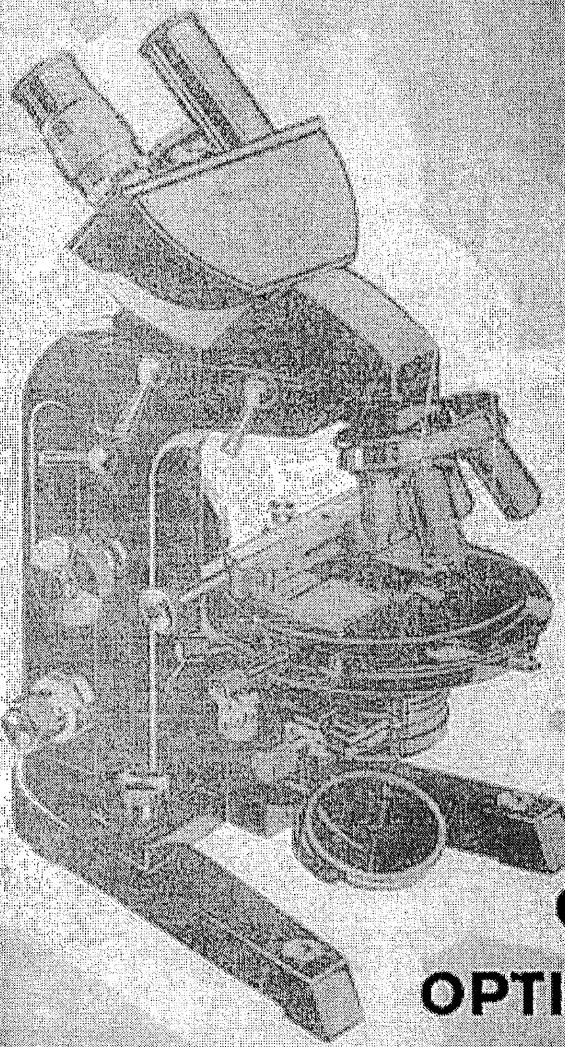


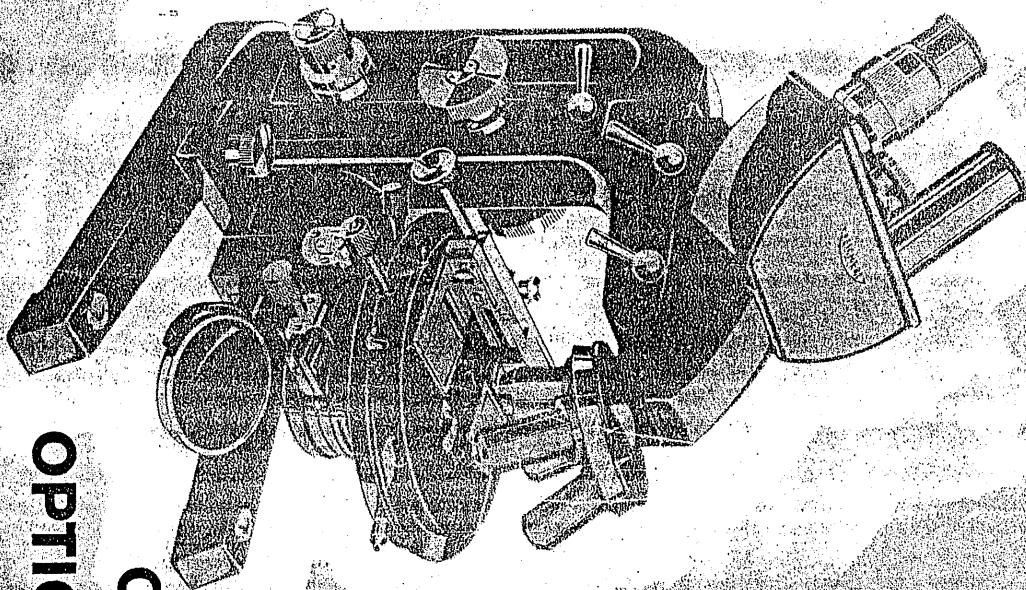
LARGE UNIVERSAL MICROSCOPE

"Z"



C. REICHERT
OPTICAL WORKS
VIENNA XVII.

LARGE UNIVERSAL
MICROSCOPE
"Z"



C. REICHERT
OPTICAL WORKS
VIENNA XVII.

LARGE UNIVER

MICROSCOP

"Z"

With a view to offering our clients something better than we have produced before, we are constantly endeavouring to improve upon our existing products. For this reason, kindly note that the illustrations shown in this list are not binding as to details. By the present list all former lists for this instrument are cancelled.

C. REICHERT OPTICAL W
VIENNA XVII. HERNALSER HAUPTSTR.

LARGE UNIVERSAL MICROSCOPE

"Z"

With a view to offering our clients something better than we have produced before, we are constantly endeavouring to improve our existing products. For this reason, we may note that the illustrations shown in this list are not binding as to details. In the present list all former lists for this instrument are cancelled.

C. REICHERT OPTICAL WORKS
VIENNA XVII. HERNALSER HAUPSTRASSE 219

REICHERT

REICHERT

REICHERT



The new large

Universal Microscope "Z", 1937 Pattern

is a perfect instrument for:

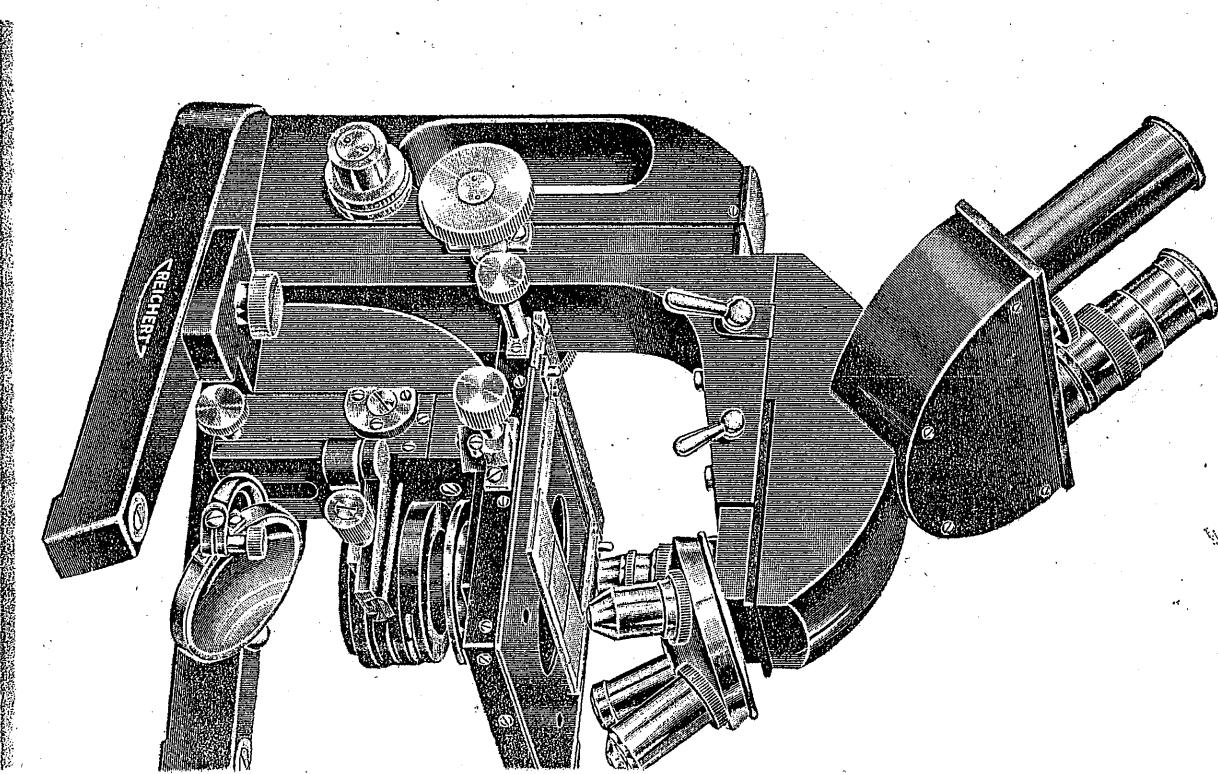
Microscopy in transmitted and incident natural light, bright and dark ground.

Microscopy in transmitted and incident polarised light.

The examination of three-dimensional objects, and for dissecting work with Greenough binocular objectives and image-erecting prism tubes.

Photomicrography and photomacrography.

The Universal Microscope "Z" is the instrument for the scientist, research man and practitioner. It enables all work — from dissecting to the finest examinations at maximum powers — to be done and the result photographed.



The new large

Universal Microscope "Z", 1937 Pattern

is a perfect instrument for:

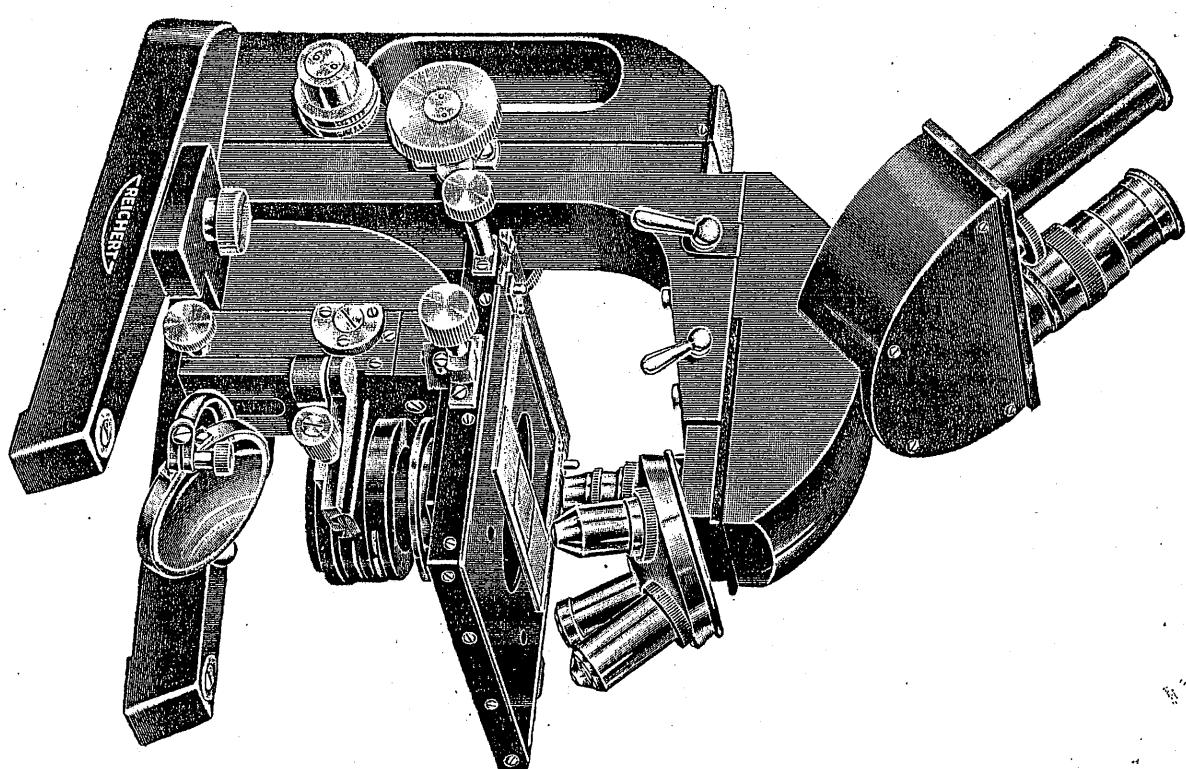
Microscopy in transmitted and incident natural light, bright and dark ground.

Microscopy in transmitted and incident polarised light.

The examination of three-dimensional objects, and for dissecting work with Greenough binocular objectives and image-erecting prism tubes.

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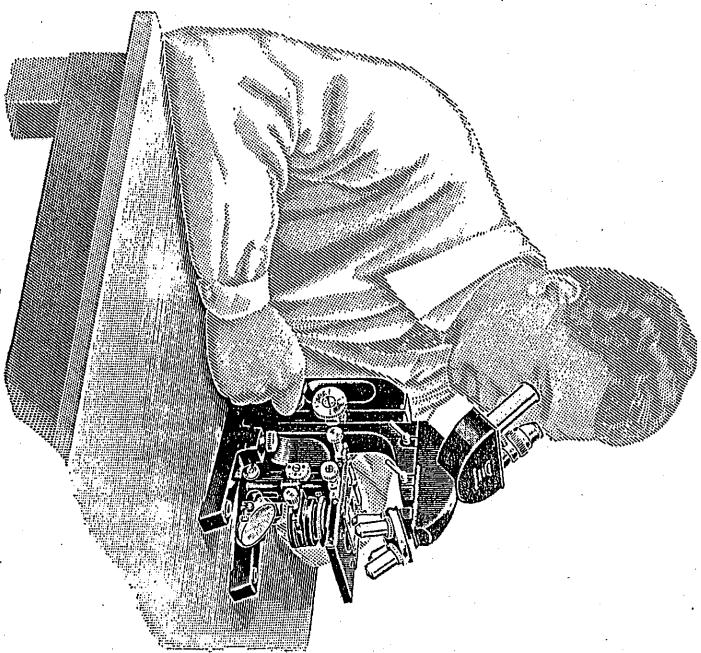
The Universal Microscope "Z" is the instrument for the scientist, research man and practitioner. It enables all work — from dissecting to the finest examinations at maximum powers — to be done and the result photographed.



Technical Details

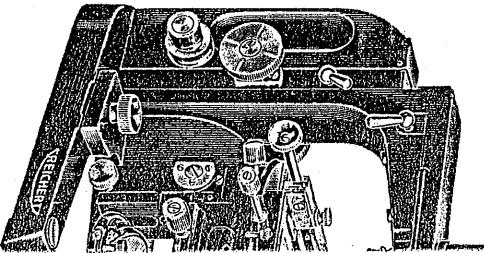
Steady and Rigid Microscope Body

Heavy pattern. The limb and foot are made in one piece, so that no strain comes on to the focussing adjustments when the instrument is being raised or put away.



Comfortable attitude of the body. No strain to the microscopist

Microscope "Z" with Vertical Monocular Body-Tube
for Photomicrography



Interchangeability of Optical Parts

A horizontal sliding guide enables the observing tubes, objective and incident light illuminators to be rapidly changed.

Optimum Arrangement of Inclined Observation Tubes

The observation tubes for visual work are well set back and at an angle which detailed examinations have proved to be the best. Therefore be done with the head and body upright and relaxed and resting on the work-table, so that the microscopist is saved strain and can give his entire attention to the work of observation.

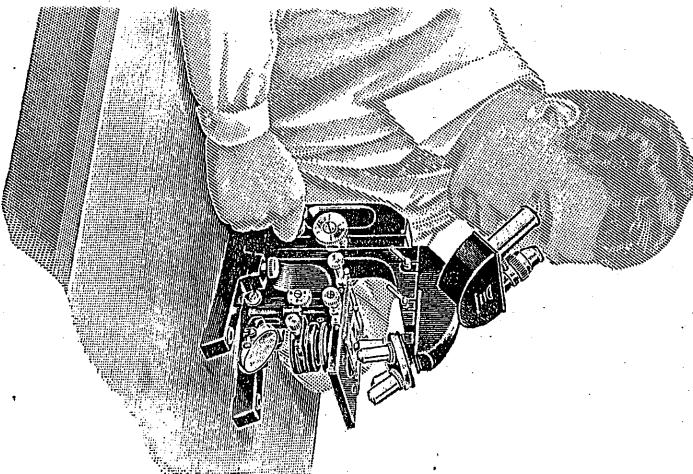
Monocular and Binocular Tubes

Inclined Binocular Tube. Binocular observation is the most comfortable way of viewing. It prevents the eyes being strained or damaged through working with only one of them.

Details

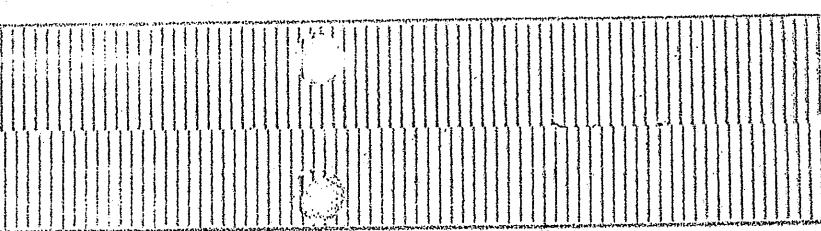
Rigid Microscope Body

The limb and foot are made in one piece, so that no strain is caused by focussing adjustments when the instrument is being raised or lowered.



Confortable attitude of the body. No strain to the microscopist

Microscope "Z," with Vertical Monocular Body-Tube for Photomicrography



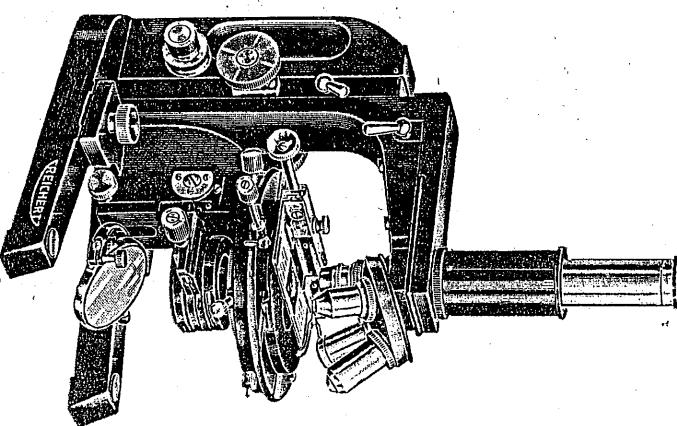
Microscope "Z," with Vertical Monocular Body-Tube for Photomicrography

Interchangeability of Optical Parts

A horizontal sliding guide enables the observing tubes, objective nosepieces, and incident light illuminators to be rapidly changed.

Optimum Arrangement of Inclined Observation Tubes

The observation tubes for visual work are well set back and arranged at an angle which detailed examinations have proved to be the best. Work can therefore be done with the head and body upright and relaxed and the forearms resting on the work-table, so that the microscopist is saved any physical strain and can give his entire attention to the work of observing.



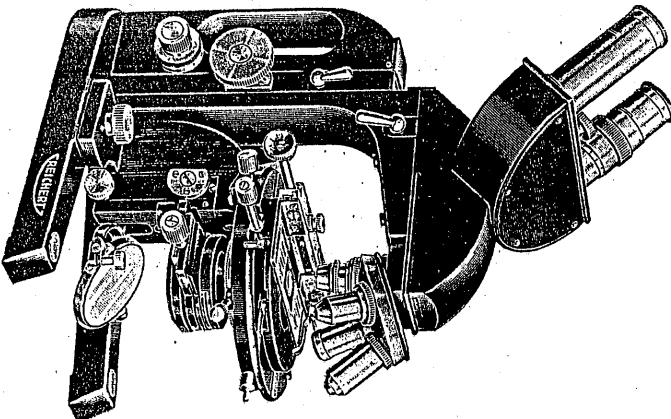
Monocular and Binocular Tubes

Inclined Binocular Tube. Binocular observation is the natural way, as it prevents the eyes being strained or damaged through working too long with only one of them.

Adjustment
The long guide adopted for the limb allows a maximum adjustment of 95 mm (3 $\frac{1}{4}$ "').

Fine Focussing Adjustments
The fine focussing adjustment can be clamped in any position. Coarse focussing is ensured by the extremely long sliding guides in the instrument. The fine focussing slider is on rollers (Patented design). The screw with large drum for reading to 0,001 mm. The drums are located low down on either side of the stand for ease of use, the forearms resting on top of the table.

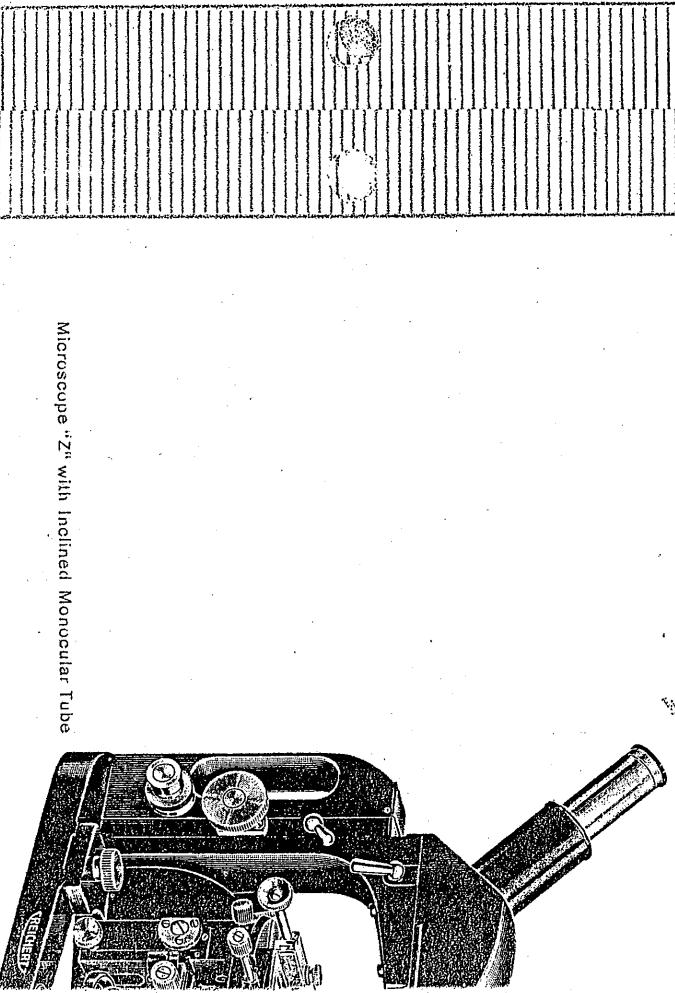
Division of Rays. The rays are divided by a set of prisms coated with a semi-translucent layer of silver, and these normally supply two identical images. If desired, and at an extra cost, prisms with a silver coating of gradually increasing density can be supplied so as to achieve a stereoscopic effect.



Microscope "Z" with Inclined Binocular Tube

Interpupillary Distance. The distance between the two eyepieces can be varied between 54 and 74 mm (2.125" and 2.913") and the adjustment read off on a scale. To compensate for differences in acuity of vision of the two eyes, an eyepiece can be adjusted by a worm motion and the setting also indicated by a scale.

The Inclined Monocular Tube is intended for microscopists who can only work with one eye, or else prefer to do so, owing to greater anomalies of one eye, or from habit.
The Vertical Monocular Tube is used for photomicrography in conjunction with a camera.



Microscope "Z" with Inclined Monocular Tube

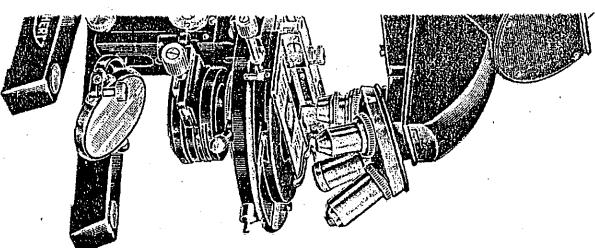
Since the inclined tubes intended for visual work give higher magnification than the inclined monocular tube, used with eyepieces of correspondingly lower power sc useless magnification of the image.

Large Reichert Universal Microscope Equipment for Transmitted Light

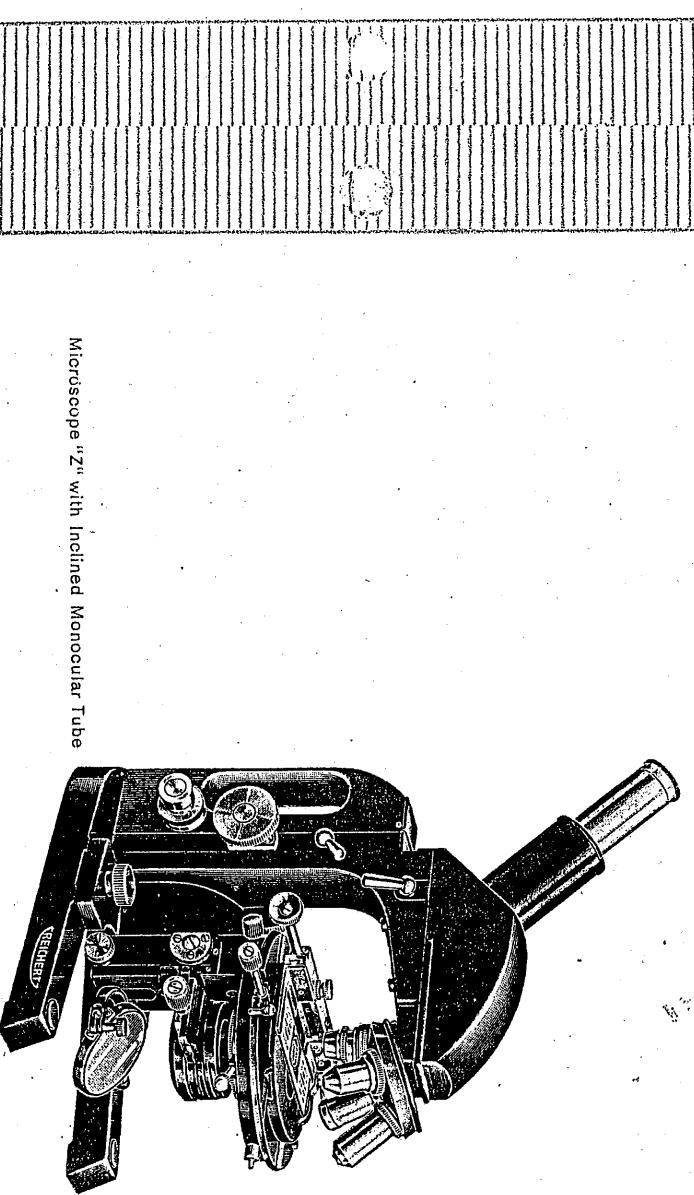
Description of the Stand

Massive microscope stand with limb, horizontal slider guide tubes and nosepieces. Rack-and-pinion coarse focussing with can be clamped in any position. Fine focussing by microm roller guide and low-set milled heads, with scale drum (radi

rays. The rays are divided by a set of prisms coated with a thin layer of silver, and these normally supply two identical red, and at an extra cost, prisms with a silver coating of using density can be supplied so as to achieve a stereoscopic



Microscope "Z" with Inclined Binocular Tube



Microscope "Z" with Inclined Monocular Tube

Since the inclined tubes intended for visual work give a 50 per cent higher magnification than the inclined monocular tube, they should be used with eyepieces of correspondingly lower power so as to obviate useless magnification of the image.

Large Reichert Universal Microscope "Z"

Equipment for Transmitted Light

Description of the Stand

Massive microscope stand with limb, horizontal slider guide for changing the tubes and nosepieces. Rack-and-pinion coarse focussing with 95 mm travel, can be clamped in any position. Fine focussing by micrometer screw with roller guide and low-set milled heads, with scale drum (reading to 0.001 mm).

Eye Distance. The distance between the two eyepieces can be 54 and 74 mm (2.125" and 2.913") and the adjustment scale. To compensate for differences in acuity of vision of the eyepiece can be adjusted by a worm motion and the setting by a scale.

Monocular Tube is intended for microscopists who can one eye, or else prefer to do so, owing to greater anomalies from habit.

Monocular Tube is used for photomicrography in connection with a camera.

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Detachable stage carrier. Large illuminating Apparatus No. 22.11.14. Condenser carrier vertically adjustable by rack and pinion. Double-lens condenser N.A. 1.20, with screw-off front lens and aperture iris diaphragm of the rotary, laterally adjustable type which can be cut out as required. Mirror ground plane and concave, which can be swung about two axes at right angles and clamped in position. Mahogany cabinet, with lock and key and compartments for the optical parts.

Microscope "Z" as specified, with round, Rotating and Centring

Mechanical Stage No. 18, 5" diameter, travel 50×30 mm ($2\frac{1}{2} \times 1\frac{1}{4}$ "), with scales and verniers reading accurately to 0.1 mm (Finder Stage). Without tubes, nosepieces or optical parts

Code Word: ZETRU

Microscope "Z" as specified, with square Mechanical Stage No. 22¹⁾, 120 \times 120 mm ($4\frac{3}{4} \times 4\frac{3}{4}$ ") travel 50×30 mm, accurate readings to 0.1 mm by means of three scales and verniers (Finder Stage). Without tubes, nosepieces or optical parts

Code Word: ZETVI

Microscope "Z" as specified, with round Rotating and Centring

Stage No. 48, 125 mm (5") diameter. Without tubes, nosepieces or optical parts

Code Word: ZETUR

Transmitted Light Condenser No. 00.11.15, N. A. 1.40, triple-lens, with screw-off front lens on carrier tube²⁾

Code Word: TREKO

Transmitted Light Condenser No. 00.11.18, N. A. 1.40, achromatic-aplanatic four-lens type, with screw-off front lens, on tube carrier²⁾ Code Word: APSEM

Triple Objective Nosepiece on slider, No. 229 z Code Word: TRARS

Quadruple Objective Nosepiece on slider, No. 230 z Code Word: NORES

Inclined Binocular Observing Tube "S", No. 1012 Code Word: BISRE

Inclined Monocular Observing Tube "N", No. 1013 Code Word: MOSRE

Straight Monocular Tube for Photography "M", No. 1011 Code Word: MOGRA

The same Set, but with single Eyepieces for the inclined m.

Sets of Optical Parts recommended for Bright Transmitted Light Microscopy

For the Finest Research Work:

Apochromatic Optical Parts; magnifications with the Quadruple Objective Nosepiece on Slider

Achromatic Objective $\times 4$ Apochromatic Objectives $\times 12, \times 45, \times 60$ $\times 30-2400^1)$ with the straight tube $\times 20-1600$

Pair of Huyghenian Eyepieces $\times 5$

Pairs of Compensating Eyepieces $\times 5, \times 12, \times 16$

Pair of Micrometer Compensating Eyepieces $\times 8$

The same Set, but with single Eyepieces for the inclined m.

Code Word: ZETVI

For Clinical Work and Diagnosis:

Fluorite Optical Parts; magnifications with the inclined tub

with the straight tube $\times 50-1600$

Quadruple Objective Nosepiece on Slider

Achromatic Objective $\times 10$

Fluorite Objectives $\times 40, \times 60$

Fluorite Oil Immersion $\times 100$, N. A. 1.30

Pairs of Compensating Eyepieces $\times 8, \times 16$

The same Set, but with single Eyepieces for the inclined m.

Code Word: ZETVI

For Medical Practitioners:

Achromatic Optical Parts; magnifications with the inclined m.

with the straight tube $\times 50-1200$

Triple Objective Nosepiece on Slider

Achromatic Objectives $\times 10, \times 45$

Achromatic Oil Immersion $\times 100$, N. A. 1.25

Pairs of Huyghenian Eyepieces $\times 5, \times 10, \times 12$

Code

1) This stage is specially suitable in cases where it is desired subsequently to extend the scope of the instrument to microscopy in incident light. Solid adaptor stage for this purpose Code Word VOTIP

2) When one of these condensers is ordered, the double-lens condenser N. A. 1.20 included in the Complete Sets can be omitted.

¹⁾ To avoid useless magnifications, the eyepieces should be selected so that given for the straight tube are not appreciably exceeded for the inclined tubes

stage carrier. Large Illuminating Apparatus No. 22.11.14. Condenser
ff front lens and aperture iris diaphragm of the rotary, laterally
be which can be cut out as required. Mirror ground plane and
ch can be swung about two axes at right angles and clamped
Mahogany cabinet, with lock and key and compartments for the

"Z" as specified, with round, Rotating and Centring

Stage No. 18, 5" diameter, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), with
verniers reading accurately to 0.1 mm (Finder Stage). Without
pieces or optical parts

Code Word: ZETRU
Code Word: ZETV1

"Z" as specified, with square Mechanical Stage No. 22¹⁾,
 $(4\frac{3}{4}'' \times 4\frac{3}{4}'')$ travel 50×30 mm, accurate readings to 0.1 mm by
scale and verniers (Finder Stage). Without tubes, nosepieces
rts

Code Word: ZETV1

"Z" as specified, with round Rotating and Centring
8, 125 mm (5") diameter. Without tubes, nosepieces or optical

Code Word: ZETUR
Code Word: ZETV1

1 Light Condenser No. 00.11.15, N. A. 1.40, triple-lens, with
nt lens on carrier tube²⁾

Code Word: TREKO
Code Word: APSEM

1 Light Condenser No. 00.11.18, N. A. 1.40, achromatic-aplanatic
with screw-off front lens, on tube carrier²⁾

Code Word: APSEM

Objective Nosepiece on slider, No. 229 z Code Word: NORES

Code Word: TRARS

Monocular Observing Tube "S", No. 1012 Code Word: BISRE

Code Word: MOSRE

Monocular Tube for Photography "M", No. 1011

Code Word: MOGRA

especially suitable in cases where it is desired subsequently to extend the scope of the
scope in incident light. Solid adaptor stage for this purpose

Code Word VOTIP

These condensers is ordered, the double-lens condenser N. A. 1.20 included in the
be omitted.

Sets of Optical Parts recommended for Bright Ground Transmitted Light Microscopy

For the Finest Research Work:

Apochromatic Optical Parts; magnifications with the inclined tubes,
 $\times 30-2400^1)$, with the straight tube $\times 20-1600$

Quadruple Objective Nosepiece on Slider

Achromatic Objective $\times 4$

Apochromatic Objectives $\times 12$, $\times 45$, $\times 60$

Apochromatic Oil Immersion Objective $\times 100$, N. A. 1.30

Pair of Huyghenian Eyepieces $\times 5$

Pair of Compensating Eyepieces $\times 5$, $\times 12$, $\times 16$

Code Word: ZEFOB

Pairs of Micrometer Compensating Eyepieces $\times 8$

The same Set, but with single Eyepieces for the inclined monocular tube

Code Word: ZEFOM

For Clinical Work and Diagnosis:

Fluorite Optical Parts; magnifications with the inclined tubes $\times 75-2400^1)$,
with the straight tube $\times 50-1600$

Quadruple Objective Nosepiece on Slider

Achromatic Objective $\times 10$

Fluorite Objectives $\times 40$, $\times 60$

Fluorite Oil Immersion $\times 100$, N. A. 1.30

Pairs of Compensating Eyepieces $\times 8$, $\times 16$

Code Word: ZEKIB

The same Set, but with single Eyepieces for the inclined monocular tube

Code Word: ZEKIM

For Medical Practitioners:

Achromatic Optical Parts; magnifications with the inclined tubes $\times 75-1800^1)$,
with the straight tube $\times 50-1200$

Triple Objective Nosepiece on Slider

Achromatic Objectives $\times 10$, $\times 45$

Achromatic Oil Immersion $\times 100$, N. A. 1.25

Pairs of Huyghenian Eyepieces $\times 5$, $\times 10$, $\times 12$

Code Word: ZEPAB

The same Set, but with single Eyepieces for the inclined monocular tube

Code Word: ZEPAM

¹⁾ To avoid useless magnifications, the eyepieces should be selected so that the maximum powers given for the straight tube are not appreciably exceeded for the inclined tubes.

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The same Set as ZEPAB, except that the $\times 45$ Achromatic Objective is replaced by the $\times 60$ Achromat, which is specially recommended for historical work
Code Word: ZEHIB

The same set as ZEHIB, but with single eyepieces for the inclined monocular tube
Code Word: ZEHIM

Stands are not supplied without Optical Parts. For latter, see Price Key.

Supplementary Equipment for above Sets for Dark Ground, Transmitted Light Microscopy

Double-surface Dark Ground Condenser No. 706 and 5 special Object Holders (Slides), in case
Code Word: DUFKO

Dark Ground Stops for the higher-powered Objectives. These should be ordered to suit the optical equipment selected:

Funnel Stop No. 1703 for Achromatic Objective $\times 45$ Code Word: TRIFO

Funnel Stop No. 1710 for Achromatic Oil Immersion Objective $\times 100$

Code Word: TREGY

Funnel Stop No. 1706 for Fluorite Objective $\times 40$

Code Word: TRAFL

Funnel Stop No. 1705 for Fluorite Objective $\times 60$

Code Word: TRASO

Funnel Stop No. 1711 for Fluorite Oil Immersion Objective $\times 100$

Code Word: TROEL

Funnel Stop No. 1712 for Achromatic Objective $\times 45$ Code Word: TRAPF

Funnel Stop No. 1713 for Achromatic Objective $\times 60$ Code Word: TROPS

Funnel Stop No. 1725 for Achromatic Oil Immersion Objective $\times 100$

Code Word: TROAP

Light Sources for Transmitted Light

Microscopy Lamp for visual work with transmitted light, for connecting up direct to the mains supply. Well ventilated and light-tight lamp casing, with cable, switch and connector, blue glass, and carrier for clamping to the microscope base.
In Preparation

Microscopy Lamp "Lux FN" for visual work with transmitted light-ground work, for low-voltage bulb as "Lux FN"; without the or set of swing-out filters, but only with filter carrier, frosted filter. (For this item, the Small Optical Bench No. 611 or Table 5 is absolutely necessary)

Code \

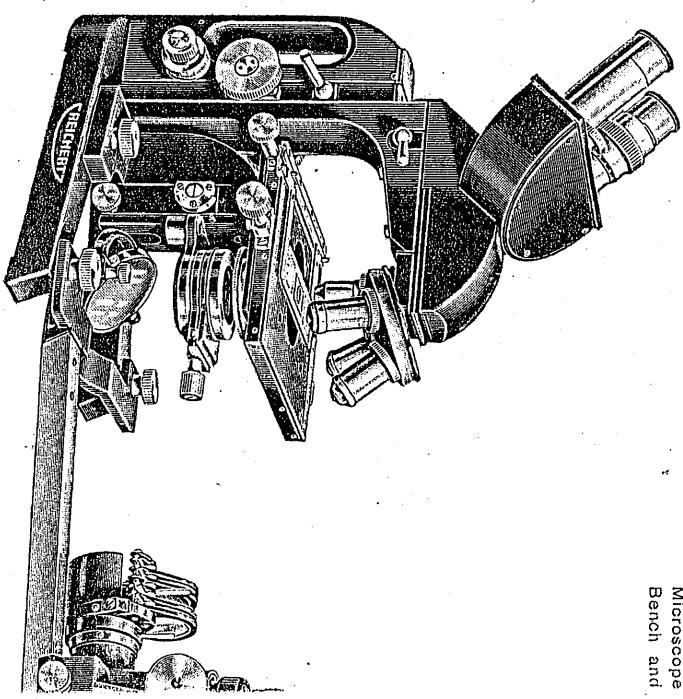
1. Low-voltage Bulb No. 7705, 6 Volt, 5 Amperes, with spe

Code \

Resistance No. 7806, 5 Amperes, for connecting up to 110, 15 D. C. or A. C. Mains¹⁾.
Code \

Transformer No. 7822, for 110 and 220 Volt A. C. Mains on Code \

Photomicrography Lamp "Lux FN", for visual work with transmitted light, dark ground work, and photomicrography; for low-voltage bulb, with adjustable, apochromatic condenser lens, iris diaphragm and swing-out set of filter glasses comprising ground glass, yellow, green and blue filters. (For this item, the Small Optical Bench No. 611 or Table Stand No. 8100 is absolutely necessary)
Code Word: LUFNE



Microscope
Bench and

¹⁾ When ordering electrical equipment, please state the mains voltage, and (in the case) the frequency of the supply (cycles per second) as well.

as ZEPAB, except that the $\times 45$ Achromatic Objective is

$\times 60$ Achromat, which is specially recommended for histo-

Code Word: ZEHIB

is ZEHIB, but with single eyepieces for the inclined monocular supplied without Optical Parts. For latter, see Price Key.

Code Word: ZEHIM

Necessary Equipment for above Sets for Dark Ground,

1 Light Microscopy

Dark Ground Condenser No. 706 and 5 special Object

Code Word: DUFKO

, in case
Stops for the higher-powered Objectives. These should

, suit the optical equipment selected:

No. 1703 for Achromatic Objective $\times 45$ Code Word: TRIFO

No. 1704 for Achromatic Objective $\times 60$ Code Word: TRASP

No. 1710 for Achromatic Oil Immersion Objective $\times 100$

Code Word: TREGY

No. 1706 for Fluorite Objective $\times 40$ Code Word: TRAFL

No. 1705 for Fluorite Objective $\times 60$ Code Word: TRASO

No. 1711 for Fluorite Oil Immersion Objective $\times 100$

Code Word: TROEL

No. 1712 for Apochromatic Objective $\times 45$ Code Word: TRAPF

No. 1713 for Apochromatic Objective $\times 60$ Code Word: TROPS

No. 1725 for Apochromatic Oil Immersion Objective $\times 100$

Code Word: TROAP

2es for Transmitted Light

amp for visual work with transmitted light, for connecting up

ains supply. Well ventilated and light-tight lamp casing, with

id connector, blue glass, and carrier for clamping to the micro-

In Preparation

aphy Lamp "Lux FN", for visual work with transmitted light,

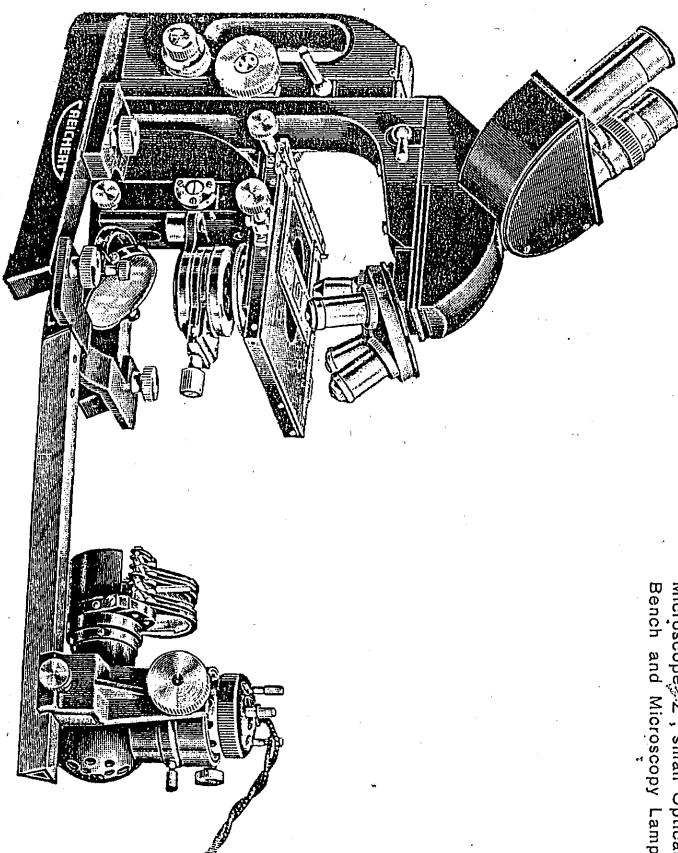
k, and photomicrography, for low-voltage bulb, with adjustable,

natic condenser lens, iris diaphragm and swing-out set of filter

ing ground glass, yellow, green and blue filters. (For this item,

al Bench No. 6111 or Table Stand No. 8100 is absolutely neces-

Code Word: LUFNE



Microscope "Z", small Optical
Bench and Microscopy Lamp

Microscopy Lamp "Lux FDN" for visual work with transmitted light and dark-ground work, for low-voltage bulb as "Lux FN"; without the iris diaphragm or set of swing-out filters, but only with filter carrier, frosted glass and blue filter. (For this item, the Small Optical Bench No. 6111 or Table Stand No. 8100 is absolutely necessary).

Code Word: LUNAD

1 Low-voltage Bulb No. 7705, 6 Volt, 5 Amperes, with special socket

Code Word: MALUZ

Resistance No. 7806, 5 Amperes, for connecting up to 110, 150 and 220 Volt

D. C. or A. C. Mains¹⁾

or:

Transformer No. 7822, for 110 and 220 Volt A. C. Mains only¹⁾

Code Word: TROMA

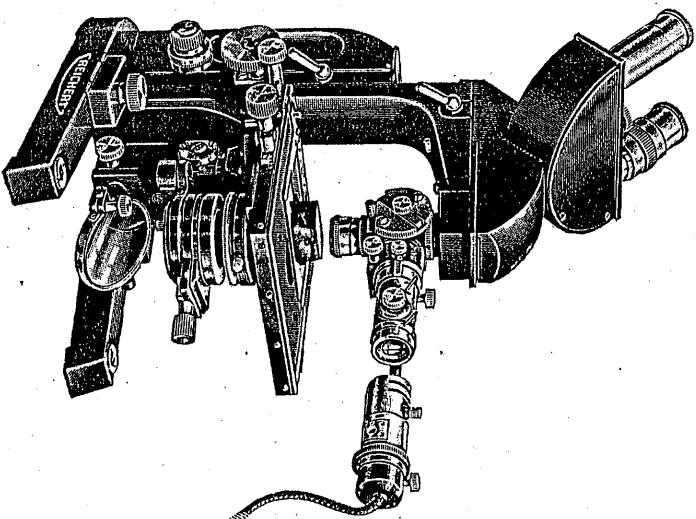
¹⁾ When ordering electrical equipment, please state the mains voltage, and (in the case of transformers) the frequency of the supply (cycles per second) as well.

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Small Optical Bench No. 6111, for fixing to the microscope base parallel to the plane of symmetry of the microscope (in the forward direction). Including securing device for the lamps "Lux FN" or "Lux FDN". Code Word: O P B A P

Table Stand No. 8100 with crosshead, to enable the lamps to be used apart from the microscope and to be tilted and adjusted in any direction. Code Word: T I S T A



Microscope "Z" with Universal
Opaque Illuminator

Equipment for Incident Light

I. The new Universal Opaque Illuminator No. 1402 for all Types of Incident Light Illumination

The new Universal Opaque Illuminator No. 1402 is provided with a slide portion for inserting in the long horizontal sliding change device of the microscope, and can be easily and quickly substituted for the revolving nosepiece. It comprises a casing and an illuminating attachment.

1. The **Casing** contains, arranged at an angle of 45°:

- (a) A **Plane Glass Plate** for vertical internal illumination, for finest structures and details at the highest powers, the r of the microscope being fully exploited.
- (b) A **Strip Mirror** for steeply inclined, single-sided illumin purpose of achieving bright and well contrasted images with
- (c) A **Ring Mirror** for the "Epilum" external illumination. gives conical illumination from all sides so as to achieve effect with reflecting objects, and highly contrasted im reflex effects, and with true colour reproduction, in the having a dull, non-reflecting surface. At the lower end a slider guide into which the objectives are slipped (Changer). The various types of illumination are changed placing the reflector holder between marked stops located guide.

2. The Illuminating Attachment

contains a field stop & iris diaphragm, together with a deflecting system of vari guiding the rays obliquely in the case of internal illumination when the strip mirror is being used, and a swing-out "Epilum" external illumination. An attachable, rotary sect oblique external illumination from on side and of variabl "Epilum" objectives are being used.

III. Light Sources for the Universal Opaque Illuminator

- (a) **Visual Work.** The small lamp No. 1413 should be used which is secured to the Universal Opaque Illuminator carrier bar.
- (b) **Photomicrography.** The deflecting mirror system is used with the low-voltage lamps "Lux FN", "Lux FDN" or so powered light source, the lamps being mounted on the same

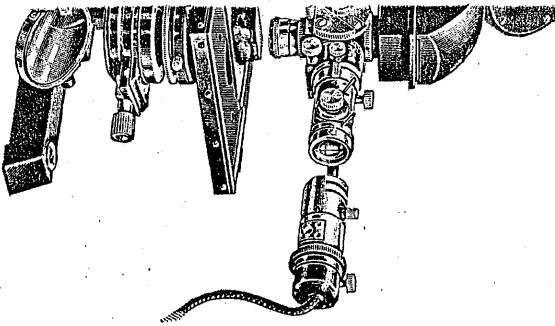
III. Objectives for above:

- For **bright-ground work** only: simple **Incident Light** centring slides,
or:
For **bright-ground** and **dark-ground work**: "Epilum" ring condenser, also on centring slides.

Bench No. 6111, for fixing to the microscope base parallel to the symmetry of the microscope (in the forward direction). Including for the lamps "Lux FN" or "Lux FDN". Code Word: O P BAP

No. 8100 with crosshead, to enable the lamps to be used microscope and to be tilted and adjusted in any direction

Code Word: T I S T A



Microscope "Z" with Universal
Opaque Illuminator

for Incident Light

Universal Opaque Illuminator No. 1402 for all Types of

Illumination

al Opaque Illuminator No. 1402 is provided with a slide portion he long horizontal sliding change device of the microscope, iily and quickly substituted for the revolving nosepiece. It ing and an illuminating attachment.

1. The Casing contains, arranged at an angle of 45°:

(a) A **Plane Glass Plate** for vertical internal illumination, for revealing the finest structures and details at the highest powers, the resolving power of the microscope being fully exploited.

(b) A **Strip Mirror** for steeply inclined, single-sided illumination, for the purpose of achieving bright and well contrasted images with a relief effect.

(c) A **Ring Mirror** for the "Epilum" external illumination. The ring mirror gives conical illumination from all sides so as to achieve a dark-ground effect with reflecting objects, and highly contrasted images, free from reflex effects, and with true colour reproduction, in the case of objects having a dull, non-reflecting surface. At the lower end of the casing is a slider guide into which the objectives are slipped (Objective Slide Changer). The various types of illumination are changed merely by displacing the reflector holder between marked stops in a diagonally located guide.

2. The Illuminating Attachment contains a field stop and an aperture iris diaphragm, together with a deflecting system of variable effect for guiding the rays obliquely in the case of internal illumination, especially when the strip mirror is being used, and a swing-out central stop for "Epilum" external illumination. An attachable, rotary sector stop provides oblique external illumination from one side and of variable azimuth when "Epilum" objectives are being used.

II. Light Sources for the Universal Opaque Illuminator

(a) **Visual Work.** The small lamp No. 1413 should be used, the casing of which is secured to the Universal Opaque Illuminator by means of a carrier bar.

(b) **Photomicrography.** The deflecting mirror system is used in conjunction with the low-voltage lamps "Lux FN", "Lux FDN" or some similar high-powered light source, the lamps being mounted on the small optical bench.

III. Objectives for above:

For **bright-ground work** only: simple **Incident Light Objectives** on centring slides,

or:

For **bright-ground** and **dark-ground work**: "Epilum" **Objectives** with ring condenser, also on centring slides.

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Description of Stand

Massive microscope stand with limb. Horizontal slider guide for changing the tubes and the Universal Opaque Illuminator. Rack-and-pinion coarse focusing, travel 95 mm, can be clamped in any position. Fine focussing by micrometer screw with roller guide and low-set milled heads with graduated drum (reading to 0.001 mm). Detachable stage carrier. Mahogany cabinet with lock and key and compartments for the optical parts.

Microscope "Z" as specified, with Mechanical Stage No. 23, size $120 \times 120 \text{ mm}$ ($4\frac{3}{4}'' \times 4\frac{3}{4}''$), travel $50 \times 30 \text{ mm}$ ($2'' \times 1\frac{1}{4}''$), reading accurately to 0.1 mm by means of three scales and verniers (Finder Stage). Without tubes or optical parts.

Further stages, particularly for very large and heavy objects, are now in course of preparation.

Inclined Binocular Observing Tube "S" No. 1012 Code Word: BI S RE

Inclined Monocular Observing Tube "N" No. 1013 Code Word: MO S RE

Vertical Monocular Tube "M" No. 1011 (for Photomicrography)

Code Word: MOGRA

Universal Opaque Illuminator No. 1402, as described Code Word: UNO PI

Slide Portion No. 1410 for the Universal Opaque Illuminator No. 1402
Code Word: SUN OP

Sector Stop No. 1407 for one-sided external illumination Code Word: SEKOP

Suggested Sets of Optical Components

A. Bright-ground and Dark-ground (for the examination of Steel and Iron)

1. For Binocular Microscopy
Universal Incident Light Optical Components on Centring Slides

with Handles:
Achromatic Objective $\times 5.5$
Epium Objectives $\times 11$, $\times 45$
Fluorite Objective $\times 62$

Fluorite Oil Immersion Objective $\times 100$, N. A. 1.30
Pairs of Huyghenian Eyepieces $\times 5$, $\times 8$, $\times 12$
Code Word: ZEDUS

2. For Monocular Microscopy:
The same set as above, but with single eyepieces Code Word: ZEDUN

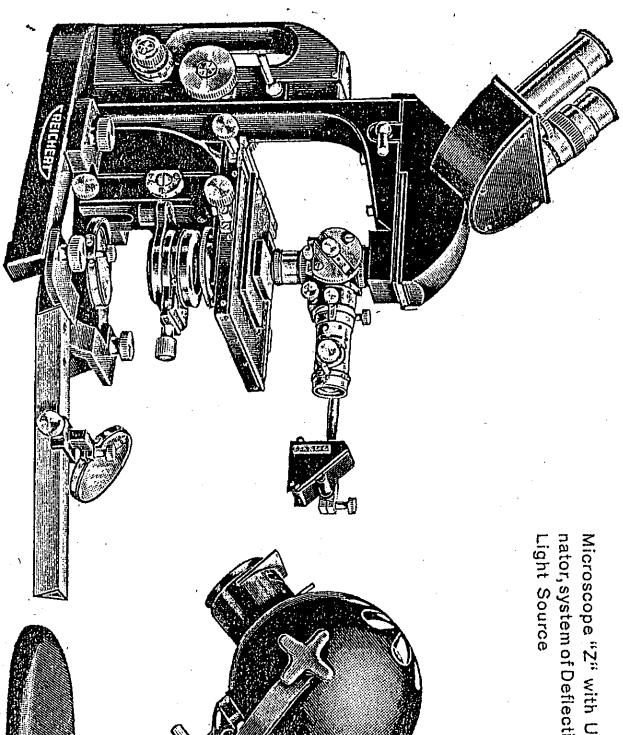
B. Bright Ground (for the examination of Steel and Iron)

1. For Binocular Microscopy
Incident Light Optical Components, on Centring Slid
Achromatic Objectives $\times 5.5$, $\times 11$, $\times 45$
Fluorite Objective $\times 62$
Fluorite Oil Immersion Objective $\times 100$, N. A. 1.30
Pairs of Huyghenian Eyepieces $\times 5$, $\times 8$, $\times 10$
Code Word: ZEDUN

C. Bright-ground and Dark-ground (for examining Non-f
1. For Binocular Microscopy:
Epilum Optical Components on Centring Slides with
Epilum Objectives $\times 5.5$, $\times 11$, $\times 45$
Epilum Oil Immersion Objective $\times 62$, N. A. 1.00
Pairs of Huyghenian Eyepieces $\times 5$, $\times 8$, $\times 10$
Code Word: ZEDUN

2. Monocular Microscopy
The same set as above, but with single eyepieces Code Word: ZEDUN

Microscope "Z": with Un
nator system of Deflectin
Light Source



f Stand

cope stand with limb. Horizontal slider guide for changing the Universal Opaque Illuminator. Rack-and-pinion coarse focus-nm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Z" as specified, with Mechanical Stage No. 23, size $\frac{3}{4}'' \times 4\frac{3}{4}''$, travel 50×30 mm ($2'' \times 1\frac{1}{4}''$), reading accurately in mm, can be clamped in any position. Fine focussing by micro-th roller guide and low-set milled heads with graduated drum (1 mm). Detachable stage carrier. Mahogany cabinet with lock compartments for the optical parts.

Sets of Optical Components

Incident Light Optical Components on Centring Slides

Incident Light Optical Components on Centring Slides

Objective $\times 5.5$

Objectives $\times 11, \times 45$

Objectives $\times 62$

Immersion Objective $\times 100$, N. A. 1.30

Ghennian Eyepieces $\times 5, \times 8, \times 12$ Code Word: ZEDUS

Monocular Microscopy:

it as above, but with single eyepieces Code Word: ZEDUN

B. Bright Ground (for the examination of Steel and Iron)

1. For Binocular Microscopy

Incident Light Optical Components, on Centring Slides with Handles:

Achromatic Objectives $\times 5.5, \times 11, \times 45$

Fluorite Objective $\times 62$

Fluorite Oil Immersion Objective $\times 100$, N. A. 1.30

Pairs of Huyghenian Eyepieces $\times 5, \times 8, \times 10$ Code Word: ZELSE

2. For Monocular Microscopy:

The same set as above, but with single eyepieces Code Word: ZELMO

Incident Light Optical Components, on Centring Slides with Handles:

Epilum Objectives $\times 5.5, \times 11, \times 45$

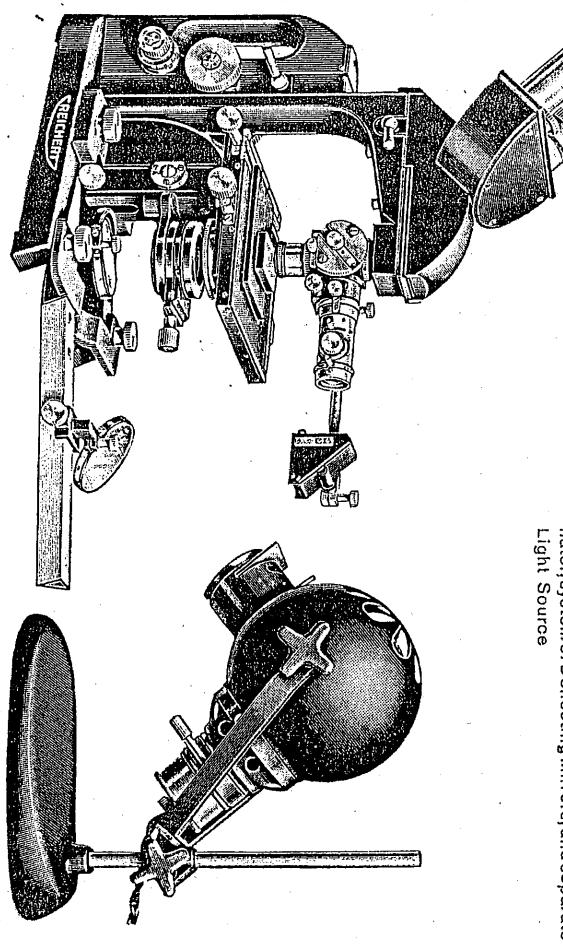
Epilum Oil Immersion Objective $\times 62$, N. A. 1.00

Pairs of Huyghenian Eyepieces $\times 5, \times 8, \times 10$ Code Word: ZENEM

3. Monocular Microscopy:

The same set as above, but with single eyepieces Code Word: ZENEM

Microscope "Z" with Universal Opaque Illuminator, System of Deflecting Mirrors, and separate Light Source



D. Bright Ground (for the examination of Non-ferrous Metals)

1. **For Binocular Microscopy**
Incident Light Achromatic Optical Components on Centring Slides
 with Handles:
 Achromatic Objectives $\times 5.5$, $\times 11$, $\times 15$
 Achromatic Oil Immersion Objective $\times 62$, N.A. 1.00
 Pairs of Huyghenian Eyepieces $\times 5$, $\times 8$, $\times 10$ Code Word: Z E L N I
2. **For Monocular Microscopy**

The same set as above, but with single eyepieces Code Word: Z E N I M

For separate Objectives and Eyepieces, see Price Key.

Light Sources for Incident Light

(a) **For Visual Work:**

Small Lamp Body No. 1413, with adjustable triple-lens aplanatic-achromatic collector, together with cable and connector

For above:

5 Low Voltage Bulbs No. 7611 h (for the Small Lamp), 10 Volt, 0.65 Amp.
 Code Word: K L E N V

Green Filter No. 8002
Yellow Filter No. 8015
Blue Filter No. 8020

Universal Resistance No. 782, for connecting up to mains supplies between 110 and 220 Volts D. C. or A. C.)

Transformer No. 7820, for 110 and 220 Volt A. C. supplies only)
 Code Word: U N W I D

(b) **For Photomicrography**

Photomicrography Lamp "LuxFN" for low-voltage bulb, with adjustable, aplanatic-achromatic collector, iris diaphragm and set of tip-up filters, comprising frosted glass, yellow, green and blue filters. (For this item, it is indispensable to have the Small Optical Bench No. 6111 or the Table Stand No. 8100)

1) When ordering electrical appliances, etc., please state the voltage of the mains supply available and, in the case of transformers, the frequency as well.

Microscopy Lamp "LuxFDN", as Lux "FN" except that it has no filter carrier, frost filter. (For this item it is indispensable to have the Small Optical Bench No. 6111 or the Table Stand No. 8100.)

- 1 **Low-voltage Bulb No. 7705** (for "Lux FN" or "Lux FDN") with special socket Code Word: K L O P L
- 2 **Resistance No. 7806**, 5 Amperes, for connecting up to 110, D. C. or A. C. supplies¹ Code Word: T O R A N
- 3 **Transformer No. 7822**, for 110 and 220 Volt A. C. supplies Code Word: U N W I D

Small Optical Bench No. 6111, for securing to the base of the instrument (facing front) parallel to the plane of symmetry of the instrument (facing front) with securing device for the lamps "Lux FN" or "Lux FDN" Code Word: K L E N V

Deflecting Mirror System (for photomicrography), for use with "Lux FN", "Lux FDN" or any other strong source of light; consisting of a **movable mirror No. 1984**, with holder, for placing on the bench, and **upper, fixed mirror No. 1985**, with auxiliary lamp to the Opalite Illuminator in place of the small lamp Code Word: G E F I Z

The Small Optical Bench and the Deflecting Mirrors are necessary for photomicrography with incident light, irrespective of the light sources specified ("Lux FN" or "Lux FDN") or is to be utilised.

Filter Carrier No. 8104 with device for clamping it to the bench when an independent source of light, arc lamp, etc. is used.

Table Stand No. 8100 with crosshead, to enable the filter carrier to be tilted and adjusted in any direction apart from the microscope and tilted and adjusted in any direction

1) When ordering electrical appliances or components, please always state the voltage of the mains supply available and, in the case of transformers, the frequency (in cycles per second).

ound (for the examination of Non-ferrous Metals)

ular Microscopy **Objectives** on Centring Slides

Objectives $\times 5.5$, $\times 11$, $\times 15$

Oil Immersion Objective $\times 62$, N. A. 1.00

Ghennian Eyepieces $\times 5$, $\times 8$, $\times 10$

ular Microscopy

et as above, but with single eyepieces Code Word: ZENIM

bjectives and Eyepieces, see Price Key.

Notes for Incident Light

Work: Body No. 1413, with adjustable triple-lens aplanatic-collector, together with cable and connector

Code Word: KLOPL

Voltage Bulbs No. 761 h (for the Small Lamp), 10 Volt, 0.65 Amp.

Code Word: KLENV

ter No. 8002 Code Word: GUFIZ

ter No. 8015 Code Word: GEFIZ

No. 8020 Code Word: BAFIG

Resistance No. 782, for connecting up to mains supplies (and 220 Volts D. C. or A. C.) Code Word: UNWID

ter No. 7820, for 110 and 220 Volt A. C. supplies only¹⁾ Code Word: TORAN

micrography

ography Lamp "Lux FN" for low-voltage bulb, with adjustable

chromatic collector, iris diaphragm and set of tip-up filters, com-

leted glass, yellow, green and blue filters. (For this item, it is

le to have the Small Optical Bench No. 6111 or the Table

Code Word: LUFINE

electrical appliances, etc., please state the voltage of the supply available and, in the case of transformers, the frequency (in cycles per second).

¹⁾ When ordering electrical appliances or components, please always state the voltage of the supply available and, in the case of transformers, the frequency (in cycles per second).

Microscopy Lamp "Lux FDN", as Lux "FN" except that it has no iris dia-

phragm or set of tip-up filters, but only a filter carrier, frosted glass and blue filter. (For this item it is indispensable to have the Small Optical Bench

No. 6111 or the Table Stand No. 8100.)

Code Word: LUNAD

1 Low-voltage Bulb No. 7705 (for "Lux FN" or "Lux FDN"), 6 Volt, 5 Amp., with special socket

Code Word: MALUZ

Resistance No. 7806, 5 Amperes, for connecting up to 110, 150 and 220 Volt D. C. or A. C. supplies¹⁾

Code Word: WIDIA

Transformer No. 7822, for 110 and 220 Volt A. C. supplies only¹⁾

Code Word: TROMA

Small Optical Bench No. 6111, for securing to the base of the microscope parallel to the plane of symmetry of the instrument (facing forward), together with securing device for the lamps "Lux FN" or "Lux FDN". Code Word: OPBAP

Deflecting Mirror System (for photomicrography), for use with the lamps "Lux FN", "Lux FDN" or any other strong source of light; consisting of **lower**, **movable mirror No. 1984**, with holder, for placing on the small optical bench, and **upper, fixed mirror No. 1985**, with auxiliary lens, for attaching to the Opaque Illuminator in place of the small lamp. Code Word: UMSPI

The Small Optical Bench and the Deflecting Mirrors are absolutely necessary for photomicrography with incident light, irrespective of whether one of the light sources specified ("Lux FN" or "Lux FDN") or any other source is to be utilised.

Filter Carrier No. 8104 with device for clamping it to the optical bench when an independent source of light, arc lamp, etc. is used. In preparation.

Table Stand No. 8100 with crosshead, to enable the lamps to be used apart from the microscope and tilted and adjusted in any direction.

Code Word: TISTA

chromatic collector, iris diaphragm and set of tip-up filters, completed glass, yellow, green and blue filters. (For this item, it is le to have the Small Optical Bench No. 6111 or the Table

Code Word: LUFINE

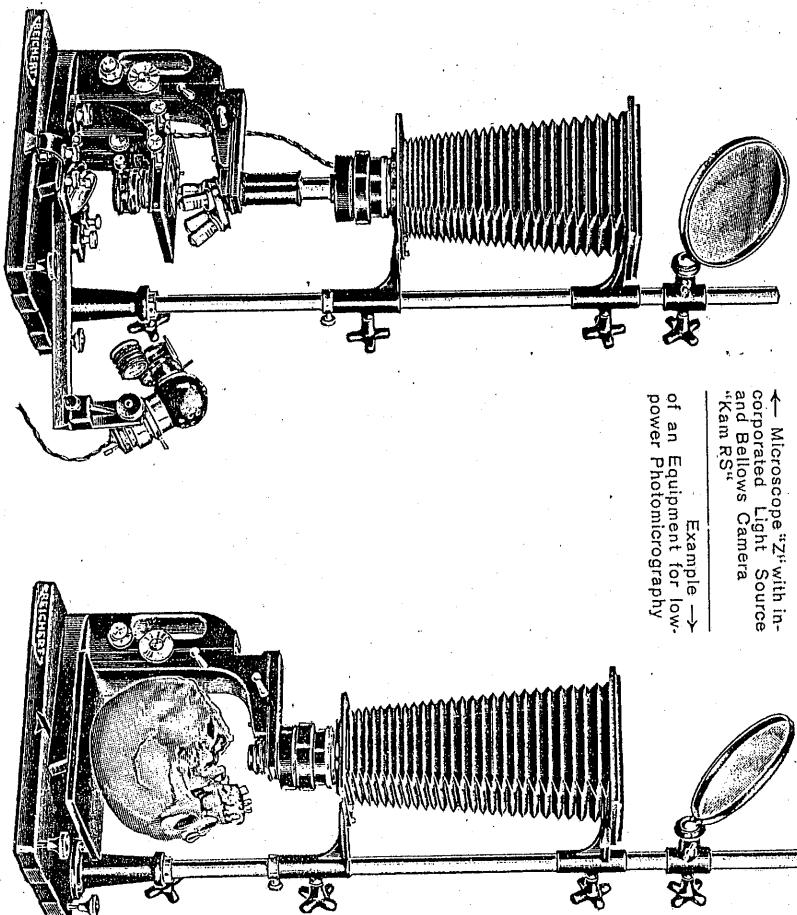
electrical appliances, etc., please state the voltage of the supply available and, in the case of transformers, the frequency as well.

Supplementing a Transmitted Light Microscope "Z" for Working with Incident Light

Universal Opaque Illuminator No. 1402 as described on page 14
Code Word: UNOPI

Slide Portion No. 1410 for the Universal Opaque Illuminator No. 1402
Code Word: SUNOP

Sector Stop No. 1407 for external illumination from one side
Code Word: SEKOP



Objectives

Either, for **bright-ground work** only: Simple Incident Light on centring slides; or

For **bright- and dark-ground work**: "Epilum" Objectives condenser, also on centring slides.

For single object glasses and eyepieces for transmitted and see Price Key.

Light Sources for incident light — see page 18 (a) and (l)

Completing the Instrument for Photomic with Transmitted and Incident Light

Photomicrographic Apparatus "Kam RS"

on base with clamping cheeks for attaching the microscope. is vertical and the camera can be swung out on the bar. With clear glass focussing screens, two single dark slides, one exposures; to take plates 9×12 cm Shutter No. 345 for time and instantaneous exposures, with r (Cannot be supplied separately) Observing Mirror No. 6106 s

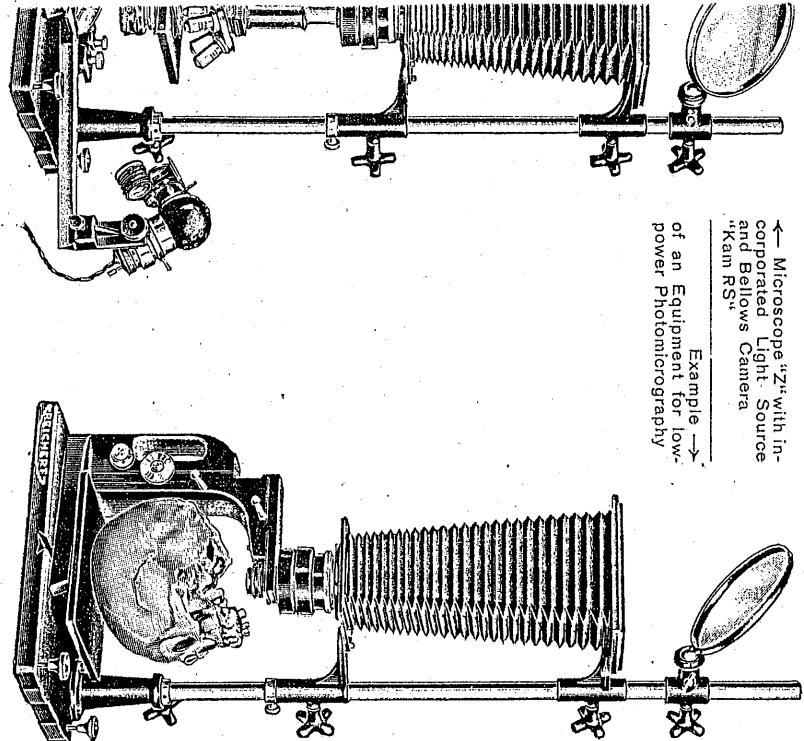
Suggested Accessories for the Photomicrographic Apparatus "Kam RS"

Bent Focussing Glass No. 6225, $\times 4.5$ or:
Straight Focussing Glass No. 6116, $\times 4.5$, with adjustable eye-

Code
2 Stop Rings No. 377 for the Camera Carrier Adaptors No. 316, for 6.5×9 cm plates (One) Adaptors No. 317, for 4.5×6 cm plates (One) Dark Patch No. 6184, for limiting the image field of the came Grey Wedge Exposure Meter No. 6180, 9×12 cm Spare Dark Slide No. 6408, 9×12 cm (One)

Mounting a Transmitted Light Microscope "Z" with Incident Light

Opaque Illuminator No. 1401 for the Universal Opaque Illuminator No. 1402 as described on page 14
Code Word: UNOPI
No. 1410 for the Universal Opaque Illuminator No. 1402
Code Word: SUNOP
No. 1407 for external illumination from one side
Code Word: SEKOP



← Microscope "Z" with incident light source incorporated Bellows Camera "Kam RS"

Example →
of an Equipment for low-power Photomicrography

Objectives

Either, for **bright-ground work** only: Simple Incident Light Objectives on centring slides;

or
For **bright- and dark-ground work**: "Epilum" Objectives, with ring condenser, also on centring slides.

For single object glasses and eyepieces for transmitted and incident light, see Price Key.

Light Sources for incident light — see page 18 (a) and (b)

Completing the Instrument for Photomicrography with Transmitted and Incident Light

Photomicrographic Apparatus "Kam RS"

on base with clamping cheeks for attaching the microscope. The runner bar is vertical and the camera can be swung out on the bar. With frosted and clear glass focussing screens, two single dark slides, one for graduated exposures; to take plates 9×12 cm
Shutter No. 345 for time and instantaneous exposures, with remote release.
(Cannot be supplied separately)
Observing Mirror No. 6106s
Code Word: KAMSE
Code Word: VERSU

Suggested Accessories for the Photomicrographic Apparatus "Kam RS"

Bent Focussing Glass No. 6225, $\times 4.5$
Code Word: KNILU
or:
Straight Focussing Glass No. 6116, $\times 4.5$, with adjustable eye-lens
Code Word: STELU

2 Stop Rings No. 377 for the Camera Carrier
Adaptors No. 316, for 6.5×9 cm plates (One)
Adaptors No. 317, for 4.5×6 cm plates (One)
Dark Patch No. 6184, for limiting the image field of the camera
Grey Wedge Exposure Meter No. 6180, 9×12 cm
Spare Dark Slide No. 6408, 9×12 cm (One)
Code Word: EINMA
Code Word: GRAKE
Code Word: METAN

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Spare Ground Glass Focussing Screen No. 327, without frame 9×12 cm
Code Word: MATSE

or:

Attachable Camera "Kam VAX"

Complete equipment, together with distance piece and focussing telescope,
lens shutter, ground glass screen, 2 metal dark slides, wire release, smoked
glass in slip-on mount, dark patch; Size 4.5×6 cm Code Word: VAMAK

The same Camera, but without the observing telescope ("Kam VAY")
Code Word: VAMUS

Attachable Camera "Kam VBX"

The same equipment as under "VAMAK", but for size 6.5×9 cm
Code Word: VABOK

or:

Attachable Camera "Kam VCX"

The same equipment as under "VAMAK", but for 9×12 cm format
Code Word: VACET

The same Camera, but without the observing telescope ("Kam VCY")
Code Word: VACUR

Suggested Accessories for the Attachable Cameras

Focussing Glass No. 6116, $\times 4.5$, with adjustable eye-lens	Code Word: STELU
Adaptors No. 316 for 6.5×9 cm plates (One)	Code Word: RAMEN
Adaptors No. 317 for 4.5×6 cm plates (One)	Code Word: EINRA
Plain Focussing Screen No. 6403, 4.5×6 cm	Code Word: BLAVI
Plain Focussing Screen No. 6194, 6.5×9 cm	Code Word: BLASE
Plain Focussing Screen No. 6195, 9×12 cm.	Code Word: BLANU
Grey Wedge Exposure Meter No. 6178, 4.5×6 cm	Code Word: GRAVI
Grey Wedge Exposure Meter No. 6179, 6.5×9 cm	Code Word: GRAEX
Ground-glass Focussing Screen No. 6402, 4.5×6 cm	Code Word: GRAKE
Ground-glass Focussing Screen No. 6191, 6.5×9 cm	Code Word: MASIIV
Metal Dark Slide No. 6401, 4.5×6 cm	Code Word: MANEU
Metal Dark Slide No. 6407, 6.5×9 cm	Code Word: METIV
Metal Dark Slide No. 6408, 9×12 cm	Code Word: METEX

Eyepieces for Photomicrography

In order to obtain pictures of sufficiently flat definition, we
to use the Plane Eyepieces listed below in place of the us
eyepieces. These Plane Eyepieces are, however, only suitab
Achromatic Object Glasses from $\times 10$ upwards and with all
Glasses.
Plane Eyepiece $\times 5$ Code
Plane Eyepiece $\times 8$ Code
Plane Eyepiece $\times 12$ Code

Light Sources for Photomicrography

For these, please refer to the equipments for transmitted an
on pp. 12 and 18.

Particulars of Additional Equipments for**Microscopy with Polarised Light and for****Low-power****Photomicrography (Photomacrorgraphy)****supplied on application**

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REICHERT

less Focussing Screen No. 327, without frame 9×12 cm

Code Word: MATSE

era "Kam VAX"

int, together with distance piece and focussing telescope,
nd glass screen, 2 metal dark slides, wire release, smoked
ount, dark patch; Size 4.5×6 cm Code Word: VAMAK
, but without the observing telescope ("Kam VAY")
Code Word: VAMUS

era "Kam VBX"

ent as under "VAMAK", but for size 6.5×9 cm
Code Word: VABOK

, but without observing telescope ("Kam VBY")
Code Word: VABUF

era "Kam VCX"
ent as under "VAMAK", but for 9×12 cm format
Code Word: VACET

, but without the observing telescope ("Kam VCY")
Code Word: VACUR

ssories for the Attachable Cameras

No. 6116, 4.5, with adjustable eye-lens
for 6.5×9 cm plates (One)
for 4.5×6 cm plates (One)
Screen No. 6403, 4.5×6 cm
Screen No. 6194, 6.5×9 cm
Screen No. 6195, 9×12 cm
sure Meter No. 6178, 4.5×6 cm
sure Meter No. 6179, 6.5×9 cm
sure Meter No. 6180, 9×12 cm
ussing Screen No. 6402, 4.5×6 cm
ussing Screen No. 6191, 6.5×9 cm
ussing Screen No. 6192, 9×12 cm
No. 6401, 4.5×6 cm
No. 6407, 6.5×9 cm
No. 6408, 9×12 cm

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Eyepieces for Photomicrography

In order to obtain pictures of sufficiently flat definition, we advise workers to use the Plane Eyepieces listed below in place of the usual Huyghenian eyepieces. These Plane Eyepieces are, however, only suitable for use with Achromatic Object Glasses from ×10 upwards and with all Fluorite Object Glasses.

Plane Eyepiece × 5	Code Word: PLADU
Plane Eyepiece × 8	Code Word: PLANE
Plane Eyepiece × 12	Code Word: PLAVI

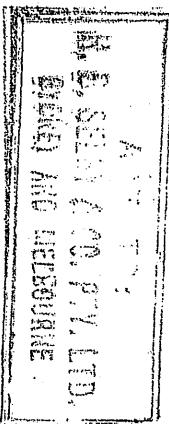
Light Sources for Photomicrography

For these, please refer to the equipments for transmitted and incident light on pp. 12 and 18.

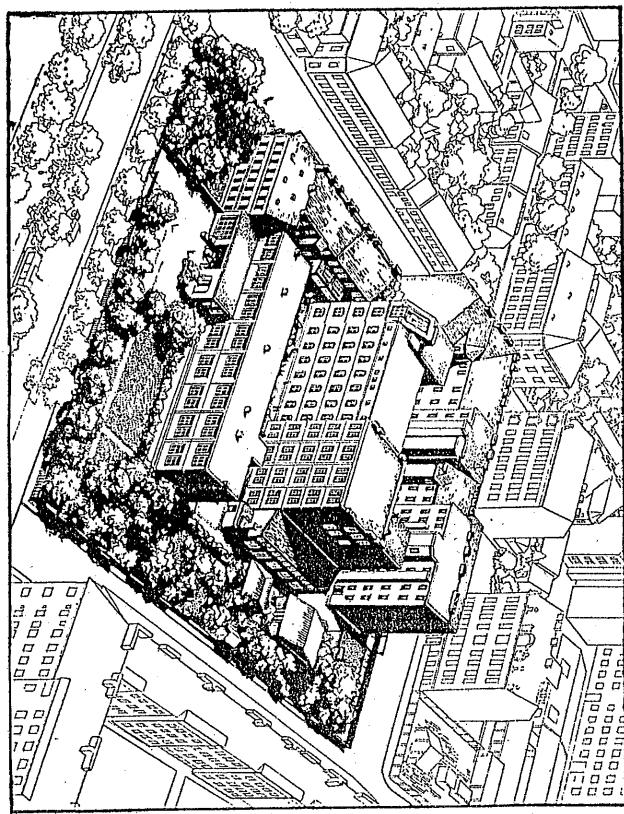
Particulars of Additional Equipments for Microscopy with Polarised Light and for Low-power Photomicrography (Photomacgraphy)

supplied on application

Mikro 498e — 2000337 MU.



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AUSTRIA



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Printed in Austria

"Large Universal Microscope Z - C.Reichert Optical Works, Vienna, XVII."

This is an original detailed sales brochure for the Reichert Universal Z Microscope.

Date: Covers the 1937 pattern, and printing number indicates 1937.

24 pages, this measures 6.25" x 8.25".

This is a well detailed brochure giving technical details, details of associated equipment including for transmitted light, optical parts, incident light equipment, and attachable cameras. All extras include the code words for ordering.

Condition: Cover shows quite a bit of wear with chipping at the top and heavy wear along the spine, corners show bumping and wear, inside shows usage but is clean and tidy, fair plus to reasonable condition overall.