LEITZ
LABORLUX K and D

Transmitted-light microscopes for laboratory and classroom

Code-No. 913 298

LEITZ LABORLUX K and D
These microscopes fulfil all the demands of modern laboratory and instructional microscopy

Ergonomic studies were an important factor in the development and construction of these microscopes. The eyepiece angle, the height of the tubes, the width and inclination of the handrests as well as the positioning of the controls all allow a relaxed body posture and therefore concentrated examination and interpretation of the specimen.

The "building block" conception results in a favourable relationship between efficiency and price and makes possible the adaption of the microscope periphery to the particular needs of the laboratory and lesson.

For excursions and expeditions, where no electricity is available and the microscope must be transported under difficult conditions, an attachable mirror provides the illumination and the robust transport case protects the instrument from damage.

One-knob control of the LABORLUX K and two-knob control of the LABORLUX D ensure rapid and precise adjustment of the microscope image. The specimen can be securely and comfortably moved with the carefully-placed object guide or mechanical stage knobs.

Cover illustration:
Liver metastasis, Ladewig
40x objective
Specimen and photograph: Dr. R. Morath, City Hospital, Bielefeld

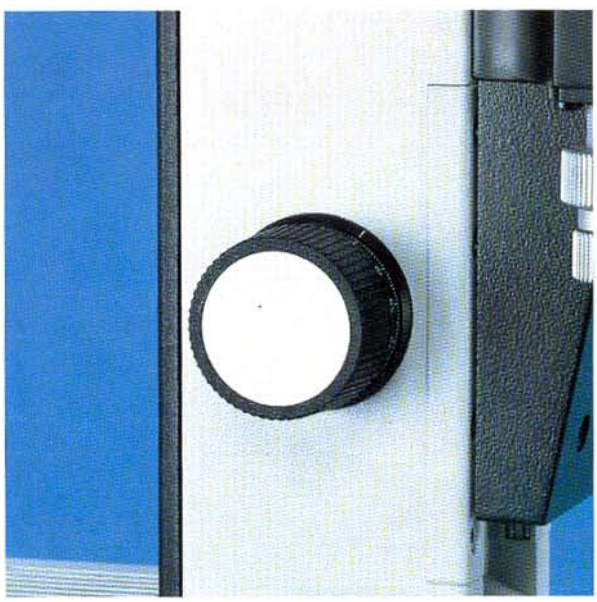
LABORLUX D
with FSA-R binocular phototube, precision mechanical stage No. 15
and UKL universal condensor

LEITZ LABORLUX K and D
Offering excellent stability, ease-of-use and extension-capability

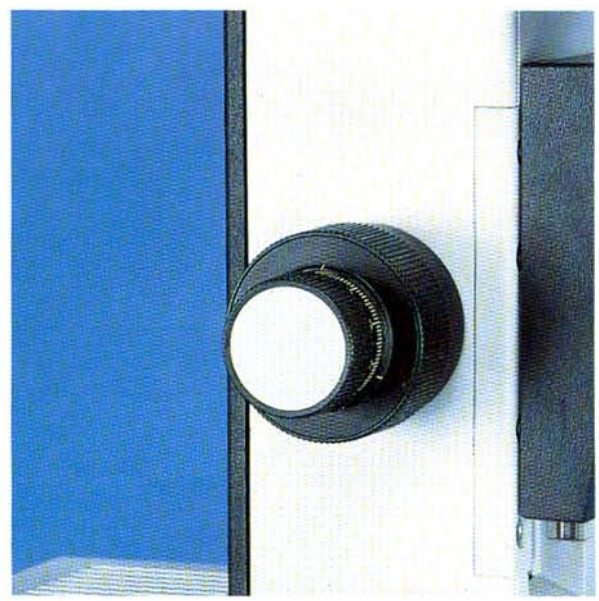
Anticorrosive aluminium-pressure casting and inner finning provide the great stability of these stands which are the basis for the universal extension of the microscopes K and D.
The large base is sealed and therefore protects the illumination optics against dirt. As the lamp housing is placed at the back of the microscope, the heat from the powerful 6V 20W halogen lamp does not affect the stand. A transformer is built into the base of the stand and therefore not only provides stability because of the low-lying centre of gravity, but also saves space and avoids cables on the bench-top. The brightness can be steplessly adjusted by means of the control knob conveniently placed on the right hand-rest, immediately next to the focus controls.

Both fine and coarse focusing of the LABORLUX K are achieved by a single combination control, whereas the LABORLUX D has coaxial knobs for independent fine and coarse adjustment. These focus controls are mounted on both sides of each stand for left- or right-handed use.

Single-knob control of LABORLUX K



Coaxial twin-knob control of LABORLUX D



Observation tubes

The rapid-change tube mount is chromium-plated to withstand the hardest use and is large enough so that even if the release lever is accidentally operated, the tubes remain in place and do not fall off. The tubes can be rotated through 360° and clamped in any position.

Monocular tube P

Simple inclined observation tube.

Binocular tube O

Straight tube for simple image-recording systems (microphotography, TV).

Binocular tubes S

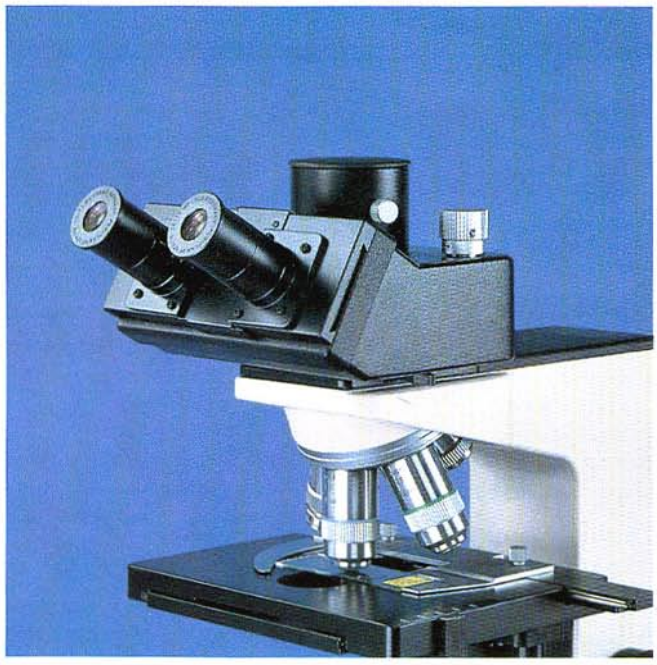
These are available with a viewing angle of 30° or 45°. The interpupillary distance can be adjusted from 55mm to 75mm, the necessary tube length compensation is set on the eyepiece mounts.

FSA and FSA-R tubes

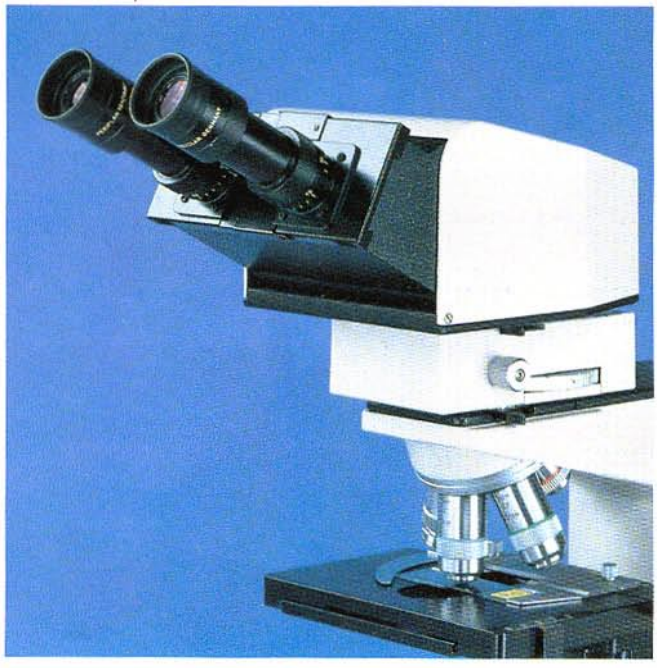
These combine the functions of both observation and photo tubes. The mechanical tube length compensation is automatically adjusted when the interpupillary distance is set and, as a result, the image need only be focused in the observation plane; film plane focus with Leitz and Wild camera attachments is then guaranteed.

Ergonomic tube SV

The viewing angle can be steplessly adjusted between 0° and 40° vertically, which enables the user to select the most comfortable and relaxing position for long observation periods. A useful orientation aid is built into the tube in the form of an image inverter. This provides vertically and laterally correct images, thereby simplifying specimen adjustment and manipulation.



FSA binocular photo tube.



SV ergonomic tube with magnification changer.

LEITZ LABORLUX K and D
Top-class images through quality optics

Revolving objective nosepiece

The ball-bearing mounted nosepiece is so arranged that the objectives not in use are situated towards the stand, allowing unhindered access to the specimen. This makes specimen changing during repetition work and use of immersion objectives much easier.
Precision mechanics ensure that, after each change of objective, the same spot on the specimen remains exactly in the image centre.

Objectives

The EF flat-field objective range distinguishes itself through optimal contrast and high resolution. Because of the good field-of-view planarity, it is rarely necessary to refocus in order to study details at the image edge.
The mechanical construction of these achromate objectives follows the standard design of the Leitz range:

The grip-ring for screwing the objectives into the nosepiece is conveniently placed over the front element.

The colour-coded rings facilitate recognition of the objective power.

The external collars can be rotated so that the engravings can be easily read.

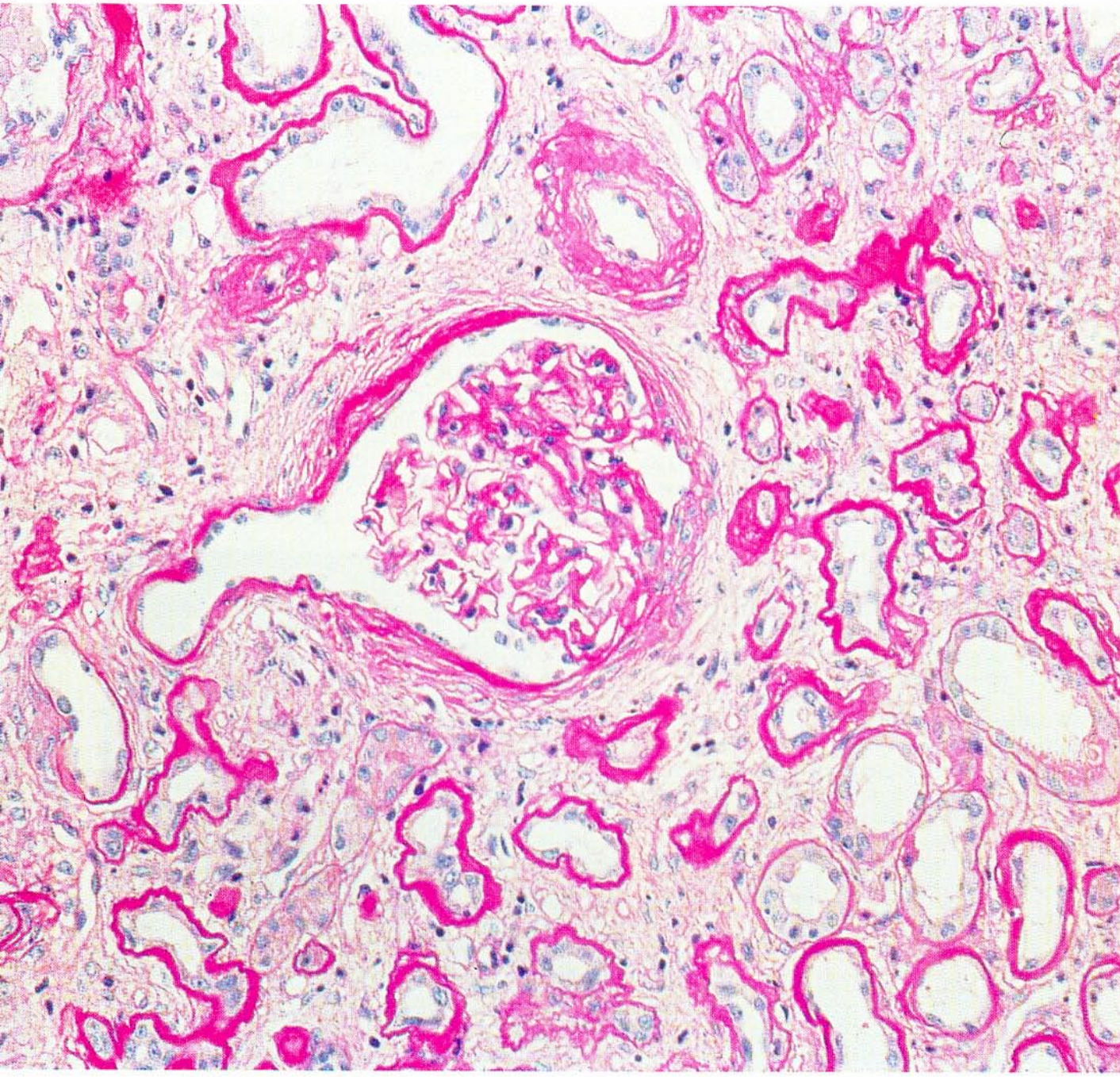
Damage to the objectives or specimens on focusing is not possible; the low-powered objectives cannot come into contact with the stage even at it's highest setting, whilst the high magnification objectives have spring-loaded front pieces which give if contact with the stage occurs.

Eyepieces

PERIPLAN 6.3x to 12.5x eyepieces are available for the LABORLUX K/D; the 10x pair is also available in a version for spectacle wearers. Various graticules for measurement, counting and microphotographic format-indication can be used in the adjustable eyepieces.

EF flat-field objectives

Kidney biopsy, PAS mesangial glomerulonephritis
40x objective
Specimen: Dr. Störkel, Institute for Pathology, Mainz



LEITZ LABORLUX K and D
The condenser range makes all illumination methods easy

Condensers

The condenser mount on both microscopes is height adjustable and has a dovetail fitting, making rapid change of the condenser possible at any time. The condenser can be clamped in all positions.
The upper condenser drive stop can be set by the user, by means of a knurled screw, so that Koehler illumination is automatically given at this setting.

Condenser No. 54

This condenser, of illumination aperture 0.90, is designed to provide homogeneous illumination of the whole object field at all magnifications, without the attachment of a supplementary front lens being necessary. If a higher illumination aperture is required, for example in microphotography, an additional lens can be attached which raises the numerical aperture to 1.25.

Condenser LK

With interchangeable swing-in tops. For investigation of very fine structures, where the highest resolution capability of the optical system is demanded, the APL OEL 1.32 immersion condenser top is available for use with the 100/1.32 OEL objective. Dark-field tops with long intercept distances complete the LK system.

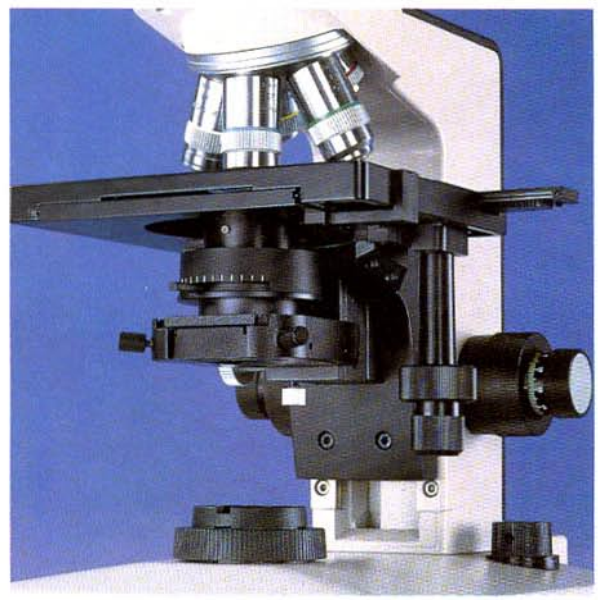
Dark-field condensers

The LABORLUX K and D are easily converted for dark-field work, for which a dry and an immersion condenser are available.

Universal condenser UKL

The UKL condenser facilitates bright-field, phase contrast and dark-field observation. The built-in light ring for phase contrast and the central stop for simple dark-field work, up to medium magnifications, are centred by the user. This condenser is particularly convenient for studies in which rapid change-over between the illumination methods is required in order to make all the available information visible.

Condenser No. 54



Object stages

Three non-interchangeable object stages are available:

Simple stage

The standard stage, with a surface area of 125 x 138mm. The specimen is held either by two removable clips or by an attachable object guide (for left- or right-handed control). Adjustment range: 72 x 50mm.

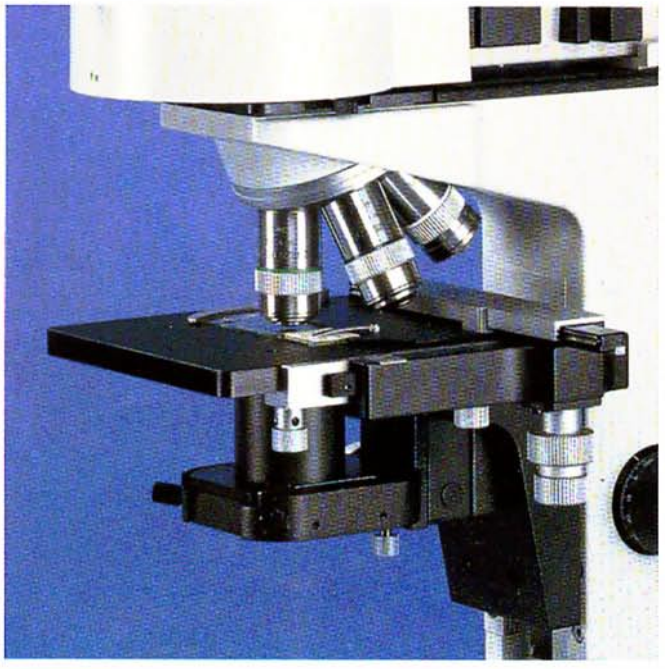
Precision mechanical stage No. 15

Precise movement is ensured by the ball-bearing mount. Coordinates can be read-off from scales and verniers. Specimens of size 76 x 26mm are accomodated.
Special value has been laid upon optimizing the working conditions with this stage. The control knobs are placed at the same height as the focus controls; the hands can therefore be rested on the base of the stand while operating the stage, thereby eliminating hand and forearm fatigue.
Adjustment range: 76 x 26mm

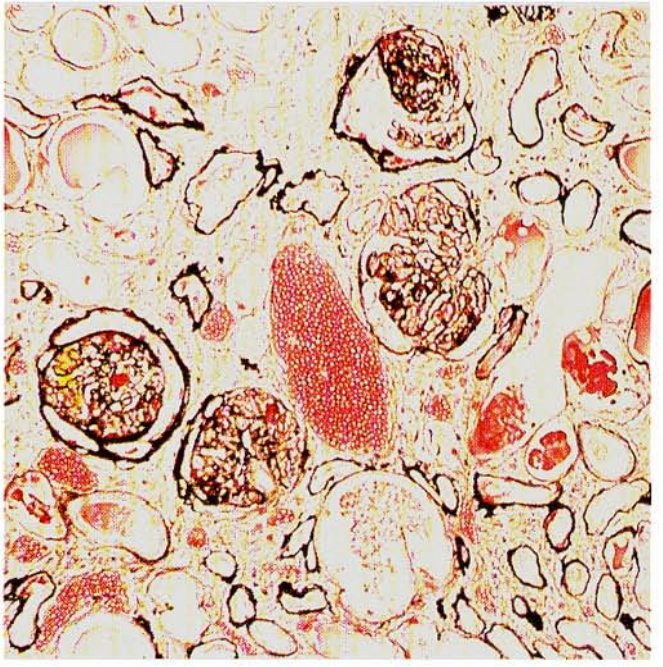
Large mechanical stage No. 78

Surface area of 200 x 140mm. The ball-bearing mounted guide track enables the exact adjustment to the finest specimen structures up to the highest magnification. Scales and verniers enable the position of details to be read-off in both directions to an accuracy of 0,1mm.
Adjustment range: 76 x 52mm.

Simple object stage with object guide.



Kidney biopsy, Jones colouring
16x objective
Specimen: Dr. S. Störkel, Institute for Pathology, Mainz



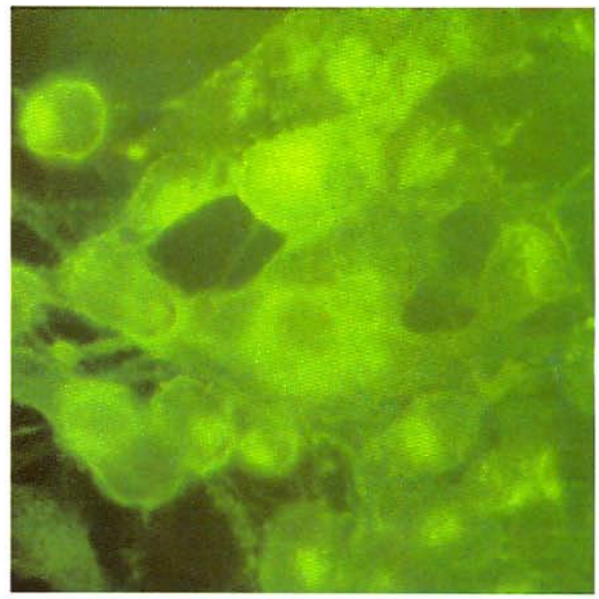
LEITZ LABORLUX K and D
Meet all demands even of fluorescence studies

The investigation of microscopic specimens with the aid of fluorescence excitation is gaining more and more importance. In the basic and applied research fields, as well as for routine operations, the fluorescence method can provide further information. In addition to investigations in histology, cell biology, and microbiology, it is used mainly in haematology and genetics. Outstanding examples of the application of the fluorescence method are the immunofluorescence method for the demonstration of antigens, and chromosome investigations after specific fluorochroming for the detection of the band structures.

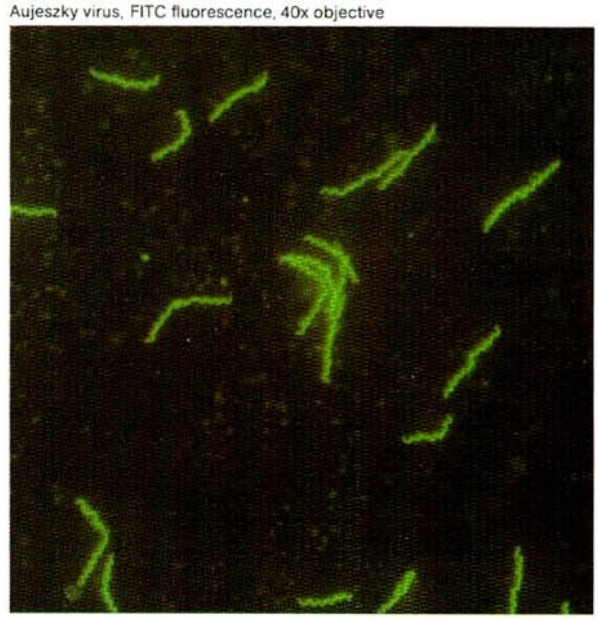
On attachment of the LEITZ PLOEMOPAK fluorescence incident-light unit, the LABORLUX K and D stands are converted into perfect fluorescence microscopes. Incident-light excitation, mainly at higher objective apertures, is more efficient than transmitted-light; it reaches the specimen through the objective and is therefore weakened neither by the thickness of the slide nor by the bottom layers of the specimen.

Rapid change-over between three excitation ranges is possible with the 3-Lambda-PLOEMOPAK, simply by turning the filter revolver. Each separate filter block can be easily exchanged, the replacement being automatically adjusted to the light path. A mechanical stop enables rapid switching between two neighbouring filters as often as desired, which is of particular advantage when the specimen has been treated with two fluorochromes, each requiring a different excitation wavelength.

The 1-Lambda-PLOEMOPAK accepts one filter block, which can be exchanged through an opening in the side of the housing. By insertion of a transmitted-light element, the microscopes can also be used with other illumination methods such as phase contrast and bright- and dark-field.

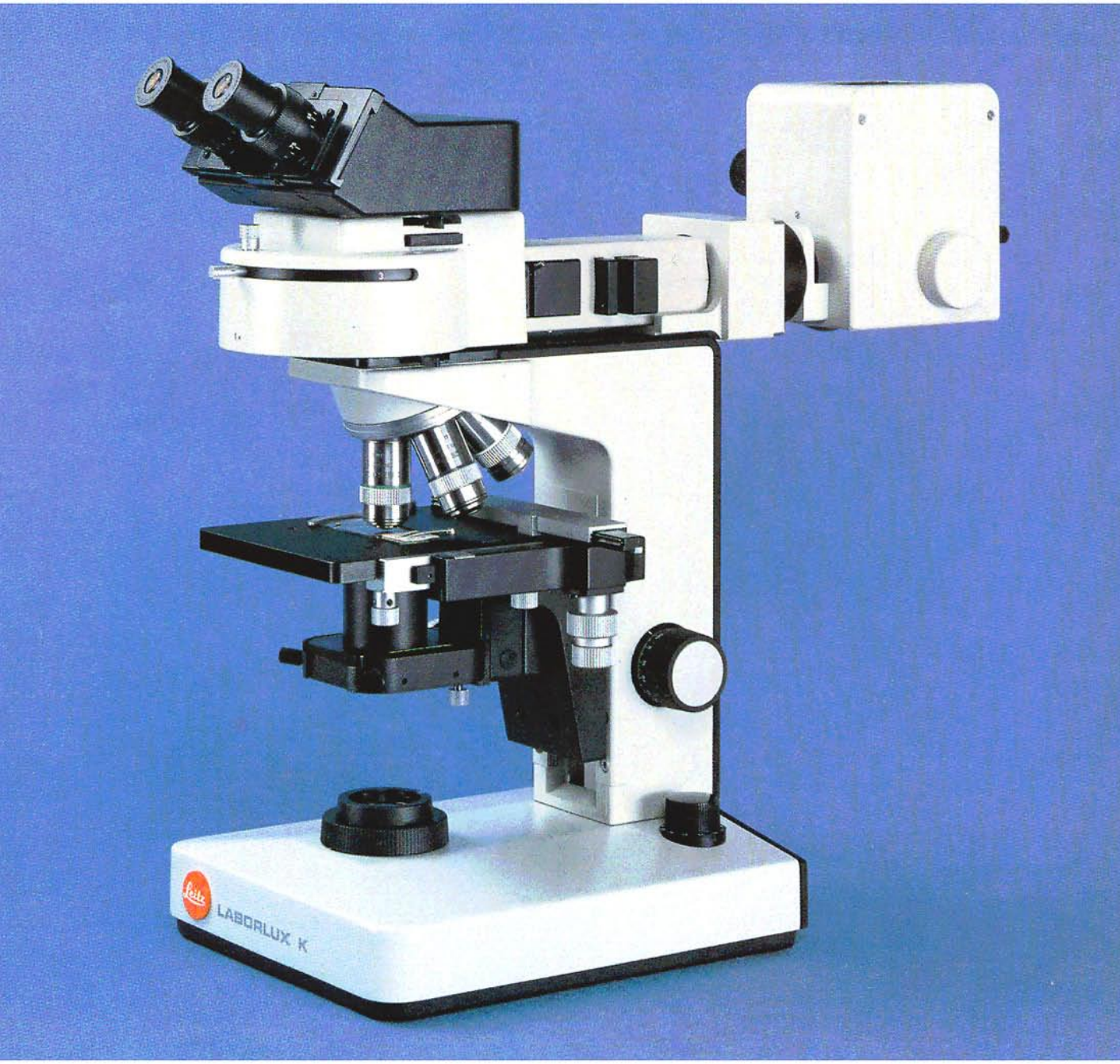


Aujeszky virus, FITC fluorescence, 40x objective



Treponema, FITC fluorescence, 63x objective

LABORLUX K with 3-Lambda-PLOEMOPAK

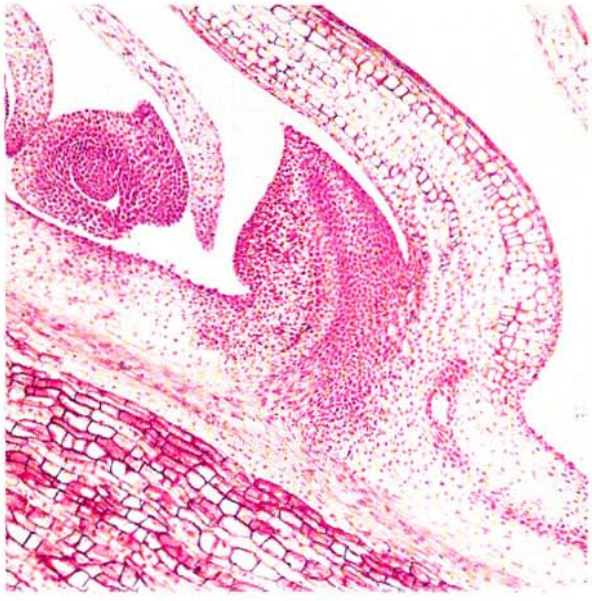


LEITZ LABORLUX K and D
Automatic microphotography with the VARIO ORTHOMAT camera system

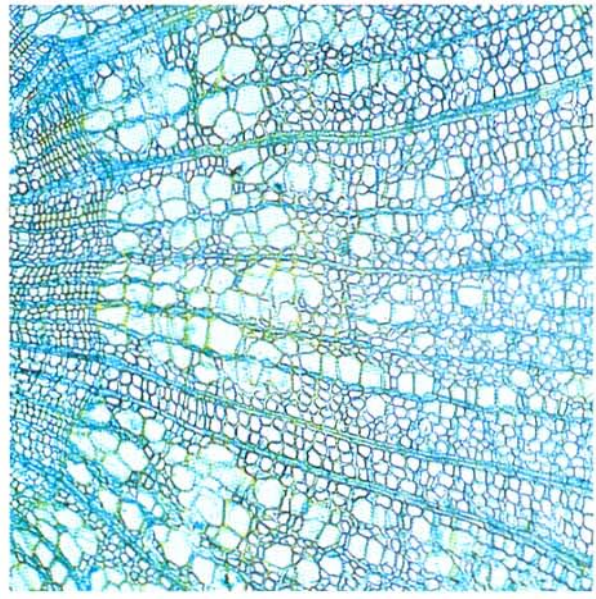
Whether for your own records, to accompany research results or for publication in journals, the LEITZ VARIO ORTHOMAT offers the optimum integration of photography with the usual microscopic investigations; the various camera attachments make the use of all common film formats possible. Automatic exposure measurement ensures superb pictures, whether in incident- or transmitted-light, for all known illumination or contrast methods. Depending on the contrast and light-ratios present in the image, the exposure can be measured from the entire object-field or, with the movable spot, from any specimen detail, as desired.
The arrangement of the controls on a control panel enables the user to quickly and easily set and read all the important functions; troublesome operation pressures and the consequent sources of error are thereby avoided.
For a description of the VARIO ORTHOMAT, please see the brochure No. 540-045.

The WILD-MPS micro camera system offers a choice between various outfits for formats from 24 x 36 mm to 101.6 x 127 mm (4″ x 5″).
The exact equipment can be chosen according to the precise requirements of the user, from the simple WILD MPS 11A without exposure meter to the WILD MPS 45/51 Photoautomat. Depending upon the model, integrated exposure metering, spot exposure metering, Schwarzschild compensation, electronic shutter control, automatic film transport etc. are possible. Details can be obtained from the WILD brochures M1-301, M1-302, M1-303 and M1-315.

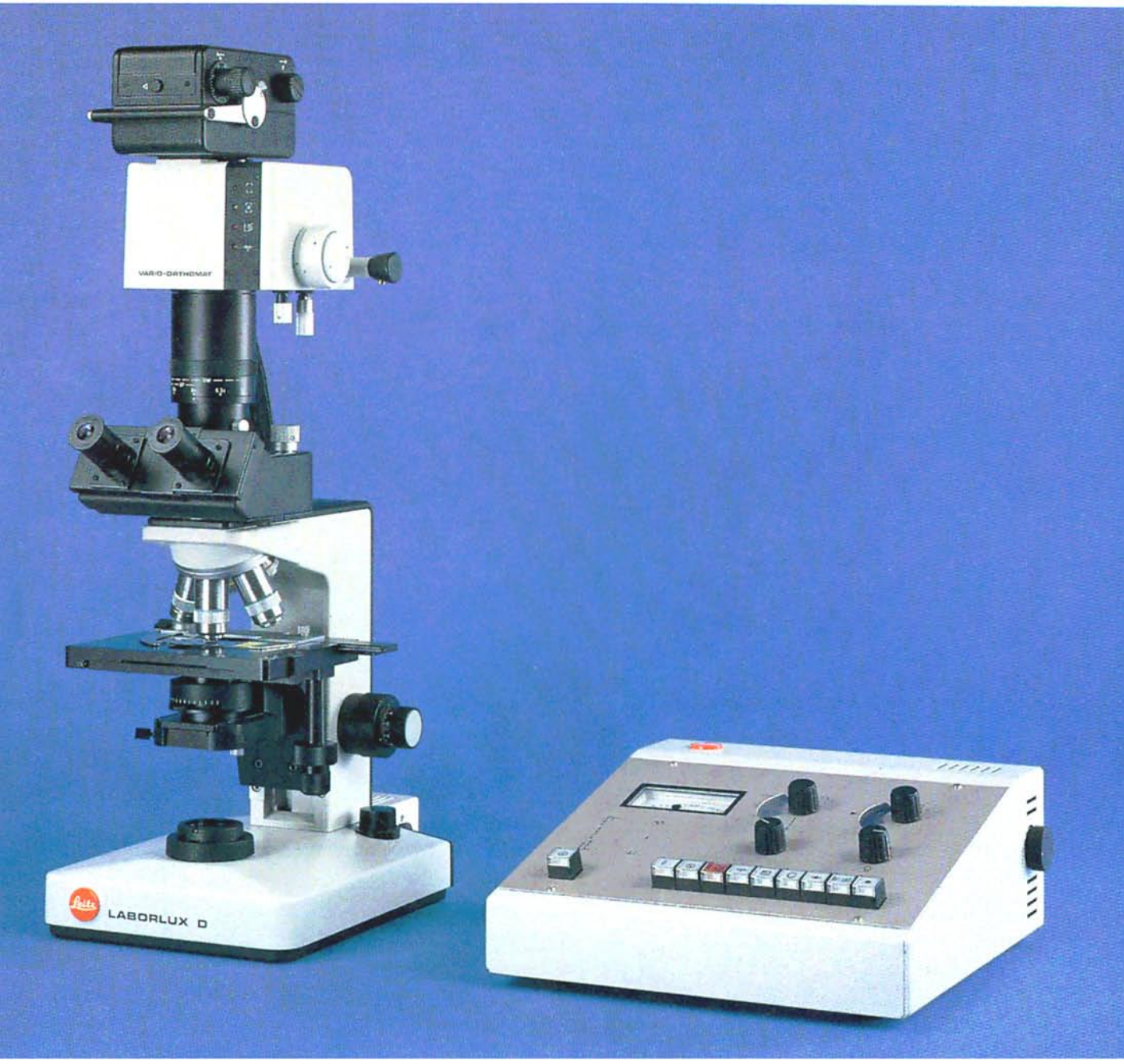
Female inflorescence
6.3x objective



Tilia platyphyllos (lime)
40x objective
Specimen: Prof. Dr. A. R. Kranz, Frankfurt



LABORLUX D with LEITZ VARIO ORTHOMAT automatic camera system



LEITZ LABORLUX K and D
Objectives and eyepieces for brilliant images

EF flat-field objectives
for bright- and dark-field
(black engravings)

Tube length 160mm
Image distance 150mm
Parfocal distance 45mm

Objective magnification/aperture	Free working distance, mm.	Cover-glass correc-tion[1]	Colour-code for magnific-ation/ immersion	Order No.
EF 4/0.12	24.00	CO	red	519 759
EF 10/0.25	6.80	CO	yellow	519 760
EF 25/0.50	0.50	C	dark green	519 761
EF 40/0.65	0.45	C	grey	519 762
EF 63/0.85	01.5	C	dark blue	519 765
EF 100/1.25 OEL	0.10	C	white/black	519 804
100/1.25–0.60 OEL[2]	0.09	C	white/black	519 781

NPL FLUOTAR objectives
for bright- and dark-field
(black engravings)

Tube length 160mm
Image distance 150mm
Parfocal distance 45 mm

Objective magnification/aperture	Free working distance, mm.	Cover-glass correc-tion[1]	Colour-code for magnific-ation/ immersion	Order No.
FLUOTAR 6.3/20	2.30	CO	orange	519 493
FLUOTAR 10/0.30	0.75	CO	yellow	519 496
FLUOTAR 16/0.45	0.58	C	pale green	519 500
FLUOTAR 25/0.55	0.36	C	dark green	519 501
FLUOTAR 40/0.70	0.45	C	pale grey	519 737
FLUOTAR 50/1.00 OEL	0.20	C	pale blue/ black	519 693
FLUOTAR 63/0.90	0.11	O	dark blue	519 503
FLUOTAR 63/0.90 KORR[3]	0.11	C	dark blue	519 446
FLUOTAR 100/1.32 OEL	0.17	C	white/black	519 504
FLUOTAR 100/1.32–0.60 OEL[2]	0.17	C	white/black	519 652

EF flat-field objectives (achromatic)
for phase contrast
(green engravings)

Tube length 160mm
Image distance 150mm
Parfocal distance 45mm

Objective magnification/aperture	Free working distance, mm.	Cover-glass correc-tion[1]	Order No.
EF 10/0.25 PHACO 1	6,80	CO	519 767
EF 25/0.50 PHACO 2	0,50	C	519 768
EF 40/0.65 PHACO 2	0,45	C	519 769
EF 100/1.25 OEL PHACO 3	0,10	C	519 806

NPL FLUOTAR objectives
for phase contrast
(green engravings)

Tube length 160mm
Image distance 150mm
Parfocal distance 45mm

Objective magnification/aperture	Free working distance, mm.	Cover-glass correc-tion[1]	Order No.
NPL FLUOTAR 10/0.30 PHACO 1	0,73	CO	519 497
NPL FLUOTAR 16/0.45 PHACO 1	0,57	CO	519 505
NPL FLUOTAR 25/0.55 PHACO 2	0,36	C	519 506
NPL FLUOTAR 40/0.70 PHACO 2	0,24	C	519 747
NPL FLUOTAR 50/1.00 OEL PHACO 3	0,18	C	519 694
NPL FLUOTAR 100/1.32 OEL PHACO 3	0,16	C	519 508

PERIPLAN eyepieces (Ø 23.2mm) Tube length 160mm

Magnification	Field-of-view, mm.	Order No. (single)	Order No. (pair)
6.3x	18	519 625	519 627
6.3x	18 M	519 626	519 628
6.3x	18 M[4]	519 626	519 629
10x	18 ☍	519 748	519 744[5]
10x	18 ☍ M	519 750	519 745[5]
10x	18 ☍ M[4]	519 750	519 746[5]

PERIPLAN GF large-field eyepieces (Ø 23.2mm)

Magnification	Field-of-view, mm.	Order No. (single)	Order No. (pair)
GF 10x	18	519 620	519 622
GF 10x	18 M	519 621	519 623
GF 10x	18 M[4]	519 621	519 624
GF 12.5x	18	519 838	519 834
GF 12.5x	18 M	519 839	519 835
GF 12.5x	18 M[4]	519 839	519 836

Special eyepiece (Ø 23.2mm)

Magnification	Field-of-view, mm.	Remarks	Order No.
10	18 ☍ Z	High-point eyepiece for spectacle-wearers, with fixed pointer[6]	519 751

[1] C: use with coverglass (thickness 0,17 mm ±0.05mm)
O: use without coverglass
CO: use with or without coverglass

[2] Oil immersion with iris diaphragm

[3] Coverglasses of thickness 0.11 to 0.23mm can be used with the objectives indicated with KORR

[4] Each eyepiece in the pair is adjustable

[5] With soft rubber eyecup, can also be used by those with normal sight

[6] Can be paired with eyepieces 519 748 or 519 750

M = Adjustable eyepiece, accepts graticule. Only one eyepiece in a pair is adjustable, except when indicated by [4].

☍ = High-point eyepiece, for spectacle-wearers

LABORLUX D with illuminaton mirror and transport case.

Leitz means precision.
Worldwide.

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Code-Nos. of the editions in

German	French	Spanish
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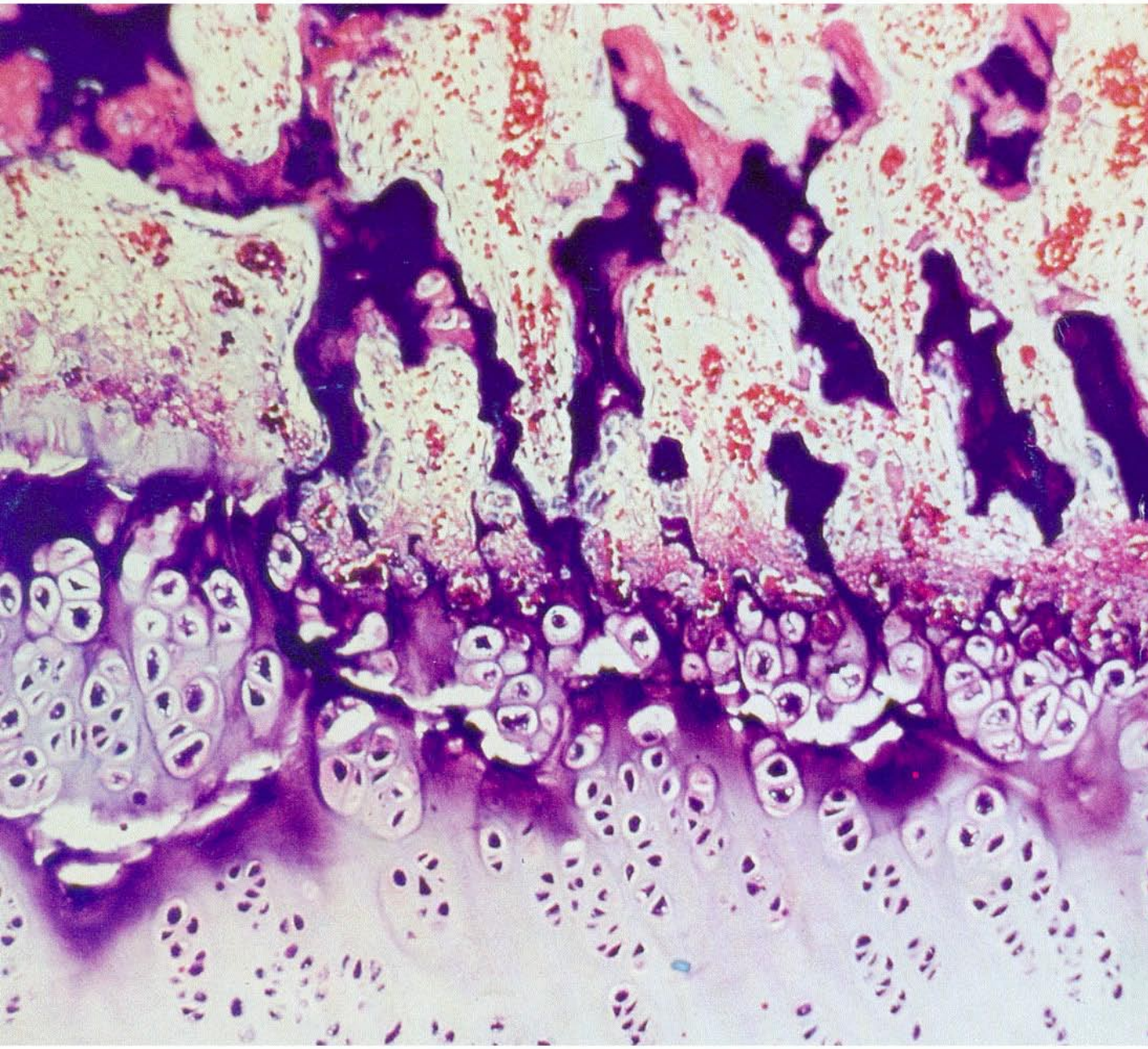
LEITZ WETZLAR and WILD HEERBRUGG

Two enterprises of worldwide reputation – the leading range in microscopy and metrology. Research, manufacture, distribution and service shared worldwide guarantee the optimum performance range of optical, precision-mechanical, electronic systems.



Bone cartilage, Giemsa 10x objective Specimen: Dr. S. Stoerkel, Institute for Pathology, Mainz

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