

THE MULTIMEDIA PROGRAM MICROSCOPIC BIOLOGY ABCD

FOR INTERACTIVE TEACHING AND LEARNING

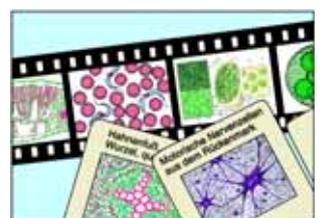
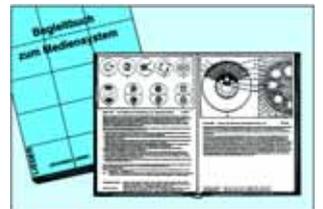
The new MULTIMEDIA PROGRAM FOR MICROSCOPIC BIOLOGY aims to give a strictly outlined synopsis of all those lines of biology important for instruction at schools, colleges and universities and suitable for working with the microscope.

A considerable part of the Program is an extensive manual with detailed descriptions and drawings of the prepared microscope slides and photomicrographs of the school series A, B, C and D. A well selected complementary media package with overhead transparencies, sketch- and work sheets, descriptions and pictures of the drawings, and new CD-ROM serves the teacher to work with the subject during the lessons. The abundant material offers the teacher the opportunity to select and to vary the content to tailor the lesson for each class.

The following media are offered with the Multimedia Program:

1. Prepared Microscope Slides
2. Manual with Texts and Drawings
3. Color Atlas of Overhead Projector Transparencies
4. CD-ROM for Interactive Learning
5. Media Package with Transparencies, Texts, Sketch- and Work Sheets
6. Color Photomicrographs 35 mm (original exposure)
7. Additional Microscope Slides

Please note: The Multimedia-Program ABCD with all its parts is also available in the following languages: **German, English, French, Spanish, Portuguese and Italian.** Please name the requested language when ordering



1. Prepared Microscope Slides

Basic component of the program are the A, B, C and D series comprising of 175 microscope slides. The four series are arranged systematically and constructively compiled, so that each enlarges the subject line of the proceeding one. They contain slides of typical micro-organisms, of cell division and of embryonic developments as well as of tissues and organs of plants, animals and man. Each of the slides has been carefully selected on the basis of its instructional value.

LIEDER prepared microscope slides are made in our laboratories under scientific control. They are the product of long experience in all spheres of preparation techniques. Microtome sections are cut by highly skilled staff, cutting technique and thickness of the sections are adjusted to the objects. Out of the large number of staining techniques we select those ensuring a clear and distinct differentiation of the important structures combined with best permanency of the staining. Generally, these are complicated multicolor stainings. LIEDER prepared microscope slides are delivered on best glasses with ground edges of the size 26 x 76 mm (1 x 3"). – Every prepared microscope slide is unique and individually crafted by our well-trained technicians under rigorous scientific control. We therefore wish to point out that delivered products may differ from the pictures in this catalog due to natural variation of the basic raw materials and applied preparation and staining methods.

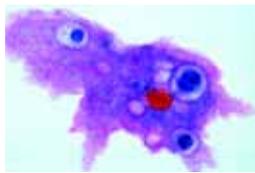
The number of series in hand should correspond approximately to the number of microscopes to allow several students to examine the same prepared microscope slides at the same time. For this reason all slides out of the series can be ordered individually also. So, important microscope slides can be supplied for all students.

No. 500 School Set A for General Biology, Elementary Set 25 microscope slides

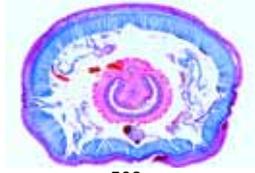
Zoology

- 501e **Amoeba proteus**, w.m. showing nucleus and pseudopodia
 502e **Hydra**, w.m. extended specimen to show foot, body, mouth, and tentacles
 503c **Lumbricus**, earthworm, typical t.s. back of clitellum showing muscular wall, intestine, typhlosole, nephridia etc.
 504c **Daphnia and Cyclops**, small crustaceans from fresh water
 505d **Musca domestica**, house fly, head and mouth parts (proboscis) w.m.
 506b **Musca domestica**, leg with clinging pads (pulvilli)
 507c **Apis mellifica**, honey bee, anterior and posterior wing
Histology of Man and Mammals
 508c **Squamous epithelium**, isolated cells from human mouth
 509d **Striated muscle**, l.s. showing nuclei and striations
 510d **Compact bone**, t.s. special stained for cells, lamellae, and canaliculi
 511d **Human scalp**, vertical section showing l.s. of hair follicles, sebaceous glands, epidermis
 512c **Human blood smear**, stained for red and white corpuscles
Botany, Bacteria and Cryptogams
 513d **Bacteria from mouth**, smear Gram stained showing bacilli, cocci, spirilli, spirochaetes
 514c **Diatoms**, strewn slide of mixed species
 515c **Spirogyra**, vegetative filaments with spiral chloroplasts
 516c **Mucor or Rhizopus**, mold, w.m. of mycelium and sporangia
 517c **Moss stem with leaves** w.m.
Botany, Phanerogams
 518c **Ranunculus**, buttercup, typical dicot root t.s., central stele
 519c **Zea mays**, corn, monocot stem with scattered bundles t.s.
 520c **Helianthus**, sunflower, typical herbaceous dicot stem t.s.
 521c **Syringa**, lilac, leaf t.s. showing epidermis, palisade parenchyma, spongy parenchyma, vascular bundles
 522d **Lilium**, lily, anthers with pollen grains and pollen sacs t.s.
 523d **Lilium**, ovary t.s. showing arrangement of ovules
 524c **Allium cepa**, onion, w.m. of epidermis shows simple plant cells with cell walls, nuclei, and cytoplasm
 525d **Allium cepa**, l.s. of root tips showing cell divisions (mitosis) in all stages, carefully stained

NEW: No. CD050 Interactive CD-ROM with Teaching Material to School Set A (Description see page 10)



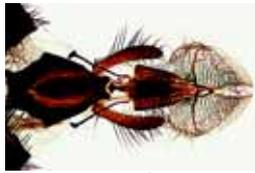
501e



503c



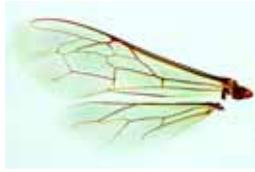
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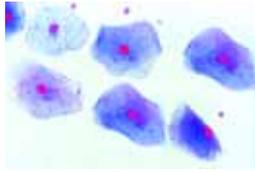
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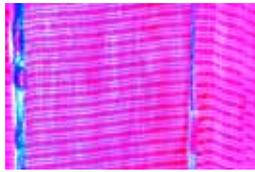
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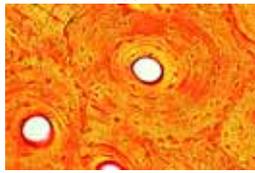
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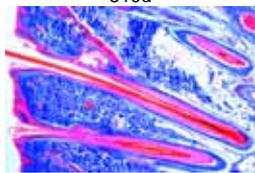
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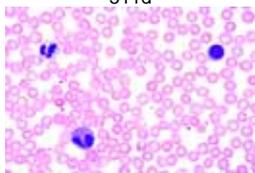
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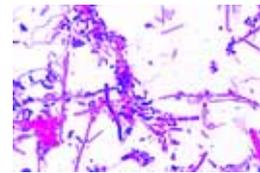
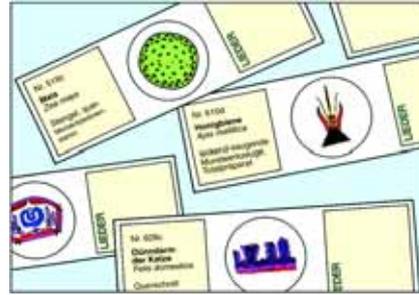
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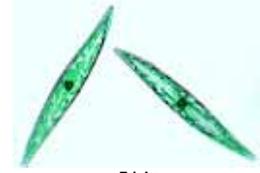
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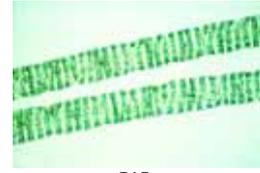
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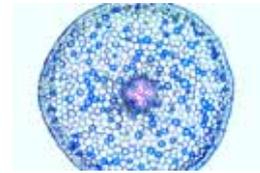
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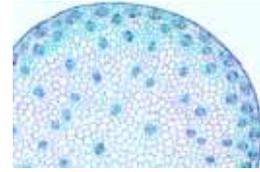
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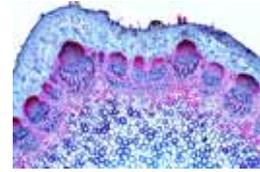
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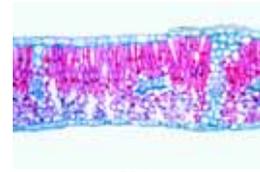
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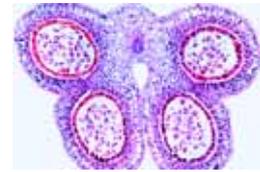
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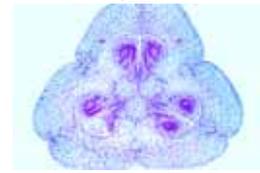
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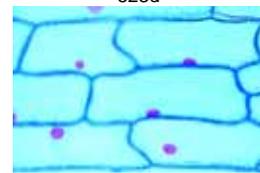
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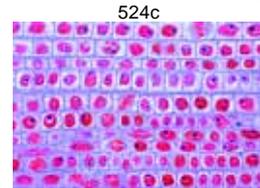
522d



523d



524c



525d

No. 600 School Set B for General Biology, Supplementary Set 50 microscope slides

Zoology and Parasitology

- 601d **Paramecium**, nuclei stained
 602c **Euglena**, a common flagellate with eyespot
 603c **Sycon**, a marine sponge, t.s. of body
 604e **Dicrocoelium lanceolatum**, sheep liver fluke, w.m.
 605c **Taenia saginata**, tapeworm, proglottids of various ages t.s.
 606d **Trichinella spiralis**, l.s. of skeletal muscle showing encysted larvae
 607d **Ascaris**, roundworm, t.s. of female in region of gonads
 608b **Araneus**, spider, leg with comb w.m.
 609d **Araneus**, spider, spinneret w.m.
 610d **Apis mellifica**, honey bee, mouth parts of worker w.m.
 611b **Apis mellifica**, hind leg of worker with pollen basket w.m.
 612e **Periplaneta**, cockroach, chewing mouth parts w.m.
 613b **Trachea** from insect w.m.
 614b **Spiracle** from insect w.m.
 615d **Apis mellifica**, sting and poison sac w.m.
 616b **Pieris**, butterfly, portion of wing with scales w.m.
 617d **Asterias rubens**, starfish, arm (ray) t.s. showing tube feet, digestive gland, ampullae

Histology of Man and Mammals

- 618e **Fibrous connective tissue** of mammal
 619c **Hyaline cartilage** of mammal, t.s.
 620e **Adipose tissue**, stained for fat
 621d **Smooth (involuntary) muscle** l.s. and t.s.
 622e **Medullated nerve fibres**, teased preparation of osmic acid fixed material showing Ranvier's nodes
 623c **Frog blood smear**, showing nucleated red corpuscles
 624d **Artery and vein** of mammal, t.s.
 625d **Liver** of pig, t.s. showing well developed connective tissue
 626c **Small intestine** of cat, t.s. showing mucous membrane
 627c **Lung** of cat, t.s. showing alveoli, bronchial tubes

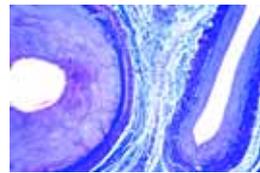
Botany, Cryptogams

- 628c **Oscillatoria**, a common blue green filamentous alga
 629e **Spirogyra** in scalariform conjugation, formation of zygotes
 630c **Psalliota**, mushroom, t.s. of pileus with basidia and spores
 631c **Morchella**, morel, t.s. of fruiting body with asci and spores
 632d **Marchantia**, liverwort, antheridial branch with antheridia l.s.
 633d **Marchantia**, archegonial branch with archegonia l.s.
 634d **Pteridium**, braken fern, rhizome with vascular bundles t.s.
 635d **Aspidium**, t.s. of leaf with sori showing sporangia and spores

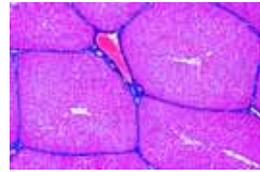
Botany, Phanerogams

- 636e **Elodea**, waterweed, stem apex l.s. showing meristematic tissue and leaf origin
 637d **Dahlia**, t.s. of tuber with inuline crystals
 638b **Allium cepa**, onion, w.m. of dry scale showing calcium oxalate crystals
 639d **Pyrus**, pear, t.s. of fruit showing stone cells
 640c **Zea mays**, corn, typical monocot root t.s.
 641c **Tilia**, lime, woody dicot root t.s.
 642c **Solanum tuberosum**, potato, t.s. of tuber with starch and cork cells
 643c **Aristolochia**, birthwort, one year stem t.s.
 644c **Aristolochia**, older stem t.s. shows secondary growth
 645d **Cucurbita**, pumpkin, l.s. of stem with sieve tubes, annular and reticulate vessels, sclerenchyme fibres
 646d **Root tip** and root hairs
 647c **Tulipa**, tulip, epidermis of leaf with stomata and guard cells w.m., surface view
 648c **Iris**, typical monocot isobilateral leaf, t.s.
 649c **Sambucus**, elderberry, stem showing lenticells and cork cambium, t.s.
 650e **Triticum**, wheat, grain (seed) sagittal l.s. with embryo and endosperm

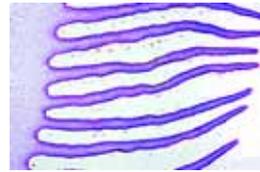
**NEW: No. CD060 Interactive CD-ROM with Teaching Material to School Set B
(Description see page 10)**



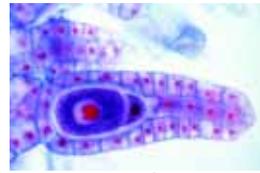
624d



625d



630c



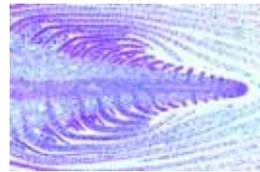
632d



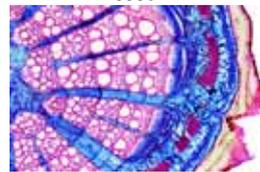
634d



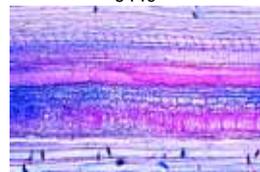
635d



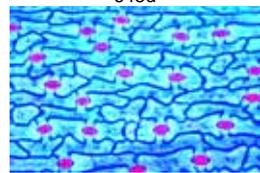
636e



644c



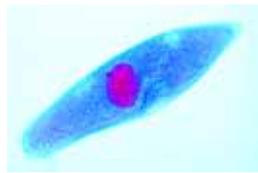
645d



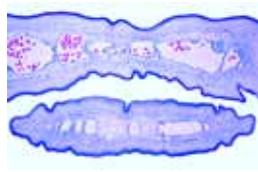
647c



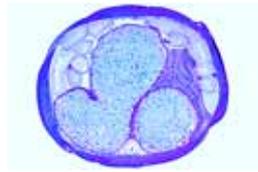
650e



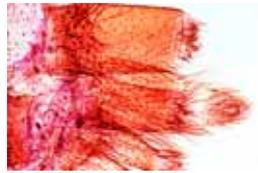
601d



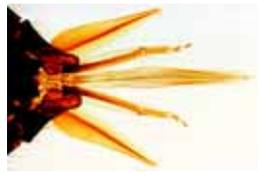
605c



607d



609d



610d



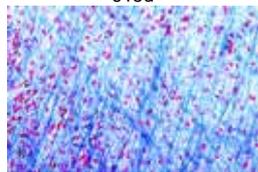
611b



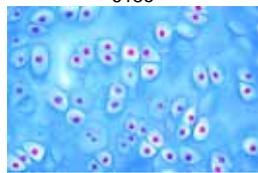
614b



615d



618e



619c



620e

No. 700 School Set C for General Biology, Supplementary Set 50 microscope slides

Zoology and Parasitology

- 701f **Trypanosoma gambiense**, causing sleeping disease, blood smear
 702f **Plasmodium berghei**, malaria parasite, blood smear
 703d **Radiolaria**, strewn slide of mixed species
 704d **Foraminifera**, strewn slide of mixed species
 705d **Obelia hydroid**, w.m. of colony with hydrants and gonothecae
 706d **Hydra**, t.s. of body in different levels. Ectoderm, entoderm
 707c **Planaria**, typical t.s. through the body
 708e **Apis mellifica**, honey bee, head with compound eyes and brain t.s.
 709d **Apis mellifica**, abdomen of worker t.s., with intestine and nephridia
 710e **Ctenocephalus canis**, dog flea, adult w.m.
 711d **Dermanyssus gallinae**, chicken mite, adult w.m.
 712d **Helix pomatia**, snail, hermaphrodite gland (ovotestis), t.s. with developing ova and spermatozoa
 713d **Mya arenaria**, clam, gills t.s. and l.s. showing ciliated epithelium
 714d **Branchiostoma lanceolatum** (Amphioxus), typical t.s. of body with gills, liver, and gonads
 715c **Bird feathers**, w.m. of two types: wing or vane and down feathers

Embryology

- 716e **Salamandra larva**, sections from selected material showing mitotic stages in skin and other organs
 717f **Chicken embryo**, 48 hour, t.s. with neural tube and chorda

Histology of Man and Mammals

- 718d **Ovary** of cat, t.s. with primary, secondary, and Graafian follicles
 719d **Testis** of mouse, t.s. showing spermatogenesis in all stages
 720d **Cerebellum** of cat, t.s. shows Purkinje cells
 721c **Spinal cord** of cat, t.s. showing white and grey matter, nerve cells
 722d **Kidney** of cat, t.s. through cortex and medulla
 723d **Retina** of cat, t.s. for detail of rods and cones
 724e **Tongue** of rabbit, t.s. of papilla foliata with abundant taste buds

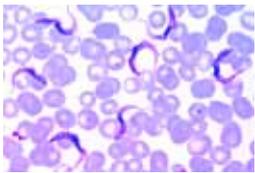
Botany, Bacteria and Cryptogams

- 725d **Bacillus subtilis**, hay bacillus, smear with bacilli and spores
 726d **Streptococcus lactis**, milk souring organisms, smear showing chains
 727e **Volvox**, with daughter colonies and sexual stages, w.m.
 728d **Fucus vesiculosus**, brown alga, female conceptacle with oogonia t.s.
 729d **Fucus vesiculosus**, male conceptacle with antheridia t.s.
 730c **Cladophora**, green alga, branched filaments with multinucleate cells
 731c **Claviceps purpurea**, ergot, sclerotium t.s.
 732d **Puccinia graminis**, wheat rust, uredinia on wheat leaf t.s.
 733d **Puccinia graminis**, aecidia and pycnidia on barberry leaf t.s.
 734b **Saccharomyces**, yeast, budding cells w.m.
 735d **Physcia**, foliose lichen, thallus with symbiotic algae t.s.
 736e **Fern prothallium**, w.m. showing sex organs
 737d **Equisetum**, horse tail, strobilus with spores l.s.

Botany, Phanerogams

- 738d **Lupinus**, lupin, root nodules with symbiotic bacteria t.s.
 739c **Euphorbia**, spurge, stem with lactiferous ducts l.s.
 740d **Pinus**, pine, three sections of wood: transverse, radial, tangential
 741d **Tilia**, lime, three sections of wood: transverse, radial, tangential
 742d **Elodea**, waterweed, aquatic stem with primitive bundle t.s.
 743d **Cucurbita**, pumpkin, stem t.s. showing bicollateral bundles and sieve plates
 744d **Fagus**, beech, sun and shade leaves, two t.s. for comparison
 745c **Nerium**, oleander, xerophytic leaf with sunken stomata, t.s.
 746d **Pinus**, pine, male cone with pollen l.s.
 747d **Pinus**, female cone with ovules l.s.
 748b **Pinus**, mature pollen grains with wings w.m.
 749f **Lilium**, lily, t.s. of very young anthers showing meiotic stages of the pollen mother cells
 750d **Taraxacum**, dandelion, composite flower l.s.

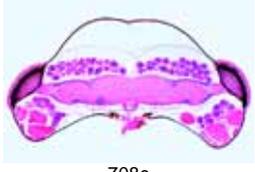
**NEW: No. CD070 Interactive CD-ROM with Teaching Material to School Set C
(Description see page 10)**



701f



706d



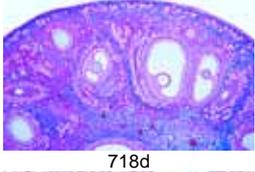
708e



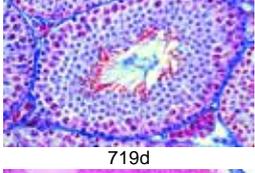
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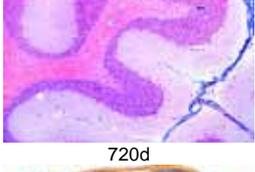
714d



718d



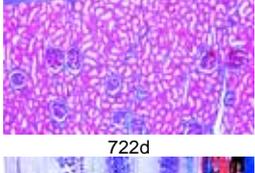
719d



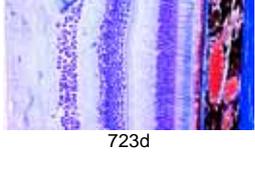
720d



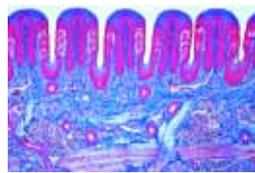
721c



722d



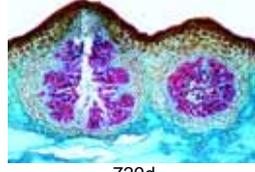
723d



724e



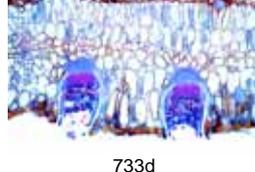
727e



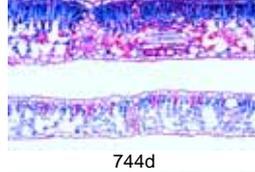
729d



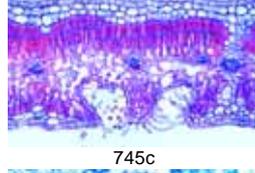
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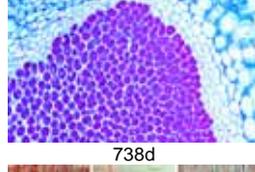
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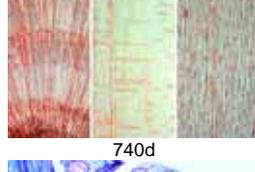
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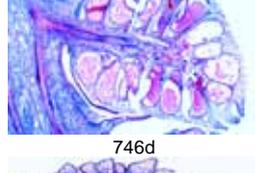
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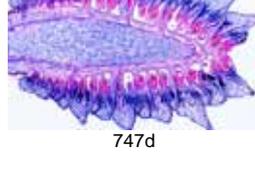
738d



740d



746d



747d

No. 750 School Set D for General Biology, Supplementary Set 50 microscope slides

Histology of Man and Mammals

- 751c **Ciliated epithelium**, in t.s. of fallopian tube of pig
 752d **Tendon** of cow, l.s. showing white fibrous tissue, stained for fibres and cells
 753f **Heart muscle**, human, t.s. and l.s., branched fibres with nuclei and intercalated discs
 754c **Lymph gland** of pig, t.s. showing lymphoid tissue
 755c **Esophagus** of cat, t.s. with stratified squamous epithelium, muscular layers
 756d **Stomach** of cat, t.s. through fundic region showing gastric glands
 757d **Large intestine (colon)**, t.s. special stained for the mucous cells
 758d **Pancreas** of pig, sec. showing islets of Langerhans
 759d **Thyroid gland** of pig, sec. showing glandular epithelium and colloid
 760d **Adrenal gland** of cat, t.s. through cortex and medulla
 761d **Sperm** of bull (spermatozoa), smear
 762e **Motor nerve cells**, smear from spinal cord of cow showing w.m. of motor nerve cells and their processes
 763f **Cerebrum**, human, t.s. of cortex showing pyramidal cells and fibrous region
 764d **Human skin** from palm, v.s. showing cornified epidermis, germinative zone, sweat glands

Zoology

- 765f **Distomum hepaticum (Fasciola)**, beef liver fluke, w.m. and stained for general study
 766f **Taenia spec.**, tapeworm, w.m. of mature proglottids
 767e **Culex pipiens**, mosquito, head and piercing-sucking mouth parts of female, w.m.
 768e **Culex pipiens**, mosquito, head and reduced mouth parts of male, w.m.
 769f **Cimex lectularius**, bed bug, w.m. of adult specimen

Cytology and Genetics

- 770f **Mitochondria**, in thin sec. through liver or kidney, special staining technique
 771g **Golgi apparatus**, t.s. through spinal ganglion, special staining technique
 772d **Chloroplasts**, in leaf of Elodea or Mnium, special stained
 773c **Aleurone grains**, in sec. of Ricinus endosperm
 774f **Storage**, section of liver or kidney, vital stained with trypan-blue to demonstrate storage in epithelial cells
 775g **DNA in cell nuclei**, demonstrated by Feulgen staining technique
 776g **DNA and RNA**, fixed and stained with methyl green and pyronine to show DNA and RNA in different colors
 777f **Giant chromosomes** from the salivary gland of Chironomus. Individual genes and puffs can be observed
 778h **Human chromosomes**, spread in the stage of metaphase, for counting chromosomes
 779f **Meiotic and mitotic stages** in sec. of crayfish testis. Nuclear spindles are present
 780f **Maturation divisions** in ova of Ascaris megalocephala, iron-hematoxylin stained
 781f **Cleavage stages** in ova of Ascaris megalocephala, iron-hematoxylin stained

Bacteria and Diseased Organs of Man

- 782d **Escherichia coli**, bacteria from colon, probably pathogenic, smear Gram stained
 783d **Eberthella typhi**, causing typhoid fever, smear from culture, Gram stained
 784e **Tuberculous lung**, t.s. of diseased human lung showing miliary tubercles in tissue
 785e **Coal dust lung (Anthraxosis pulmonum)**, t.s. of human smoker's lung
 786e **Liver cirrhosis** of man caused by alcohol abuse, t.s. showing degeneration of cells
 787e **Arteriosclerosis**, t.s. of diseased human coronary with sclerotic changes in the wall
 788e **Metastatic carcinoma (cancer)** of human liver, t.s.

Embryology

- 789e **Sea-urchin development** (Psammechinus miliaris), composite slide with two cell, four cell and eight cell stages
 790e **Sea-urchin development** (Psammechinus miliaris), composite slide with morula, blastula and gastrula stages
 791f **Frog embryology** (Rana spec.), sec. through the blastula stage showing the blastocoel
 792f **Frog embryology** (Rana spec.), sag. sec. through young larva in the tail bud stage, with primordia of organs

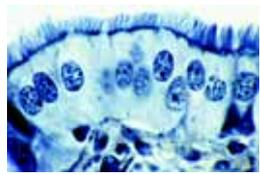
Ecology and Environment

- 793e **Leaf (needle) of fir** (Abies), two t.s. of leaves, healthy and damaged by environmental influences (acid rain)
 794e **Leaf of beech** (Fagus), two t.s. of leaves, healthy and damaged by environmental influences (acid rain)
 795d **Bacteria from waste-water**, smear with many typical forms

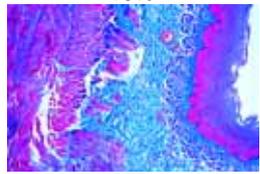
Botany

- 796c **Nostoc**, blue green alga, filamentous colonies within gelatinous sheaths
 797e **Desmids (Desmidiaceae)**, strewn slide of various species
 798c **Sphagnum**, peat moss, w.m. of leaf showing chlorophyll-bearing and hyaline cells.
 799c **Triticum**, wheat, t.s. of stem of a gramineous plant with central pith and circular arrangement of bundles
 800c **Salvia**, sage, t.s. of a square stem with angular collenchyma

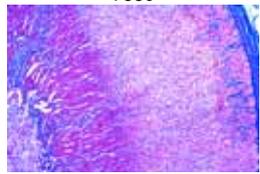
**NEW: No. CD075 Interactive CD-ROM with Teaching Material to School Set D
(Description see page 10)**



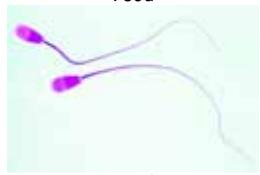
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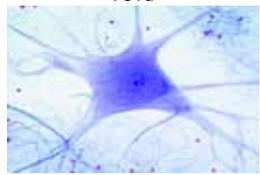
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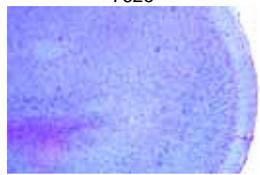
760d



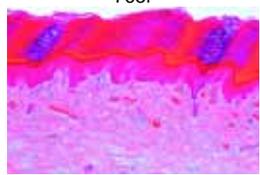
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762e



763f



764d



765f



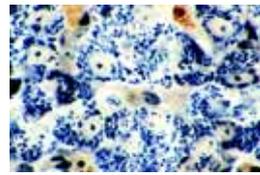
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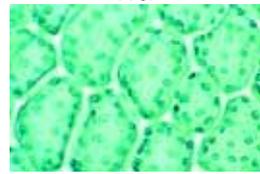
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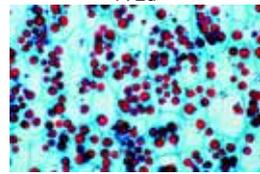
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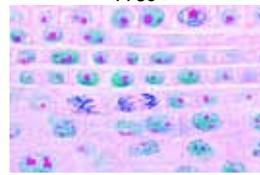
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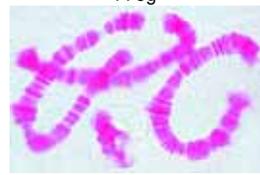
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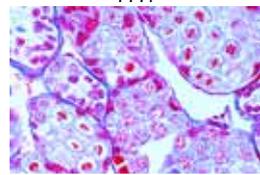
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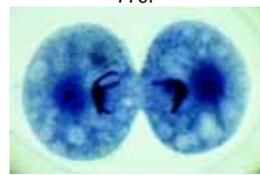
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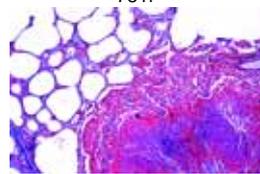
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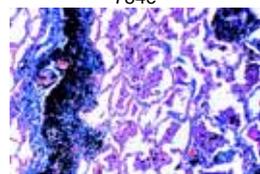
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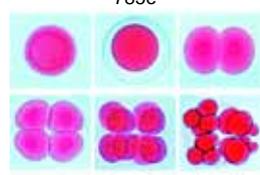
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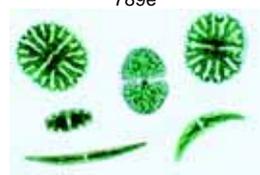
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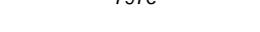
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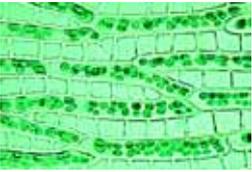


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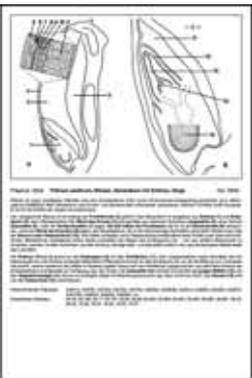
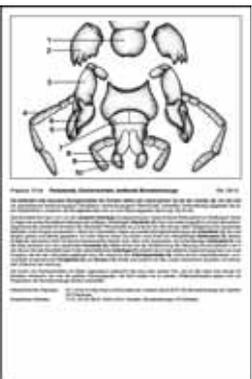
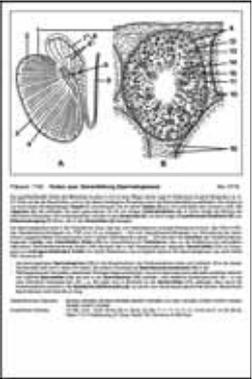
- No. 500 **Microscope Slides, School Set A for General Biology, 25 slides**
 No. 600 **Microscope Slides, School Set B for General Biology, 50 slides**
 No. 700 **Microscope Slides, School Set C for General Biology, 50 slides**
 No. 750 **Microscope Slides, School Set D for General Biology, 50 slides**
 No. 850 **Microscope Slides, School Set A, B, C and D together. 175 slides**

Prices of individual microscope slides: Each slide in our catalogues is identified by a list number which ends with a small letter. This end-letter designates the price of the slide according to the code specified in the enclosed price-list.

Boxes for prepared microscope slides: Microscope slides can be shipped in special slide boxes only for technical reasons. These boxes are available in various types and price categories and should be ordered together with the slides. Unless specified by the customer we supply standard type boxes of suitable size for our microscope slide sets and individual slides (e.g. K12, K25, K50, K100). Please see price-list.



798c



2. Manual with Texts and Drawings

With this manual the intent is to facilitate the study of microscope slides and photomicrographs and their interpretation.

The Multimedia Program consisting of 175 microscope slides, color photomicrographs 35mm, overhead transparencies, sketch- and work sheets, and wall charts constituted the basis for the conception of the manual. However, anyone who works with microscopic slides and photomicrographs will find the manual helpful in the discovery of new details, their interpretation and understanding.

The Drawings.

Microscope slides, the basic medium, are studied under the microscope using different magnifications to discover details. The projection of the color photomicrographs 35mm immediately demonstrates in optimum magnification the desired detail of the slide, thus enabling the pupil to easily and quickly find this detail in his mount.

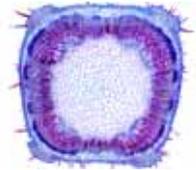
The semidiagrammatic drawings, the third medium, separate the important from the unimportant, interpreting and introducing connections.

The Descriptions.

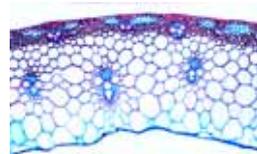
The text pertaining to each of the 175 drawings gives a detailed description of the microscopic slide, the photomicrograph 35mm and the drawing. It also makes suggestions for the best use of the Multimedia Program in class.

- The morphological structures are described and the code of numbers in the drawings is explained.
- Information is given about systematic and physiological connections as well as biological principles: the evolution from primitive to highly developed organisms, division of labour, specialization and how organisms solve certain problems. Life cycles of parasitic plants and animals are discussed.
- Information is further given about methods of collecting and studying living material to make lessons interesting. Microtechnical methods of fixing, staining and mounting are explained where possible.
- Each text refers to supplementary microscope slides and projection slides which enable the teacher to intensify and increase the knowledge of the subject. Due to the limited space only catalogue numbers of these supplementary media materials are given. Their exact labels and detailed descriptions are listed on the respective pages of this catalogue.

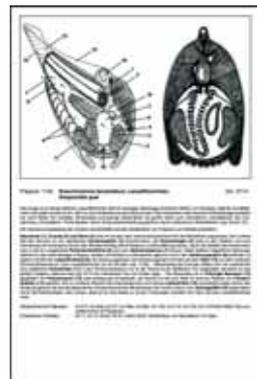
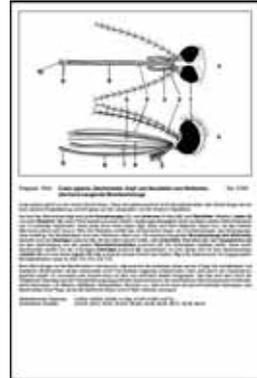
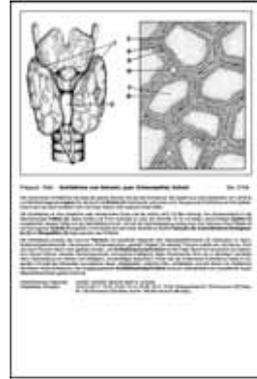
No. T8500E **Manual to the Multimedia Program Microscopic Biology, 190 pages with 175 drawings and texts**



800c



799c



3. Color Atlas of Overhead Projector Transparencies New 7th Edition 2011



The atlas comprises 45 transparency sheets (size 22 x 28 cm) showing the 175 color photomicrographs of the series A, B, C and D, but often in several magnifications, therefore the total number of individual pictures is over 252. The compilation and the individual titles of the atlas also corresponds to the A, B, C and D series of prepared microscope slides. Transparencies immediately show, on the screen, the details of the specimen required for demonstration at the most suitable magnification. The student subsequently finds it easier to locate the relevant part of the microscopic slide under the microscope. The transparencies are printed by a special process and excel by reason of their high projection quality. They are held in a

strong plastic file with ring mechanism. This OHP Transparency Atlas is offered for teachers who prefer classroom work with the OHP projector instead of the 5 x 5 cm slide projector.

For detailed description please see page 115 in this catalogue.

No. 8236E Transparency-Atlas with the Pictures of Sets A, B, C, D



Atlas of 45 OHP Transparencies comprising over 252 color photomicrographs according to the 175 Prepared Microscope Slides of the **MULTIMEDIA-SYSTEM FOR BIOLOGY A, B, C and D**. This atlas of OHP transparencies is intended to present a clear-cut outline of all fields of biology and cover all the organisms studied in schools. Each of the specimens has been carefully chosen on the basis of its instructional value. - Text: Dr. K.-H. Meyer, B.S. - NEW EDITION

NEW in 2011: Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.

Zoology. - Amoeba proteus - Radiolaria, mixed - Foraminifera, mixed - Euglena, flagellate - Trypanosoma gambiense, blood smear - Plasmodium, malaria, blood smear - Paramecium, nuclei stained - Sycon, marine sponge t.s. - Hydra, w.m. - Obelia hydroid - Planaria, t.s. - Dicrocoelium lanceolatum, sheep liver fluke - Distomum hepaticum (Fasciola), beef liver fluke - Taenia saginata, tapeworm, proglottids t.s. - Taenia, tapeworm, w.m. proglottid - Trichinella spiralis, encysted larvae - Ascaris, roundworm, t.s. female - Lumbricus, earthworm, typical t.s. back of clitellum - Daphnia and Cyclops - Araneus, spider, leg with comb - Araneus, spinneret - Dermanyssus gallinae, chicken mite - Musca domestica, house fly, head and mouth parts - Musca, leg - Apis mellifica, honey bee, mouth parts - Apis, wings - Apis, hind leg of worker - Apis, sting and poison sac - Apis, head with compound eyes t.s. - Apis - abdomen of worker t.s. - Periplaneta, cockroach, chewing mouth parts - Culex pipiens, mosquito, mouth parts of female - Culex, mouth parts of male - Trachea from insect - Spiracle from insect - Pieris, butterfly, wing with scales - Ctenocephalus canis, dog flea - Cimex lectularius, bed bug - Helix pomatia, snail, hermaphrodite gland t.s. - Mya, clam, gill sec. - Bird feathers - Asterias rubens, starfish, arm t.s. - Branchiostoma (Amphioxus), typical t.s.

Histology of Human and Mammals. Squamous epithelium - Ciliated epithelium, t.s. - Fibrous connective tissue - Tendon , l.s. white fibrous tissue - Adipose tissue, fat - Hyaline cartilage t.s. - Compact bone, t.s. - Striated muscle, l.s. - Heart muscle, human, l.s. intercalated discs - Smooth muscle l.s. and t.s. - Lung of cat, t.s. - Human blood smear - Frog blood smear - Artery and vein of mammal, t.s. - Lymph gland of pig, t.s. - Thyroid gland of pig, sec. colloid - Adrenal gland of cat, t.s. - Esophagus of cat, t.s. - Stomach of cat, t.s. fundic - Small intestine of cat, t.s. - Large intestine, t.s. mucous cells - Liver of pig, t.s. - Pancreas of pig, sec. with islets of Langerhans - Kidney of cat, t.s. - Ovary of cat, t.s. with follicles - Testis of mouse, t.s. spermatogenesis - Sperm of bull, smear - Medullated nerve fibres, Ranvier's nodes - Motor nerve cells, smear from spinal cord - Spinal cord of cat, t.s. - Cerebrum, human, t.s. pyramidal cells - Cerebellum of cat, t.s. Purkinje cells - Retina of cat, t.s. - Tongue of rabbit, t.s. with taste buds - Human skin from palm, v.s. sweat glands - Human scalp, l.s. of hair follicles

Botany, Bacteria and Cryptogams. Bacteria from mouth - Bacillus subtilis, hay bacillus - Streptococcus lactis, milk souring - Oscillatoria - Nostoc - Diatoms, mixed - Cladophora, green alga, multinucleate cells - Volvox, daughter colonies and sexual stages - Spirogyra, vegetative - Spirogyra in conjugation - Desmids, various species - Fucus, brown alga, female conceptacle t.s. - Fucus , male conceptacle t.s. - Mucor, mold - Morchella, morel, t.s. of asci and spores - Claviceps, ergot, sclerotium t.s. - Saccharomyces, yeast, budding - Psalliota, mushroom, t.s. of pileus - Puccinia, wheat rust, uredinia t.s. - Puccinia, aecidia and pycnidia t.s. - Physcia, lichen, thallus with symbiotic algae t.s. - Marchantia, liverwort, antheridia l.s. - Marchantia, archegonia l.s. - Moss stem with leaves w.m. - Sphagnum, peat moss, w.m. of leaf - Fern prothallium, sex organs - Pteridium, fern, rhizome t.s. - Aspidium, t.s. leaf with sori - Equisetum, horse tail, strobilus l.s.

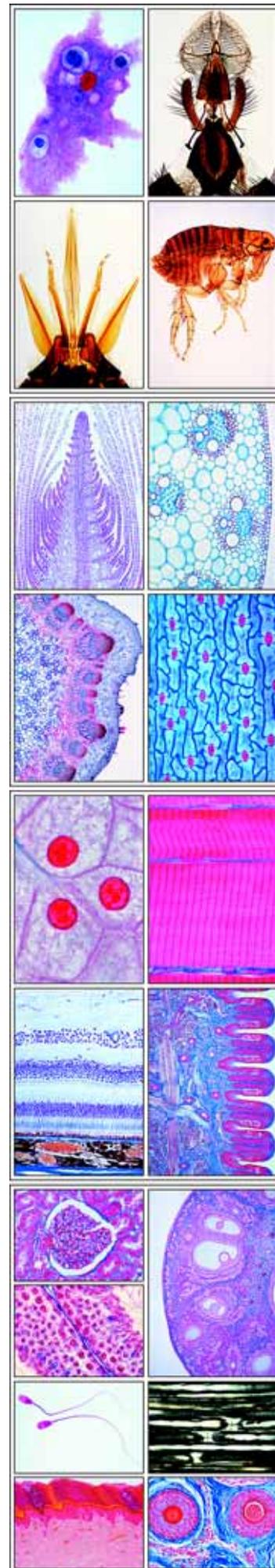
Botany, Phanerogams. Allium cepa, onion, w.m. of epidermis - Root tip and root hairs - Zea mays, corn, monocot root t.s. - Ranunculus, buttercup, dicot root t.s. - Tilia, lime, woody dicot root t.s. - Dahlia, t.s. tuber with inuline - Lupinus, lupin, root nodules with symbiotic bacteria t.s. - Elodea, stem apex l.s. - Zea mays, corn, monocot stem t.s. - Helianthus, sunflower, dicot stem t.s. - Pyrus, pear, t.s. stone cells - Solanum tuberosum, potato, tuber t.s. - Elodea, aquatic stem t.s. - Triticum, wheat, t.s. stem - Aristolochia, one year stem t.s. - Aristolochia, older stem t.s. - Sambucus, stem with lenticells t.s. - Tilia, lime, three sections of wood - Cucurbita, pumpkin, stem l.s. of sieve tubes - Cucurbita, stem t.s. of sieve plates - Euphorbia, spurge, stem with lactiferous ducts l.s. - Salvia, sage, t.s. of a square stem - Tulipa, epidermis of leaf with stomata w.m. - Iris, monocot leaf t.s. - Syringa, lilac, leaf t.s. - Fagus, beech, sun and shade leaves, two t.s. - Nerium, oleander, leaf with sunken stomata, t.s. - Lilium, lily, anthers t.s. - Lilium, ovary t.s. - Taraxacum, dandelion, composite flower l.s. - Triticum, wheat, grain with embryo l.s. - Pinus, pine, three sections of wood - Pinus, pine, male cone l.s. - Pinus, female cone l.s. - Pinus, pollen grains

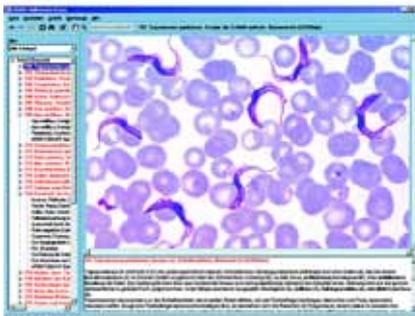
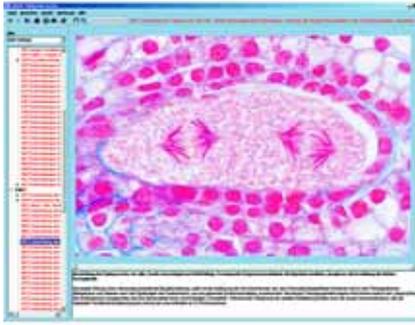
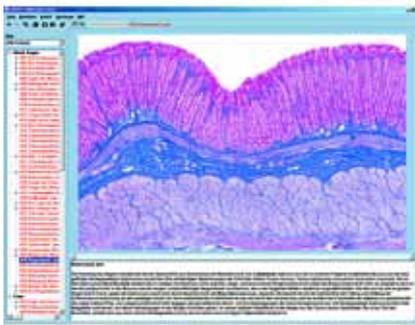
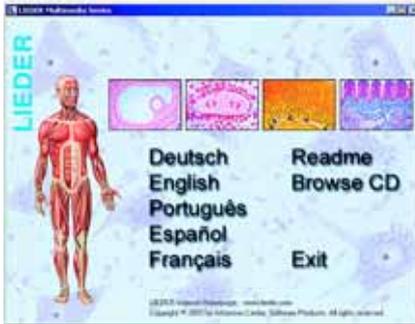
Cytology and Genetics. Allium cepa, l.s. of root tips showing mitosis - Lilium, t.s. of young anthers, meiotic stages - Salamandra, sections with mitotic stages - Mitochondria - Golgi apparatus, t.s. spinal ganglion - Chloroplasts, in leaf of Mnium - Aleurone grains - Allium , onion, showing calcium oxalate crystals - Storage, section of liver, vital stained - DNA in cell nuclei, Feulgen - DNA and RNA in different colors - Giant chromosomes from salivary gland of Chironomus - Human chromosomes, stage of metaphase - Crayfish testis, with nuclear spindles - Maturation divisions in ova of Ascaris megalocephala - Cleavage stages in ova of Ascaris

Embryology. Chicken embryo, 48 hour, t.s. with neural tube and chorda - Sea-urchin development, two cell, four cell and eight cell stages - Sea-urchin, morula, blastula and gastrula - Frog embryology (Rana), sec. blastula - do. sag. sec. young larva in tail bud stage

Bacteria and Diseased Organs of Man. Escherichia coli - Eberthella typhi, typhoid fever - Tuberculous lung of man, t.s. - Coal dust lung of man, t.s. (smoker's lung) - Liver cirrhosis of man caused by alcohol abuse, t.s. - Arteriosclerosis, t.s. of coronary artery - Metastatic carcinoma (cancer) of human liver, t.s.

Ecology and Environment. Leaf (needle) of fir (Abies), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - Leaf of beech (Fagus), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - Bacteria from waste-water





4. New Amazing Interactive Educational CD-ROM for the Series A, B, C and D



We offer a new range of about 42 CD-ROM for interactive learning and teaching in school and education. All pictures and illustrations are taken from our own stocks to guarantee superior quality. Newly developed programs guarantee easy installation and unproblematic running of the program. Every CD comprises the following topics:

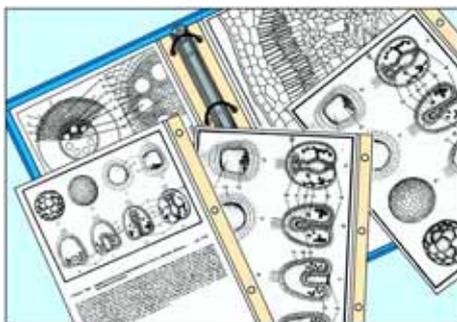
- Comprises a great variety of beautiful **diagrams, color photos, tables, anatomical pictures, electron and X-ray photographs, impressive life cycles, human photographs, landscape photographs, scenes, test data and results**, necessary for teaching the subjects.
- Comprises all necessary **photomicrographs of microscopic slides**, which can be observed by **five different steps of magnification** by using a „MicroScope“. The slides can be moved under this microscope and can be observed in all its parts.
- Comprises all necessary **drawings** matching the pictures, with **explanations** of all the parts.
- The same number of comprehensive **explanatory texts** to help understanding the pictures.
- A special **test program** to check the students' knowledge in several levels of difficulty. A variable number of random selected pictures have to be identified. After a successful run the students receive notes about their progress in learning. By repeating the test any success will be revealed by the program.
- A comprehensive **index, a search function** and a comfortable **browser** for all pictures and texts on every CD-ROM.
- All pictures can be shown also in **full-screen size**, just by pressing the ENTER button.
- Special **accompanying material**, which enables evaluation of what has been seen, and creative learning is an important part of the program. **Drawings, sketch- and worksheets** are supplied for many of the pictures on the CD. They are stored in **full printing quality (high resolution of 300 to 600 dpi)**. After printing the drawings may be supplemented or colored. In addition, the worksheets – which are allowed to be copied – can be used as **accompanying material for class tests**.
- The novel **demo program** features the functionality to start a self-running demo of the program in sequential or random order. A sophisticated **presentation mode** allows the user to prepare a collection of chosen pictures for an impressive full-screen presentation.
- The complete set of images on this CD can be displayed in **thumbnail view** for a comprehensive overview of all available material. Thus, the user is also able to compile pictures around topics of special interest for the classroom.
- A comprehensive **index**. The entire set of material, that is, pictures, supplemental texts and slides, and drawings, are accessible via the main program's dropdown-menu Tools – „Search picture...“ or „Select picture“.
- The texts will be provided in **up to five languages** (English, German, French, Spanish and Portuguese) by pre-selection when starting the program. The program surface is adapted to the well-known „WINDOWS™-LOOK“.
- All pictures and texts can be **printed** by the user.
- The CD works with all Windows versions (WINDOWS™ 95, 98, NT, 2000, XP and higher). The resolution is **960 x 640 or higher for superior quality**. Full color representation with **over 1 Million colors** (depending on the screen). Optionally the CD runs also on PowerMac G4 and higher with WINDOWS™ emulation.
- The size of the **desktop** and the **windows for texts and pictures** can be scaled and adapted to the requirements of the user.

NEW INTERACTIVE EDUCATIONAL CD-ROM FOR THE SERIES A, B, C, D.

Our new amazing CD-ROM for the MULTI-MEDIA PROGRAM SCHOOL-SETS A, B, C, D of **BIOLOGY** comprise all necessary **photomicrographs of microscopic slides**, which can be observed by different magnifications by using a „MicroScope“. Beautiful **color drawings** matching the slides, with detailed **explanations**.

- CD050 **MICROSCOPIC BIOLOGY - Set A** (Available for immediate delivery)
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. A. *Comprising about 240 pictures and 1175 texts*
- CD060 **MICROSCOPIC BIOLOGY - Set B** (Available for immediate delivery)
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. B. *Comprising about 570 pictures and 2835 texts*
- CD070 **MICROSCOPIC BIOLOGY - Set C** (Available for immediate delivery)
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. C. *Comprising about 400 pictures and 1960 texts*
- CD075 **MICROSCOPIC BIOLOGY - Set D** (Available for immediate delivery)
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. D. *Comprising about 440 pictures and 2125 texts*
- CD085 **MICROSCOPIC BIOLOGY - Set A, B, C and D together.**
All 4 CD-ROM can be copied into one big file during installation, *providing access to more than 2.200 pictures and 8.100 texts*

5. Media Package, Sketch- and Work Sheets for Copying

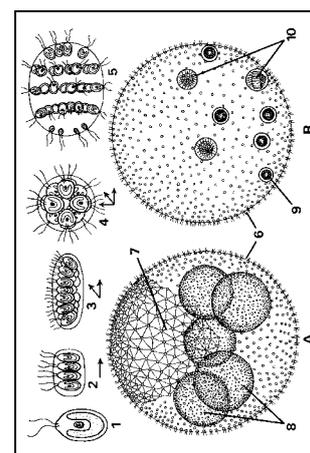
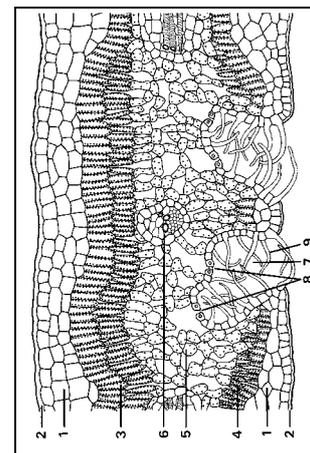


Strictly adapted and corresponding with the manual, the microscope slides and the transparencies, the media package comprises the following parts, assorted in proof plastic files with ring mechanism:

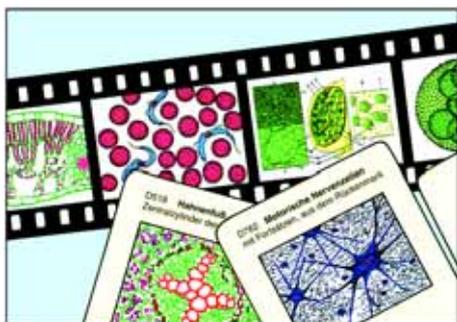
- **Overhead Transparencies of the Drawings.** The complete set of 175 pictures, printed on best, hard-wearing support foil, size 21 x 29 cm. Suitable for daylight-projection in classroom. Details of the drawing can be colored by the teacher while projecting. He may explain the structures marked with numbers or write on the transparencies using a felt-tipped pen.

- **Sketch- and Work Sheets of the Drawings.** The complete set of 175 pictures, printed on strong paper, size 21 x 29 cm. Suitable for taking photocopies for all students. They serve to facilitate seeing his way through the prepared microscope slides and finding the detail important in the lesson. They start processes of learning and understanding by comparing microscope slides with the diagrammatic drawings, thus to identify and label the details relevant in the lesson. They allow completing or coloring the drawings according to own observations, and finally the sheets can be used for tests.
- **Descriptions and Pictures** of the manual pages, each page with text and picture on a separate sheet.
- **Transparencies, Sketch- and Work Sheets, and Manual Pages** are kept in 175 separate clear-view envelopes, therefore the single titles can be taken out of the files separately.

- No. M500 **Media Package, Sketch- and Work Sheets, Part A, 25 items, in file**
 No. M600 **Media Package, Sketch- and Work Sheets, Part B, 50 items, in file**
 No. M700 **Media Package, Sketch- and Work Sheets, Part C, 50 items, in file**
 No. M750 **Media Package, Sketch- and Work Sheets, Part D, 50 items, in file**
 No. M850 **Media Package, Sketch- and Work Sheets, Parts A, B, C, D together, 175 items**



6. Color Photomicrographs 35 mm (original exposure)

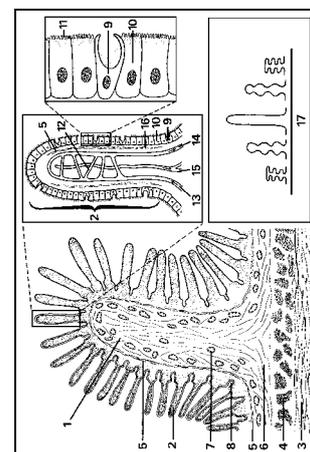
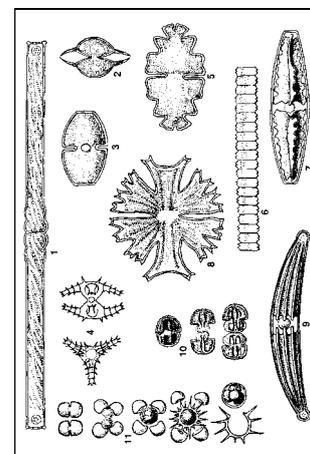


The projection of a 35 mm photomicrograph going with the prepared slide makes it easier for the student to discover and interpret the important structures of the microscope slide under the microscope. LIEDER color photomicrographs show on the screen the requested section in the best magnification.

Our photomicrographs are full color 35 mm transparencies of maximum quality made from excellent and carefully selected prepared microscope slides. In order to obtain the highest quality for the projection all transparencies are original exposures, i.e. each LIEDER color photomicrograph is individually photographed from the specimen through high standard microscopes with automatic cameras of the most advanced technique. Consequently, there is no loss of quality which could arise from a copying process.

LIEDER color photomicrographs are of high definition and clarity, coupled with color reproduction which has resulted in slides of unsurpassed quality. Such high quality transparencies enables the maximum amount of information to be illustrated in such a manner that it can be readily appreciated by the student. LIEDER photomicrographs are mounted between glass in solid dust-proof 50 x 50 mm (2x2") frames. Compilation and individual titles of the A, B, C and D series of PHOTOMICROGRAPHS correspond strictly to those of the A, B, C and D series of PREPARED MICROSCOPE SLIDES.

- No. D50 **Photomicrographs 35mm, School Set A General Biology, Elementary Set**
 25 projection slides *List of Contents and Individual Titles see Microscope Slide School Set A, page 4*
- No. D60 **Photomicrographs 35mm, School Set B General Biology, Supplementary Set**
 50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set B, page 5*
- No. D70 **Photomicrographs 35mm, School Set C General Biology, Supplementary Set**
 50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set C, page 6*
- No. D75 **Photomicrographs 35mm, School Set D General Biology, Supplementary Set**
 50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set D, page 7*
- No. D85 **Photomicrographs 35mm, School Sets A, B, C, D together. All four sets,**
 175 projection slides



7. Additional Microscope Slides to the School Series A, B, C, and D

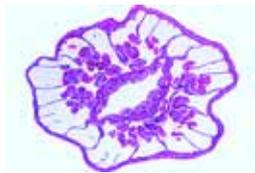
Selected supplementary prepared microscope slides matching the school series A, B, C, and D. All the slides can be purchased either in complete sets or series or individually. The procurement and processing of the original material for some preparations presents special problems. For this reason, these preparations can often only be manufactured in small quantities entailing a longer delivery period. This applies particularly to the preparations marked with an asterisk * in the catalogue, for which we can not guarantee delivery.

850E01 Zoology

- Pr422e **Vorticella**, a common stalked ciliate w.m.
 Pr440f **Mixed protozoa**, many different forms are found on this slide
 Po121d **Spongilla**, fresh water sponge, t.s. showing choanocytes, incurrent and excurrent channels
 Po128c **Euspongia**, a commercial sponge, macerated skeleton shows horny fibres, w.m.
 Co112f **Hydra** with bud, fresh water polyp, w.m. *
 Co2193e **Actinia, (Metridium)**, sea anemone, t.s. and l.s. through entire young specimen on one slide
 An124d **Hirudo medicinalis**, medicinal leech, t.s. through the body for demonstrating general structures of a leech
 An144e **Lumbricus**, earthworm, anterior end including gonads, l.s.
 An143c **Lumbricus**, earthworm, clitellum t.s.
 Ro211e **Plumatella**, moss animals, w.m. or section
 Cr120c **Small crustaceans**, mixed species of fresh water plankton
 Ar111e **Spider**, entire young specimen, w.m.
 Ar127e **Spider**, sagittal l.s. of abdomen showing the book or trachea lung
 Mo1515e **Snail**, typical l.s. of small specimen for general study
 In119d **Formica sp.**, ant, head and mouth parts w.m.
 In211b **Melolontha**, cockchafer, laminate antenna with sensory organs w.m.
 In215b **Apis mellifica**, honey bee, anterior leg with eye brush w.m.
 In255e **Testis**, in t.s. of abdomen of drone of *Apis mellifica*, honey bee
 In311d **Drosophila**, fruit fly, adult male or female w.m.
 Pi160c **Cyprinus**, carp, gills t.s.
 Pi162c **Cyprinus**, carp, blood smear showing nucleate red corpuscles
 Pi175f **Fish scales** composite slide, shows cycloid, ctenoid and placoid scales on one slide, w.m.
 Am234c **Rana**, frog, skin with skin glands, vertical l.s.
 Am212c **Rana**, frog, lung t.s., simple bag-like lung with large central cavity
 Re213c **Lacerta**, lizard, lung t.s. Enlargement of respiratory surface
 Av111c **Gallus domesticus**, chicken, blood smear

850E02 Bacteria and Cryptogams

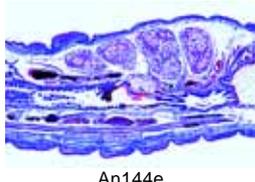
- Ba161e **Spirillum volutans**, a very large spirillum, smear *
 Ag117c **Chroococcus**, large single celled blue-green algae w.m.
 Ag174d **Eudorina**, biflagellate cells within gelatinous sheaths forming spherical colonies of thirty-two cells w.m.
 Fu131d **Rhizopus or Mucor**, mold, conjugation stages and formation of zygospores w.m.
 Fu161c **Penicillium**, blue mold, mycelium and conidiophores, w.m.
 Fu227c **Boletus edulis**, pore fungus, horizontal sec. of pileus showing c.s. of pores
 Li104d **Physcia**, lichen, t.s. through apothecium showing asci and spores
 Br112d **Marchantia**, liverwort, cupule with gemmae, l.s. showing vegetative reproduction of liverworts
 Br123d **Polytrichum**, moss, l.s. of sporophyte with spores
 Br125e **Mnium**, moss, l.s. of antheridia
 Br126e **Mnium**, moss, l.s. of archegonia
 Pt113e **Lycopodium**, club moss, l.s. of young sporophyll showing developing spores



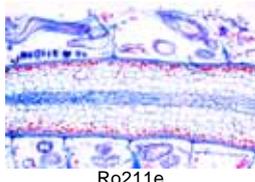
Co2193e



An124d



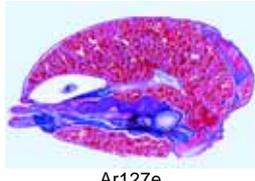
An144e



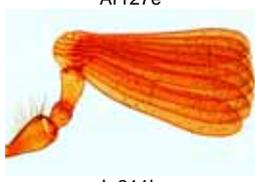
Ro211e



Ar111e



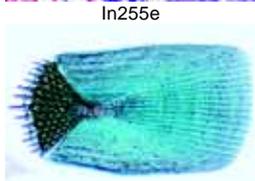
Ar127e



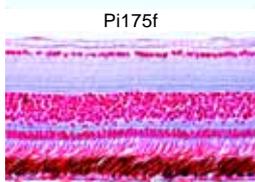
In211b



In255e



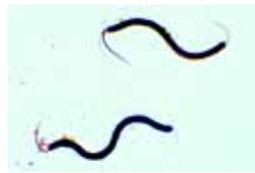
Pi175f



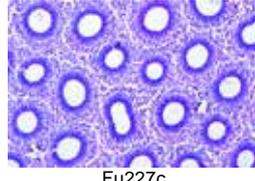
Am234c



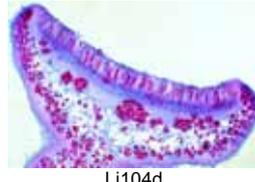
Am212c



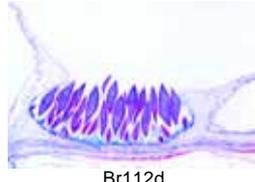
Ba161e



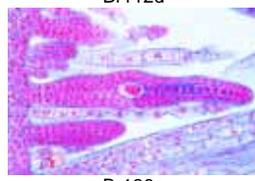
Fu227c



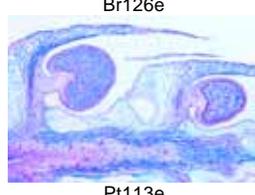
Li104d



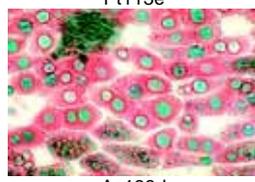
Br112d



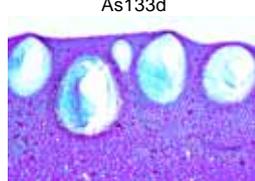
Br126e



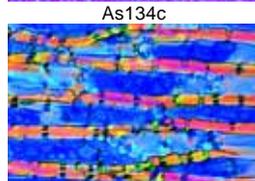
Pt113e



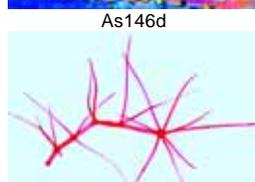
As133d



As134c



As146d



As149b



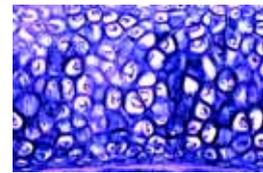
As1525d

850E03 Phanerogams

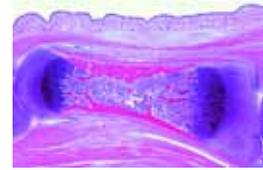
- As133d **Fat**, t.s. of endosperm of *Corylus* (hazel) stained for fat
 As134c **Lysigenous oil glands**, t.s. rind of Citrus fruit
 As136d **Acid tannic**, t.s. bark of *Rosa*
 As146d **Reserve cellulose**, t.s. seed of Phoenix (date)
 As1491b **Scale-like stellate hairs**, isolated and w.m. from *Elaeagnus* (olive tree)
 As149b **Branched leaf hairs**, isolated and w.m. from *Verbascum* (mullein)
 As1525d **Annular and spiral vessels**, isolated and w.m.
 As202e **Herbaceous and woody roots**, two t.s. on one slide for comparison
 As251d **Alnus**, alder, root nodules with symbiotic actinomycetes (*Streptomyces alni*) t.s.
 As255d **Fagus**, beech, root with ectotrophic mycorrhiza, t.s.
 As256d **Neottia nidus avis**, orchid, root with endotrophic mycorrhiza, l.s.
 As259c **Dendrobium**, orchid, aerial root with velamen t.s.
 As307e **Herbaceous and woody stems**, two t.s. on one slide for comparison
 As314c **Juncus**, bulrush, stem with internal stellate cells t.s.
 As355d **Cuscuta**, dodder, t.s. through stem of host showing the haustoria of the parasite
 As285e **Viscum album**, mistletoe, sec. showing parasitic root in wood of apple tree
 As3772e **Fagus**, beech, three sections of wood: t.s., r.l.s., t.l.s.
 As320c **Acorus calamus**, sweet flag, rhizome t.s. showing storage of starch
 As4112c **Iris**, leaf epidermis w.m. showing stomata in rows
 As412c **Zea mays**, corn, monocot gramineous leaf t.s.
 As4567c **Ammophila**, marram grass, xerophytic leaf t.s.
 As459c **Ficus elastica**, India rubber plant, leaf with cystoliths t.s.
 As465d **Utricularia**, bladderwort, w.m. of bladder
 As470d **Nepenthes**, pitcher plant, t.s. of pitcher with digestive glands
 As473d **Helleborus**, t.s. of a typical mesophytic dicot leaf for general study, showing large cellular structures
 As451c **Fagus**, beech, t.s. of leaf bud showing developing leaves, meristematic tissue and midrib
 As501e **Monocot and dicot flower buds** t.s. on same slide for comparison of the floral diagrams
 As605d **Taraxacum**, dandelion, t.s. of composite flower showing tubular florets and ligulate florets
 As606d **Papaver**, poppy, t.s. of flower shows parietal placentation
 As613d **Solanum tuberosum**, potato, t.s. flower bud for floral diagram
 As631d **Lycopersicum**, tomato, young berry type fruit t.s.
 As638d **Phaseolus**, bean, t.s. of pod showing pericarp and seed
 As619d **Capsella bursa pastoris**, shepherd's purse, l.s. of ovule with embryos in situ for general study
 As630c **Mixed pollen types**, showing various forms of many different species
 Gy125c **Pinus**, pine, older stem with annual rings, resin ducts t.s.
 Gy135f **Pinus**, ovule l.s. showing archegonia,
 Gy140e **Pinus**, mature embryo with endosperm t.s.

850E04 Histology and Human Science

- Ma118d **Cuboidal epithelium**, in sec. of kidney papilla
 Ma127d **Mucous tissue**, t.s. of navel string (umbilical cord)
 Ma131d **Yellow elastic cartilage**, section specially stained for elastic fibres
 Ma138e **Bone development**, intracartilaginous ossification in foetal finger or toe, l.s.
 Ma214d **Trachea** of cat or rabbit, t.s. with ciliated epithelium, cartilage etc.
 Ma255e **Pituitary gland (hypophysis)**, sag. l.s. of complete organ from cow or pig showing adeno- and neurohypophysis
 Ma311d **Tooth** human, t.s. of crown
 Ma316e **Tooth development**, medium stage l.s.
 Ma337c **Duodenum** of cat or dog, t.s. showing Brunner's glands
 Ma341d **Vermiform appendix**, human t.s.
 Ho4368e **Uterus**, human, t.s. for general structure
 Ho440e **Placenta**, human t.s. with chorion and blood vessels
 Ma434d **Ovary**, sec. selected to show Corpus luteum
 Ma636d **Human scalp**, horizontal sec. shows t.s. of hair follicles



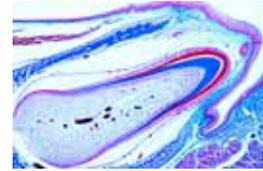
Ma131d



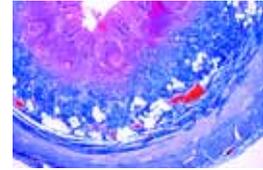
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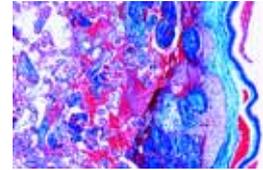
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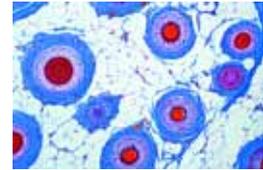
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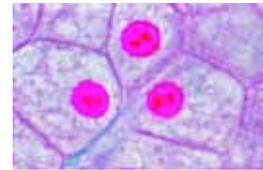
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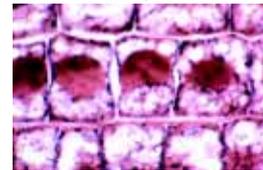
Ho440e



Ma636d



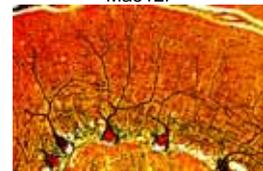
Ma101d



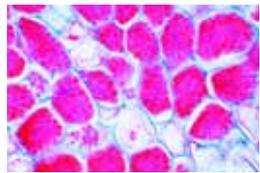
As119g



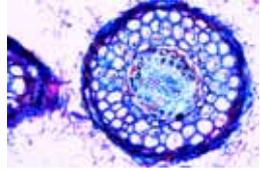
Ma512f



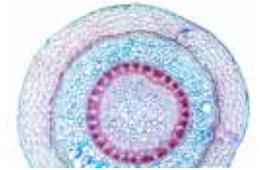
Ma515f



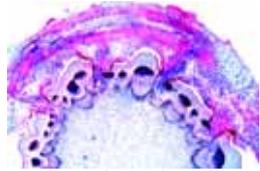
As251d



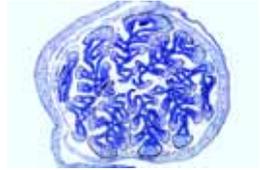
As255d



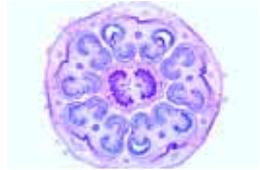
As259c



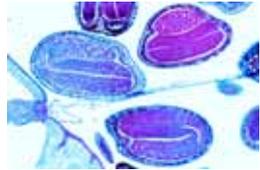
As355d



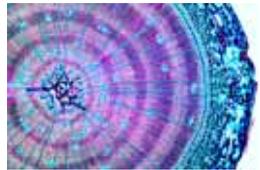
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As501e



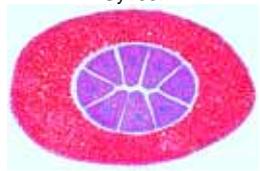
As619d



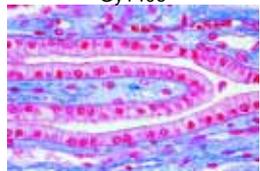
Gy125c



Gy135f



Gy140e



Ma118d

850E05 Cytology and Genetics, Embryology

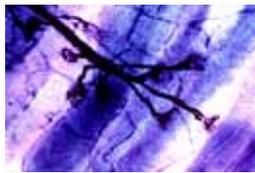
- Ma101d **Simple animal cells** in sec. of salamander liver showing nuclei, cell membranes and cytoplasm. For general study of the animal cell
- As1155g **Mitosis**, squash preparation from *Allium* root tip, shows intact mitotic stages, Feulgen stain *
- As115d **Mitosis**, t.s. from *Allium* root tips showing all stages of plant mitosis in polar view
- As119g **Mitochondria**, thin l.s. of *Allium* root tips specially fixed and stained to show the mitochondria clearly
- Ma1045f **Barr bodies** (human sex chromatin) in smear from female squamous epithelium *
- Ma512f **Cerebral cortex**, t.s. stained by Golgi's silver method to show the pyramidal cells
- Ma515f **Cerebellum**, t.s. stained by Golgi's silver method to show the Purkinje cells
- Ma528f **Spinal cord** of cat, t.s. silvered for nerve cells and fibres
- Ma552h **Motor nerve endings**, muscle stained with gold chloride showing the motor end plates *
- As526f **Lilium, anther** t.s., microspore mother cells in tetrad stage
- As530e **Lilium**, l.s. through pistil and stigma with pollen and pollen tubes
- Em718f **Chicken**, 72 hour, t.s. in region of heart and eyes
- Ma445f **Embryo of mouse**, sagittal l.s. of entire specimen showing all organs in situ

850E06 Parasites and Pests

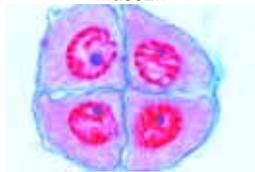
- Ba112d **Staphylococcus aureus**, pus organism, smear from culture
- Ba131d **Mycobacterium tuberculosis**, smear from culture
- Ba136d **Corynebacterium diphtheriae**, smear from culture
- Ba145d **Salmonella paratyphi**, paratyphoid fever, smear
- Ba149d **Shigella dysenteriae**, causes bacillary dysentery, smear
- Pr311f **Plasmodium falciparum**, malignant tertian malaria of man, blood smear with typical ring stages
- Pr330e **Nosema apis**, honey bee dysentery, sec. of diseased intestine
- Ar1515e **Varroa**, parasitic mite of bees w.m.
- Ne131d **Ascaris lumbricoides**, roundworm, ova in faeces w.m.
- Ne135f **Enterobius vermicularis (Oxyuris)**, pin worm, w.m. of an adult specimen
- Ne170g **Mixed ova** in faecal material. Slide containing eggs of parasitic worms of different species i.e. *Ascaris*, *Ancylostoma*, *Trichuris*, *Taenia*, *Enterobius*, *Schistosoma* *
- Py324i **Taenia pisiformis**, tapeworm, w.m. of scolex with four suckers and hooklets *
- Py3272t **Dipylidium caninum**, tapeworm, w.m. of scolex with suckers and rostellum, and immature proglottids *
- Py337f **Echinococcus granulosus**, dog tapeworm (also harmful to human), cyst wall and scolices t.s.
- In125f **Anopheles**, head and mouth parts of female w.m.
- In124f **Anopheles**, malaria mosquito, head and mouth parts of male w.m.
- In325f **Pediculus humanus**, louse, adult male or female w.m.

850E07 Ecology and Environment, Pests in Agriculture

- 4542e **Putrefactive bacteria** (*Spirillum*) from sludge poor in oxygen, smear
- Ag1176c **Microcystis**, blue-green algae, irregular colonies growing in eutrophicated water, w.m.
- 4555d **Rotifers**, Rotatoria, small animals from putrid water
- 4559d **Skin of fish**, injured by water highly polluted with chemicals, t.s.
- 4560d **Skin ulcer** of an amphibian, t.s. caused by environmental influences
- 4586c **Constituents of humus soil**, strewn slide
- 4598b **Asbestos powder** (cancerogenous), strewn slide
- In132e **Gipsy**, *Lymantria*, mouth parts of larva w.m.
- In339c **Plant lice**, *Aphidae* sp., w.m. of several specimens
- 7502d **Potato black scab**, *Synchytrium endobioticum*, infected tissue
- 7503d **Downy mildew of grapes**, *Plasmopara viticola*, infected leaf, t.s.
- 7509d **Grape mildew**, *Uncinula necator (Oidium Tuckeri)*, t.s.
- 7508d **Rose mildew**, *Erysiphe pannosa*, infected leaf with conidia t.s.
- 7510d **Gooseberry mildew**, *Sphaerotheca mors uvae*, perithecia on diseased fruit, t.s.
- 7512c **Monilia**, *Sclerotinia fructigena*, diseased fruit with conidia t.s.
- Fu211d **Cornsmut**, *Ustilago zaeae*, t.s. of pustule with spores



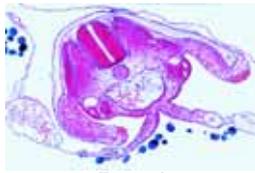
Ma552h



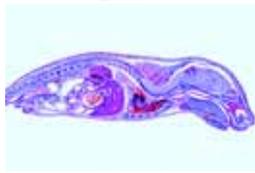
As526f



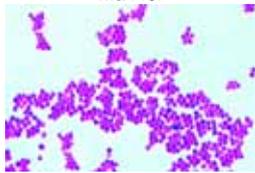
As530e



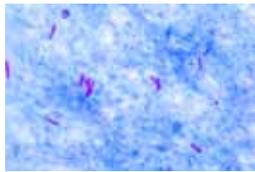
Em718f



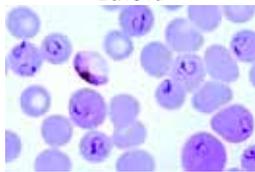
Ma445f



Ba112d



Ba131d



Pr311f



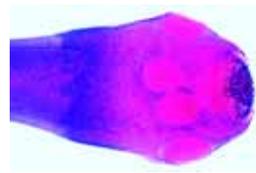
Pr330e



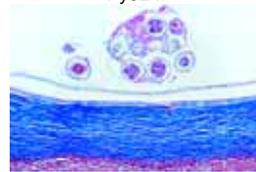
Ar1515e



Ne135f



Py324i



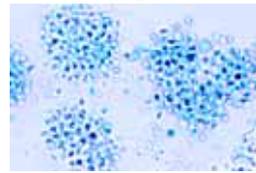
Py337f



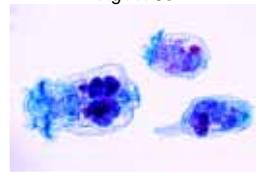
In124f



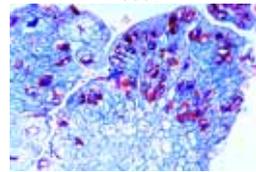
In325f



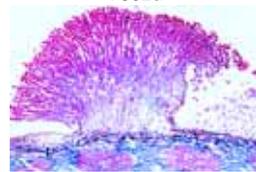
Ag1176c



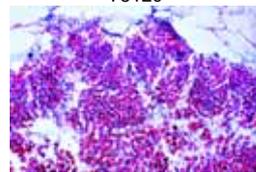
4555d



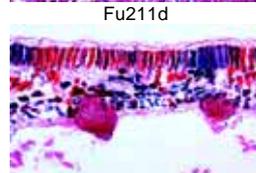
7502d



7512c



Fu211d



7503d



7508d