.m. - Ctenocephalus canis, dog flea, adult female w.m. - Ctenocephalus canis, adult male w.m. - Nosopsyllus fasciatus, rat flea, adult w.m. - Ceratophyllus gallinulae, chicken flea, adult w.m.

**HUMAN DISEASES (PATHOLOGY):** Abnormal alterations of cells and tissues - Parenchymatous and fatty degeneration of liver - Hemosiderosis of liver - Glycogenosis of liver - Pigmentary cirrhosis of liver - Necrotic esophagitis - Foreign body granuloma with hemosiderin and giant cells - Tonsillitis - Liver cirrhosis - **Injury of circulatory organs and blood-forming organs** - Adiposis of heart - Cardiac callosity - Myocarditis chronica acute recidivans - Organized venous thrombosis of muscle - Infarct of spleen - Chronic myeloid leukaemia of spleen - Malarial melanemia of spleen - Anthracosis of lung - **Pathologic alterations of lung and liver, tuberculosis, pneumonia** - Cardiac callosity - Influenzal pneumonia - Croupous pneumonia - Chronic pneumonia - Necrotic (cheesy) pneumonia - Miliary tuberculosis of lung - Chronic tuberculous pulmonary cavity with bacteria - Icterus hepatis - **Reaction of kidney after arteriosclerosis, disturbance of metabolism, and inflammation; colitis** - Glomerular atrophy of kidney - Amyloid degeneration of kidney - Acute hemorrhagic nephritis - Chronic glomerulonephritis - Septic embolic nephritis - Colitis dysenterica Shiga-Kruse - **Specific inflammations after infection with syphilis spirochaetes** - Congenital syphilis of liver, spirochaetes silvered after Levaditi - Congenital syphilis of liver (feuerstein liver), routine stained - Gumma of testicle - **Progressive alteration of injured tissues and organs (Hypertrophy and hyperplasia)** - Atheroma of head - Struma colloides - Undescended testicle showing hyperplasia of Leydig's cells - Hypertrophy of prostate - Giant cell sarcoma of maxilla - **Benignant and malignant tumours** - Chondroma of pubic bone - Myoma of uterus - Fibroadenoma of breast - Fibroepithelial mixed tumour of parotid gland - Melanosarcoma of skin - Spindle cell sarcoma - Carcinoma cervicis uteri - Sarcoma of testicle - Cystadenoma papilliferum of ovary - Gelatinous carcinoma of rectum - Lymphosarcoma mediastini - Metastatic carcinoma of liver.

Cat #: [JL-4MT](#)

### Human Apparatus of Movement Overheads



#### 30 Overheads

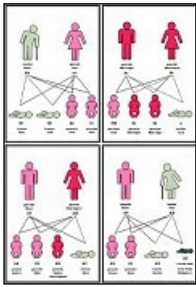
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 66 colour pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicrographs and macrographs, X-ray photographs). In strong plastic file with ring-mechanism. - Compilation and text: Prof. Walter Mergenthaler.

**Connective and Supporting Tissues:** Embryonic connective tissue - Areolar connective tissue - White fibrous tissue, I.s. of tendon - Yellow elastic fibrous tissue, I.s. of ligamentum nuchae - Hyaline cartilage of frog - Costal cartilage of man - Yellow elastic cartilage - Fibrocartilage from intervertebral disc - Bone cells and canaliculi - Tibia of man, t.s. showing general structure: fundamental lamellae, Haversian lamellae, interstitial lamellae - Compact bone, t.s. showing systems of lamellae, medium magnification - Long hollow bone, entire epiphysis for general study - Compact bone, I.s. showing Haversian canals - Haversian system, t.s. for finer detail - Structure of bone, schematic figure - Finger of human embryo, I.s. cartilaginous predisposition of finger bones - Finger of human embryo, beginning ossification - Bone development, I.s. details of intracartilaginous ossification - Bone development, t.s. - Osteoblasts, high magnification - Red bone marrow showing megakaryocytes

**The Skeleton:** The skeleton, entire front and entire back view - Division of the skeleton in its functional parts - Joints: hinge joint, ball-and-socket joint - Finger joint, sagittal I.s. low magnification - Vertebral column, cervical and thoracic vertebrae - Lumbar vertebra, sacrum, coccygeal bone - Skull, atlas, axis - Thorax and shoulder girdle, front and back views - Construction of a long bone, 3 schematic figures - Skeleton of the arm showing supination and pronation - The elbow joint, entire view and longitudinal section - The skeleton of the hand - The pelvis, 2 figures, one showing the ligaments - The knee joint, 4 figures: long. section, front view, back view, and menisci - The skeleton of the foot: side view, frontal view, ankle joint - The skull, front view and side view - The skull dissected in its different bones - X-ray photograph of a dislocation (luxation) - X-ray photograph of a bone fracture

**The Muscular System:** The skeletal musculature of man, general view of front side and back side - Structure of the muscle, 4 schematic figures - Striated muscle, electron micrograph - Striated muscle, t.s. showing fascia, connective tissue, muscle bundles and muscle fibres - Striated muscle, I.s. muscle fibres and nuclei - Striated muscle fibres, I.s. showing the striations, high magnification - Striated muscle fibres, t.s. showing the fibrillae, high magnification - Capillary blood vessels in the muscle, injected preparation - The sensory and motor innervation of the muscle (muscle spindles and motor end plates), 4 schematic figures - Motor nerve end plates - Neuromuscular synapses in skeletal muscle, electron micrograph - Motor innervation of muscle, low magnification - Muscle spindle - The muscles of head and neck, front view and side view - The muscles of the trunk, front view - The superficial muscles of the back - The deeper muscles of the back - The muscles of the shoulder (antagonism) - The muscles of the arm - The pronation and supination muscles of the arm - The muscles of the hand, front view and back view - The muscles of the pelvis - The muscles of the leg, front view and side view - Extensor and flexor muscles of the leg - The muscles of the shank and the foot - Example of a complex muscular efficiency.

Cat #: JL-11MT

**Human Genetics Overheads, Part 1****32 Overheads**

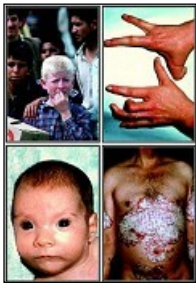
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 88 colour pictures, some with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs, clinical appearance of patients, pedigrees, karyotypes). In strong plastic file with ring-mechanism. Recent new developments in all fields of human genetics made a completely revised edition of this subject necessary. The four series of colour transparencies covering human genetics incorporate the latest developments in research. The new brilliant visual material is highly informative. The detailed explanatory texts fulfil the didactic requirements of modern teaching.

**Modes of Inheritance:** The series of transparencies covers the basic knowledge of formal genetics, illustrated with examples of medical genetics. Compilation and text: Prof. Dr. med. Klaus Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. Tiemo Grimm (Institut für Humangenetik, Universität Würzburg). A. Autosomal dominant inheritance - Autosomal dominant inheritance - Clinical appearance of neurofibromatosis, multiple fibromas - Ditto., cafe au lait spots - Pedigree of a family with neurofibromatosis - Clinical appearance of cleft hand - Pedigree of a family with cleft hand - Pedigree of a family with achondroplasia - Codominant mode of inheritance (ABO blood groups) - B. Autosomal recessive mode of inheritance - Autosomal recessive mode of inheritance - Probability of being heterozygous for the relatives of a homozygous individual - Clinical appearance of albinism - Albinism in animals - Pedigree of a family with albinism - The decomposition of phenylalanine - Pedigree of a family with phenylketonuria (pseudodominance) - Pedigree of a family with deafmutism (genetic heterogeneity) - Heterozygosity-effects - C. X-chromosomal inheritance - X-chromosomal recessive inheritance - Colour plate for testing red-green-blindness - Pedigree of a family with red-green-blindness - Clinical appearance of muscular dystrophy of Duchenne type - Structure of the gene of muscular dystrophy - Examples of changing's on deletions in the dystrophin gene - Pedigree of families with muscular dystrophy - Clinical appearance of haemophilia - Haemophilia A in the European aristocracy - X-chromosomal dominant inheritance - Clinical appearance of incontinentia pigmenti (Bloch-Sulzberger syndrome) - Pedigree of a family with incontinentia pigmenti - D. Multifactorial inheritance - Multifactorial inheritance (effect of threshold value) - Recurrence risks of multifactorial inheritance - Clinical appearance of harelip and cleft palate - Harelip and cleft palate due to amniotic bands - Different causes of harelip and cleft palate - Clinical appearance of the van der Woude syndrome - Pedigree of a family with van der Woude syndrome - Clinical appearance of neural tube defects, spina bifida - Ditto. anencephalus - Clinical appearance of clubfoot - Ditto. of psoriasis - Example of pyloric stenosis illustrating the so-called "Carter-effect" - E. Mitochondrial inheritance - Mitochondrial inheritance - Pedigree of a family with Leber's optic atrophy

**Cytogenetics:** Part II illustrates various types of human cell cultures, the preparation of sex-chromatin (X- and Y-chromatin) in normal and pathological states through analysis of Barr-bodies, drumsticks and F-bodies. It also includes the analysis of metaphase chromosomes by various banding techniques, including NOR- and SCE-methods, and the most common types of chromosomal aberrations and the phenotypic consequences. Secondary chromosomal aberrations following exposure to clastogens and illustrating repair defects are shown. The series ends with examples from the field of tumourcytogenetics: leukemias and solid tumours. - Compilation and text: Dr. rer. nat. Ulrike Gamerdinger, Dipl.-Biol. Katja Weiske and Prof. Dr. Gesa Schwanitz (Institut für Humangenetik, Universität Bonn). A. Cell cultures - Lymphocyte culture - Tissue culture - Clones in tissue culture - Mitotic activity in tissue culture - B. Sex chromatin - Barr bodies in cells of the hair bulb - Drumstick in a mature segmented granulocyte - Two Barr bodies; karyotype 47,XXX - F-body in a human lymphocyte - Two F-bodies; karyotype 47,XYY - C. Chromosome staining and banding techniques - Uniform staining - GTG-banding pattern - QFQ-banding pattern - RBA-banding pattern - C-banding pattern - SCE (sister-chromatid-exchange) - Nucleolus organizing region (NOR), silver staining - Normal karyotype with GAG banding pattern - Paris nomenclature of chromosomes - D. Chromosomal aberrations - Trisomy 21; karyotype - Boy with Down's syndrome - Simian crease in a boy with Down's syndrome - Karyotype of a patient with translocation trisomy 21 - Trisomy 13; karyotype - Trisomy 18; karyotype - Ring chromosome 18; karyotype - Isochromosome X; karyotype - Inversion 2; karyotype - Karyotype of a girl with "cri-du-chat" syndrome - Child with "cri-du-chat" syndrome - Pedigree of a family showing segregation of a reciprocal translocation - Monosomy X; karyotype - Patient with Turner's syndrome (monosomy X) - Klinefelter's syndrome; karyotype - Risk for the birth of a child with chromosome aneuploidy - Chromosomal findings in spontaneous abortions - Triploidy; karyotype - Alterations of chorionic villi due to triploidy - E. Mutagenesis, clastogenes, tumour cytogenetics - Increased SCE rate - Mitosis with multiple aberrations - Diagram of aberration types - Micronuclei - Unspecific chromosome aberrations - Table of chromosome breakage syndromes - Philadelphia chromosome in chronic myeloid leukaemia - Marker chromosomes in solid tumours.

Cat #: JL-12MT

## Human Genetics Overheads, Part 2



## 42 Overheads

Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 116 colour pictures, some with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs, clinical appearance of patients, pedigrees, karyotypes).

**Molecular Genetics, Statistic Genetics:** Part III starts with an introduction into the principles of molecular genetics. Main emphasis is put on the application of the new molecular techniques in medical genetics and genetic counselling. Aspects of population genetics, mutations and blood groups are furthermore described. - Compilation and text: Prof. Dr. med. Klaus Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. Tiemo Grimm (Institut für

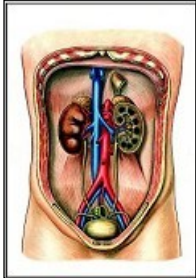
Humangenetik, Universität Würzburg). A. Molecular genetics, statistic genetics - From DNA to chromosomes - Genetic code - Restriction enzymes - Evidence of DNA sequences by Southern-blot - Polymorphisms of restriction fragments (RFLP) in Southern-blot - Ditto. and CA repeats as molecular markers - Polymerase chain reaction (PCR) - Indirect diagnosis of genotypes. Example: muscular dystrophy of Duchenne type - Direct diagnosis of genotypes. Example: Ditto. - Erythrocytes in sickle cell anaemia - Indirect diagnosis of genotypes. Example: sickle cell anaemia - Ditto. Example: spinal muscular atrophy - Direct diagnosis of genotypes. Example: mucoviscidosis - Gene map of the X-chromosome - Diagram of fluorescence-in-situ-hybridisation - Proof of a deletion in the elastin-gene on Williams-Beuren-Syndrom by FISH - Mode of operation and therapy of hereditary diseases - Therapy of mucoviscidosis - Germ line therapy and somatic gene therapy - Problems and risks on gene transfer - Principles of somatic gene therapy - B. Population genetics, mutations - Crossing over - Linkage analysis, segregation of two loci with independent inheritance - Ditto. with dependent inheritance - Ditto. with possible crossing-over - Calculation of lodscore-data for linkage analysis - Linkage analysis, example Chorea Huntington - Law of Hardy and Weinberg - IQ of couples, an example of assortative mating - Rate of frequency of homozygotes and heterozygotes - Types of mutation - Mutation rates of autosomal dominant inheritance and X-chromosomal recessive inheritance - Role of paternal age in case of new mutations - Newborn with Apert's syndrome - Pedigree with autosomal dominant mutation (aniridia) - Congenital lack of the iris (aniridia) - Diagram of oogenesis - Diagram of spermatogenesis - Molecular genetic evidence for germ cell mosaicism in case of muscular dystrophy (Duchenne type) - Unstable trinucleotide-mutations, a new type of mutations - Imprinting, parent-specific loss of gene function causing hereditary diseases - Origin of tumours according to Knudson's two hit model - C. Blood groups - Determination of AB0 blood groups - Positive and negative reactions in AB0 blood group determination - Genotypes and phenotypes in AB0 blood groups - Inheritance of AB0 blood groups - Exclusion of paternity by AB0 blood groups - DNA fingerprints as evidence of paternity - Importance of Rh-incompatibility for blood-donors and during pregnancy - The HLA gene complex on chromosome 6 - HLA linkage with the adreno-genital syndrome (AGS) in a family - HLA associations in various diseases.

**Genetic Counselling and Prenatal Diagnosis:** The subject of this series includes principles of genetic counselling and prenatal diagnosis, effects of damage to the foetus, calculation of risks, genetics of behaviour, twin research. - Compilation and text: Prof. Dr. med. K. Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. T. Grimm (Institut für Humangenetik, Universität Würzburg) A. Genetic counselling and prenatal diagnosis - Indications for genetic counselling - Concepts of genetic counselling - Recurrence risk in a family, if only one child is affected - Potential consequences after genetic counselling - Neural tube defect as seen with ultrasound - Maternal serum-AFP-level during normal pregnancy and with a neural tube defect - Indications for prenatal diagnosis - Biopsy of chorionic villi - Amniocentesis, foetal blood sampling - Diagram of germ cell development of a balanced 14;21 translocation - Ditto. 12;21 translocation - B. Teratogenic injury to the foetus - Appearance of alcohol embryopathy - Characteristics of alcohol embryopathy - Appearance of hydantoin-barbiturate embryopathy - Appearance of thalidomide embryopathy - Influence of maternal PKU to the foetus - Appearance of rubella embryopathy - Time-table of the development of organs and sensitivity teratogens - C. Estimated risk - Everyday risks - Bayes' theorem in case of incomplete penetrance - Balance between mutation and selection in case of lethal X-chromosomal inheritance - Estimated risk in case of lethal X-chromosomal inheritance - Consanguinity (inbreeding coefficient) - Frequency of homozygotes and heterozygotes in autosomal-recessive inheritance - Estimated risk on consanguinity and autosomal recessive inheritance - D. Behaviour genetics - Twin research - Pedigree of the Bach family - Pedigree of the Darwin- Galton family - What is intelligence? - Frequency distribution of I.Q. values - Frequency distribution of I.Q. values in siblings of persons with different degrees of mental defects - Cytogenetics and clinical appearance of the fragile-X-syndrome - Correlation of I.Q. depending on the degree of relationship - Heritability - I.Q. test data of identical (monozygotic) twins - Twin data depending on school performance - I.Q. test data of female twins above 60 years of age - Position of twins in the uterus - Typical adult identical (monozygotic) twins, front view - Typical adult identical (monozygotic) twins, profile - Oral aspect of the identical (monozygotic) twins - Atypical adult identical (monozygotic) twins, front view - Atypical adult identical (monozygotic) twins, profile - Eye regions of identical (monozygotic) twins - Structure of the iris of identical (monozygotic) twins - Noses of identical (monozygotic) twins, view from the bottom - Siamese twins - Incomplete conjoined twins - Experimental production of complete and incomplete uniovular twins during the early development of amphibians - Fraternal (dizygotic) twins, front view - Fraternal (dizygotic) twins, profile - Eye regions of fraternal (dizygotic) twins - Structure of the iris of fraternal (dizygotic) twins - Ears of fraternal (dizygotic) twins - Hands of fraternal twins - Dermatoglyphics of identical and fraternal twins - DNA-fingerprints of identical and fraternal twins - Identical (monozygotic) triplets - Eye regions of

the identical (monozygotic) triplets - Ears of identical (monozygotic) triplets - Twin findings in endogenous psychosis  
 - Family findings in schizophrenia depending on the proportion of common genes - Comparison of concordance rates in manic depressive twins - Family findings in manic-depressive psychosis depending on the share of common genes  
 - Reasons for and frequency of twin pregnancy.

Cat #: JL-5MT

### Human Organs of Digestion Overheads



#### 33 Overheads

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 77 colour pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicro- and macrographs) - Compilation and text: Prof. W. Mergenthaler.

**Mouth, Pharynx and Stomach:** Milk teeth and permanent teeth - The different kinds of teeth: incisor tooth, canine tooth, premolar tooth - Gum with milk tooth and permanent tooth, l.s. - Incisor tooth and gum, l.s. - Gum with root of tooth, t.s. - Head of mammalian embryo showing primordia of teeth, frontal section - Tooth development: dental lamina and young dental sac - Older dental sac - Dental sac with primordium of tooth - Primordium of tooth, upper part showing

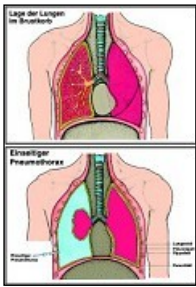
the crown - Primordium of tooth, high magnification shows dentine, enamel, enamel organ, odontoblastic cells - Human tooth, ground thin to show enamel, dentine and pulp - Bacteria of caries in l.s. of diseased human tooth - Bacteria from human mouth, smear - Bacteria from human intestine - Human tongue, section shows muscles and papillae - Tongue of cat, sec. with cornified papillae - Vallate papilla of human tongue with taste buds - Location of the salivary glands in the head - Part of the salivary gland, low magnification - Submaxillary gland, a predominating serous gland - Submaxillary gland, high magnification showing detail of acini - The structure of a salivary gland, schematic figure - Sublingual gland, a predominating mucous gland - Parotid gland, a pure serous gland - Oesophagus of man, t.s. low magnification - Oesophagus of man, t.s. medium magnification shows muscular layers and mucous membrane - Stomach of man, sagittal l.s. shows cardiac, fundic and pyloric region - Stomach, l.s. medium magnification shows muscular layers and mucous membrane - Mucous membrane of stomach, t.s. - Mucous membrane of stomach, t.s. high magnification - shows detailed structures of gastric glands

**Intestine:** Location of the abdominal viscera of man - Small intestine of newborn child, t.s. entire view and detail view with suspensory ligamentum - Duodenum of man, l.s. showing intestinal wall, folds, and villi - Duodenum, l.s. of a fold with Brunner's glands - Duodenum, l.s. showing villi, crypts, and glands - Jejunum of man, l.s. showing intestinal wall, folds, and villi - Jejunum, l.s. of intestinal villi medium magnification - Epithelium of intestine with mucous cells - Intestinal loop with injected blood vessels - Small intestine of cat, t.s. injected to show the blood vessels - Intestinal villi injected to show the blood vessels, surface view - Detailed structure of an intestinal villus, 3 schematic figures - Large intestine (colon) of man, l.s. - Tubular glands of colon, l.s. - Tubular glands of colon, t.s.

**Liver and Pancreas:** Liver and pancreas, general view - Liver of pig, t.s. shows liver lobules, low magnification - Liver lobule, schematic figure to show the glandular structure of the liver - Trabecula of liver cells, 2 schematic figures - Liver lobule, schematic figures to show the construction and the vascular systems - Capillary vessels of liver, central veins and collecting vein, schematic figure - The venous vascular system of the liver; portal vein and liver vein, schematic figure - Liver of pig, t.s. medium magnification for finer details - Liver lobule, t.s. showing the structure of the liver cells, high magnification

**The Excretory System of Man:** The urinary organs: kidney, ureter, urinary bladder - The kidney, l.s. schematic figure - Kidney of mouse, sag. sec. of complete organ - Kidney of human foetus, entire sagittal l.s., low magnification - The blood vessels of kidney, schematic figure - Human kidney, l.s. shows cortex, medulla, and pelvis, low magnification - Human kidney, t.s. of cortex, medium magnification - Malpighian corpuscle, showing Bowman's capsule, glomerular loop of afferent and efferent arteries, convoluted tubules - Cortex of kidney, l.s. with injected blood vessels - Medulla of kidney, l.s. with renal tubules and collecting tubes - Kidney, injected with trypan blue to demonstrate storage in the convoluted tubules - Nephron and glomerulus, 2 schematic figures - Ureter, t.s. - Urinary bladder, t.s. of the wall.

Cat #: JL-6MT

**Human Respiratory and Circulatory Systems Overheads****42 Overheads**

Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising approx. 110 colour pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicrographs and macrographs, human photographs, electron micrographs, X-ray photographs). - Compilation and text: OStR Michael Duenckmann.

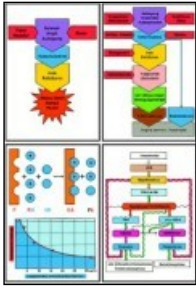
**The Respiratory System of Man:** The human respiratory organs, general view - Longitudinal section through head and neck. Air passages marked - Frontal section through the facial part of the skull showing the nasal cavity with its sinuses - Frontal section through the nasal septum and the hard palate - Diagram of the processes of swallowing and breathing - Frontal and dorsal view and longitudinal section of the larynx - Functions of the arytenoid cartilage and the shape of the

glottis in various voices. - Human trachea, l.s. - Ciliated epithelium of the trachea - Structure of ciliated epithelial cells, electron micrograph - Position of the lungs in the thorax - Inner lining of the thorax. Visceral pleura, parietal pleura, pleural gap, pneumothorax of one lung - X-ray of human thorax, inspired and expired - Longitudinal section through thorax, inspired and expired position - Intercostal muscles during in- and expiration - Structure of the lungs, two steps of enlargement - Human lung, t.s. low magnification for general view - Human lung, t.s. showing bronchioles and alveoli - Lung of cat. Blood vessels injected - Alveolar septum, electron micrograph - Lung of cat, t.s. stained for elastic fibres - Comparison of inspired and expired air, diagram - Diagram of gaseous exchange in the pulmonary alveoli - Volume of air respired, diagram - Connection between work and respiration per minute - Lung of salamander, t.s. - Lung of frog, t.s. - Lung of lizard, t.s. - Enlargement of pulmonary respiratory surface of various vertebrates - Influence of varying composition of the air on respiratory frequency - Frequency of nervous impulses due to O<sub>2</sub>- and CO<sub>2</sub>-contents in the blood - Regulation of respiration - Feedback system explaining the regulation of respiration - Miliary tuberculosis of human lung - Deposition of dust in human lung - Dust concentration depending on the number of inhabitants in towns - Absorption of carbon monoxide and oxygen by haemoglobin - The London smog catastrophe of December 1952. Smoke and sulphur dioxide-content of the air

**The Circulatory System of Man: Blood and Lymphatic Organs:** Cylinders with precipitated structural components and clotted blood - Composition of the blood. Precipitated and coagulated blood - Human blood smear, low magnification - Human blood smear, high magnification. Erythrocytes and various forms of leucocytes - Shape and size of an erythrocyte - Relation between partial pressure of oxygen and oxygen-saturated haemoglobin - Red bone marrow of mammal. Giant cells, blood forming cells - Mature erythrocyte and erythroblast, electron micrograph - Blood smears of frog and chicken. Nucleated red blood corpuscles - Various types of leucocytes. Granulocytes, lymphocytes, monocytes - Blood smear from leukemic person compared with normal blood smear - The steps of blood clotting - Electrophoresis of protein fractions in human blood - Human leucocytes with phagocytosed bacteria - Leucocyte, moving through the capillary wall - Structure of antibodies with antigen binding sites - Serum reactions to show hereditary relationship - The AB0 blood groups - Positive and negative reactions in determination of AB0-blood group - Diagram to understand agglutination of the AB0-blood groups - Diagram to understand Rh-incompatibility in second and further child - The human lymphatic system with lymph nodes - Exchange of substances between blood capillaries, tissue, and lymph capillaries - Human lymph node, t.s. - Follicle in human lymph node, t.s. - Structure of a lymph node with afferent and efferent blood and lymph vessels. Diagram - The human immune system - Development of lymphocytes. Memory cells, plasma cells - Fine structure of a plasma cell of bone marrow, electron micrograph - Human spleen t.s. Red and white pulp, capsule, trabeculae - The vascular system of the human spleen - Fine structure of a splenic sinus, electron micrograph - Human palatine tonsil, t.s. - Thymus gland of young cat, t.s. Hassall's corpuscles - Human pharyngeal tonsil, t.s. epithelium interspersed with lymphocytes.

**The Circulatory System of Man: Heart and Blood Vessels:** Position of the heart in the body - Front view of the heart and big vessels - Human heart, semi-diagrammatic longitudinal section - View of the cardiac valvular plane. Arterio-ventricular and semilunar valves - Transverse section of the two cardiac ventricles. Endocardium, myocardium, epicardium - Structure of the cardiac muscle. Interlacing network of fibres, intercalated discs, striation, nuclei - Activity of the heart, papillary muscles, shift of the valvular plane, opening and closing of cusps - Cardiac cycle. Diagram - Cycle of pressure and volume of the left ventricle. Blood pressure in the aorta, cardiac sounds - The human circulatory system. Heart, pulmonary and systemic loop - Stimulation and coordination of the heart - Human electrocardiogram - Diagram of human blood circulation. Big vessels and capillary networks - Catchment areas of the hepatic portal vein. Stomach, small and large intestine, pancreas, spleen - Blood share of the different organs - The heart in the circulatory system of vertebrates. Fishes, amphibians, reptiles, birds, mammals - Human artery and vein, t.s. - Artery of muscular type, t.s. - Artery of the elastic type, t.s. - Carotid artery, t.s. showing the elastic elements - Bagpipe function of the aorta. Diagram - Arrangement for taking the human blood pressure - Diagram to explain the pulse during reduction of pressure in the bag - Blood capillaries in the mesenteries - Ultrastructure of the capillary wall, electron micrograph - Interchange of substances between capillary and tissue - Pressure and volume in human circulation. Diagram - Human vein, t.s. - Transport of blood in the veins by pulse waves of neighbouring artery and by contraction of neighbouring muscles - Position of the main baroreceptors for regulation of the blood pressure - Analysis of manipulated blood pressure. Diagram - Regulation of arterial blood pressure. Negative feedback system.

Cat #: JL-10MT

**Hormones and Hormone Systems Overheads****42 Overheads**

Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising 116 colour pictures, mostly with several component figures (drawings, diagrams, tables, anatomical pictures, photomicrographs and macrographs, portraits, human photographs, test results). In strong plastic file with ring-mechanism. - Compilation and text: Prof. Walter Mergenthaler and Dr. Karl-Heinrich Meyer, BS.

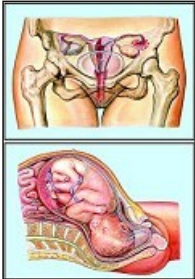
**Part I:** Giving the basic insights in the nature and function of hormones, and shows the collaboration of hormones as well as their relation to the autonomic nervous system. - Effect of thyroxine therapy on a child, 2 figures - Effect of thyroxine therapy on a child - The human thyroid gland, situs - Exocrine and endocrine glands, diagrams - The human hormone glands, position, shape, size - Human thyroid gland, t.s. - Effect of thyroxine on Ambystoma: Development from aquatic to terrestrial form - Acceleration of tadpole development caused by thyroxine - Inhibition of growth of rabbits caused by thyroxine deficiency - Myxedema before and after thyroxine treatment - Cretinism caused by insufficiency of thyroid gland - Cretin with goitre - Endemic cretinism - Relation between iodine and goitre - Control of goitre by treatment with iodides - Basedow's or Graves' disease - The parathyroid glands, situs - The pancreas, situs - Islands of Langerhans, t.s. - Control of the blood sugar level by insulin and glucagon - Kidney and adrenal gland, sagittal l. s. - Kidneys and adrenal glands of a rabbit, situs - Human kidney and adrenal gland, entire view and section - Adrenal gland, t.s. - The control of blood sugar level by adrenalin - Child with "moonface" due to cortical tumour - Bull and ox, effect of castration - Castrated fowl, effect of castration on rooster and hen - Castrated rooster before and after treatment with sex hormone - Testis of mammal, t.s., showing details - Interstitial cells of Leydig, t.s. - Human ovary, diagram - Ovary with follicles in different stages, t.s. - Corpus luteum, t.s. - Effect of follicle hormone on growth of uterus - Location of pituitary gland and pineal body, sagittal l.s. of head - Human pituitary gland, l.s. showing the anterior and posterior lobe - Human pituitary gland, t.s. of anterior lobe, high magnification - Inhibition of growth of a dog caused by pituitary removal - Pituitary dwarfism in humans caused by hormone deficiency - Gigantism in humans caused by pituitary overactivity - Acromegaly of human - Adiposogenital dystrophy (Froehlich's syndrome) - Gonadotropic pituitary effects on ovary - Relations between endocrine glands - Thymus of juvenile and adult person - Thymus with Hassall's bodies, t.s. - Delayed development of tadpoles caused by feeding thymus - Comparison of feeding thyroid with feeding thymus

**Part II:** It demonstrates the development of hormone glands, the interaction of releasing and gonadotropic hormone as well as the feedback control of the peripheral hormones. Influence on the gene activity and protein synthesis, neurosecretion, second messenger and cascade mechanism. Dovetailed operation of different hormones, inhibiting and stimulating factors, animal production, anabolica, hormonal contraception, insect hormones and auxines. - Feedback on thyroid hormones, loop scheme - Feedback on thyroid hormones, hierarchic scheme - General diagram of feedback circuit - Feedback circuit for blood thyroxine level - Neurosecretory cells in hypothalamus produce thyrotropin-releasing hormone (TRH) - Hypothalamus and pituitary gland l.s. - Hypothalamus and pituitary gland with neurosecretory cells and vessels for TRH and TSH - Development of pituitary gland and primordium of thyroid gland - Thyroid follicles (three-dimensional) and functional states - Effect of TSH on thyroid gland - Biosynthesis, storage, transportation, and effect of thyroxine - Effect of inhibitors on secretion of thyroid gland - Blood calcium level and release of parathormone resp. calcitonin - Regulation of the blood calcium level, scheme - Synthesis of human insulin - Island of Langerhans, three-dimensional picture - Regulation of blood sugar level by A- and B-cells of the islands of Langerhans - Homeostatic regulating mechanism of the blood glucose level - Phylogenetic and embryonic development of the adrenal gland - The function of the adrenal medulla based on its origin from the sympathetic nervous system. - Biosynthesis of adrenaline, a beta-receptor blocker - Effect of noradrenaline and adrenaline on heart and vascular muscles - Second messenger and cascade mechanism at glycogenolysis - Catecholamines give special efficiency to the body in case of emergency - Daily stress and lack of exercise may cause angina pectoris and cardiac infarction - Structure and nomenclature of cortical hormones - Effects of the renal hormone renine and of the mineral corticosteroid aldosterone - The feedback mechanism on the secretion of aldosterone (hierarchic and loop scheme) - The feedback mechanism on the secretion of corticosterone (hierarchic scheme) - The feedback mechanism on the production of corticosterone (loop scheme) - Corticosterone affects gene activity - Effects of corticosterone - Increasing population density inhibits reproduction - Stress and animal breeding - The effect of nicotine and caffeine on the endocrine system - Adrenal androgens, relation between adreno-cortical and sexual hormones - Development of the gonads - Leydig's cells and Sertoli's cells - Control of the secretory action of male gonads (hierarchic scheme) - Secondary sex characters in humans - Recessive hereditary receptor defect causes female phenotype - The effect of anabolica - Control of ovarian functions (hierarchic scheme) - Processes during the menstrual cycle - Pregnancy: hormonal control by the blastocyst - Pregnancy: hormonal control by the placenta - The antibody pill - hormonal contraception - Stimulation and maintenance of milk production - Long bones with epiphyseal line - Growth in length of a long bone - Hormonal control of growth (hierarchic scheme) - Hormone release in the posterior pituitary - Structure and effect of oxytocin - Effects of vasopressin (antidiuretic hormone) - Hormone production in head and thorax of an insect - Juvenile hormone (neotenin) and moulting hormone (ecdysone) - The cooperation of hormones during moulting (hierarchic scheme) - Moulting hormone ecdysone influences pattern of puffs - Quantitative analysis of hormones by bonding to proteins - Gibberellines promote growth - Germinating grain, drawing - Germinating grain, photograph - Growth of animal and plant cells - The coleoptile tip produces somatotrophic hormone indolacetic acid - Polar movement of auxin in the coleoptile tip - Positive

phototropism of coleoptile tip - Lateral illumination causes redistribution of auxin in the coleoptile tip - Action spectrum of phototropism and absorption spectrum indicate a flavoprotein to function as photoreceptor.

[Cat #: JL-17MT](#)

## Reproduction and Germ Development of Humans and Animals Overheads



### 30 Overheads

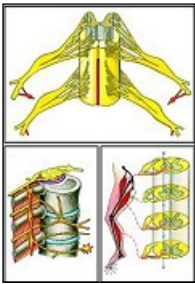
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 104 colour pictures, mostly with several component figures (drawings, diagrams, tables, anatomical pictures, photomicrographs and macrographs, human photographs). In strong plastic file with ring-mechanism. - Compilation and text: Prof. Walter Mergenthaler and Dipl. Biol. Christine Himmelein.

**Reproduction of Man and Animals:** A series illustrating reproduction from protozoa to man. It will therefore not only be an invaluable aid in biology classes but equally valuable for teaching sex instruction. The beautiful anatomical picture plates have been made by university illustrators specialising in this field. - Asexual reproduction (division) of Amoeba - Asexual reproduction

(budding) of Hydra - Sexual reproduction of Hydra - Reproduction of the sea urchin (Echinus) - Fertilization of the sea urchin egg - Reproduction in fishes - Reproduction in salamanders - The female reproductive organs of reptiles, birds, and mammals - The reproductive organs of the human male; lateral view of situs - Ditto; diagram - Testis, t.s., low magnification - Seminiferous tubules showing spermatogenesis; t.s. - Testis, epididymis, spermatogenesis; diagrams - Sperm smear of bull - Human hair, egg, and spermatozoa; comparison of sizes - The reproductive organs of the human female; lateral view of situs - Ditto; front view of situs - Ovary; t.s., low magnification - Egg development: primary follicle - Egg development: secondary follicle - Egg development: early stage of Graafian follicle - Egg development: mature Graafian follicle with germ hillock and egg cell - Egg development: mature ovulated egg with corona radiata - Corpus luteum - Human fallopian tube t.s. - Ciliated epithelium of the Fallopian tube; t.s., high magnification - The yolk sac and the embryonic development of fishes - The embryonic membranes of chicken - The embryonic membranes of mammals and humans - Wall of human uterus, t.s. - Changes of the endometrium during menstrual cycle and after fertilization - Oogenesis, ovulation, fertilization, cleavage of fertilized egg, and implantation of blastocyst in the uterine wall - Growth of embryo and foetus in the uterus, 4 stages - Structure and function of the placenta, diagram - Foetus in uterus showing placenta, umbilical cord, and amniotic cavity - Full term baby in maternal abdomen, normal cephalic presentation - Beginning of birth, entrance of amniotic sac into the birth canal

**Germ Development of Man and Animals:** Starting with the fertilization of the egg and the fusion of the two haploid nuclei, the various types of egg and corresponding types of cleavage are shown. The gastrulation, neurulation and formation of germ layers in Branchiostoma, frog and human beings are then illustrated. - Fertilization of the Ascaris egg, entering of a sperm I. The beginning of embryonic development - fertilization - Fertilization of Ascaris egg, entrance of spermatozoon in the oocyte - Mature oocyte of Ascaris with male and female pronuclei, each nucleus contains two chromosomes. - II. Cleavage - Metaphase of the first cleavage of Ascaris, equatorial plate in side view shows chromosomes, spindle fibres, centrioles - Telophase of the first cleavage of Ascaris, division of the cell body - Total equal cleavage: 2-, 4-, 8-cell stage, morula - Types of eggs and patterns of cleavage I: as far as the 8-cell stage - Types of eggs and patterns of cleavage II: morula and blastula - Blastula of sea urchin (Echinus), after total equal cleavage - Blastula of frog (Rana), after total unequal cleavage - Insect, blastula after superficial cleavage - III. Gastrulation - Gastrulation of sea urchin, Echinus, diagram - Gastrula of sea urchin, Echinus, photomicrograph - IV. Neurulation - Organogenesis in frog and chicken - Neurulation in Amphioxus, t.s. diagram - Neurulation in frog, anterolateral and dorsal view, diagram - Neurulation in frog, t.s. - Neurula of frog, t.s. - Neurula of frog, mid-dorsal region, t.s., detail - Neurula of chicken, t.s. - Chicken embryo 33 hours of incubation, l.s. - Frog embryo, tail bud stage, l.s. - Frog embryo, tail bud stage, t.s. - Frog larva, 3 days after hatching, l.s. - Frog larva after hatching, t.s. - Frog larva, t.s. of heart region - Chicken embryo, 48 hours, t.s. - Chicken embryo, 72-hours, l.s. - Chicken embryo, 72-hours chick, embryonic disc with circular system injected - Chicken, older embryo, l.s. - V. Organogenesis in humans, Summary - Median l.s. through a human embryo - Development of the human heart, t.s. of three stages - External changes in the human heart, ventral view - Development of human lungs, t.s. of 6 weeks old embryo - Stages of human pulmonary development - Development of the human eyes, four stages - Head of mammalian embryo, sagittal section showing eyes - Mammalian embryo, median sagittal section of whole body with primordia of organs.

Cat #: JL-7MT

**The Nervous System Overheads, Part 1****30 Overheads**

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 76 colour pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs). In strong plastic file with ring-mechanism. - Compilation and text: Dr. K.-H. Meyer, BS).

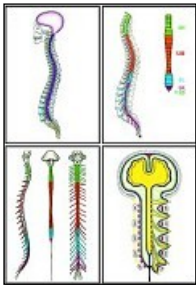
**The Nervous Tissue - Introduction to the Total Complex of the Nervous System:**

Introduction to the total complex nervous system. It shows the occurrence of typical nerve cells in the human nervous system, the structure of the neuron, the composition of a nerve, motor end plates, glia cells etc. - Human nervous system, entire view - Sagittal section of human cerebellum - Spinal ganglion, t.s. - Spinal cord of cat, t.s. silver stained - Grey matter of spinal cord, t.s. showing nerve cell bodies - White matter of spinal cord, t.s. showing nerve fibres - Motor nerve cell from spinal cord. - Purkinje cells from human cerebellum - Pyramidal cells from cortex of human cerebrum - Pseudounipolar neuron (T-cell) from spinal ganglion - Bipolar neurons in the retina of the eye, diagram - Various shapes of human neurons, 5 figures - Nerve cell showing neurofibrils - Nissl substance in neurons from the spinal ganglion - Diagram of a neuron - Various neurons from human nervous system, 4 figures - Human sciatic nerve, t.s., low magnification - Bundle from sciatic nerve, t.s., medium magnification - Nerve fibres, t.s., high magnification, axons and medullary sheaths - Nerve fibres, l.s. high magnification shows the Ranvier's nodes - Structure of myelinated nerve fibre, diagram, 2 figures - Neuromuscular junction, motor end plate - Motor end plates, diagram, 2 figures - Glial cells from brain.

**The Nervous Systems of the Invertebrates:** The study of the evolution of the nervous system beginning with primitive animals is necessary for a more profound understanding of the human nervous system. The series shows the net-like nervous system of the coelenterates, the ropeladder-like systems of the arthropods, and the nervous systems of molluscs and echinoderms; progressive concentration and differentiation; structural elements as neuron, ganglion, centres, reflex-arcs, automatisms, etc. - Reactions of single cells to stimuli: pore-cell of a sponge, nematocysts - The nervous system of Hydra - Reaction of Hydra to stimuli. Type of reaction depending upon strength of stimulus - The nervous system of a jellyfish (Scyphozoa) - The nervous system of Planaria (Platyhelminthes) - The nervous system of a roundworm (Nematoda) - The evolution of the nervous system in worms - The nervous system of the earthworm - Reflex arcs in the earth worm. Corresponding nervous connections between sensory and muscular cells - Reactions of the earthworm to stimuli - The nervous system of insects - Concentration of ganglia in insects - Development of the nervous system of a beetle, larval instars, pupa, and beetle - Brain of a worker honey-bee, structure. Forebrain with optic lobes, mid- and hindbrain - Frontal section of an insect brain, diagram - Longitudinal section through the head of a locust - Head of a worker honey-bee, t.s.. Midbrain, optic lobes, compound eyes - Unisegmental reflex arcs in insects. Connections of sensory and motor cells - Intersegmental reflexes in insects. Connections between sensory and motor cells and brain centres - Antenna cleaning reflex of the cricket. Complex reflex action involving a chain of linked reflexes - The nervous system in arthropods: lobster, crab, spider, scorpion - The nervous system of Chiton. Nervous ring surrounding oesophagus - The nervous system of a freshwater mussel. Cerebral, pedal and visceral ganglion - The nervous system of a freshwater snail, lateral view. Concentration of the ganglia towards the head - The nervous system of a freshwater snail, dorsal view - The nervous system of a terrestrial snail (*Helix pomatia*). Advanced concentration of the ganglia in the head. - The nervous system of a cuttlefish - The brain of the cuttlefish. Consisting of three pairs of ganglia - The nervous system of a starfish - General structure of echinoderms (starfish, sea urchin, sea cucumber).

**The Nervous System of the Vertebrates:** The central idea of the series is the evolution of the nervous system from primitive forms to complicated ones. It shows the progressive differentiation of the brain, the construction of its parts in the different classes of vertebrates and their relation to each other. The purpose of the series is to render the human nervous system more understandable. - The nervous system of Branchiostoma (*Amphioxus*), frog, and human - Embryonic development of the central nervous system of Branchiostoma (*Amphioxus*) - Ditto. of frog, from the side and from above. Closing of neural groove to neural tube - Ditto. of frog, corresponding transverse sections - Ditto. in humans - Development of the neural tube in humans - Development of the neural tube into the brain, frontal sections - Mammalian embryo. Formation of the central nervous system and other organs - The spinal cord of Branchiostoma, lamprey, and bony fish; t.s. showing differentiation of grey and white matter - Spinal cord of a salamander larva, t.s. with notochord - Spinal cord of a cow, t.s. - Comparison of the masses of brain and spinal cord in Branchiostoma, frog, rabbit, cat, ape, human - Brains of vertebrates (shark, bony fish, amphibian, reptile, bird, mammal), dorsal view - Brains of vertebrates, corresponding sagittal sections. Increase of the size of the forebrain, variation of the cerebellum depending upon the mobility of the animal - Shift of the optic pathways to the endbrain. Development of the thalamus into a relay station - Formation of the neopallium from concentric growth rings - Pattern of mammalian cerebral convolutions, phylogenetic tree - Cranial nerves of frog and sheep, ventral view - Human brain, ventral view with cranial nerves - Innervation of body regions by sensory and motor cranial nerves - Proportion between brain and head in vertebrates. Increase of relative size of the brain from shark to frog, reptile, bird, cat - Proportion between brain and head in mammals. Ditto dog, chimpanzee, man.

Cat #: JL-8MT

**The Nervous System Overheads, Part 2****36 Overheads**

Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 82 colour pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs). In strong plastic file with ring-mechanism. -  
Compilation and text: Dr. K.-H. Meyer, BS.

**The Human Spinal Cord:** The study of development, general and microscopic structure of the spinal cord forms the basis on which the function of the grey and the white matter can be worked out by analysing reflexes and diseases of man - The human nervous system. Central, peripheral, and autonomic nervous system - Embryonic development of the spinal cord in frog and human -

A. External structure of the spinal cord - Human vertebra. Superior view, left, lateral view of three vertebrae with intervertebral discs, right. - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Human spinal cord in the spinal canal, lateral view. Opened dural sac, surface view with segments. - Human spinal cord and medulla oblongata. Lateral and dorsal view with spinal nerves, ventral view without nerves. - The membranes of the brain and the spinal cord, diagram - Position of the spinal cord in the spinal canal, t.s. - B. Internal structure of the spinal cord - Spinal cord of cow, t.s. - The grey matter, motor neuron, dendrites, axon - The white matter, myelinated axons - Evolution of the spinal cord. Branchiostoma, lamprey, bony fish - Proportion of grey to white matter. A series of t.s. of human spinal cord - Entrance of dorsal root of spinal nerve into the dorsal column - Spinal ganglion, l.s. - Portion of the spinal cord with roots, ganglia, and spinal nerves, three-dimensional diagram - C. Function of the spinal cord - Simple reflex arc, diagram. Tactile corpuscle - spinal cord - motor end plate on muscle fibre - Knee jerk reflex. Stimulated organ responds - Stepping on a nail. Not stimulated organ responds - Somatic dermatoms supplied by segments of the spinal cord - Polio: syndrome of the ventral grey matter - Tabes, tertiary syphilis: syndrome of the dorsal white matter - Sclerosis of the pyramidal tracts - Hemisection of the spinal cord - Where do the tracts of somatic sensibility cross? - Complete section of the spinal cord - Course of typical sensory tracts: conscious and unconscious deep pressure sensibility, conscious dermal sensibility - Course of typical motor tracts: volitional and involuntary control of movement

**The Human Brain - An Introduction to the Reception, Conduction and Transmission of Information:**

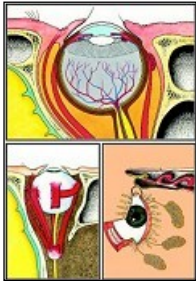
Starting from the external structure, the embryonic development of the brain is treated and its hierarchic structure. As the brain is a connecting and conducting organ, reception, conduction, and transmission of information is treated in a separate chapter. As controlling organ of our body, the brain is its biggest consumer of energy. To introduce into the structure and function of the brain parts, similar to series „The Human Spinal Cord“, we shall start from lesions of the medulla oblongata and then follow the course of the typical sensory and motor tracts introduced in the last chapter through the medulla oblongata, pons, mid- and interbrain, to the cortex and cerebellum. A. External structure of the brain - The human brain, lateral view - Sagittal section of the human brain, view on the right half - Frontal section of human brain - Visual and hidden part of the cerebral surface - B. Development of the brain - Hierarchic structure of the human brain, embryonic development - The hierarchic structure of the brain, archipallium and neopallium, sagittal section - C. Reception, conduction, and transmission of information - Electrotonic or resting and action potential - Receptors receive various types of sensory input and transduce them into action potentials of equal magnitude - Intensity of stimulus is reported by impulse frequency - Propagation of action potential along unmyelinated axon - The myelin sheath of peripheral nerve fibres (Schwann cells) - Fine structure of a Ranvier's node - Composition of myelin compared with liver cell membrane - The myelin sheath in the brain, after Krstic - Fine structure of the myelin sheath - Nerve cell body from the cerebrum with dendrites, axon, and synapses. Diagram - Exciting and inhibiting synapses, location and structure - Synapsis, spatial picture - Synaptic transmission, diagram - D. Blood supply of the brain - The blood supply of the brain, ventral view - The blood supply of the brain, lateral view - Meninges and glia, spatial diagram (after Krstic) - The blood-brain-barrier - The drainage of the brain - The reflections of the dura mater - The ventricles (liquor spaces) of the brain - E. Structure and function of the brain parts - 1. The brain stem - Brain stem, ventral and dorsal view - a. Medulla oblongata - Lesion caused by diving accident - Lesion caused by haemorrhage (stroke) - The course of sensory tracts through the medulla - The course of motor tracts through the medulla - b. Pons - The course of sensory tracts through the pons - The course of motor tracts through the pons. - c. Midbrain and interbrain - The course of sensory tracts through the mid- and interbrain - The course of motor tracts through the mid- and interbrain - 2. Cerebrum - Pyramidal cells of the cerebral cortex - Areas and tracts of the cerebrum, diagram - The lobes and areas of the left cerebral hemisphere - Sensomotor homunculus - Severed corpus callosum: differing functions in cerebral hemispheres - 3. Cerebellum - Views of the cerebellum from various sides - Purkinje cells of cerebellar cortex - Fine structure of the cerebellar cortex, neuronal connections - The most important neuronal arcs of the cerebellar cortex - Tracts connecting the cerebrum with the cerebellum

**The Autonomic Nervous System:** Starting from the simple pupillary reflex and from emptying the urinary bladder by reflex action, this series introduces into the autonomic nervous system. It widens the knowledge about the antagonistic effect of the sympathetic and parasympathetic part of the autonomic nervous system (ANS). The structural and physiological differences between the somatic and autonomic nervous system are studied as well as the connections between the sympathetic ganglia and the central nervous system. The reflex arcs linking both systems to each other and regulating the body temperature. - Effect of atropine on one eye, eyes exposed to equal

incidence of light - Innervation of the iris muscles. Antagonism of sympathetic and parasympathetic nervous system - Control of urinary bladder. Innervation by somatic and autonomic nervous system. - Antagonistic effect of the sympathetic and parasympathetic system on glands and involuntary muscles - Tracts of somatic and autonomic nervous system - Transmitter and inhibiting substances of synapses and motor end plates in the somatic, sympathetic, and parasympathetic system. - The location of the spinal cord, spinal nerves, sympathetic trunk, and ganglion II - Courses of sensory and motor tracts of the autonomic nervous system through the spinal cord, sympathetic trunk, and ganglion II - Regulation of the body temperature. Location of the receptors and controlling centres in the body, negative feedback system.

Cat #: JL-9MT

## The Organs of Sense Overheads



### 36 Overheads

Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 90 colour pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicrographs and macrographs, electron micrographs, human photographs). In strong plastic file with ring-mechanism. - Compilation and text: Dr. Bernd Zucht.

**Eye and Vision:** Range of visible light in the electromagnetic spectrum - Sagittal section through the human eye. Cornea, iris, lens, ciliary body, retina with entrance of optic nerve, muscles - Cornea of the human eye, t.s. detail view with epithelium and connective tissue - Wall of the human eye ball, t.s. detail view. Retina, choroid, and sclera - Human retina, detail view. Rods and cones, bipolar cells, ganglion cells - Human retina. Chief synaptic connections, schematic figure - Retina, detail view of the rods l.s. - Central fovea of retina - Papilla of optic nerve - Retina seen through the ophthalmoscope - Developing eyes of young and elder mammalian embryos, sections - Ocular muscles that moves the eyeball - Front view of the eye with lachrymal glands and lachrymal duct - Visual pathways, optic chiasm, schematic figure - Accommodation for distant and near vision - Mechanism of pupillary light reflex - Vision of moving objects. Depth perception, caused by convergence of the optical axes, identical and disparate points of the retina - Vision of motion explained by the principles of reafference - Formation of an image on the retina of a normal eye. The eye as a camera - Defects of the image-forming mechanism, nearsightedness, farsightedness - Formation of an image by an astigmatic cornea - Image seen through normal glasses and glasses correcting astigmatism - Eye with pathological turbidity of the lens (cataract) - Physiological contrast, simultaneous contrast. Influence of horizontal cells on neighbour cells in the retina for the improvement of clearness of vision - Optical illusions by ambiguous information: cubes of Necker and picture-puzzle - Optical illusions caused by the influence of the surrounding areas: converging and diverging lines, oblique hatching, surrounding area of different size, simultaneous contrast - Basis for the arrow illusion - Optical illusions caused by the nonconformist of rational interpretation and optical perception: round bars coming out of a square, twisted triangle, endless stairs, modern picture - Trichromatic triangle. Different combinations of three primary colours lead to all other colour. Colour vision - Spectral sensitivity of rods and cones (dominator system), three pigment colour vision (modulator system) - Tests for colour-blindness. Red-green deficiency and blue weakness - Colour perception and emotion

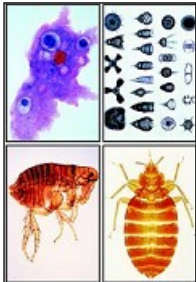
**Ear and Hearing, Sense of Equilibrium:** The formation of sound waves - Areas of rarefaction and areas of compression caused by a tuning fork - Characteristics and mutual influence of sound waves - Eardrum of the frog - Auditory ossicles at the skull of a frog - Auditory ossicles of man and cat compared with the size of a pin - Transformation of jawbone articulation into auditory ossicles during evolution - Development of the inner ear (labyrinth) and the perilymphatic space in vertebrates - Morphology of the human ear. Ear conch, external auditory canal, middle ear, inner ear - Ear drum with healed up fissure - Middle ear and inner ear. Movement of the eardrum, auditory ossicles, oval window and round window - Section through the auditory canal, eardrum and cochlea - Cochlea l.s. showing auditory nerve and organ of Corti - Organ of Corti, detail view shows sensory and supporting cells, tectorial membrane - Organ of Corti, schematic figure - Movement of Reissner's membrane and basilar membrane. Stimulation of the hair cells by the to-and-fro movement of the hairs in the tectorial membrane - Broadening of the basilar membrane from the base of the cochlea to the helicotrema - Formation of damped waves in the membranous labyrinth, depending on volume pressure of the inner ear, different elasticity of the windows and asymmetric perilymph masses - Displacement of the membranous labyrinth by the waves generated by sound vibrations - Amplitude pattern of vibration of the membranous labyrinth for high and low frequencies - Detection of sound direction by the time lack between the entry of sound into the ears - Diagram of main auditory pathways. Centres of sound in the brain - Relationship of the two sets of the semicircular canals arranged in perpendicular plains - Semicircular canals, section - Ampullar crista, t.s. - Otolithic organ (macula), t.s. - Function of the vestibular system

**Senses of Smell, Taste, Touch, Temperature and Proprioception:** Section through nasal cavity and pharyngeal cavity - Location of the olfactory mucous membrane and air stream of the breath - Olfactory and respiratory mucous membrane of mammal t.s. - Detail view of olfactory epithelium with sensory cilia - Olfactory epithelium, electron micrograph of an ultrathin section - Nasal conchae of man and deer - Tongue of man with areas of taste - Tongue of rabbit, t.s. of papilla foliata with taste buds - Papilla foliata t.s., detail view of taste bud - Vallate papilla t.s. -

Fungiform papilla t.s. - Human skin with cutaneous receptors of touch, pressure and thermal sensation - Sinus hair, l.s. and t.s. - Pacinian corpuscle - Meissner's corpuscle from human finger - Eimer's corpuscle from mouth of mole - Grandry's and Herbst's touch corpuscles from beak of duck - Sensitivity differences caused by touch-stimulation: excitation nearby or far away, weak or strong - Ruffini's warmth receptor - Krause's corpuscle, cold receptor - Back of human hand marked with warmth and cold reception points - Thermoreceptors of the infrared detector of rattle snake - Proprioceptors: muscle spindle and Golgi tendon apparatus. Conscious awareness of the position and movements of the joints - Muscle spindle in muscle, t.s.

Cat #: [JL-14MT](#)

### Parasitology, Human and Animals Overheads



#### 30 Overheads

Atlas of 30 Overhead-Transparencies size 22 x 28 cm, comprising 138 pictures (colour photomicrographs and -macrographs, colour life-cycles and anatomical pictures). With comprehensive interpretation text and 138 drawings and designs. In strong plastic file with ring-mechanism. By Prof. Dr. Werner Frank and Johannes Lieder.

Topics such as "parasitic animals, a menace to human health" are contents of the biological and health instruction in senior high schools and junior colleges offering general education. There is no doubt that in the near future this curricular aspect will be paid more and more attention to.

This transparency atlas hence shall inspire, but also offer the substantial and necessary help to realise an instruction characterized by a higher degree of clearness due to its illustrative material. Almost 50% of all human diseases in the developing countries are caused by parasites, and those animals which constitute human food are affected in a still higher degree. Our modern times are characterized by mass tourism, and travels of teenagers to subtropical and tropical countries of the Third World are no longer the rare exceptions. As developed countries show a rising tendency of diseases caused by parasites - also by earlier in these regions almost unknown ones - more action is called for in the sphere of schools, too. That is why this transparency atlas, due to its excellent usefulness to instruction, applies not only to students of human and veterinary medicine, but also to school biologists. To all of them this atlas offers reliable help with its brilliant microphotographs, typical pictures of diseases, impressive life cycles and the text, based on the latest scientific findings.

**Humoral and Cellular Reactions:** Ouchterlony precipitation - Indirect Fluorescent Antibody Test (IFAT) - Foreign-body Giant cells - Granuloma - Hypertrophy - Proliferation - Hyperplasia.

**Trypanosomes and Leishmanias:** *Trypanosoma brucei gambiense*, life-cycle, blood smear - *Trypanosoma cruzi*, life-cycle, blood smear, multiplication in amastigote forms - Apathogenic Trypanosomes - *Leishmania* - Life cycle - *Leishmania tropica* (Oriental Sore) - *Rhodnius prolixus* (Cone Nose Bug), vector of the Chagas disease - *Leishmania donovani* (Kala Azar), blood smear, tissue section - *Trichomonas vaginalis* - *Giardia lamblia intestinalis*, trophozoite and cyst.

**Entamoebae:** *Entamoeba histolytica*, life-cycle, biopsy of the rectal mucosa, trophozoites.

**Toxoplasms and Sarcosporidians, Limax Amoebae:** *Toxoplasma gondii*, life cycle, pseudocyst from the cerebrospinal fluid, cyst in the brain - *Sarcocystis* sp., schizont and merozoites - *Sarcocystis* sp., cysts (Miescher's tubes - *Naegleria fowleri*, trophozoites, facultative parasitic amoebae - Amoebic encephalitis.

**Malaria Parasites:** *Plasmodium falciparum*, life cycle, blood smear, merogony stages - *Plasmodium berghei*, blood smear, erythrocytic schizogony - *Plasmodium cynomolgi*; exoerythrocytic meront (schizont) - *Plasmodium* sp., exflagellation - *Plasmodium* sp., mosquito intestine with oocysts and sporocysts - *Plasmodium* sp., salivary gland of mosquito with sporozoites - *Plasmodium vivax*, trophozoite in an erythrocyte, mature meront (schizont) - *Plasmodium malariae*, trophozoite, young meront - *Plasmodium falciparum*, ring form stages, gametocyte with malarial pigment.

**Babesias:** *Babesia bigemina* - *Babesia microti* - *Babesia musclicolae* (splenomegaly).

**Ciliates:** *Balantidium coli* (human balantidial dysentery).

**Trematodes, Flukes and Blood Flukes:** *Opisthorchis felinus*, liver fluke of the cat, whole mount - *Clonorchis sinensis*, Chinese liver fluke, whole mount - *Opisthorchiidae*, *Heterophyidae*, life cycle - *Heterophyes heterophyes*, dwarf fluke of humans, w.m. and section - *Echinostoma revolutum*, w.m. - *Schistosoma* sp., life cycle - *Fasciolopsis buski*, giant intestinal fluke of humans - Digestive gland from snail infected with *Schistosoma mansoni* - *Schistosoma mansoni*, fork-tailed cercaria with penetration glands - *Schistosomulum* - *Schistosoma mansoni*, t.s. of two pairs in a vein - *Schistosoma mansoni* in copulation, w.m.

**Tapeworms (Cestodes):** *Taenia saginata* and *T. solium*, life-cycles - *Diphyllobothrium latum*, fish tapeworm - *Taenia saginata*, gravid proglottides, scolex with suckers - *Taenia solium*, scolex of cysticercus with suckers and hooklets - Cysticerci of *Taenia saginata* in muscular tissue - *Cysticercus cellulosae*, section - *Hymenolepis spec.* circular row of hooklets from the scolex - Proglottides of *Hymenolepis nana* with reproductive organs - Cysticercoids of *Hymenolepis nana* and *H. diminuta* - *Echinococcus granulosus* and *E. multilocularis*, life cycles - Course of cystic echinococcosis - *Echinococcus granulosus*, dog tapeworm, w.m. of adult, free protoscoleces from a hydatid, section through a hydatid cyst, *Echinococcus multilocularis*, multivesicular or spongy hydatid, tumorous changes of liver, liver of a diseased.

**Nemathelminths, Roundworms, Tongue Worms:** *Ascaris lumbricoides* and *Enterobius vermicularis*, life cycles - Verminous appendicitis with *Enterobius*, t.s. - *Trichinella spiralis*, w.m. and section of muscle with encapsuled larvae - *Ancylostoma duodenale* and *Necator americanus*, life cycles - *Ascaris lumbricoides*, common roundworm of humans, adult female t.s. - *Ancylostoma duodenale*, hook worm, adult female t.s. - *Wuchereria bancrofti*, life cycle - *Dracunculus medinensis*, Guinea worm - *Onchocerca volvulus*, sec. of subcutaneous node - *Wuchereria bancrofti*, sheathed microfilaria - *Armillifer armillatus* (Tongue worm), a pentastome.

**Ticks and Mites:** *Ornithodoros moubata*, transmitter of relapsing fever - *Borrelia duttoni*, causing relapsing fever - *Ixodes ricinus*, hard tick - *Neotrombicula autumnalis*, harvest mite or autumnal chigger - *Demodex folliculorum*, follicle mite of humans, w.m. of adult and sec. in skin - *Sarcoptes scabiei*, itch mite, w.m. of adult and sec. in skin.

**Lice and Bugs:** *Pediculus humanus*, human louse - *Phthirus pubis*, pubic or crab louse, adult and egg (nit) - *Cimex lectularius*, bed-bug.

**Mosquitos:** *Culex sp.* house mosquitos - *Anopheles sp.* malarial mosquitos - *Anopheles sp.*, mouth parts of female and male w.m. - *Culex sp.*, mouth parts of female c.s.

**Fleas Aphaniptera:** *Pulex irritans*, human flea, adult male and female - *Ctenocephalides canis*, dog flea - *Xenopsylla cheopis*, tropical rat flea (plague flea) - Helminth Eggs and Larvae, Protozoan Cysts - *Heterophyes sp.* - *Clonorchis sinensis* - *Schistosoma haematobium* - *S. mansoni* - *S. japonicum* - *Hymenolepis nana* - *H. diminuta* - *Taenia sp.* - *Echinococcus granulosus* - *Trichuris trichiura* - *Enterobius vermicularis* - *Ascaris lumbricoides* - *Ancylostoma duodenale* - *Dracunculus medinensis* - *Armillifer armillatus* - *Sarcocystis sp.* - *Entamoeba histolytica*, four nucleate cyst - *E. coli*, eight nucleate cyst.



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