No. 49 A. en / 47 D. en

Leitz

Microscopes

and

Accessories

Ernst Leitz
Optical Works
Wetzlar

No. 49 A. en

Leitz

Microscopes

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November 1926. 2000.

The two eyepiece tubes of the binocular tube are parallel, and are capable of lateral displacement, by means of a milled head, between them, and a

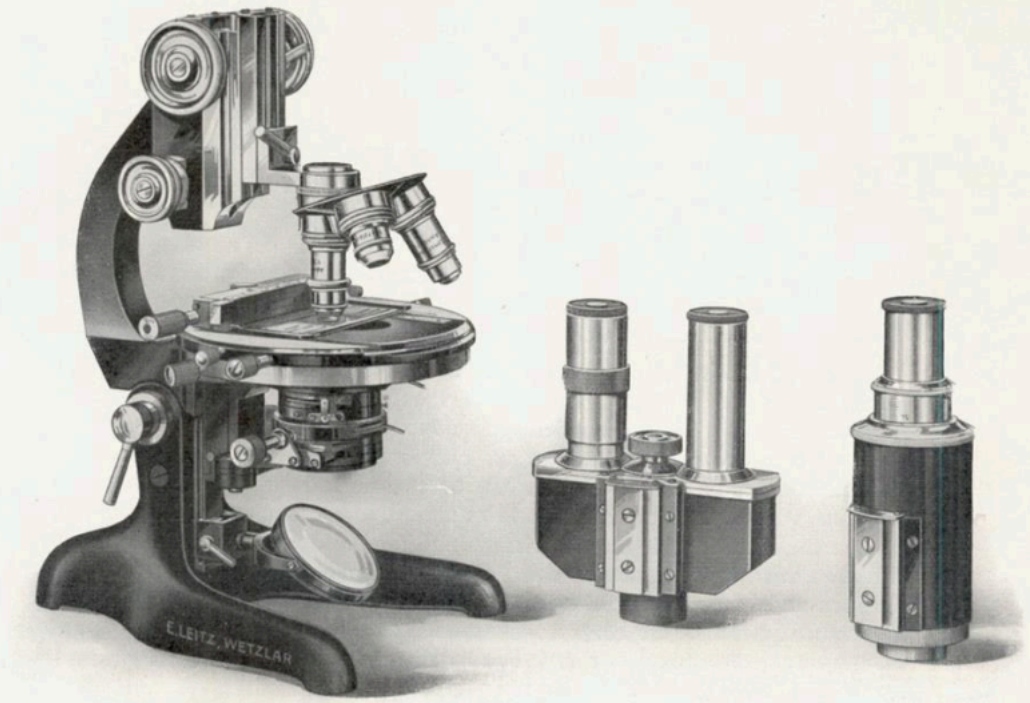


Large Universal Microscope.

millimetre scale. In the event of the sight differing in the two eyes, the objectives should be focused first with the left eye closed, using the slow micrometer motion. Next, the right eye should be closed, and the adjustment for the other eye established by the eyepiece collar, which can be moved independently of the other eyepiece tube. By way of an alternative, the observer may retain his spectacles.

Observation with both eyes, the resulting stereoscopic effect, and the fact that objects are seen in relief, contribute materially to the case with which fine details may be recognised, and afford a better perception of the structural relations of the component elements. Moreover, binocular viewing obviates the fatigue of the eyes, which frequently causes discomforts to microscopists working with the single tube.

The stands of the **G series** offer a wide range for subsequent completion. Amongst these the **GC stands,** like those of the A and B series, are equipped with the large illuminating apparatus, the **GE and GF stands** with the illuminating apparatus of medium size, in which the iris-diaphragm is permanently attached

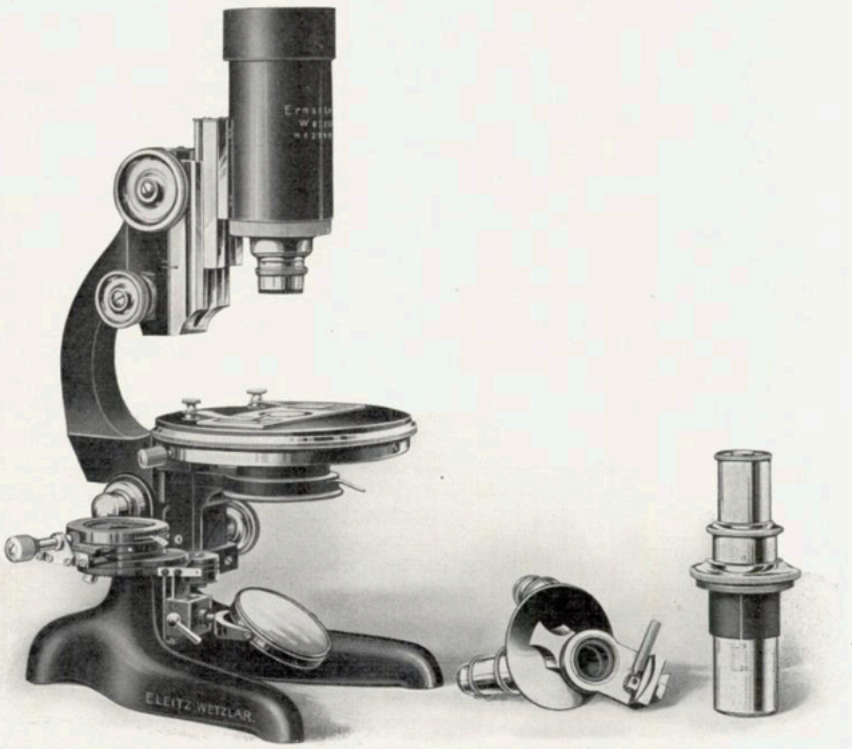


New Microscope, Stand AABM, showing the tubes detached.

to the condenser. **Stands GC** may be furnished with round centring and revolving object stage as well as built-in centring and revolving mechanical stage with scales reading by verniers, and clamping screw, the **GE stands** with simplified mechanical stage having a range of about 10 mm. in either direction, with round centring and revolving object stage, and with built-in centring and revolving mechanical stage, while the **GF stands** have a fixed square as well as fixed round object stage.

Our **stand G,** which is largely in use as a school and class microscope, has been retained in its old form. The square object stage of this stand is

likewise interchangeable with the fixed round object stage, the simplified mechanical stage having a range of motion of about 10 mm. in either direction and the round centring and revolving object stage. Moreover, those who still give preference to the micrometer screw with slow motion prism may be furnished with our **stand II** in its original form.

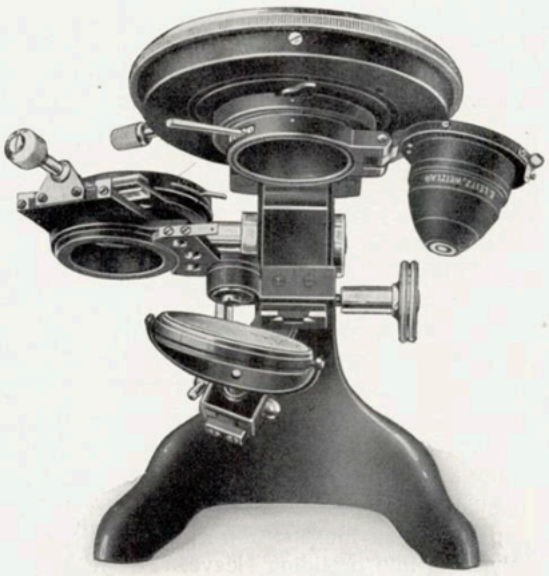


New Microscope, Stand ABM.
with wide tube for photo-micrography, showing the revolving nosepiece carrier detached.

In addition, the catalogue contains a few further instruments, serving special purposes. Separate booklets and leaflets, dealing with instruments not described in this catalogue, may be obtained on application. These relate to binocular dissecting magnifiers, skin capillary microscopes, plate culture microscopes, etc. as well as simpler microscopes for instruction in schools and for the private use of school boys, for meat inspectors etc.

Illuminating Apparatus and Condensers.

The Abbe Illuminating Apparatus is the most convenient means of regulating the illumination of microscopic objects which are to be viewed by transmitted light. Our larger microscopes are provided with it, while the stands of medium size have a simplified illuminator or may have one subsequently added to them.



Large Illuminating Apparatus a.

The illuminating apparatus is made in various forms and sizes to suit the resources and purposes of the various stands.

Also, the substage fittings may be provided with condensers differing in their apertures and their optical correction. Condensers of high aperture afford a means of bringing out the full resolving powers of an objective and possess the further advantage that they are available for the purpose of producing dark-ground illumination.

When used as 'dry condensers', without the interposition of an immersion fluid, the condenser cannot have a greater aperture than 1.0, since rays inclined beyond a certain angle are totally reflected. For ordinary observations in transmitted light the 'dry' condenser amply suffices and has the advantage of being simple and easy to manipulate. Where, however, it is important to employ the full aperture of the condenser the gap between the latter and the object slide should be filled up with a layer of cedar-wood oil. In this case the object should be embedded in a highly refracting medium in order to obviate total reflection at the upper surface of the object slide. Spherical and chromatic corrections, as well as aplanatic qualities, greatly affect the results to be achieved in photo-micrography when small sources of light are employed, and have an important bearing upon observation in a dark field.

No.		Codeword
5580.	**Large Illuminating Apparatus a.** The substage is fitted with a rack-and-pinion motion for establishing the best obtainable illumination and is furnished with the following components: a swing-out iris-diaphragm, which may be rotated within its plane, with rack-and-pinion motion for oblique illumination, a sliding sleeve for the reception of a cylinder iris-diaphragm, with a two-lens condenser of num. ap. 1.20. a sunk portion of the mount above the iris-diaphragm serves for the reception of the ground glass or light-filter discs when artificial light is used	**Iluma**
5581.	**Large Illuminating Apparatus a**, as above, but with three-lens swing-out condenser of num. ap. 1.40	**Ilite**
5582.	**Large Illuminating Apparatus a,** as above, but with aplanatic swing out condenser of num. ap. 1.40	**Ilmut**
5583.	**Large Illuminating Apparatus b.** This is in the main similar to the illuminating apparatus a, excepting that it has no cylinder iris-diaphragm and that the condenser does not swing out but simply slips into a sliding sleeve. Two-lens condenser of num. ap. 1.20	**Ilant**
5584.	**Large Illuminating Apparatus b,** as above, but with three-lens condenser of num. ap. 1.40	**Iloti**
5585.	**Large Illuminating Apparatus b,** as above, but with aplanatic condenser of num. ap. 1.40 *)	**Ilnam**
5586.	**Medium Sized Illuminating Apparatus ccz.** This consists of a substage, which can be moved up and down by rack and pinion, and a sliding sleeve, into which slides the cylinder iris-diaphragm with two-lens swing-out condenser, num. ap. 1.20 with permanently attached iris diaphragm. Ground glass or light-filter discs may be placed on a pivoted ring under the iris-diaphragm	**Ilata**

* When supplied in the cylindrical sliding sleeve, the component members of the aplanatic condenser may not be screwed apart.

5587. **Medium Sized Illuminating Apparatus ccz,** as above, but with a three-lens swing-out condenser of num. ap. 1.40 . . . **Ilari**

5588. **Medium Sized Illuminating Apparatus ccz,** as above but with aplanatic swing-out condenser of num. ap. 1.40 . . . . **Iltus**

5589. **Medium Sized Illuminating Apparatus cc,** consisting of sliding sleeve screwed directly to the object stage and fitted to receive a cylinder iris-diaphragm and swing-out condenser of num. ap. 1.20 with permanently attached iris-diaphragm. A swing-out ring is pivoted under the iris-diaphragm for the reception of a ground glass or light-filter disc . . . . . **Ilemi**

5590. **Medium Sized Illuminating Apparatus cc,** as above, but with a three-lens swing-out condenser of num. ap. 1.40 . . . **Ilamy**

5591. **Medium Sized Illuminating Apparatus cc,** as above, but with an aplanatic swing-out condenser of num. ap. 1.40 . . **Ilina**

5592. **Medium Sized Illuminating Apparatus cz,** consisting of a substage with vertical motion by rack and pinion and with a sliding sleeve for the reception of a two-lens condenser of num. ap. 1.20 with permanently attached iris-diaphragm. A pivoted ring under the iris-diaphragm serves to accommodate a ground glass or light-filter disc . . . . . **Iluni**

5593. **Medium Sized Illuminating Apparatus cz,** as above, but with three-lens condenser of num. ap. 1.40 . . . . . **Ileny**

5594. **Medium Sized Illuminating Apparatus cz,** as above, but with aplanatic condenser of num. ap. 1.40*) . . . . . **Iltan**

5595. **Medium Sized Illuminating Apparatus c,** consisting of a two-lens condenser of num. ap. 1.20 with immovable iris-diaphragm made to slide into the sliding sleeve. A pivoted ring under the iris-diaphragm serves to receive a ground glass or light-filter disc . . . . . **Iluto**

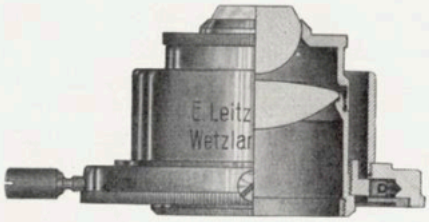
5596. **Medium Sized Illuminating Apparatus c,** as described above but with three-lens condenser of num. ap. 1.40 . . . . . **Ilono**

5597. **Medium Sized Illuminating Apparatus c,** as above, but with aplanatic condenser of num. ap. 1.40*) . . . . . **Ilsul**

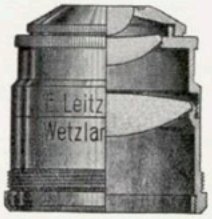
*) When supplied in the cylindrical sliding sleeve, the component members of the aplanatic condenser may not be screwed apart.

Condensers.

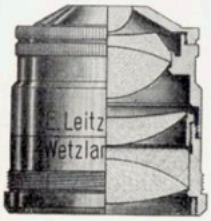
The various condensers which can be used with the substage fittings described above differ both in their optical qualities and in their mechanical equipment.



Two-lens condenser as it appears when screwed into the centring mount.



Three-lens Condenser

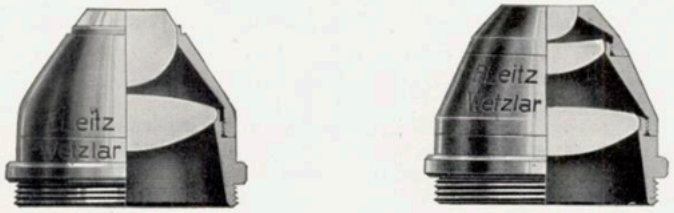


Aplanatic Condenser.

Fig. 1.

Fig. 1 shows the condenser in its simplest form. The condensers are furnished with a screw thread by means of which they may be screwed into the centring mount No. 5608, which is solely intended for their reception The component members may be screwed apart so that the condensers may be used with objectives of high, intermediate, and low powers.

Fig 2 shows the condenser in its second form of mount. This is likewise furnished with a screw thread by means of which the condenser may be attached to the swing-out ring of the a, ccz and cc forms of the illuminating



Two-lens Condenser num. ap. 1.20 — Three-lens Condenser num. ap. 1.40

Fig. 2.

apparatus, with which they are chiefly used. The component members may be screwed apart as in the preceding form of mount. The condensers are likewise available for use with the centring mount No. 5608.



Two-lens Condenser num. ap. 1.20 — Three-lens Condenser num. ap. 1.40

Fig. 3.

Fig. 3 shows the third form of the mount. Its characteristic feature is the cylindrical sliding sleeve. These condensers have likewise members which may be screwed apart and are intended for use with the b, cz and c forms of the illuminating apparatus.

The distinctive optical qualities of the condensers are as follows:

Nr. — Codeword

5599. **The Two-lens Condenser** has a numerical aperture of 1.20 and suffices for all practical observations in a bright field in conjunction with dry as well as immersion lenses.

Two-lens Condenser for the centring mount . . . . . **Ilkar**
Ditto for the swing-out ring . . . . . **Ilkig**
Ditto for the cylindrical sliding sleeve . . . . . **Ilkon**

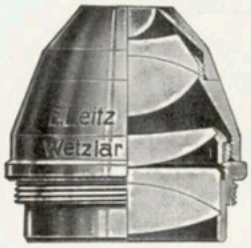
5600. **The Three-lens Condenser** has a numerical aperture of 1.40 and is primarily intended for use as an immersion condenser. When so used, the observer is enabled to take full

No. Codeword

advantage of oblique illumination in conjunction with oil-immersion lenses. It may be employed in conjunction with central iris-diaphragm No. 5605 or with the centre stop No. 5606 for dark-field illumination.

Three-lens Condenser for the centring mount . . . . . **Iltir**
Ditto for the swing-out ring . . . . . **Iltog**
Ditto for the cylindrical sliding sleeve . . . . . **Iltre**

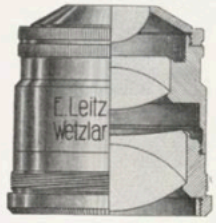
5601. **The Aplanatic Condenser** has a numerical aperture of 1.40. It is formulated on the principle of the oil-immersion lenses and, like these, besides being spherically and chromatically corrected, satisfies the sine condition. Its focal length is 8.5 mm. and the distance of the upper principal focus from the front lens is 1.2 mm., which admits of object slides up to this thickness being used. This condenser is particularly valuable in all cases where it is required to obtain an illuminating pencil of the largest possible aperture and yet as free from aberrations as may be. When used in conjunction with the centre stop placed upon the diaphragm carrier the aplanatic condenser may serve as a substitute for the reflecting condenser in dark-field observations.



Aplanatic Condenser num. apert. 1.40

Aplanatic condenser for the centring mount **Ilpen**
Ditto for swing-out ring . . . . . **Ilpur**
Ditto for cylindrical sliding sleeve . . . . . **Ilpla**

5601a. **Spherical and Achromatic Condenser** of a num. ap. 1.0 with unscrewing hemisphere available for use with thick object slides, thanks to its large lens aperture and long working distance . . **Ilpox**



Spherical and Achromatic Condenser.

5602. **Low-power Spectacle Lens Condenser** for use with the microsummars in cylindrical sliding sleeve mount . . **Ilbro**

5603. **Cylinder Iris-Diaphragm,** adapted for the b, cz and c forms of the illuminating apparatus . . . . . **Cylis**



This iris-diaphragm fits in the place of the condenser into the sliding sleeve.

5604. **Iris-diaphragm** to screw to the condenser mounts . . . . . **Irisa**
5605. **Central Iris-diaphragm** for dark-field illumination for use with the condensers Nos. 5600 and 5601 . . . . . **Zenti**

No.		Codeword
5606.	**Centre Stop** with three interchangeable stops for dark-field illumination, for use with condensers Nos. 5599 to 5601 . .	**Zetro**
5607.	**Diaphragm Cylinder** with three interchangeable stops for insertion in the sliding sleeve	**Zyble**
5608.	**Centring Mount** fitting the sliding sleeve, with two centring keys	**Pocon**

Reflecting Condensers for Dark-field and Ultra-microscopic Observations

will be found described in a separate booklet which will be sent free on application.

Light-Filters.

For the purpose of obtaining an accentuated contrast in ocular observations as well as for photographing, light-filters having the desired value should have a moderately restricted range of absorption. We provide for these purposes the following filters.

5609.	**Photographic Yellow-green Filter** consisting of yellow and green discs in a mount, adapted to the state of correction of the objectives used*)	**Ifgyn**
5610.	**Blue Filter:** Lifa light-filter, Catal. No. 201 a	**Ifbla**
5611.	**Green Filter:** Lifa light-filter. Catal. No. 201 b	**Ifgru**
5612.	**Red Filter:** Lifa light-filter. Catal. No. 201 c	**Ifrot**
5613.	**Yellow Filter:** Lifa light-filter. Catal. No. 901	**Ifgel**

The Lifa filters in their standard form serve for accentuating the contrasts obtaining in ocular observation. They are introduced between the source of light and the microscope mirror. Of other colour filters for special purposes, such as photography by mono-chromatic light, we would recommend the Lifa filters Nos. 900 (blue-red), 901 (yellow) and 902 (blue-green). When used in pairs, these furnish a faultless pure blue, green and red of great intensity. The makers are the Lifa Light-Filter Works of Augsburg B. 35.

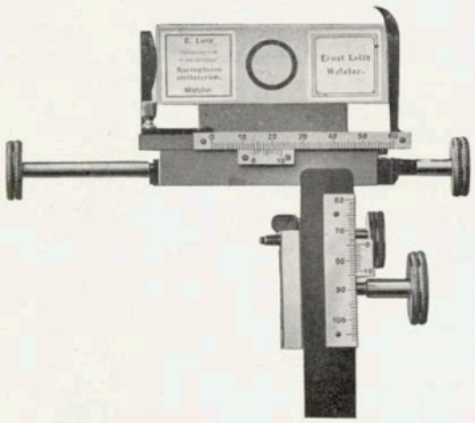
5614.	**Stand for Lifa Light-Filters,** on foot, adjustable in height and inclinable	**Ifsta**
5615.	**Stand with Cooling Cell for Lifa Light-filters,** to protect the latter from cracking when powerful sources of light, arc lamps, etc., are employed. The arrangement consists of a round cell filled with water, which may be raised and lowered along the upright of a small stand on a foot, and a clamping ring with a slit for the filters . .	**Iflif**
5616.	**Stand for Fluid Filters****) mounted on a foot, with a cell, which can be shifted vertically and inclined	**Iflus**

*) The disc may be dropped into the ground glass ring of the microscope.
**) for directions for using fluid filters see separate list.

Mechanical Stages.

The efficiency of a microscope is greatly enhanced by the addition of a mechanical stage, as this furnishes a means of rapidly and systematically manipulating an object under the microscope. For the microscope stands specified in this catalogue we provide the following models:

No.		Codeword
5634.	**Large Built-in Mechanical Stage,** centring and revolving, for stands AABM and AA, in case, see figs. on pp. 44 and 46	**Plain**
5635.	**Large Built-in Mechanical Stage**, centring and revolving, for stands BBMB, BB and GC, in case, see figs. on pp. 48 and 50	**Plaus**
5636.	**Large Mechanical Stage,** for stands ABM, A, B and GC, in case. This stage has slow rack-and-pinion motions, and has a **range of 100 × 50 mm.,** so that such large preparations as occur occasionally, for example in embryological work, may be gone through at one setting. The vernier for the backward and forward motion reads $^1/_{10}$ mm., while the transverse motion reads $^1/_{20}$ mm. The mechanical stage is so placed upon the microscope stage that the vertical wedge at the rear drops into a notch at the back of the plinth of the tube body, where it is clamped by means of a screw. When re-attaching the stage at any time after it has been detached it will always return to its original position. Moreover, it may at any time be added to an existing microscope stand, but, when ordering, the type of stand for which it is required should be indicated	**Plata**
5637.	**Mechanical Stage** for Stands ABM, A B, GC and GE, in case.	



Mechanical Stage No. 5637.

This mechanical stage is available **for use with microscopic preparations of the usual sizes not exceeding 80 × 30 mm.**

No. Codeword

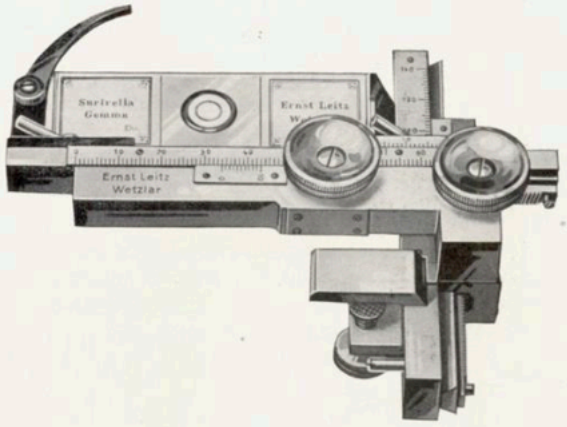
It attaches to the stand in much the same manner as the mechanical stage No. 5636 and ensures therefore that, after detachment, it may always be replaced in the same position. Preparations may therefore be gone through systematically, and any particular element may be noted and again found at any time.

The mechanical stage may be added at any time but the model of the stand should be specified when ordering . . . **Plano**

5639. **Mechanical Stage** for the Large Travelling Microscope and Stand II, in case.

For attachment to the stand the hexagonal holder, which is open in front, should be placed round the plinth of the tube body, the stage should then be accurately set and attached with the aid of the screw at the side of the hexagonal holder. When replacing the mechanical stage care should be exercised to ensure that the point of the screw may accurately re-enter the indentation made when the stage is attached in the first instance in order that it may occupy an invarying position. This stage may be supplied at any time to an existing stand **Plasy**

5641. **Mechanical Stage** for Stands GD, GF and G to be attached to the fixed square object stage only, in case.



Mechanical Stage No. 5641.

Both motions are effected by rack and pinion. The stage has scales to read $^1/_{10}$ mm. by verniers. The holding piece is placed against the right side of the microscope stage and is clamped thereto from below by means of a screw . . . . . **Plaze**

Revolving Objective Changers.

(Nosepieces)

For rapidly interchanging objectives on a microscope.

No.		Codeword
5620.	**Three-point Objective Centring Clutch**	**Pizan**

In this centring clutch (registered pattern) all objectives screw to centring rings and, when once centred, remain so after any number of exchanges.

5621.	**Centring Collar** for the above	**Pizut**



Revolving Nosepiece for three objectives. Revolving Nosepiece for four objectives.

5631.	**Revolving Nosepiece** for two objectives	**Dublo**
5632.	**Revolving Nosepiece** for three objectives	**Tripo**
5633.	**Revolving Nosepiece** for four objectives	**Quato**

These revolving nosepieces serve the purpose of rapidly changing the objectives and are so adjusted that when any one of them is in focus the other will likewise be in focus when rotated into position in alignment with the tube, so that only with the objective of highest power it may be necessary to apply a touch to the micrometer head.

To attain this condition the nosepiece should either be purchased together with the microscope in the first instance, or, if obtained subsequently, the objectives for which it is required should be sent to us for adaptation.

It should be borne in mind that a nosepiece has a depth of 18 mm. and that its attachment to the microscope adds therefore 18 mm. to the length of the tube. Hence, to maintain the prescribed tube-length of 170 mm., the draw-tube should be set at 152 mm.

Large Universal Microscope.

	Codeword
Large Stand with horseshoe foot, hinge for inclining the body with clamping lever, large revolving and graduated object stage with disengaging slow motion and rack-and-pinion motion with clamping lever for raising and lowering it. Coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.001 mm.) Plane and concave mirror with radial and sliding motions and capable of displacement independently of the condenser	**Austi**

For Biological Investigations.

Biological illuminating apparatus in dovetail fitting consisting of a carrier capable of being moved by rack and pinion in the direction of the optic axis, swing-out and revolving iris-diaphragm with rack and pinion for oblique illumination, and sliding sleeve for the reception of the centring mount	**Aubla**
Centring Mount No. 5608 for the condensers, with two keys . . .	**Pocon**
Aplanatic Condenser No. 5601, with detachable front and middle lens, fitting the centring mount	**Ilpen**
Bicentric dark-field condenser num. ap. 1.20 fitting the centring mount	**Conut**
Low power spectacle lens condenser No. 5602 for use with microsummars	**Ilbro**
Interchangeable monocular wide tube with draw tube	**Aufmo**
Interchangeable tube for photo-micrography with auxiliary eyepiece tube at the side	**Abbli**
Interchangeable binocular tube with prism casing and milled head for setting to the distance between the eyes	**Aufbi**
Revolving Nosepiece for four objectives on a fitting which attaches by a capstan screw to the dovetail motion piece for the interchangeable tube	**Auver**
Large Mechanical Stage No. 5637	**Plano**

Equipment for biological investigations	**Autar**

For Petrological Investigations:

In dovetail fitting, petrological illuminating apparatus with double diaphragm condenser and polarising Ahrens prism.	**Aumal**
Interchangeable immersion condenser num. ap. 1.45 for use with objectives having a num. ap. exceeding 0.85	**Autim**
Interchangeable petrological tube, tube slit inclined at 45° for the reception of compensators, rotating anastigmatic tube analyser with correcting lens reading the rotation at intervals of 5°, centring Amici-Bertrand auxiliary lens with iris-diaphragm and rack-and-pini-	

*) See introduction page 14.



Universal Microscope
(see also figure on p. 9.)

	Codeword
on motion, eyepiece analyser and collar with index and adapter for eyepieces of standard size	Autus
Adapter with correcting lens to screw on to the binocular tube, for appending the latter as a binocular attachment	Aulis
Objective centring clutch on carrier, interchangeable with the revolving nosepiece for four objectives with three centring collars	Auzag
Petrological mechanical stage	Pirux
Equipment for petrological investigations	Aumin

For Investigations by Incident Light:

Large vertical illuminator for objectives of high and intermediate powers, with reflecting prism and glass plate on changing slide, with changing collars for three objectives	Opage
Diaphragm carrier with two mirrors, stationary illuminating lens and iris-diaphragm, ground glass plate (for use with an arc lamp) and filter cell, on stand	Opati
Simple holder with glass plate for use as an illuminator for the objectives of lowest power	Opabo
Equipment for investigations by incident light	Opaca
Large cabinet with fittings and case for the accessories	Aucas
Two leather cases for the cabinet and case	Auled
Two canvas cases for the cabinet and case	Ausel

Optical Equipment:

For Biological Investigations:

Apochromatic objectives 16, 8, 4 and 3 mm.
Apochromatic oil-immersion objective 2 mm. of num. ap. 1.40.
Fluorite oil- immersion objective $^1/_{12}$a of num. ap. 1.15 (Special objective for dark-field observation)
Intermediate objective adapter with iris-diaphragm.
Micro-summar F/4.5 42, 35 and 24 mm. focus.
Paired Huyghens eyepieces 6×, 10×.
Paired periplanatic eyepieces 4×, 6×, 8×, 10×, 15× and 25×
Magnifications 40 – 2375 — Aubio

For Petrological Investigations:

Two additional objective centring collars.
Achromatic non-polarising objectives 1, 2, 3a, 6 and homogeneous oil-immersion objective $^1/_{12}$ of num. ap. 1.30.
Huyghens eyepieces 4×, 5×, 8× with large field of view, cross lines and movable eye-lens.
Huyghens eyepiece 6× with large field of view with micrometer 10 mm. divided into 100 parts and movable eye-lens.

Codeword

Eyepiece net micrometer No. 2208 for screwing into Huyghens eyepiece 6×.

Stage micrometer 2 mm. divided into 200 parts, photographed scale. No. 2206.

Gypsum Plate, red 1st order, in mount No. 2023.

Mica Plate 1 4 λ in mount No. 2024.

Berek Compensator for determining double refraction and exact measurement of phase differences, with directions No. 2020.

Auxiliary magnifier for viewing the conoscopic interference images of smallest mineral particles No. 2060.

Magnifications 13 – 800 . . . . . **Aupol**

For Investigations by Incident Light:

Achromatic dry objective 1b.

Apochromatic dry objective 16 mm.

Apochromatic dry objectives 8 and 4 mm. in short mounts.

Apochromatic oil-immersion objective 3 mm. of num. ap. 1.32.

Fluorite oil-immersion objective 1/7a of num. ap. 0.95.

Achromatic oil-immersion objectives 16 mm. of num. ap. 0.25 and 8 mm. of num. ap. 0.65.

Five additional collars.

Huyghens eyepiece 4×.

Periplanatic eyepieces 5×, 12× and 20×.

Magnifications 17 – 1300 . . . . . **Aufal**

Large Universal Microscope for biological and petrological investigations and observations by incident light, including the optical equipment as specified, with cabinet and case and leather outer cases . . . . . **Ausam**

For biological investigations fluorite objectives and achromatic objectives may take the place of apochromatic objectives.

In the case of the petrological equipment, preference hasbe given to achromatic lenses, since the components of these objectives are free from double refraction, whereas the apochromatic and fluorite lenses both contain fluorite, which frequently is faintly double refracting. Where the objectives are not employed for making exact measurements but are solely required for ocular observations it is often an advantage to use fluorite or apochromatic lenses in view of their higher optical correction. The achromatic lenses supplied with the petrological equipment are naturally well adapted for biological work.

Observations by incident light necessitate the use of high-power and medium power lenses which are specially corrected for uncovered objects, in addition to which they require to be contained in short mounts. The lowest power lenses No. 1b and the 16 mm. lens may be replaced by low-power lenses taken from other equipments, such as the apochromatic 16 mm., and the achromatic objectives 1 and 2, which may be used in their standard state of correction and in their ordinary mounts. Objectives provided for observation by incident light should be used at the tube length stated for these purposes.

When one or the other of the three optical equipments is excluded it may be necessary to supplement the selected equipment by eyepieces taken over from that or those excluded.

E. LEITZ WETZLAR

Stand CBMP.

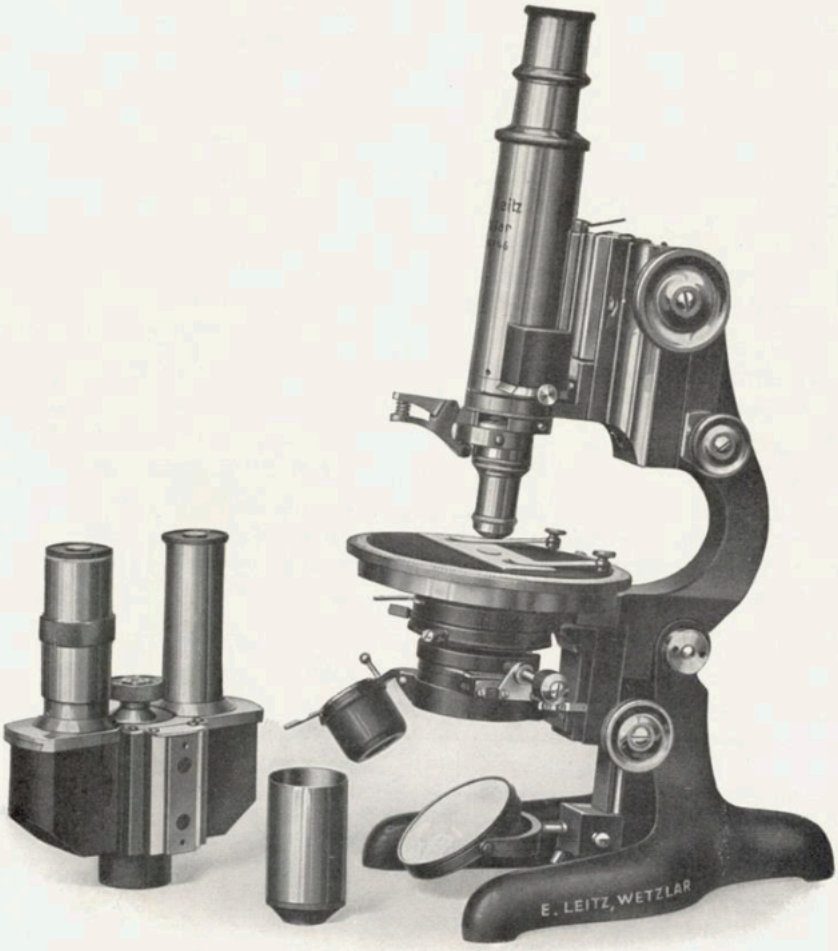
	Codeword
Large Microscope. Stand with horseshoe foot and hinge with clamping lever. Large revolving graduated object stage. Coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.002 mm.) Large illuminating apparatus b. No. 5583 with two-lens condenser of num. ap. 1.20, swing-out rotary polariser and centring mount for the condensers with two keys. Plane and concave mirror, to move independently of the condenser motion, with clamping lever, exclusive of cabinet	**Copst**
Interchangeable polarising tube with anastigmatic tube analyser; detachable orientated and graduated draw-tube with clamping eccentric lever	**Copux**
Interchangeable binocular tube with prism casing and milled head for setting to the distance between the eyes . . .	**Copin**
Adapter with correcting lens to screw on to the binocular tube, for appending the latter as a binocular attachment .	**Copor**
Objective centring clutch on carrier, which attaches by means of a capstan screw to the dovetail motion piece for the interchangeable tubes, with slit at 45° for the reception of compensators, with three centring collars	**Cozag**
Gypsum Plate No. 2023. red 1st order, in metal mount .	**Kogip**
Mica Plate, $^1/_4\,\lambda$ No. 2024, in metal mount	**Komer**
Cabinet for stand CBMP	**Cosur**
Complete Stand CBMP without objectives and eyepieces	**Copai**

Optical Equipments:

Equipment for General Work:

Stand 'Copai' with
One additional centring collar
Achromatic non-polarising objectives 1, 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepiece 5×
Huyghens eyepiece 8 × with cross lines and movable eye-lens
Huyghens eyepiece 6× with micrometer scale of 10 mm. = 100 parts and movable eye-lens

*) See introduction page 14.

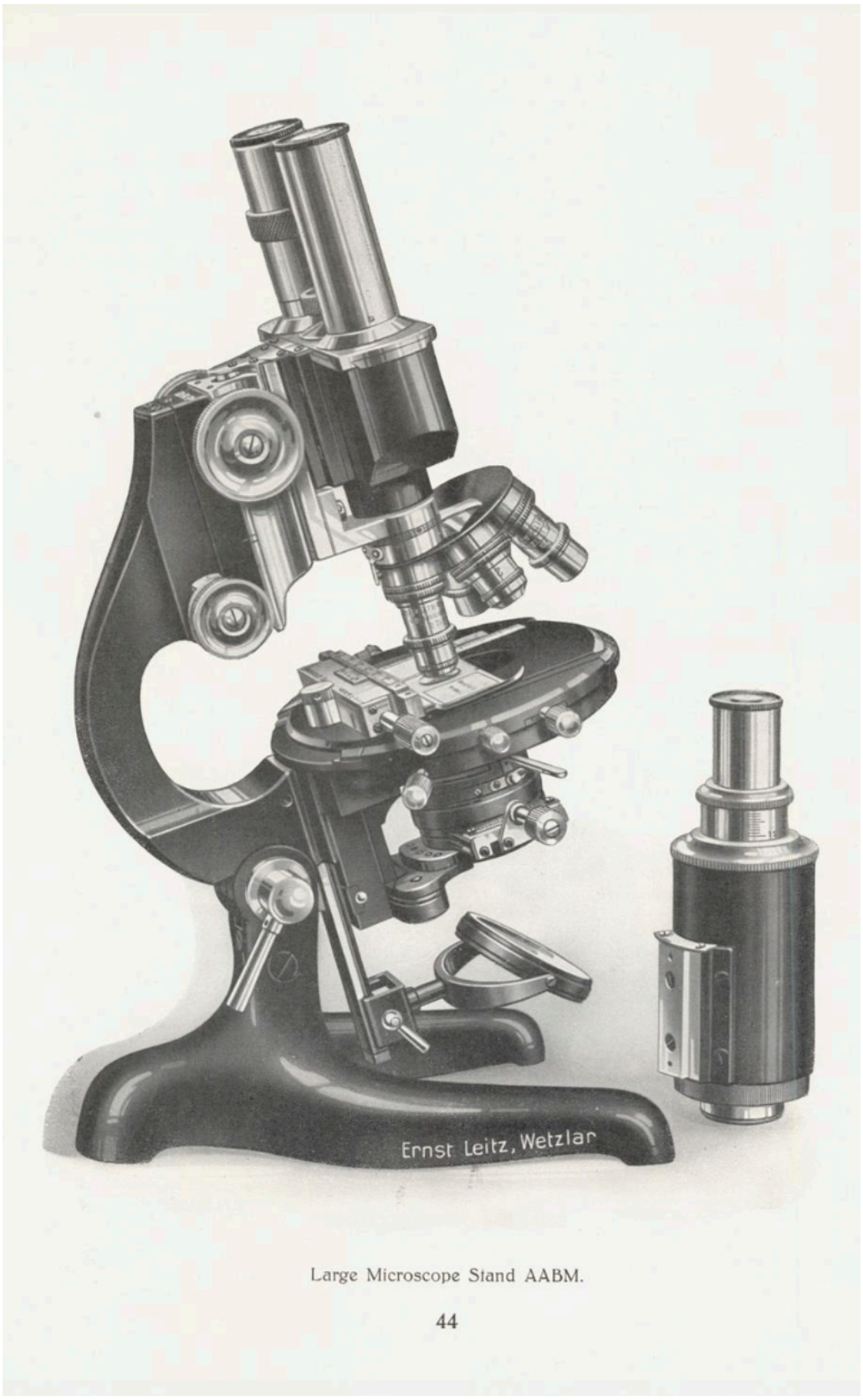


Microscope Stand CBMP.

	Codeword
Paired Huyghens eyepieces 6×	
Magnifications 16 - 800	Coppo
Stage Micrometer 1 mm. = 100 parts	Obter

Equipment for High Class Work:

Stand 'Copai' with
Two additional centring collars
Achromatic non-polarising objectives 1, 3a, 5
Fluorite oil-immersion objectives $^1/_7$a of num. ap. 0,95 and $^1/_{12}$a of num. ap. 1.32
Paired Huyghens eyepiece 6×
Paired periplanatic eyepieces 8×, 12×
Huyghens eyepieces 5×, 10×
Periplanatic eyepieces 15×, 20×
Huyghens eyepiece 8× with cross lines and movable eye-lens
Huyghens eyepiece 6× with micrometer 10 mm. = 100 parts, and movable eye-lens
Stage micrometer 1 mm. = 100 parts
Eyepiece diaphragm No. 2062 (for use in conjunction with the lowest eyepieces for viewing the conoscopic interference figures of small mineral particles)
Magnifications 16 – 1900 . . . . . Coply



Large Microscope Stand AABM.

E. LEITZ WETZLAR

Stand AABM (Patented in Germany).

Large Microscope. Inclinable stand, with hinge and clamping lever, built-in centring and revolving mechanical stage with scales reading by verniers and clamping screw, interchangeable with a round centring and revolving object stage. Coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.001 mm.). Binocular tube with prism casing and milled head for setting the eyepieces to the distance between the eyes, interchangeable with the wide tube for photo-micrography with wide-angle lenses without eyepiece, and with graduated draw-tube. Detachable revolving nosepiece carrier. Large illuminating apparatus a No. 5580 with hinged two-lens condenser of num. ap. 1.20 and cylinder iris-diaphragm **Abema**

Equipment for Anatomical, Histological and Bacteriological Work:

Stand 'Abema' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, fluorite objective 6a
Fluorite oil-immersion objective $^1/_{12}$a of num. ap. 1.32
Paired Huyghens eyepieces 5×, 8×
Paired periplanatic eyepieces 12×, 20×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16 - 1900 . . . . . **Abami**

Equipment for Clinical Investigations:

Stand 'Abema' with
Revolving nosepiece for four objectives
Achromatic objectives 2, 4, 6L
Fluorite oil-immersion objectives $^1/_7$a of num. ap. 0.95 and $^1/_{12}$a of num. ap. 1.32
Paired Huyghens eyepieces 5×, 8×
Paired periplanatic eyepieces 12×, 25×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 30 - 2375 . . . . . **Abome**

Apochromatic Equipment for Research:

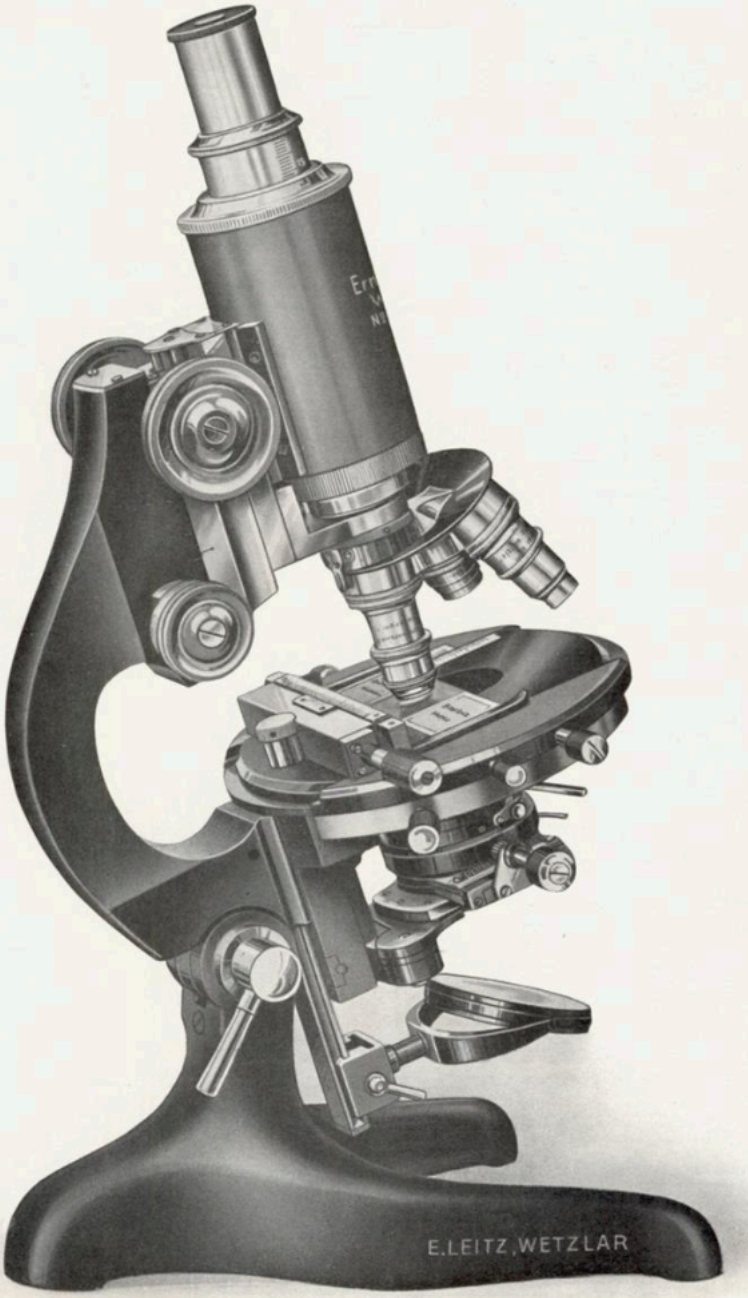
Stand 'Abema' with
Revolving nosepiece for four objectives
Apochromatic objectives 16 mm., 8 mm., 4 mm.
Apochromatic oil-immersion objective 2 mm. of num. ap. 1.32
Paired periplanatic eyepieces 5×, 8×, 12×, 25×
Periplanatic micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 50 - 2300 . . . . . **Abumu**

Stand ABM.

Large microscope conforming to stand AABM but without the built-in centring and revolving mechanical stage, which may, however, be added subsequently, and with the illuminating apparatus a No. 5580 . . . **Absin**

Cabinet for Stands AABM and ABM with complete fittings (This cabinet is included in the above prices of the stands) **Abran**

*) See introduction page 14.



Microscope Stand AA.

E. LEITZ WETZLAR

Stand AA.

Codeword

Large Microscope, similar to stand AABM, with built-in centring and revolving mechanical stage, interchangeable with a round centring and revolving object stage, but with monocular tube only, without binocular tube, which may be added subsequently; with large illuminating apparatus a. No. 5580, with two-lens swing-out condenser of num. ap. 1.20 and cylinder iris-diaphragm . . . . . **Aksta**

Equipment for Clinics:
Stand 'Aksta' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6[L]
Fluorite oil-immersion objective $^1/_{1.8}$ a of num. ap. 1.32
Huyghens eyepieces 5×, 8×, 12×
Periplanatic eyepieces 15×, 25×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16 – 2375 . . . . . **Akros**

Apochromatic Equipment for Research:
Stand 'Aksta' with
Revolving nosepiece for four objectives
Apochromatic objectives 16 mm., 8 mm., 4 mm.
Apochromatic oil-immersion objective 2 mm. of num. ap. 1.32
Periplanatic eyepieces 5×, 8×, 12×, 25×
Periplanatic micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 50 – 2300 . . . . . **Akrum**

Stand A.

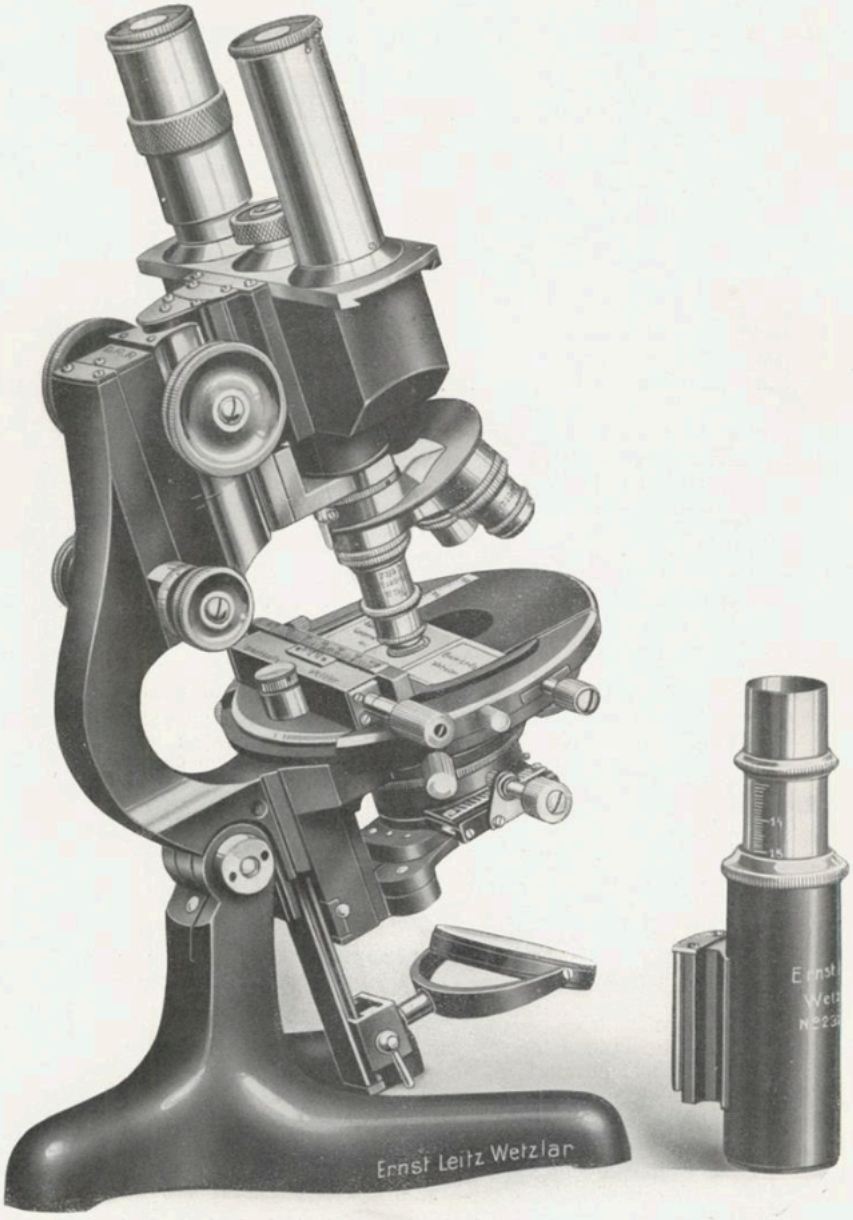
Large Microscope, conforming to stand AABM, with round centring and revolving object stage, but without built-in mechanical stage and without binocular tube, both of which may be added subsequently; with large illuminating apparatus a No. 5580 with two-lens swing-out condenser of num. ap. 1.20 and cylinder iris-diaphragm . . . . . **Astra**

Equipment for Laboratories:
Stand 'Astra' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6[L]
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 12×
Magnifications 16 – 1200 . . . . . **Asunu**

Equipment for Anatomical, Histological and Bacteriological Work:
Stand 'Astra' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, fluorite objective 6a
Fluorite oil-immersion objective $^1/_{12}$a of num. ap. 1.32
Huyghens eyepieces 5×, 8×
Periplanatic eyepieces 12×, 20×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16 – 1900 . . . . . **Asumy**

The Mechanical Stage No. 5637 may be used with this stand . **Plano**

Cabinet for Stands AA and A (included in the above prices) . . **Asuro**
It provides no room for the accomodation of the binocular tube.



Microscope Stand BBMB

Stand BBMB.

Codeword

Large Microscope. Inclinable stand with hinge and clamping lever, built-in centring and revolving mechanical stage with scales reading by verniers and clamping screw, interchangeable with a round centring and revolving objects tage. Coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings***) and graduated drumhead (each interval = 0,002 mm.). Binocular tube with prism casing and milled head for setting the eyepieces to the distance between the eyes, interchangeable with the monocular tube; draw-tube with millimeter scale. Detachable revolving nosepiece carrier. Large illuminating apparatus a No. 5580 with two-lens swing-out condenser of num. ap. 1.20 and cylinder iris-diaphragm **Bamas**

Equipment for Laboratories:
Stand 'Bamas' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6 L
Achromatic oil-immersion objective $^1/_{19}$ of num. ap. 1.30
Paired Huyghens eyepieces 5×, 8×, 12×
Magnifications 16–1200 . . . . . **Bamox**

Equipment for Anatomical, Histological and Bacteriological Work:
Stand 'Bamas' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, fluorite objective 6a
Fluorite oil-immersion objective $^1/_{12}$a of num. ap. 1.32
Paired Huyghens eyepieces 5×, 8×
Paired periplanatic eyepieces 12×, 20×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16–1900 . . . . . **Bamut**

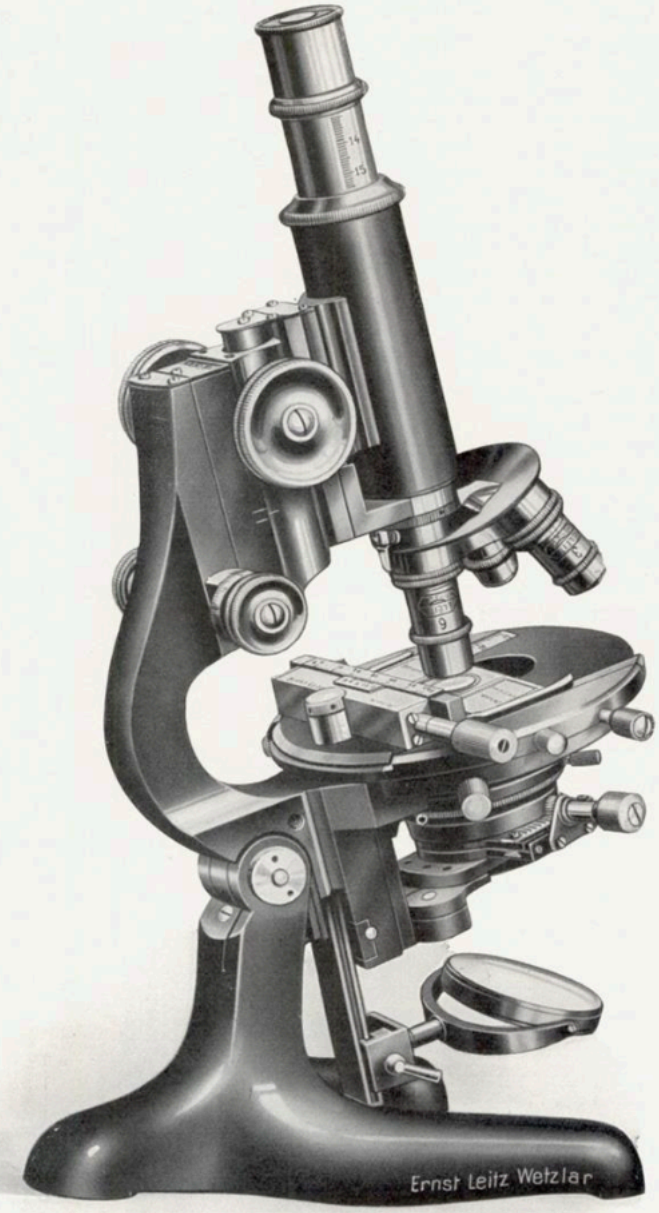
Apochromatic Equipment for Research:
Stand 'Bamas' with
Revolving nosepiece for four objectives
Apochromatic objectives 16 mm., 8 mm., 4 mm.
Apochromatic oil-immersion objective 2 mm. of num. ap. 1.32
Paired periplanatic eyepieces 5×, 8×, 12×, 25×
Periplanatic micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 50–2300 . . . . . **Bamyn**

Stand BMB

conforming to Stand BBMB but without built-in centring and revolving mechanical stage, which may be added subsequently. With large illuminating apparatus a No. 5580 . . . . . **Basos**

Cabinet for Stands BBMB and BMB with complete fittings **Bacus**
(The cabinet is included in the above prices)

*) See introduction page 14.



Microscope Stand BB.

Stand BB.

Codeword

Large Microscope, conforming to stand BBMB, with built-in centring and revolving mechanical stage, and interchangeable round centring and revolving object stage, but with monocular tube only, without the binocular tube, which may, however, be added subsequently, with large illuminating apparatus a No. 5580, with two-lens swing-out condenser of num. ap. 1.20 and cylinder iris-diaphragm . . . . . **Bebat**

Equipment for Laboratories:
Stand 'Bebat' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 12×
Magnifications 16 – 1200 . . . . . **Bebor**

Apochromatic Equipment for Clinics:
Stand 'Bebat' with
Revolving nosepiece for three objectives
Apochromatic objectives 16 mm., 8 mm.
Apochromatic oil-immersion objective 2 mm. of num. apert. 1.32
Periplanatic eyepieces 8×, 12×, 20×
Periplanatic micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 60 – 1840 . . . . . **Bebuz**

Stand B.

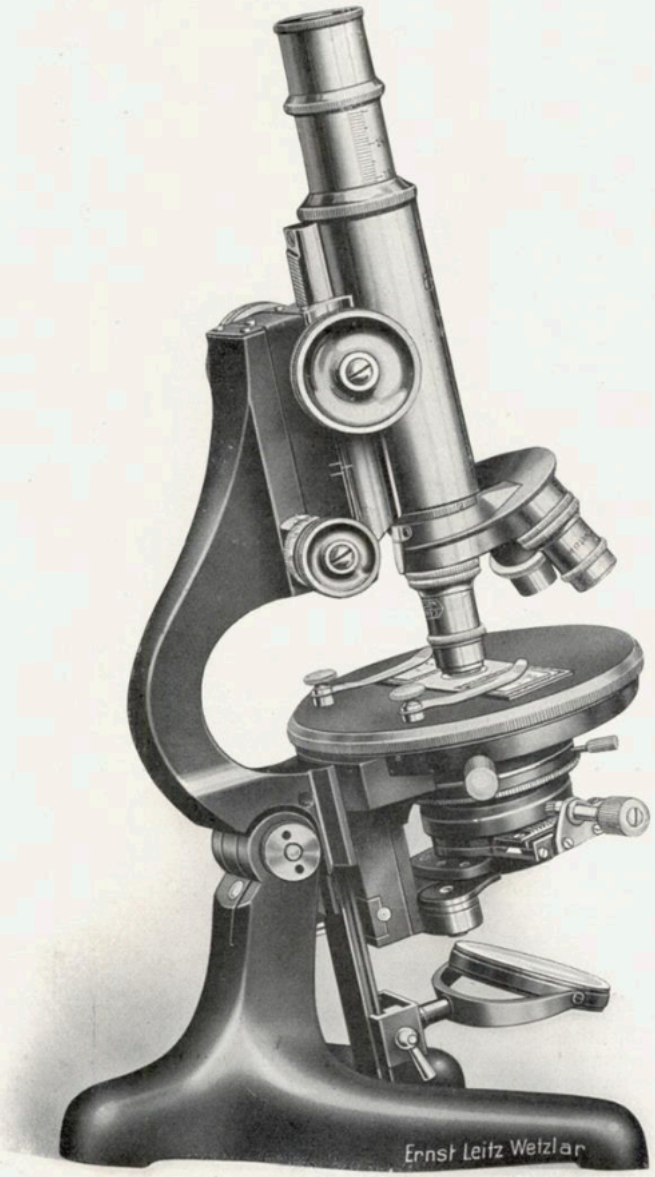
Large Microscope, conforming to Stand BBMB, with round centring and revolving object stage, without built-in mechanical stage and without binocular tube, both of which may be added subsequently; with large illuminating apparatus a No. 5580 with two-lens swing-out condenser of num. ap. 1.20 and cylinder iris-diaphragm . . . . . **Bedas**

Equipment for Diagnostic Work:
Stand 'Bedas' with
Revolving nosepiece for three objectives
Achromatic objectives 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000 . . . . . **Bedet**

Equipment for Clinics:
Stand 'Bedas' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6L
Fluorite oil-immersion objective 1/12 a of num. ap. 1.32
Huyghens eyepieces 5×, 8×, 12×
Periplanatic eyepiece 25×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16 – 2375 . . . . . **Bedix**

The Mechanical Stage No. 5637 may be used with this stand . **Piano**

Cabinet for Stands BB and B (included in the above prices) . **Becos**
(it does not provide accomodation for the binocular tube).



Microscope Stand GC.

Stand GC.

Codeword

Large Microscope with horseshoe foot, inclinable stand with hinge and clamping lever, with round centring and revolving object stage, coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drum head (each interval = 0.002 mm.) Draw-tube with millimeter scale. Large illuminating apparatus b No. 5583 with two-lens condenser of num. ap. 1.20 and iris-diaphragm . . . . . **Cugat**

Equipment for Diagnostic Work:
Stand 'Cugat' with
Revolving nosepiece for three objectives
Achromatic objectives 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60–1000**) . . . . . **Cugno**

Equipment for Laboratories:
Stand 'Cugat' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 12×
Magnifications 16–1200**) . . . . . **Cugre**

Equipment for Clinics:
Stand 'Cugat' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6L
Fluorite oil-immersion objective 1/12a of num. ap. 1.32
Huyghens eyepieces 5×, 8×, 12×
Periplanatic eyepieces 25×
Huyghens micrometer eyepiece 6×
Stage micrometer 2 mm. = 200 parts No. 5684
Magnifications 16–2375 . . . . . **Cugsi**

The Mechanical Stage No. 5637 may be used with this stand . **Plano**

Cabinet for the stand GC (included in the above prices) . . . **Cucos**

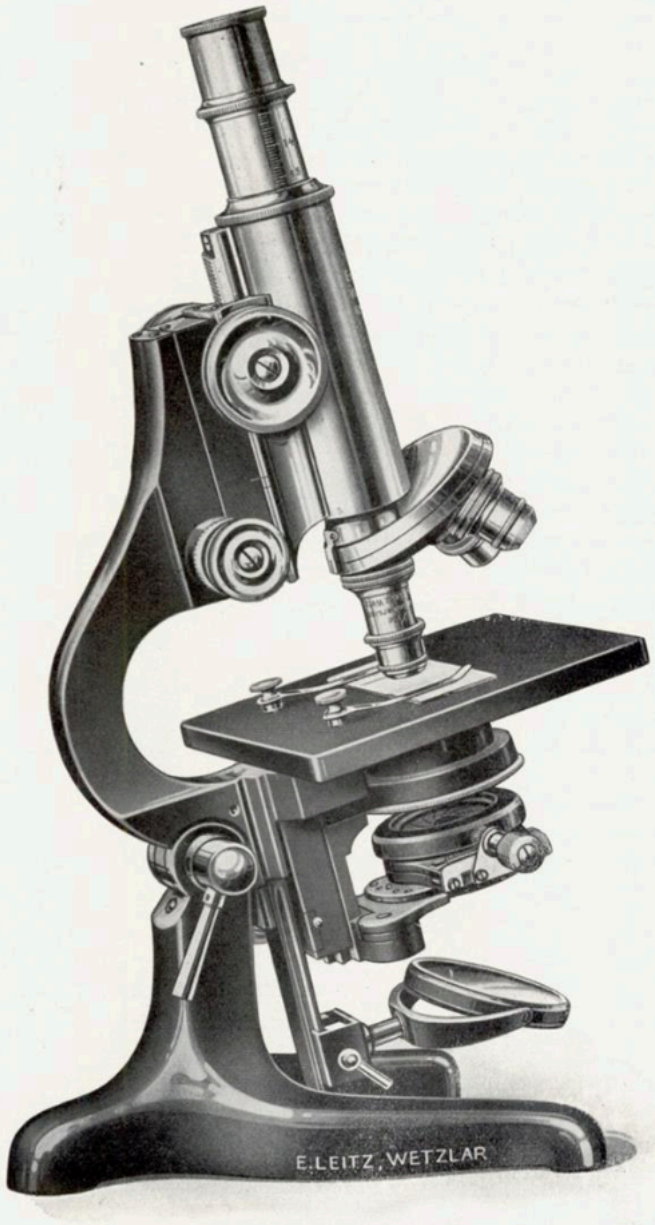
This stand may be supplied with a built-in centring and revolving mechanical stage with scales reading by verniers which is interchangeable with the above object stage . . . . . **Plaus**

In the event of a swing-out condenser with a cylinder iris-diaphragm being preferred in the place of the slip-in condenser please indicate this by appending the codeword . . . . . **Cubel**

For fixed body tube instead of draw-tube the price is reduced by . . **Gefex**

*) See introduction page 14.

) If great value is attached to highest magnifications we recommend our **Huyghens eyepiece 16x which is supplied at the same price as the other Huyghens eyepieces. (see page 26.)



Microscope Stand G D.

Stand GD.

Codeword

Large Microscope, conforming to stand GC, but with **fixed square object stage,** inclinable stand with hinge and clamping lever, coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.002 mm). Draw-tube with millimeter scale. Large illuminating apparatus b No. 5523 with two-lens condenser of num. ap. 1.20 and iris-diaphragm . . . . . **Dosbe**

Equipment for Diagnostic Work:

Stand 'Dosbe' with
Revolving nosepiece for three objectives
Achromatic objectives 3, 6L
Achromatic oil-immersion objective 1/19 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 10×
Magnifications 50 – 1000**) . . . . . **Dufox**

Equipment for Laboratories:

Stand 'Dosbe' with
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 10×
Magnifications 16 – 1000**) . . . . . **Dugri**

Equipment for Clinics:

Stand 'Dosbe' with
Revolving nosepiece for four objectives
Achromatic objectives 2, 4, 6L
Fluorite oil-immersion objective 1/12 a of num. ap. 1,32
Huyghens eyepieces 5×, 8×, 10×, 12×
Magnifications 30 – 1140*) . . . . . **Dubas**

Mechanical Stage No. 5637 adaptable to this stand . . . . . **Plano**

Mechanical Stage No. 5641 adaptable to this stand . . . . . **Plaze**

In the event of a swing-out condenser with a cylinder iris-diaphragm being preferred in the place of the slip-in condenser please indicate this by appending the codeword . . . . . **Cubel**

For fixed body tube instead of a draw-tube the price is reduced by **Gefex**

*) See introduction page 14.

) If great value is attached to highest magnifications we recommend our **Huyghens eyepiece 16× which is supplied at the same price as the other Huyghens eyepieces (see page 26).



Microscope Stand GE
with round centring and revolving object stage.

Stand (Tube not to draw out)	a) with fixed sliding sleeve	b) illuminating apparatus with rack and pinion, without condenser.
	Codeword	Codeword
GE with simplified mechanical stage	**Egrun**	**Egzur**
GE with round centring and revolving object stage	**Egdra**	**Egrez**
GE with built-in centring and revolving mechanical stage . . .	**Egbau**	**Egauz**

E. LEITZ WETZLAR

Stand GE.

Codeword

Medium Sized Microscope, conforming to stand GC, but with lower foot, inclinable through an angle of 90°, coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.002 mm.). **The tube does not draw out**).** Fixed round centring stage having a range of motion of about 10 mm. in either direction **(Simplified Mechanical Stage***).** Illuminating apparatus movable by rack and pinion (without condenser) . . . . . **Egzur**

Equipment for Diagnostic Work:

Stand 'Egzur' with
Two-lens condenser of num. ap. 1,20 with iris-diaphragm attached thereto
Revolving nosepiece for three objectives
Achromatic objectives 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000†) . . . . . **Eggel**

Equipment for Dark-field Work:**)**

Stand 'Egzur' with
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto (for a bright field)
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 10×
Magnifications 50—1000 (in a bright field)†) . . . . . **Eggit**
Bicentric Condenser AA for dark-field illumination of num. ap. 1,20 (see list Micro D 2021) . . . . . **Condu**
Intermediate objective adapter with iris-diaphragm . . . . . **Irtis**
Microscope lamp 'Stella', inclinable model, for dark-field work with 200-watt filament bulb . . . . . **Stedo**

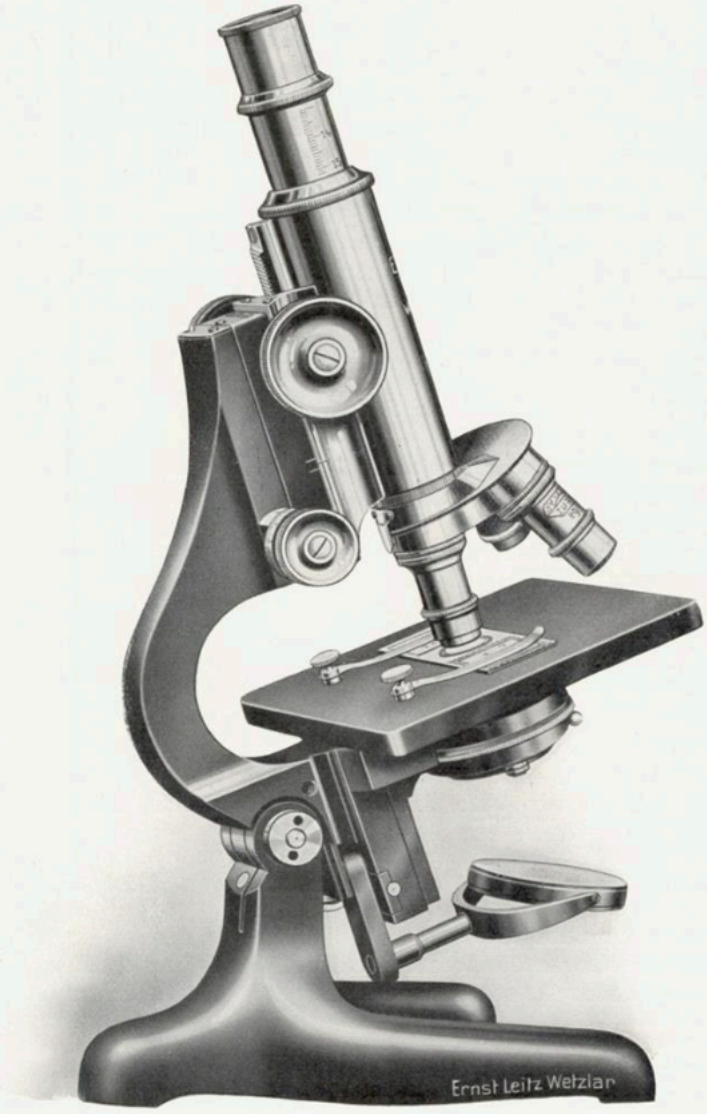
Equipment for Laboratories:

Same stand, but with round centring and revolving object stage 'Egrez'
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto
Revolving nosepiece for four objectives
Achromatic objectives 1, 3, 6L
Achromatic oil-immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 5×, 8×, 12×
Magnifications 16 – 1200†) . . . . . **Eggum**

The Mechanical Stage No. 5637 may be used with this stand . . **Plano**

Cabinet for stand GE (included in the above prices) . . . . . **Eggas**

*) See introduction page 14.
) the draw-tube with millimetre scale may be added subsequently . . . . . **Gelos
***) the stand may be supplied with round centring and revolving object stage and with built-in mechanical stage. See page 56.
****) For critical dark-field work we recommend especially achromatic objective 3a, fluorite oil-immersion objectives 1/12a of num. ap. 0.95 and 1/12a of num. ap. 1.15 (special objective)
†) If great value is attached to highest magnifications we recommend our **Huyghens eyepiece 16 x** which is supplied at the same price as the other Huyhens eyepieces (see page 26).



Microscope Stand GF
with fixed square stage

Stands (Tube not extensible)	a) with fixed sliding sleeve	b) illuminating apparatus with rack and pinion, without condenser.
	Codeword	Codeword
GF with fixed round object stage	**Efrut**	**Efrun**
GF with fixed square object stage	**Efeck**	**Efzet**

Stand GF.

Codeword

Medium Sized Microscope, conforming to stand GE, inclinable to 90°, coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with **new ball bearings*)** and graduated drumhead (each interval = 0.002 mm.). Tube not extensible**). Fixed round object stage***) with sliding sleeve on the underside of the stage (without condenser) . . . . . **Efrut**

Equipment for Class Demonstrations:

Stand 'Efrut' with
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto
Revolving nosepiece for three objectives
Achromatic objectives 1. 3 6L
Huyghens eyepieces 6×. 10×
Magnifications 19–450†) . . . . . **Effad**

Equipment for Diagnostic Work:

Same Stand, but with illuminating apparatus to move byrack and pinion 'Efzun'
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto
Revolving nosepiece for three objectives
Achromatic objectives 3 6L
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1,30
Huyghens eyepieces 6×. 10×
Magnifications 60–1000†) . . . . . **Effel**

Equipment for Dark-field Work:**)**

Same stand, but with illuminating apparatus to move by rack and pinion 'Efzun'
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto (for bright field)
Revolving nosepiece for three objectives
Achromatic objectives 3. 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1,30
Huyghens eyepieces 5×. 8×. 10×
Magnifications 50–1000 (in a bright field)†) . . . . . **Effit**
Bicentric condenser AA for dark-field illumination of num. ap. 1,20 (see list Micro D 2021) . . . . . **Condu**
Intermediate objective adapter with iris-diaphragm . . . . . **Irtis**
Microscope lamp 'Stella' inclinable model, for dark-field work with 200-watt filament bulb . . . . . **Stedo**

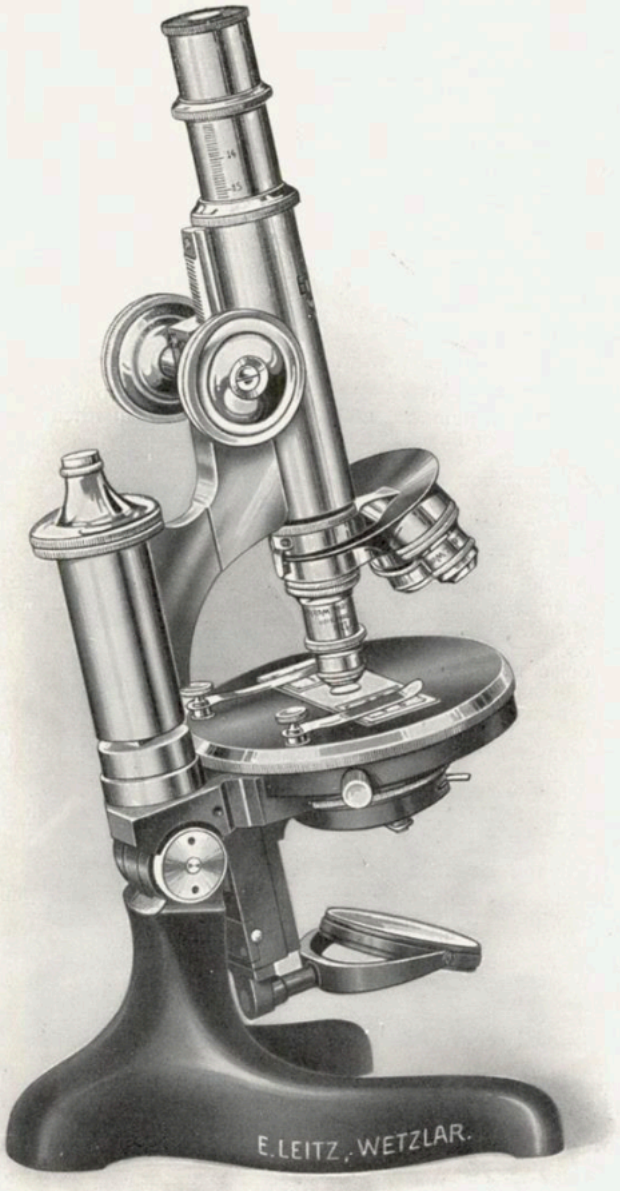
Equipment for the Examination of Blood:***)**

Same stand, with illuminating apparatus to move by rack and pinion 'Efzun', but with draw-tube with millimeter scale
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto
Revolving nosepiece for objectives
Achromatic objectives 3a. 6L
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 5× 8×. 12×
Magnifications 70–1200†) . . . . . **Effum**

Mechanical Stage No. 5637 for expeditiously examining the preparations with systematic precision . . . . . **Plano**

Cabinet for stand GF (included in the above prices) . . . . . **Effos**

*) See introduction page 14.
) The draw-tube may be added subsequently . . . . . **Gelos
***) The stand may be supplied with fixed square object stage. See page 58.
****) For critical dark-field work we recommend especially achromatic objective 3a, fluorite oil-immersion objectives $^1/_{12}$a of num. ap. 0,95 and $^1/_{12}$a of num. ap. 1.15 (special objective).
*****) For haemocytometers see Catalogue 49E.
†) If great value is attached to highest magnifications we recommend our Huyghens eyepiece 16x which is supplied at the same price as the other Huyghens eyepieces (see page 26).



Microscope Stand II.

Stand II.

Codeword

Medium Sized Microscope. Stand with hinge, inclinable through an angle of 90°, coarse focusing by rack and pinion, micrometer slow motion. Draw-tube with graduated millimetre scale. Round centring and revolving vulcanite object stage. Sliding sleeve on the underside of the stage with diaphragm cylinder with three interchangeable stops . . . . . **Halix**

Equipment for Class Work:
Stand with
Revolving nosepiece for three Objectives
Achromatic objectives 1, 3, 6L
Huyghens eyepieces 8×, 12×
Magnifications 26 – 540*) . . . . . **Hasol**

Equipment for Class Demonstrations:
Stand as above described, but with
Illuminating apparatus to move by rack and pinion
Two-lens condenser of num. ap. 1.20 with iris-diaphragm attached thereto
Revolving nosepiece for three objectives
Achromatic objectives 1, 3, 6L
Huyghens eyepieces 6×, 10×
Magnifications 19 – 450*) . . . . . **Hattu**

Equipment for Diagnostic Work:
Stand as above described, but with
Illuminating apparatus to move by rack and pinion
Two-lens condenser of num. ap. 1,20 with iris-diaphragm attached thereto
Revolving nosepiece for three objectives
Achromatic objectives 3, 6L
Achromatic oil-Immersion objective 1/12 of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000*) . . . . . **Hagno**

Mechanical Stage No. 5639 for expeditiously examining the preparations with systematic precision . . . . . **Plasy**

Cabinet for stand II (included in the above prices) . . . . . **Hacos**

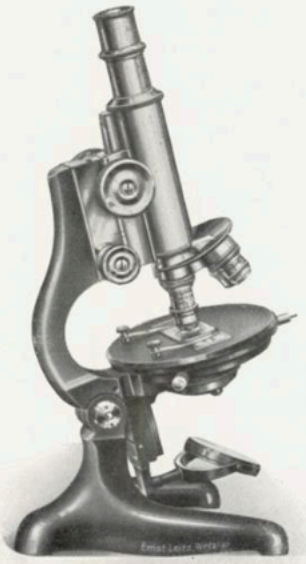
*) If great value is attached to highest magnifications we recommend our **Huyghens eyepiece 16×** which is supplied at the same price as the other Huyghens eyepieces (see page 26).



Stand G with fixed round object stage and draw-tube.



Stand G with fixed square object stage and draw-tube.



Stand G with simplified mechanical stage and draw-tube.



Stage G with round centring and revolving object stage and draw-tube.

Stand G.

Codeword

Medium Sized Microscope, stand with hinge, inclinable through an angle of 90°, coarse focusing by rack and pinion, micrometer screw-and-cam slow motion with graduated drumhead (each interval = 0.004 mm.). The following prices refer to stands with fixed, not extensible tube*) and sliding sleeve on the stage (without condenser and diaphragm).

Stand G, as described, with fixed round object stage . . . . **Gurut**

Stand G, as described, with fixed square object stage . . . . **Gurek**

Stand G, as described, with simplified mechanical stage . . . **Gurax**

Stand G, as described, with round centring and revolving object stage **Gurre**

The stand G is fitted with the medium sized illuminating apparatus c No. 5595, cz No 5592, ccz No. 5586 (see pages 29 30) and, if no illuminating apparatus is desired, with cylinder diaphragm No. 5607 with three stops.

Optical Equipments.

For Class Work:

Stand G with fixed round object stage 'Gurut'
Cylinder diaphragm No. 5607
Revolving nosepiece for three objectives
Achromatic objectives 1, 3, 6 L
Huyghens eyepieces 8×, 12×
Magnifications 26 – 540*) . . . . . **Gusol**

For Pharmaceutical Work:

Stand G with fixed round object stage 'Gurut'
but with draw-tube with millimeter scale
Illuminating apparatus c No. 5595
Revolving nosepiece for two objectives
Achromatic objectives 3, 6
Huyghens eyepiece 6× with micrometer (10 mm = 100 parts) and movable eye-lens
Huyghens eyepiece 10×
Magnifications 60 – 450*) . . . . . **Gupha**

Stage micrometer No. 5683 (1 mm = 100 parts) . . . . . **Obter**

*) If great value is attached to highest magnifications we recommend our Huyghens eyepiece 16× which is supplied at the same price as the other Huyghens eyepieces (see page 26).

Godeword

For Class Demonstrations:

Stand G with fixed round object stage 'Gurut'
Illuminating apparatus cz No. 5592
Revolving nosepiece for three objectives
Achromatic objectives 1, 3, 6
Huyghens eyepieces 6×, 10×
Magnifications 19 – 450*) . . . . . **Gustu**

For Laboratories:

Stand G with simplified mechanical stage 'Gurax', but with draw-tube with millimeter scale
Illuminating apparatus cz No. 5592
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000*) . . . . . **Gumed**

For Chemical Work:

Stand G with round centring and revolving object stage 'Gurre'
Illuminating apparatus cz No. 5592
Revolving nosepiece for three objectives
Achromatic objectives 2, 4, 6
Huyghens eyepiece 6 × with micrometer (10 mm. = 100 parts) and movable eye-lens
Huyghens eyepiece 10×
Magnifications 35 – 450*) . . . . . **Gucem**
Stage micrometer No. 5683 (1 mm = 100 parts) . . . . . **Obter**
Appliances for investigations with polarised and incident light and for colloid-chemical work see catalogue No. 47D.

For Diagnostic and Dark-field Work:

Stand G with round centring and revolving object stage 'Gurre', but with draw-tube with millimeter scale
Illuminating apparatus cz No. 5592
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 8×, 12×
Magnifications 80 – 1200 . . . . . **Gunos**

Mechanical Stage No. 5637 may be adapted to stand G with all object stages . . . . . **Plano**

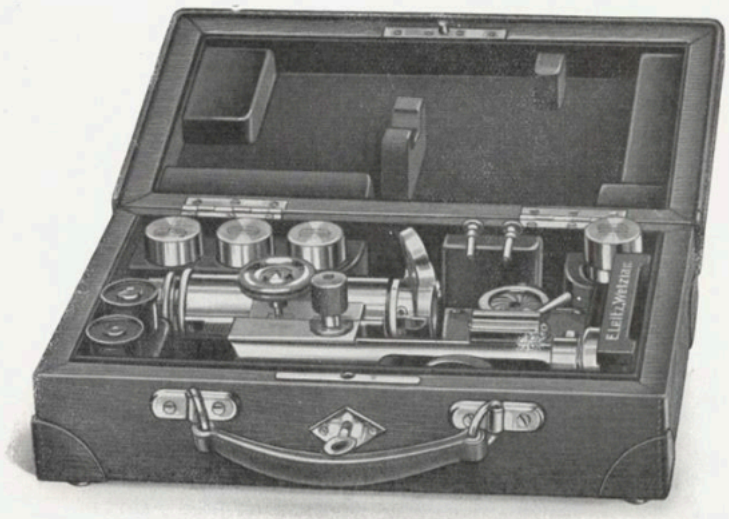
Mechanical Stage No. 5641 only adaptable to stand G with fixed square object stage . . . . . **Plaze**

The draw-tube with millimeter scale may be added subsequently . **Gelos**

*) If great value is attached to highest magnifications we recommend our Huyghens eyepiece 16× which is supplied at the same price as the other Huyghens eyepieces (see page 26).

E. LEITZ WETZLAR

Small Travelling Microscope.



Small Travelling Microscope
(in leather case measuring $10^1/_2 \times 6^3/_8 \times 3^1/_8$ inches)

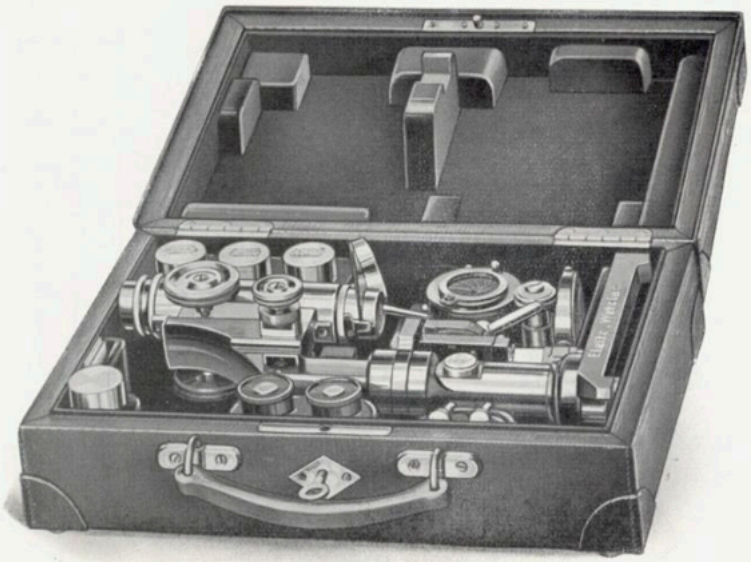
Codeword

Small Travelling Microscope. This microscope is made ready for use by spreading the foot, inserting the mirror, and unfolding the stage. The microscope has a rack-and-pinion coarse focusing motion and ball-and-inclined-plane micrometer slow motion. It is furnished with a slip-in condenser and an iris-diaphragm. In addition to the stand the case accomodates three objectives, two eyepieces and a box with a cedar-oil bottle. It is fitted with a lock and key and a carrying handle. Its weight is about $4^1/_2$ lbs. . . . . **Roane**

Equipment No. 1: Stand together with
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000 . . . . . **Robot**

Equipment No. 2: Stand together with
Revolving nosepiece for two objectives
Achromatic objectives 3, 7
Huyghens eyepieces 4×, 8×
Magnifications 40 – 500 . . . . . **Rofis**

Large Travelling Microscope.



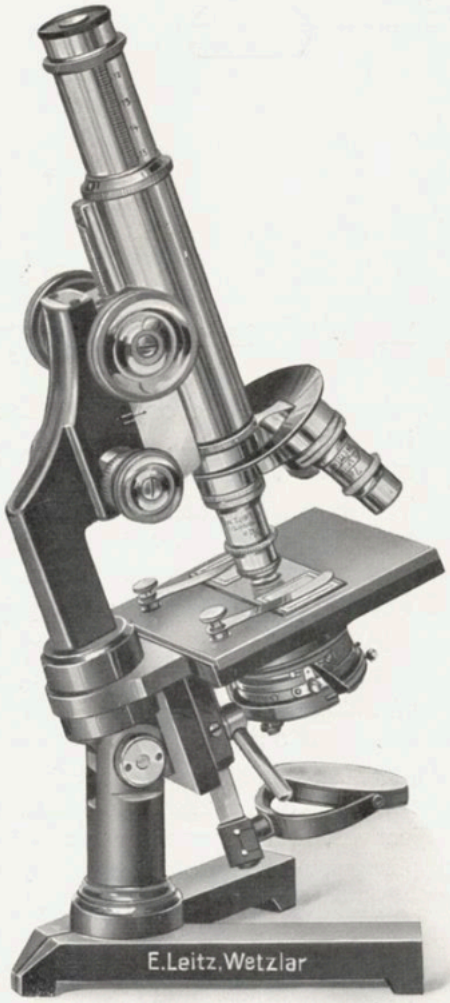
Large Travelling Microscope
(in leather case measuring $11^1/_4 \times 8^1/_4 \times 4^1/_8$ inches)

Codeword

Large Travelling Microscope. This instrument conforms in its dimensions and general design to our microscope stand GC. It has a square stage and is provided with the medium sized illuminating apparatus cs or ccs with side-screw for moving the apparatus up and down. The mechanical stage No. 5639 may be used on this stand and, if obtained in the first instance with the microscope, will be accomodated in the fitted leather case. The latter is elegantly finished and fitted with lock and key.

Large Travelling Microscope with two-lens swing-out condenser of num. ap. 1.20, cylinder iris-diaphragm and side-screw . . . . **Radry**

Equipment No. 1: Stand together with
Mechanical stage No. 5639
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000 . . . . . **Radus**



Large Travelling Microscope
(as it appears when set up)

Codeword

Same Stand, but with medium sized illuminating apparatus with two-lens condenser of num. ap. 1.20, iris-diaphragm, and side-screw for raising and lowering the condenser . . . . . **Radal**

Equipment No. 2: Stand together with
Revolving nosepiece for three objectives
Achromatic objectives 3, 6
Achromatic oil-immersion objective $^1/_{12}$ of num. ap. 1.30
Huyghens eyepieces 6×, 10×
Magnifications 60 – 1000 . . . . . **Radir**

Mechanical Stage No. 5639 may be used with this stand . . . . **Plasy**

Demonstration Microscope



Demonstration Microscope with Condenser

Codeword

Demonstration Microscope for low and intermediate powers, with square object stage and wheel diaphragm.

The instrument focuses by sliding the tube by hand. When adjusted, the latter may be fixed by a screw clamp.

Stand without objective and eyepiece — **Deman**

Equipment No. 1: Same stand, with achromatic objective 3 and Huyghens eyepiece 5×.
Magnification 50× . . . . . — **Deges**

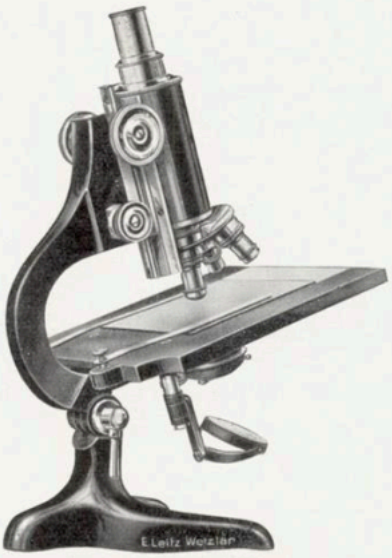
Same stand, but with fine focusing screw admitting of the use of high power objectives, with condenser and iris-diaphragm, without objective and eyepiece — **Devit**

Equipment No. 2: Same stand with fine focusing screw, with achromatic objectives 3 and 6 and Huyghens eyepiece 5×.
Magnifications 50 and 225× . . . . — **Delor**

The Demonstration Microscope is supplied in a neatly polished and fitted case.

Microscope

for the Examination of Brain Sections.

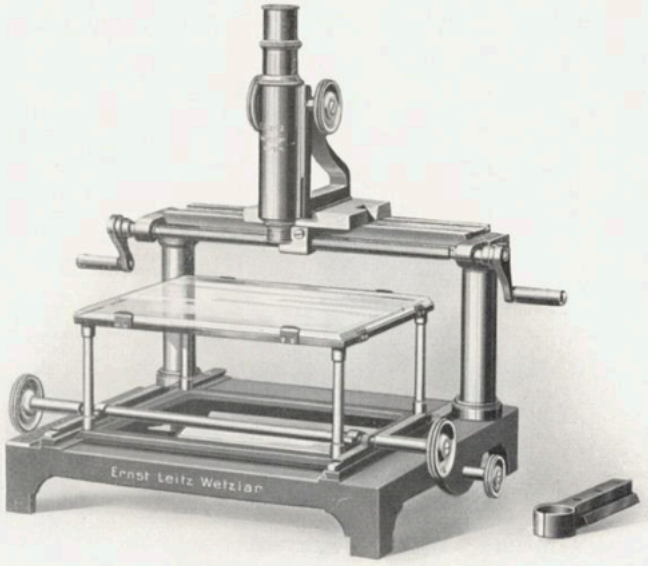


Codeword

Stand with square fixed object stage 20×20 cm. for exceptionally large sections, with wide tube for low-power photomicrographic work with wide-angle lenses without eyepiece. Coarse focusing by rack-and-pinion motion, micrometer screw-and-cam slow motion. The stage opening can be reduced. Stand with cabinet . . . . . Cerve

Same stand, with medium size illuminating apparatus with side-screw, two-lens condenser of num. ap. 1.20 and iris-diaphragm, including cabinet . . . . . Cerut

Nebelthau Traversing Microscope.



Codeword

Stand for systematically going through very large microscopic sections, especially brain sections, plate and dish cultures, etc.

Stand with traversing motion by a screw spindle, with scales for controlling the motion, which amounts to 18 cm. Monocular tube with coarse focusing motion by rack and pinion and slow motion above the objective, in dovetail fitting interchangeable with a magnifier holder. Object stage with glass plate measuring 20×16 cm., which can be moved upon rails at right angles to the traversing motion by a rack and pinion, likewise provided with scales for controlling the motion, the range of which is 13.5 cm. Large rectangular mirror.

Nebelthau Traversing Microscope, without objectives and eyepieces, with magnifier holder and magnifier 8× . . . **Nebau**

Cast Glass Dish of the size of the object stage for the reception of very large sections . . . . . **Negla**

Comparison Microscope.



Stand with hinge for inclining the body, coarse focusing by rack-and-pinion motion, micrometer screw-and-cam slow motion, Fixed square stage measuring 15.5×10 cm. with clips for the two objects which are to be compared. Medium sized illuminating apparatus c No. 5595 with two-lens condenser of num. ap. 1.20 in duplicate to slip into the sliding sleeves under the stage. The two parallel tubes are joined by a prism combination with Ramsden eyepiece magnifying about 9 times. The two semicircular images of the objects appear side by side separated by a fine line. The eyepiece can be sharply focused upon this line independently of the microscopic image.

	Codeword
Comparison Microscope, without objectives, in cabinet	**Compa**

Reading Microscope.



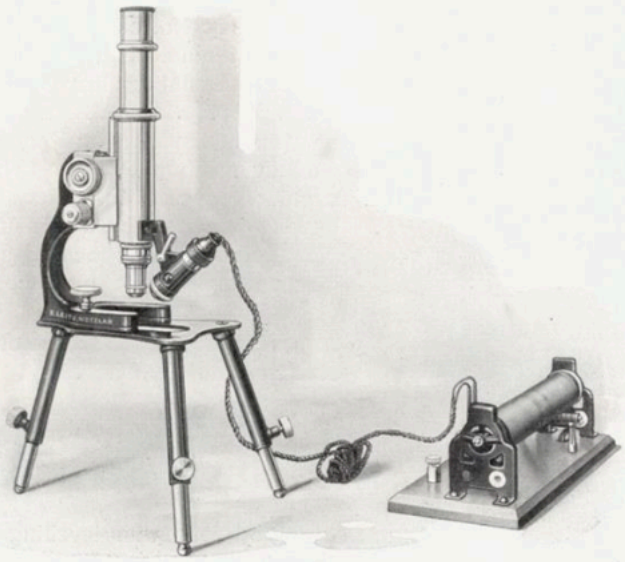
Stand on tripod foot with levelling screws and made to rise and descend by tube extension and rack-and-pinion motion from 42 to 64 cm. The tube extension and prism motion on the upright are graduated. The vertical motion can be read to $^1/_{10}$ mm. by vernier. The tube has a spirit level and can be rotated about its vertical axis. The object is focused by a rack and pinion. The objective screws apart for obtaining three magnifications. The eyepiece has a micrometer scale of 10 mm. divided into 100 parts.

	Codeword
Reading Microscope without optical components	**Radsa**
Objective to the reading microscope	**Radob**
Micrometer eyepiece	**Hygmi**
Complete reading microscope with objective and eyepiece	**Reade**

Table of the Optical Constants of the Reading Microscope with the tube set to a length of 170 mm.

	Both lenses	Front lens	Back lens
Distance from objective	5 cm.	9 cm.	48 cm.
Magnification	20×	12×	3×
Field of view	6.5 mm.	10 mm.	38 mm.

Skin Capillary Microscope



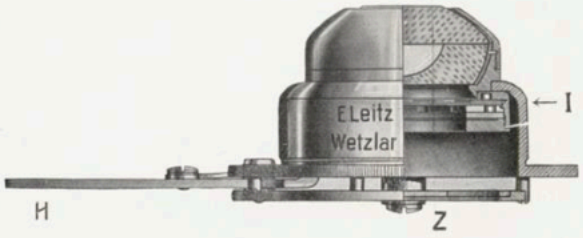
Monocular Skin Capillary Microscope with Fine Focusing Motion.

	Codeword
Monocular Skin Capillary Microscope with fine focusing adjustment, with 8-volt filament lamp, objective 3, Huyghens eyepieces 5×, 10×. Magnifications 50 and 100	Gruxu
Adjustable tripod Stand for the above, to obviate pressure being exerted upon the surface under the microscope when viewing capillaries in the leg	Gruvo
Greenough Stereo-binocular Skin Capillary Microscope on vulcanite base with detachable foot and handle in cabinet	Greuz
Illuminating Attachment with 8-volt filament lamp	Grepa
Stereo-binocular Skin Capillary Microscope with illuminating attachment, pair of objectives of 25 mm. focus, paired Huyghens eyepieces 6×, 10×. Magnifications 46 and 76	Greid

See List Mikro A 2128.

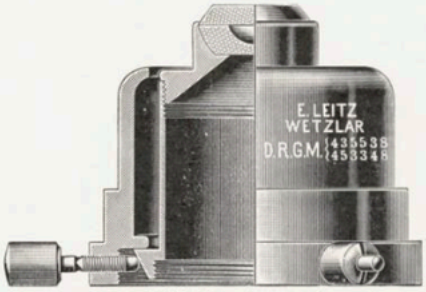
Dark-field Condensers.

The **"bicentric condensers"** surpass all combinations hitherto devised for dark-field illumination in the matter of **intensity** and the **revolving power** which can be attained with them. The greatest admissible viewing aperture is only 0.05 less than the lower limiting aperture of the condenser, which is 1.20.



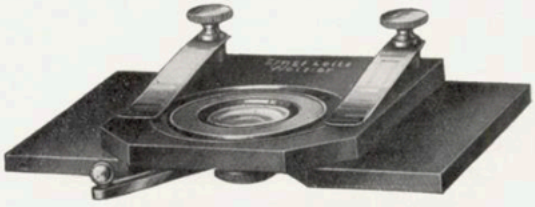
Condenser for bright-field and dark-field illumination

No.		Codeword
5500.	**Bicentric Condenser for bright-field and dark-field illumination,** with case . . . . . The condenser, in addition to its main purpose as a dark-field condenser, can be made to furnish combined dark-field and bright-field illumination for provisional orientation.	**Conro**
5501.	**Bicentric Condenser AA for dark-field illumination,** with case This condenser does not require a separate centring device. It is available for use with low and high power objectives but cannot be employed with stands with a stage opening which is smaller than 24 mm.	**Condu**



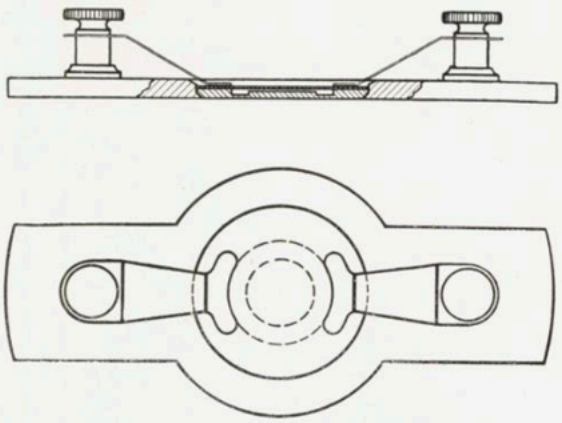
Dark-field Condenser A.

5502.	**Bicentric Condenser A for dark-field illumination,** in sliding sleeve with centring device, with case . . . . . This condenser can be used on stands with a very small stage opening. It is adapted for exceptionally exact working, especially with the highest power objectives and the radiant field may be centred rapidly and accurately.	**Conci**



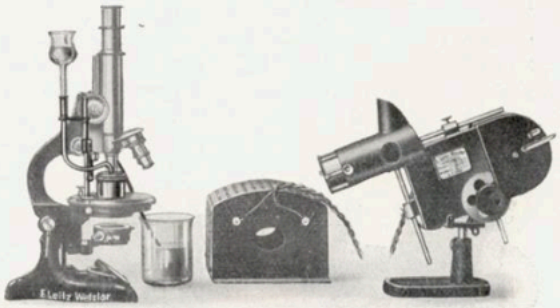
Dark-field Condenser B.

No.		Codeword
5503.	**Bicentric Condenser B for dark-field illumination,** flat plate model, with case	**Confy**
	Short focus combination, for placing upon the surface of the object stage.	
5504.	**Bicentric Condenser for dark-field illumination,** to screw into the centring mount No. 5608 (p. 34, 79)	**Comze**
	The design resembles that of the dark-field condenser A.	
	The **dark-field consenders** may also be supplied with **U-V-crown class** lenses (for the transmission of ultra-violet light). Additional codeword	**Coult**
	or with **quartz** lenses Additional codeword	**Coarz**
5505a.	**Special objective (fluorite immersion lens) 1/12 a** of num. ap. 1.15	**Flunk**
5506.	**Intermediate Objective Adapter with iris-diaphragm,** suitable for use with all Leitz objectives of medium and high power without correction mount	**Irtis**



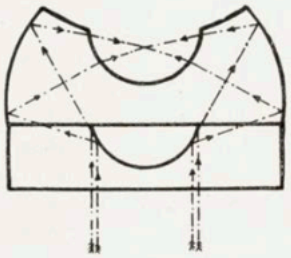
5507.	**Chamber for dark-field observation** with a glass cell and six cover-glasses, in case	**Kamra**
5508.	**Glass Chamber Cell of quartz,** each	**Kamzu**
5509.	**Quartz Cover-glass,** each	**Kamde**
5510.	**Ground Glass Plate** on stand	**Limas**
5511.	**Azimuth Diaphragm** for ascertaining the shape of the ultra-microns.	
	When ordering, specify the condenser with which the azimuth-diaphragm is to be used	**Irmuz**
5512.	**Converging Lens on Stand,** for use with ordinary filament bulbs as the source of light	**Linsa**
	Microscope Lamps for dark-field illumination see pag. 86. For further descriptions and directions for using the dark-field condensers see list Micro D 2064.	

Ultra-Condensers.



Ultra-microscope Arrangement.

The ultra-condenser serves for bringing into view ultra-microscopic particles - gases, vapours and fluids. It is used in conjunction with objectives up to No. 3, say, and with a powerful source of light, preferably our Liliput arc lamp. The whole of the rays are brought to a focus at a point by reflection at the surfaces of two glass bodies, so that they strike the object from all sides. The upper body has a cavity which serves for the reception of the substance under examination.



Trace of the rays through the ultra-condenser.

The whole is embedded in a metal casing. The substance is introduced into the cavity through two small tubes in the cover, which obviates the substance coming in contact with the embedding medium. The substance is viewed through a quartz plate in the middle of the cover.

The most suitable arrangement of the ultra-condenser is that shown in the figure, which indicates the position of the glass vessel together with the holder, the rubber tubing and pinch-cock for introducing and removing the substance to be examined.

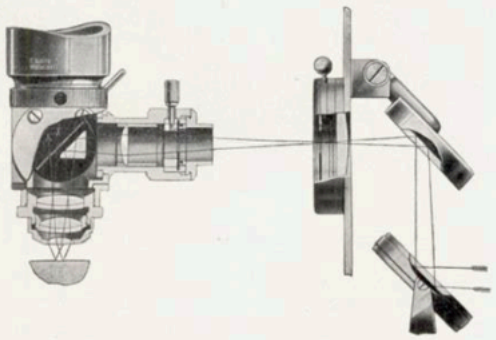
If desired, the ultra-condenser may be furnished with an attachment for the discharge of electrical sparks within the viewing cavity. This consists of an additional cover with two terminals and two platinum electrodes.

No.		Codeword
5513.	**Ultra-condenser** with holder, glass vessel and pinch-cock .	**Comul**
5514.	**Same Ultra-Condenser** with electrode attachment	**Comek**

E. LEITZ WETZLAR

Large Vertical Illuminator.

The vertical illuminators, also named opaque illuminators, are devices, which mainly serve for illuminating flat surfaces under the microscope with light coming from the direction of the objective. They are accordingly chiefly used for the examination of metals, ores, rocks and other specimens having one of their surfaces polished (that is, not in the form of thin sections), but more recently they are also increasingly used as a means of biological and medical study, especially for viewing hard animal substances



The vertical illuminator can be used with any large and medium sized microscope having a standard screw thread for the objective.

No.		Codeword
5530.	**Large Vertical Illuminator** for objectives of high and intermediate power, with reflecting prism and plate on changing slide, with adapter collars for three objectives	**Opage**
5531.	**Diaphragm Carrier** with two mirrors, converging lens and iris-diaphragm in fixed mount, ground glass plate (for use with the arc lamp) and filter-trough, on stand*)	**Opati**
5532.	**Simple Holder with thin glass plate** for use as an illuminator for objectives of lowest powers	**Opabo**
5533.	**Complete set**	**Opaca**
5534.	**Adjusting Board** for arranging the illumination, position fence, microscope foot holder, and lamp holder, without lamp . .	**Mobre**
5535.	**Polarising Prism** for placing upon the entrance tube of the vertical illuminator, for the polarisation of incident light . . In cases where this Polarising Prism is required, but no large Polarising Apparatus (see next page) included in the outfit, it becomes necessary to order an **Analysing Prism** for completion	**Mopra** **Moana**
5536.	**Simple Vertical Illuminator** with prism and iris-diaphragm	**Opefa**
5537.	**Small Filament Lamp of 6 volts**) in tubular mount, attachable to the simple vertical illuminator No. 5536, with 2 coloured filters and a ground glass disc, flexible conductor 40 inches long and reserve filament bulb . . . . . Further descriptions and directions see List Micro D 2133.	**Opelu**

*) When using on biological microscope stands, it is advisable to add the diaphragm carrier with mirror and clip for attachment to the microscope tube. **Opass**

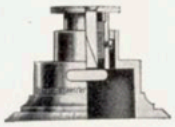
**) For resistance and transformer see page 89.

Polarising Apparatus.

The polarising apparatus serves for examining objects in polarised light. There are many structural features which cannot be recognised by any other means.

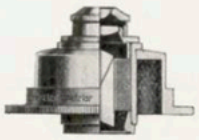
The apparatus comprises the following components:

A polariser condenser;
An intermediate mount with bearing ring and index;
An analyser with graduated circle.





Analyser with graduated circle, intermediate mount with bearing ring and index.



Polariser Condenser

The polariser condenser takes the form of a Nicol calcspar prism. The condenser is made up of two lenses, the upper one of which can be unscrewed. The analyser is formed by a calcspar prism with straight end faces. It is mounted in a sleeve, which on being withdrawn, exposes a slit for the introduction of compensators.

When ordering the apparatus the number of the microscope should be quoted.

No.		Codeword
5718.	**Large Polarising Apparatus:** *polariser with simple condenser lens,* analyser with graduated circle, intermediate fitting with index	Pyzar
5719.	**Large Polarising Apparatus:** *polariser with simple condenser lens and with screw-on upper lens of a greater illuminating aperture,* analyser with graduated circle, intermediate fitting with index The screw-on upper lens component of high aperture cannot be delivered subsequently for a polarising apparatus No. 5718.	Pyzos
5720.	**Gypsum plate** $^1/_4\ \lambda$, mounted in cardboard	Pynit
5721.	**Gypsum and mica films,** 8 films of various thicknesses, to be put over the eyepiece	Pyrus

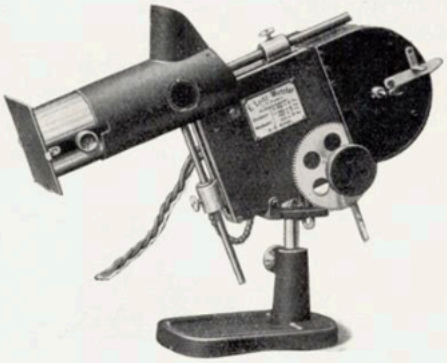
For further description and instruction see list Micro D 2136.

E. LEITZ WETZLAR

Microscope Lamps.



Liliput Arc Lamp No. 5800.



Liliput Arc Lamp with Clockwork Feed No. 5801.

5800. **Liliput Arc Lamp** for a current of 4—5 amps., **with hand feed, movable converging lens,** on stand . . . . . **Lilam**

5801. **Liliput Arc Lamp,** taking a current of 4—5 amps., **with clockwork feed and movable converging lens,** on stand **Liuhr**

5802. **Liliput Arc Lamp with hand feed, hard-glass converging lens with rack and pinion motion,** on stand . . . . . **Lihar**

5803. **Ditto with clockwork feed** . . . . . **Lizen**

5804. **Liliput Arc Lamp, with hand feed, with converging lens of U-V crown glass,** on stand . . . . . **Liult**

5805. **Ditto with clockwork feed** . . . . . **Liurk**

5806. **Liliput Arc Lamp with hand feed, with quartz converging lens,** on stand . . . . . **Liart**

5807. **Ditto with clockwork feed** . . . . . **Lirak**

When ordering Liliput arc lamps please indicate whether the available current is continuous or alternating and state the voltage of the supply circuit. The above clockwork arc lamps should be used exclusively with resistances and carbons supplied by us.

5808. **Ground glass plate** on stand . . . . . **Limas**

5809. **Resistance** for 110 volts for use with the Liliput lamps . . **Rearn**

5810. **Resistance** for 220 volts for use with the Liliput lamps . . **Reana**

5811. **Combination resistance** for 110–220 volts for use with the Liliput lamps . . . . . **Reabi**

5812. **Carbons** for a continuous current (6 and 8 mm.) for the Liliput lamp, per pair . . . . . **Cabat**

5813. **Ditto** for an alternating current (7 mm.), per pair . . . . . **Cabes**

5814. **Flexible conductor,** 5 ft., with plug . . . . . **Linur**



"Stella" Microscope Lamp, inclinable model.

No.		Codeword
5817.	**"Stella" Microscope Lamp,** inclinable model, with 100-watt filament bulb, 5 ft. flexible conductor, and plug	**Stebe**
5818.	**Ditto,** with 200-watt filament bulb	**Stedo**
5819.	**Renewal glass flask,** capacity 300 cc.	**Stolp**
5820.	**Renewal filament bulb,** 100 watt	**Stihu**
5821.	**Renewal filament bulb,** 200 watt	**Stiza**

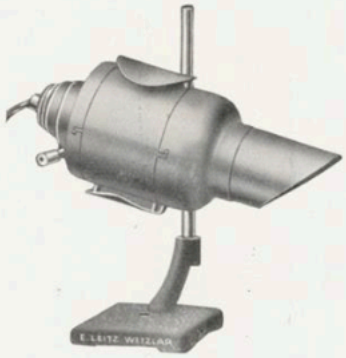
Stella lamps are well adapted for dark-ground illumination. When ordering Stella lamps please state the available voltage.



"Lucifer" Microscope Lamp.

5822.	**"Lucifer" Microscope Lamp** with eye-shade, light-filter holder, and opal glass filter, 16 – c. p. metal filament lamp bulb, 5 ft. flexible conductor, and plug	**Lucif**
5823.	**Ditto,** with three colour filters, dulled blue, yellow and green	**Lufer**

When ordering Lucifer lamps, please state the available voltage.



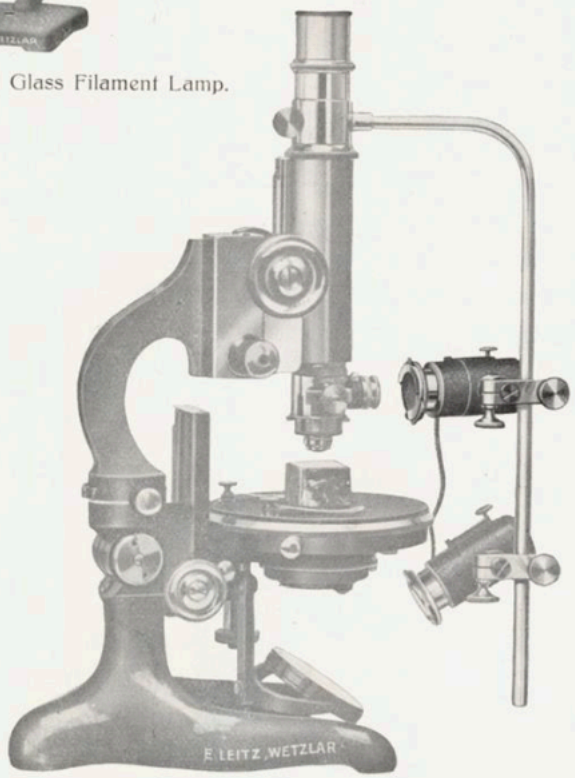
"Opaly" Opal Glass Filament Lamp.

No. | Codeword

5824. **Opal Glass Filament Lamp,** for visual observations only, on stand with iron foot, cross clamp, and lightproof casing, with 5 ft. flexible conductor and plug **Opaly**

5825. **Renewal opal glass filament bulb** . . . . . **Opamu**

When ordering opal glass filament lamps, please state the available voltage.



Mignon Lamp on Clip Rod for attachment to the Microscope Stand.

5826. **"Mignon" Microscope Lamp** with mirror, converging lens and iris-diaphragm, adjustable along a nickeled clip rod for attachment to the microscope stand (see illustration), with 6-volt filament bulb in mount with centring device, 5 ft. flexible conductor with plug, renewal filament bulb, ground glass plates, and two colour filters, yellow and green, in case **Lifub**

In this arrangement the Mignon lamp is available for transmitted, direct incident light, as well as in conjunction with the vertical illuminator.

No.		Codeword
5827.	**"Mignon" Microscope Lamp,** but without nickeled clip rod and without case	**Lione**
5829.	**"Mignon" Microscope Lamp** with condenser for attachment to the double tube of the Greenough microscope for incident illumination, 5 ft. flexible conductor with plug and two 6-volt filament bulbs, without case	**Grepa**
5830.	**"Mignon" Microscope Lamp** in tubular mount for attachment to the simple vertical illuminator with ground glass plate, and two colour filters, yellow and green, fitting the slit in the mount, 5 ft. flexible conductor with plug and two 6-volt filament bulbs, without case	**Opelu**

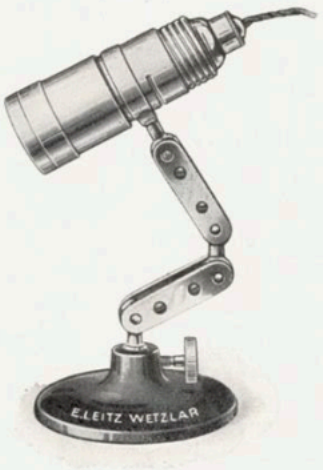
Resistances to the 6-volt Lamps:

for a continuous current:

5831.	**Combination resistance** for 110 – 220-volt supply current and 6 volts at the lamp terminals:	**Rekat**

for an alternating current:

5832.	**Transformer** for a supply current of 110 volts, 50 cycles, and 6 volts at the lamp terminals	**Refes**
5833.	**Transformer** for a supply current of 220 volts, 50 cycles, and 6 volts at the lamp terminals	**Retra**
5834.	6-volt **Renewal filament bulb**	**Lisat**



Mignon Lamp with ball-jointed arm on foot with clamping screw.

5835.	**"Mignon" Microscope Lamp** with converging lens on ball-jointed arm with 11.5-volt filament lamp in mount, 5 ft. flexible conductor with plug, renewal 11.5-volt filament bulb, ground glass plate, and two colour filters, yellow and green, without case	**Limin**
5836.	**Foot with clamping screw** for the lamp	**Litiv**

No.		Codeword
5837.	**Lamp Holder** fitting the slide box No. 253 of the binocular magnifier, for one lamp	**Lolax**
5838.	**Lamp Holder** fitting the slide box No. 253 of the binocular magnifier, for two lamps	**Lolig**



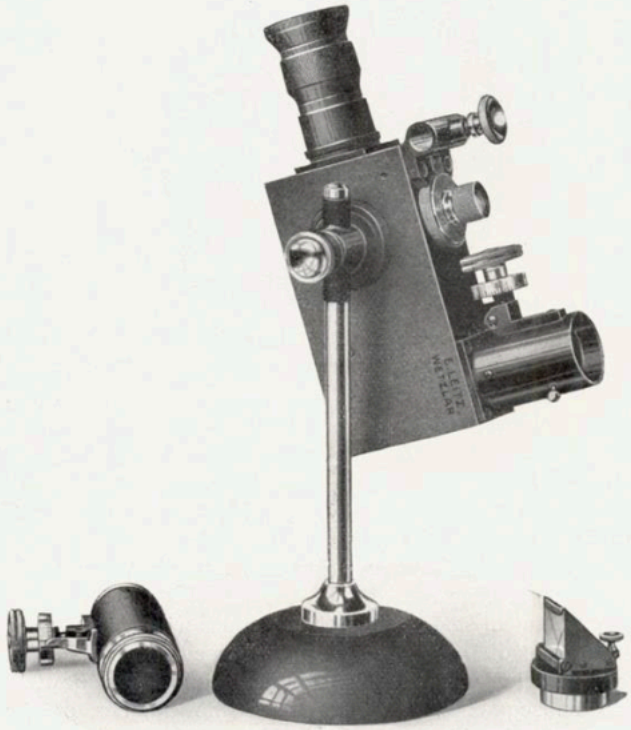
Mignon Lamp with holder for attaching one lamp to the binocular magnifier.



Mignon Lamps with holder for attaching two lamps to the binocular magnifier.

No.		Codeword
	Resistances to the 11.5-volt Lamps for a continuous current:	
5840.	**Combination resistance** for a supply current of 110 to 220 volts and 11.5. volts at the lamp terminals	**Rekyl**
	for an alternating current:	
5841.	**Transformer** for a supply circuit of 110 volts, 50 cycles, and 11.5 volts at the lamp terminals	**Rehun**
5842.	**Transformer** for a supply circuit of 220 volts, 50 cycles, and 11.5 volts at the lamp terminals	**Rehyt**
5843.	11.5-volt **Renewal filament lamp**	**Lisum**

Monochromator.

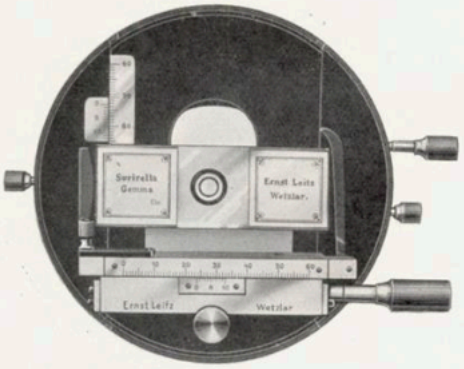


No.		Codeword
5844.	**Small Monochromator,** specially adapted for use with the microscope. The monochromator requires to be used in conjunction with our Liliput arc lamp	Croma

The monochromator is so arranged that it may be used for the illumination of the microscope with monochromatic light and also, placed behind the microscope eyepiece (for the spectrum analysis of interference colours) or without microscope (for spectroscopic measurements). For these various purposes the exit slit with collimator lens is interchangeable with a viewing eyepiece with cross-lines.

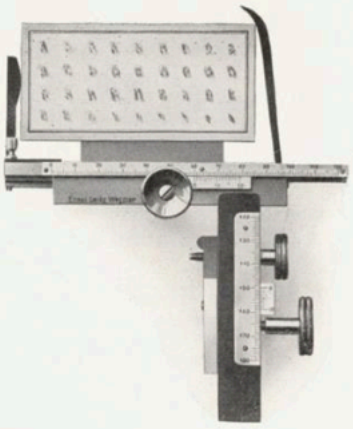
For full description and directions see separate pamphlet Micro D 2151.

Mechanical Stages.



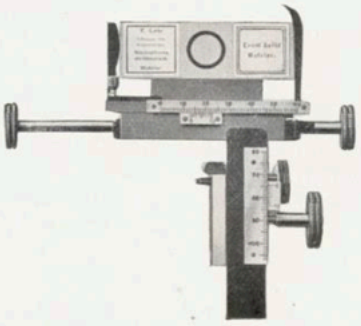
Large mechanical stage No. 5634.

No.		Codeword
5634.	**Large Mechanical Stage,** centring and revolving for stands A and ABM, in case . . . . . This mechanical stage is available for use with microscopic preparations of the usual sizes not exceeding 80×30 mm. The mechanical stage is interchangeable and can be delivered subsequently, in which case the number of the microscope should be stated.	**Plain**
5635.	**Large Mechanical Stage,** centring and revolving for stands B and BMB, in case . . . . . This mechanical stage is available for use with microscopic preparations of the usual sizes not exceeding 80×30 mm. The mechanical stage is interchangeable and can be delivered subsequently, in which case the number of the microscope should be quoted.	**Plaus**



Mechanical stage No. 5636.

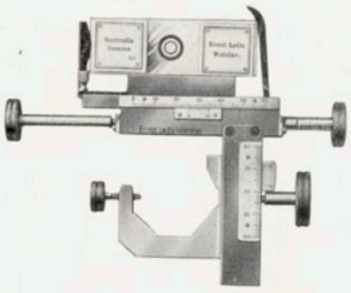
5636. **Large Mechanical Stage,** not revolving, for stands ABM, A, B and GC, in case . . . . . Plata
This stage has a range of 50 × 100 mm. suitable for large microscopic preparations, for example in embryological work, etc. The mechanical stage can be delivered also subsequently, in which case the number of the microscope should be quoted.



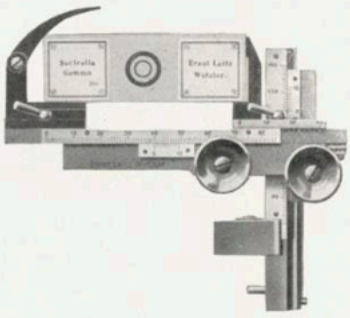
Mechanical stage No. 5637.

No. Codeword

5637. **Mechanical Stage,** not revolving, for stands ABM, A, B, GC and GE, in case . . . . . Plano
This stage is adapted for microscopic preparations of the usual size. The mechanical stage may be supplied subsequently, in which case the number of the microscope should be stated.



Mechanical stage No. 5639.



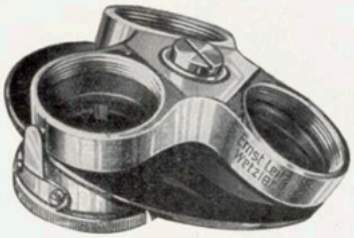
Mechanical stage No. 5641.

5639. **Mechanical Stage,** not revolving, for stands II and for the large travelling microscope, in case . . . . . Plasy
This stage is adapted for microscopic preparations of the usual size. The mechanical stage may be supplied subsequently, in which case the number of the microscope should be stated.

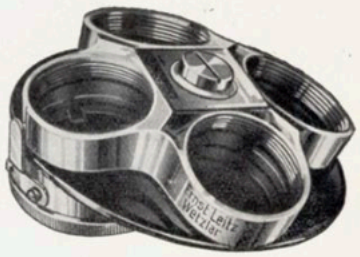
5641. **Mechanical Stage,** not revolving, for stands GE, GF and G, also for the stand No. 260 of the Greenough Microscope, in case . . . . . Plaze
This stage is adapted for microscopic preparations of the usual size. The mechanical stage may be supplied subsequently, in which case the number of the microscope should be stated.

Revolving Objective Changers.

(Nosepieces)



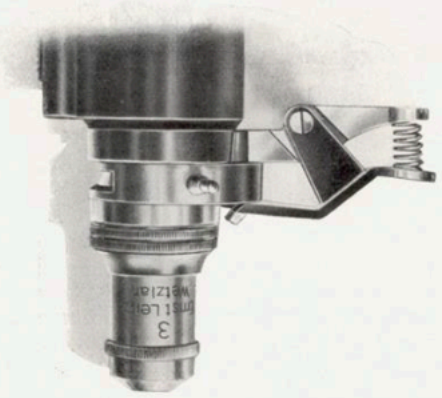
Revolving nosepiece or three objectives.



Revolving nosepiece for four objectives.

No.		Codeword
5631.	**Revolving Nosepiece** for two objectives	**Dublo**
5632.	**Revolving Nosepiece** for three objectives	**Tripo**
5633.	**Revolving Nosepiece** for four objectives	**Quato**

It should be borne in mind that a nosepiece has a depth of 18 mm. and that its attachment to the microscope adds therefore 18 mm. to the length of the tube. Hence, to maintain the prescribed tube-length of 170 mm. the draw-tube should be set at 152 mm.

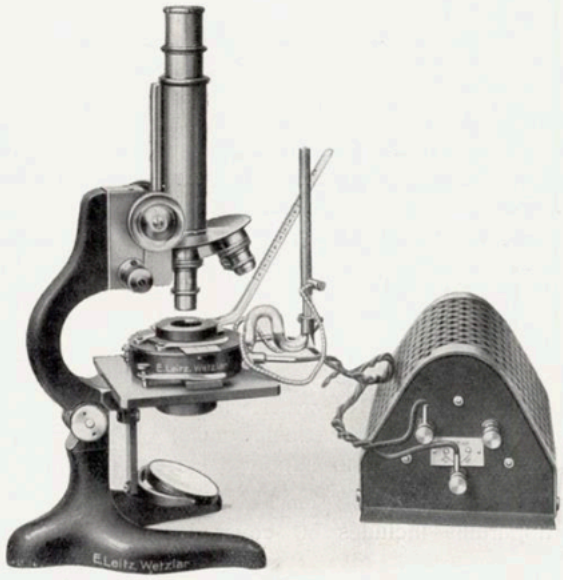


5620.	**Three-point Objective Centring Clutch** (D. R. G. M.) . . .	**Pizan**
5621.	**Centring Collar** for the above	**Pizut**

Thanks to their practical design these three-point objective clutches form a convenient substitute for the usual type of objective slide changers in that they do away with the necessity of repeated readjustments.

Heated Stages.

No.		Codeword
5550.	**Electrically Heated Stage** to put on the microscope stage; for qualitative observations or demonstrations which do not involve measurements of temperature. The maximum temperature is nearly 250 degree	**Eltis**
5551.	**Resistance** for 110 volts for the above	**Elwid**
5552.	**The Same** for 220 volts	**Elder**
5553.	**Protective Jacket** for objectives, when working with heating arrangements	**Eleap**



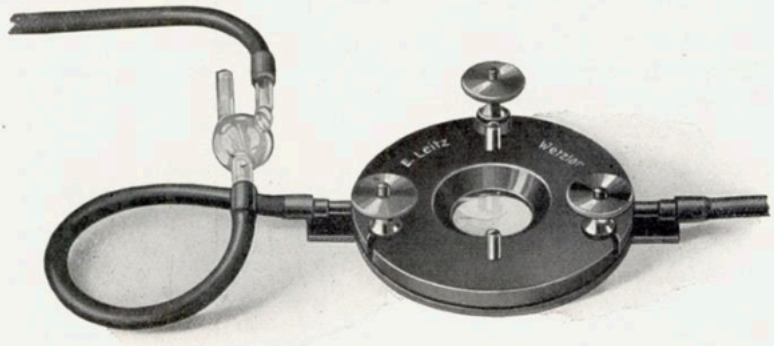
Heated stage after Walton.

5554.	**Automatically Regulating Electrically Heated Stage after Walton** for attachment to the microscope stage. This heated stage serves to maintain a permanent temperature up to 50 or 100 degree	**Eruht**
5555.	**Resistance** for 110 and 220 volts for the above	**Rebut**

Description and hints on the use of this stage will be found in our list D 2027.

E. LEITZ WETZLAR

Water-jacketed Compressor.



Ziegler's Water-jacketed Compressor.

No.		Codeword
5570.	**Water-jacketed Compressor** after Prof. Ziegler. This apparatus is admirably adapted for the observation of small tranparent organisms, such as worms, larvae, and such like. The compressor consists of two metal rings, the lower one being closed by a disc of plate glass, which forms the object slide, whilst the upper ring accommodates a hollow ring of rubber which can be compressed by the action of three thumb screws, whereby the gap between the plate and the cover-glass may be varied within certains limits. The upper ring is fitted with two small metal tubes forming respectively the inlet and outlet for the stream of water. Rubber tubes of any required length may be attached to the metal tubes the inlet being fitted with an U tube to supply a current of water by syphonage.	
	The apparatus includes 50 cover-glasses 25 mm. in diameter	**Durko**

Binocular Tube Head Attachments.

No. 5650. **Binocular Tube Head Attachment** with clamping collar, in case — Codeword **Botus**

Paired Huyghens Eyepieces.

Notation	4 × B	5 × B	6 × B	8 × B
Codeword	**Ginul**	**Gigen**	**Gizwa**	**Gidro**

Paired Periplanatic Eyepieces.

Notation	P. O. B. 4 ×	P. O. B. 5 ×	P. O. B. 6 ×	P. O. B. 8 ×
Codeword	**Giriv**	**Girfu**	**Girse**	**Girot**



We recommend the Binocular Tube Head Attachment especially to those who already possess a monocular microscope without interchangeable tube and are not prepared to acquire a new instrument of the binocular type.

When ordering a Binocular Tube Head the catalogue notation of the microscope with which it is to be used should be stated, particularly its factory number, as engraved on it, or, in the alterative, the diameter of the tube.

For description and hints on how to use it see list Mikro D 2145.

5651. **Lihotzky Image Erecting Binocular Stereo Attachment,** without paired eyepieces, with a clamping collar, in case . . — **Botop**

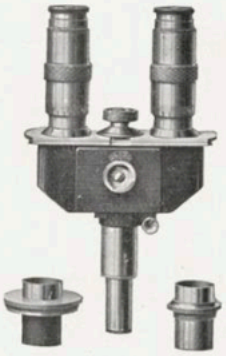
Paired Huyghens Eyepieces.

Notation	L 6 ×	L 8 ×	L 10 ×	L 12 ×
Codeword	**Biowa**	**Biore**	**Biovi**	**Biofu**

Paired Periplanatic Eyepieces.

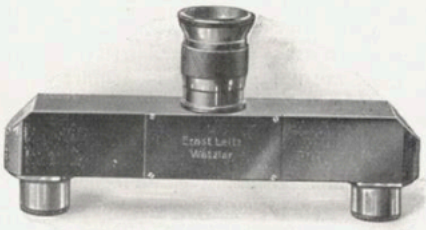
Notation	L.P.O. 6 ×	L.P.O. 8 ×	L.P.O. 10 ×	L.P.O. 12 ×	L.P.O. 15 ×	L.P.O. 20 ×	L.P.O. 25 ×
Codeword	**Brise**	**Briot**	**Brien**	**Briwo**	**Briur**	**Brias**	**Brizi**

The new **Lihotzky Stereo Tube Attachment** serves a like purpose but, without prejudice to any of the good points of the ordinary attachment, it has the further advantage that it can be made to present the microscopic image under all, including the highest, magnifications in stereoscopic relief without impairing the resolving power which conforms to the full aperture of the objective. The arrangement serves to erect the image formed by the objective and has the further advantage that the eyepieces which produce a certain magnification with the monocular microscope give the same magnification with the Lihotzky Attachment, so that full advantage may be taken of such higher eyepiece magnifications as are found desirable and useful in the monocular instrument.



When ordering the Image Erecting Lihotzky Binocular Stereo Attachment the catalogue notation of the microscope with which it is to be used should be stated, particularly its factory number, as engraved on it, or, in the alternative, the diameter of the tube.

For description and hints on how to use it see list Mikro D 2029.

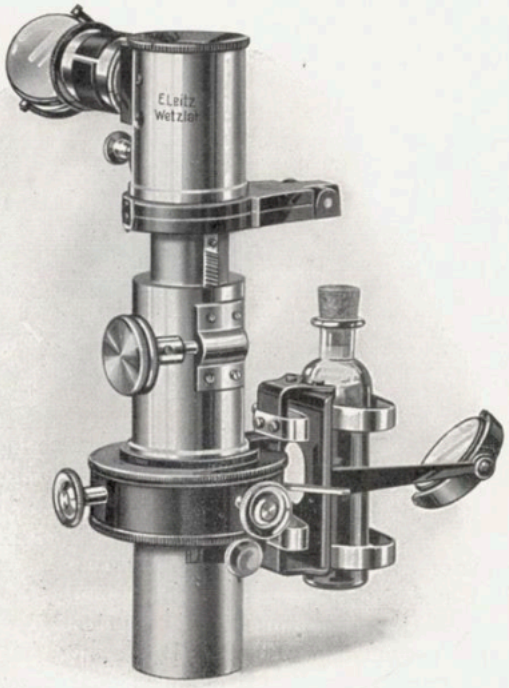


No. Codeword

5660. **Comparison Eyepiece.** This serves to combine the images furnished by the microscopes in such a way in the field of view that they may be compared with great ease. The images produced by the two microscopes are formed in one eyepiece by totally reflecting prisms. A double prism situated in the axis of the eyepiece causes one half of either image to be brought into view. In this way the two images of microscopic objects formed by the two microscopes are seen by side and can be compared. The Ramsden eyepiece has a device by means of which the dividing line in the field of view may be sharply focused in the observer's eye . . . . . **Okomp**

For Comparison Microscopes see Catal. 49 A and separate list.

Spectroscopes.



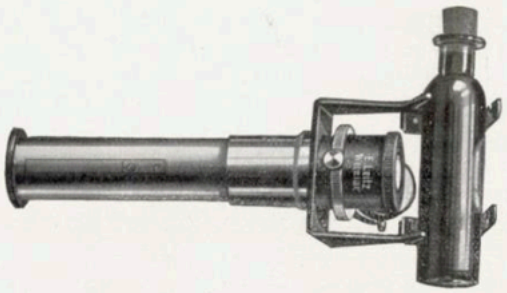
The Micro Spectroscope is a measuring instrument, with the aid of which the position of the lines of emission and absorption spectra may be read off directly in wavelenghts. The spectra of different objects may be compared by means of a comparison prism.

5665. **Micro Spectroscope** in case

Codeword: **Spemi**

For description and hints on how to use it see List Mikro E 2083.

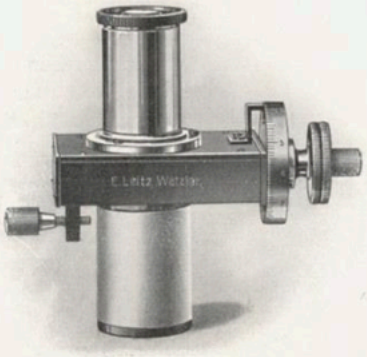
No.		Codeword
5666.	**Browning Hand Spectroscope** for viewing absorption spectra. The lens between the triple prism combination and the symmetrically moving slit jaws is achromatic. The slit may be sharply focused by its displacement	**Spero**



5667. **Same Hand Spectroscope** but with comparison prism and holder with clips for vials containing fluids to be examined . **Speta**

E. LEITZ WETZLAR

Micrometer Eyepieces.



Eyepiece Screw Micrometer



Micrometer Eyepiece
with movable scale.

No. | Codeword

5670. **Eyepiece Screw Micrometer** with movable eye-lens for accurately measuring extensive image areas. A scale of half and whole millimetres ruled upon glass is mounted under the field lens of a Ramsden eyepiece magnifying 10 times. This scale is traversed by a reference line inscribed on a mounted glass slide which is operated by a drumhead at the side. The drumhead is divided into 100 intervals. One complete rotation of the drum conforms to a linear movement of $^1/_2$ mm., so that each interval on the drum reads 0.005 mm. (5 μ). The micrometer value of an interval requires to be determined for each individual objective with the aid of a stage micrometer. Eyepiece Screw Micrometer, in case . . . . . **Okrau**

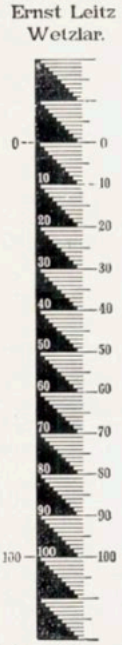
5671. **Micrometer Eyepiece with movable scale,** being 10 mm. divided into 100 parts. The scale is made to travel across the field of view by a screw within the casing. By its means any scale line may be accurately set to the extreme boundary of the object which is to be measured without the necessity of moving the object on the microscope stage. The eye-lens of the eyepiece is movable and can be focused with respect to the micrometer scale. Micrometer eyepiece with movable scale, in case . . . . . **Okbar**

The arrangement is applicable to any of the Huygens eyepieces 4× to 10× and the periplanatic eyepieces 4× to 12×. Where no particular eyepiece is specified we supply the Huygens eyepiece 6× with the movable micrometer scale.

No. Codeword

5672. **Micrometer Eyepiece** with intermediate screw-fitting containing the micrometer scale. The eye-lens is contained in a sliding mount and can be accurately adjusted to suit the observer's sight . . . . . **Okame**

5673. **Step Micrometer Eyepiece*).** The scale of this micrometer eyepiece is permanently mounted on the diaphragm of Huyghens eyepiece 6× and may be sharply focused by the movable eye-lens.



The scale is made up of groups of ten intervals, which can be easily distinguished by triangular steps rising from the first to the tenth interval of each group. This arrangement has the advantage that it can be read with the greatest ease thanks to the fact that the scale lines stand out equally sharply from light and dark objects, so that this micrometer may be described as a contrast micrometer.

The scale, when used in conjunction with its eyepiece in accordance with a table supplied with it, reads whole numbers under 10 or convenient multipliers, which are divisible by 5, viz. 10, 15, 30.

The micrometer values together with the required tube-lengths are given in the table referred to.

Step Micrometer Eyepiece . . . . . **Okstu**

For full description see List Mikro D 2079.

5674. **Step Micrometer Eyepiece** with movable scale. As in the case of the micrometer eyepiece No. 5671, the step micrometer may be moved across the field of view by the rotation of the screw which traverses the casing. In case . . . . . **Okmik**

5675. **Planimeter Eyepiece,** adapted for accurate measurements of length as well as for measuring areas and for counting particles; in case . . . . . **Oklan**

5676. **Eyepiece with two cross-lines and movable eye-lens** . . **Okfad**

Huygens eyepieces 4× to 10× and the periplanatic eyepieces 4× to 12× may be supplied in this form. In the absence of any indication as to which eyepiece is required we supply eyepiece 6×.

5677. **Herzog Artificial Silk Micrometer Eyepiece.** This micrometer eyepiece serves for determining the cross section, that is the fineness of artificial silk fibres by means of a cross-line micrometer with lines 0.162 mm. apart and comprising 400 small squares, twenty in each row. Each fifth line is a little heavier than the others. The eye-lens is movable for adjustment to the sight . . . . . **Okden**

*) cf. C. Metz, Das Stufenmikrometer mit vereinfachter Mikronteilung. Zeitschr. f. wissensch. Mikroskopie XXIX. 1912, p. 72–79.

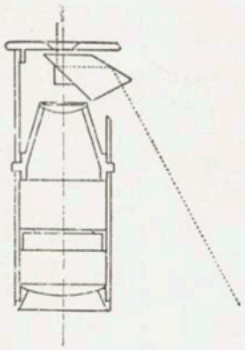
Micrometers.

No.		Codeword
5678.	**Eyepiece Glass Micrometer** for placing upon the eyepiece diaphragm, being 5 mm. divided into 100 parts	**Ocufi**
5679.	**Eyepiece Glass Micrometer,** being 10 mm. divided into 100 parts	**Ocume**
5680.	**Eyepiece Cross-line Micrometer,** for counting scattered objects in the field of view, lines 0.5 mm apart, in mount . .	**Ocnet**
5681.	**Cross-web Plate,** ruled on glass, in mount	**Ofpla**
5682.	**Herzog Artificial Silk Micrometer Plate,** being a cross-line micrometer with lines 0.162 mm. apart, 20×20 squares, every fifth line being a little heavier than the others, in mount for placing upon the eyepiece diaphragm.	**Odepa**
5683.	**Stage Micrometer,** being 1 mm. divided into 100 parts on glass, in case	**Obter**
5684.	**Stage Micrometer,** being 2 mm. divided into 200 parts, photographed scale, in case	**Obmet**
5685.	**Glass slide with chamber** $^2/_{10}$ mm. deep, with eyepiece cross-line micrometer No. 5680, in case	**Obcam**
5686.	**Glass slide with chamber,** the floor of which is ruled into squares with $^1/_{20}$ mm. sides, in case	**Obbod**
5687.	**Heim Counting Plate,** upon which are ruled three concentric circles above two cross lines	**Ochem**
5688.	**Thread Counting Plates,** being four plates with excisions of 1 and $^1/_2$ English, French and Saxon inch as well as 1 mm. square, in case.	**Obzal**

Drawing Eyepieces.



Drawing Eyepiece No. 5740



Sketch of the Drawing Eyepiece in cross section



Drawing Eyepiece No. 5743

5740. **Drawing Eyepiece** for drawing at the side of the microscope*).

The eyepiece slips into the tube like an ordinary eyepiece and is fixed therein by means of a screw. The drawing surface with the drawing pencil is seen clearly and sharply defined through the prism. The rays pass at right angles

*) The drawing eyepiece No. 5740, in the absence of directions to the contrary, is supplied in the form of an adapted Huyghens eyepiece 6x, but any of the Huyghens eyepieces 4x to 10x may be arranged as a drawing eyepiece.

No. Codeword

through the upper and lower faces of the prism and are totally reflected at the other two faces. This obviates the formation of disturbing secondary images, such as are liable to produce blurred images when coated mirrors are used. The lighting of the drawing surfaces may be modified by the introduction of two smoked glasses, for which room is provided in front of the lower prism surfaces. The light in the object may be regulated by the diaphragm of the illuminating apparatus. Drawing Eyepiece No. 5740, in case . . . . . **Desau**

In those cases where the microscope stand is to remain in its upright position when drawing with the drawing eyepiece No. 5740 use should be made of the

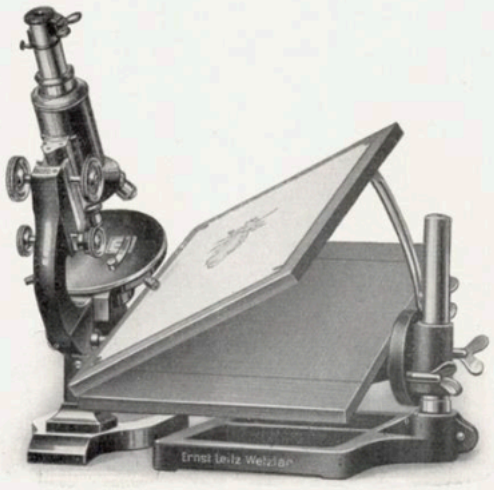
5741. **Drawing Table,** which, when set up in its working position, furnishes an angle of inclination which obviates any kind of distortion. It is made of lime wood and furnishes a smooth and flat drawing surface . . . . . **Detus**



Drawing Table No. 5741.

When it is intended to draw with the microscope in its inclined position the drawing surface requires to be inclined in two directions. In this case it will be necessary to provide the

5742. **Large Drawing Table,** which is set up as shown in the figure **Dehag**



Drawing Table No. 5742.

No. Codeword

To obviate distortion, whatever may be the position of the microscope, an endeavour should be made to bring a circle drawn upon the drawing surface into coincidence with the boundary circle of the field of view of the microscope, varying the angle of inclination of the table until this is the case.

5743. **Drawing Eyepiece** for drawing with inclined stand*).

When the microscope is inclined at an angle of 45° the drawing surface is situated on the working table approximately at a distance equal to the normal distance of distinct vision.



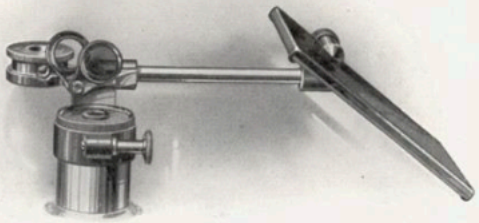
With the drawing surface in this horizontal position the images are reproduced without distortion, and there is then no need to provide a special table. The angle at which the microscope is inclined to the drawing surface is correct when a circle on it is concentric with the circular boundary of the field of view The intensity of the illumination on the drawing surface may be moderated with the aid of the two neutral tint glass plates, which are mounted in movable arms. The intensity of the field should be regulated by means of the diaphragm of the illuminating apparatus. Drawing eyepiece No. 5743, in case . . . . . **Desin**

*) The drawing evepiece No. 5743, unless otherwise ordered, is supplied in combination with a Huyghens eyepiece 6x. The drawing prism may, however, be combined with any of the Huyghens eyepieces 4x to 10x.

Drawing Apparatus
for attachment to the microscope.

No. Codeword

5744. **Abbe Drawing Apparatus.** This apparatus brings the drawing surface into view by reflection at a mirror at the side with a surface of 80×60 mm. and a double prism situated above the eyepiece. The image formed by the objective and eyepiece appears through the opening in the coating of silver of the prism. The double prism may be swung aside in its mount, as shown in the illustration. The eyepiece is then free for



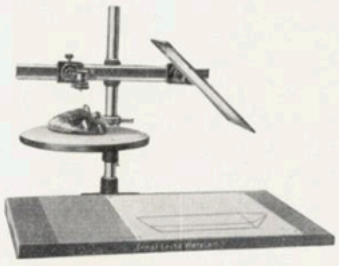
Drawing Apparatus No. 5744.

direct observation. Two movable rings containing neutral tint glasses mounted therein can be introduced in front of the side surface of the prism. They serve for moderating the light of the drawing surface . . . . . **Denom**

5745. **Large Abbe Drawing Apparatus.** The design of this apparatus is in the main the same as that of the preceding instrument, except that it has a larger mirror, the latter measuring 125×80 mm. . . . . **Denat**

5746. **Abbe Drawing Apparatus** with mirror measuring 80×60 mm. adapted for use with the large dissecting microscope No. 204 **Nacme**

5760. **Günther and Metz Drawing Apparatus** for macroscopic objects.



Drawing Apparatus No. 5760 (about $^1/_{11}$ act. size)

This apparatus admits of objects up to 25 cm. in diameter being drawn, while the drawing itself may have a size up to

No. Codeword

25 cm. Magnifications up to 15× within the above size limits may be obtained with the apparatus by varying the distance and by the interposition of lenses.

Günther-Metz Drawing Apparatus wit base measuring 60× 40 cm., a circular object stage, prism arm with drawing prism, mirror measuring 24×16 cm., all capable of mutual displacement, together with three lenses and three moderating glass plates in slip-in mount, in case . . . . . **Degun**

Directions will be found in List Mikro D 2181.

5770. **Object Marker** with writing diamond. An interesting element in a preparation may be marked for re-finding by drawing with the device a small circle about the element in question. For this purpose the object should be directed into the centre of



the field of an objective and the latter exchanged for the object marker, which screws to the microscope tube or the revolving nosepiece like an objective. The diamond chip is mounted slightly out of centre and, when the marker is turned about its axis, scribes a small circle upon the cover-glass . . . . . **Marki**

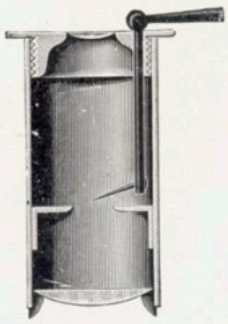
5771. **Becher Finder** for microscopic objects.

This finder consists of a glass plate ruled into small squares and accurately adjusted to a metal angle piece. The thickness of the latter is such that the ruled plate may be slipped over the object slide without touching the object. The legs of the angle piece will then be in close contact with the sides of the object holder. The ruling on the glass plate thus locates any point of the object, and, thanks to the exact adjustment of the finder, it does so irrespectively of the individual finder which is being used, so that an object point may be registered with the finder and its position re-established with any other finder of this same kind . . . . . **Fider**

The finder may be used on any microscope stand whatsoever.

For full description see our List Micro D 2148, which is supplied with the finder.

No. | Codeword

5772. 

Demonstrating Eyepiece (Pointer Eyepiece, as devised by Kuznitzky). This eyepiece serves the purpose of pointing out special features in the field. It contains a pointer which may be directed by a small external lever. By this movement in conjunction with the rotation of the eyepiece within the tube the demonstrator is enabled to direct attention to any point in the field of view . . **Okato**

Double Demonstrating Eyepiece.



This device slides into the tube of the microscope like an ordinary eyepiece. It contains above the plane of the eyepiece stop an arrangement of prisms by means of which the image formed by the objective can be viewed simultaneously by two observers. A movable pointer can be seen by both and enables either to indicate any element to which he wishes to direct the attention of the other.

5773. **Double Demonstrating Eyepiece** magnifying 4 diameters . **Okdal**

5774. **Double Demonstrating Eyepiece** magnifying 6 diametres . **Okdup**

5775. **Double Demonstrating Eyepiece** magnifying 8 diameters . **Okdyt**

Description and direction: List Mikro D 2152.

5776. **Image Erecting Prism** to fit over ordinary eyepieces. The instrument serves to erect the inverted image as seen in the eyepiece and thereby renders it easier to dissect under the compound microscope . . . . . **Okpri**

Accessory Implements

for microscopic work.



Turntable No. 5900



Micrometer Gauge No. 5901

No.		Codeword
5900.	**Turntable** for ringing cover-glasses on mounted objects, with clips for holding the preparation	**Drese**
5901.	**Micrometer Gauge** for cover-glasses and object slides, reading $^1/_{100}$ mm.	**Dimes**
5902.	**Cover-glasses,** square 15×15 mm., per 100	**Deceo**
5903.	„ „ 18×18 „ „ 100	**Decka**
5904.	„ „ 20×20 „ „ 100	**Decul**
5905.	„ circular, 15 mm. diam., per 100	**Derem**
5906.	„ „ 18 „ „ „ 100	**Deril**
5907.	„ „ 20 „ „ „ 100	**Deryt**
5908.	**Object slides,** English pattern, 3×1 in., of plate glass with ground edges, per 100	**Dobad**
5909.	**Object slides** with cavity for hanging-drop observations, per doz	**Dobka**
5910.	**Object slides** with circular well for use as a moist chamber	**Dobru**
5911.	**Micro Aquarium** for viewing micro organisms in water, etc.	**Dobor**
5912.	**Thickened Cedarwood Oil** for immersion lenses, 10 grammes	**Doleo**
5913.	**Capped Rod-stoppered Bottle** for immersion oil with horn rod	**Dokap**

Dissecting Cases.



No.		Codeword
5920.	**Case** containing a razor, section lifter, two scalpels, fine and curved scissors, forceps, two dissecting needles, two lancet pointed needles	**Dotes**
5921.	**Case** containing a razor, section lifter, scalpel, two dissecting needles, scissors, forceps	**Dotix**
5922.	**Case** containing a scalpel, scissors, forceps, two needles .	**Dotom**
5923.	**Botanical Dissecting Case** containing a scalpel, forceps, crossed forceps with horn handles, two scissors, two needles, two magnifiers	**Dotan**
5924.	**Meat Inspector's Outfit** comprising scissors, scalpel, forceps two dissecting needles, pipette with rubber teat	**Dotul**

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