R. & J. BECK,

LIMITED,

68, CORNHILL, E.C.

MICROSCOPES.

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Illustrated Catalogue

OF

MICROSCOPES, OBJECT-GLASSES AND APPARATUS

MANUFACTURED BY

R. & J. BECK,

LIMITED.

(1894.)

Council Medal, London, 1851.
First Class Medal, Paris, 1855
Prize Medal, London, 1862.
Gold Medal, Paris, 1867.
Bronze Medal, Philadelphia, 1876.
Gold Medal, International Inventions Exhibition, London, 1885.
Prize Medal, Calcutta, 1892.
Prize Medal, Portsmouth, 1892.
2 Prize Medals, Chicago, 1893.
Prize Medal, Calcutta, 1893.
Prize Medal, Bristol, 1894.

68, CORNHILL, E.C.

Factory—LISTER WORKS, KENTISH TOWN, } LONDON.

American Agents—WILLIAMS, BROWN & EARLE,

33, 35, and 39, SOUTH TENTH STREET, PHILADELPHIA.

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TERMS.

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Unless otherwise specified, goods are sent per passenger train.

ARRANGEMENT OF CATALOGUE.

The first 13 pages of this Catalogue describe the Large Model and Binocular Microscopes, which are invaluable for certain branches of investigation. The smaller and more compact models, used for Bacteriological and Clinical research, will be found next in order; while after them are figured Petrological Microscopes. Page 26 catalogues our Object-Glasses, and on pages 27 to 36 will be found an illustrated list of Microscopical Apparatus more complete than has ever been attempted. The remaining pages of the Catalogue are devoted to Dissecting Microscopes, Microtomes, Mounting Materials, and all Microscopical Sundries.

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LARGE MODEL MICROSCOPES.

"THE INTERNATIONAL" MICROSCOPE.– No. 1. Plate I.

No.	DESCRIPTION	Price £ s. d.
1A	"THE INTERNATIONAL" BINOCULAR MICROSCOPE, WITH SWINGING SUB-STAGE AND NEW ARRANGEMENTS FOR ROTATING AND REVOLVING THE CONCENTRIC ROTATING STAGE WITH IRIS DIAPHRAGM, AND ALSO FOR ADJUSTING AND ROTATING THE ILLUMINATING APPARATUS, WITH ALL THE LATEST ADDITIONS, COMPLETE. (Plate I.)	220 0 0
	14 Object-glasses, magnifying from 8 to 10,000 linear } viz. 4 in. (9°), 3 in. (12°), 1½ in. (23°), ⅔ in. (32°), $\frac{4}{10}$ in. (65°), $\frac{4}{10}$ in. (95°), ¼ in. (75°), ⅕ in. (120°), ⅛ in. (130°), $\frac{1}{10}$ in. imm. (180°), $\frac{1}{20}$ in. imm. (180°), $\frac{1}{40}$ in. (140°), ⅛ in. Binocular (110°), $\frac{1}{15}$ in. imm. Binocular (180°).	
	Lieberkuhns to the following Object-glasses :—1½ (132), ⅔ (Pl. XVII. 133), $\frac{4}{10}$ (Pl. XVII. 135), ¼ (136).	
	10 Eye-pieces, viz.: 1 pair No 1, 1 pair No. 2, 1 pair No. 3, 1 No. 4, 1 No. 5, (Pl. XVII. 171), 1 pair Kelner's Orthoscopic Eye-pieces (Pl. XVII. 170). Indicators to 6 Eye-pieces (Pl. XVII. 175). Graduated Draw-tube (Pl. XVII. 174). Erecting-glass (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Achromatic Condenser, with 2 Diaphragm-plates and Iris Diaphragm (Pl. XVIII. 180). Quadruple Nose-piece in Aluminium (Pl. XIX. 194). Adapter for Centring Illuminating Apparatus (Pl. XVIII. 200). Brown's Iris Diaphragm (201). Maltwood's Finder (Pl. XIX. 202). Three Dark Wells and Holder (Pl. XIX. 220). Equilateral Prism (Pl. XXI. 211). Parabolic Lieberkuhn, with Sorby's Reflector (Pl. XVII. 224). Amici's Prism (Pl. XXI. 225). Nachet's Prism (Pl. XXI. 226). Wenham's Parabolic Reflector (Pl. XXI. 227). Spot-Lens (Pl. XXI. 228). Right-angled Prism (Pl. XXI. 230). Blue-glass Moderator (Pl. XX. 232). White-cloud Illuminator (Pl. XX. 240). Large Bull's-eye Condensing-lens (Pl. XX. 242). Smaller Side Condensing-lens (Pl. XX. 243). Side Silver Reflector (Pl. XX. 245). Lever Compressor (Pl. XXV. 250). Parallel-plate Compressor (Pl. XXV. 251). Reversible Compressor (Pl. XXV. 252). Wenham's Compressor (Pl. XXV. 253). Screw Live-box (Pl. XXV. 254). Large Live-box (Pl. XXV. 255). Small Live-box (Pl. XXV. 256). Opaque Disk Revolver, with 3 Trays of Disks and Forceps (Pl. XXV. 258). Three-pronged Forceps (Pl. XXV. 261). Stage Mineral-holder (Pl. XXV. 265). Growing-cell (Pl. XXV. 267). Two Large Glass Troughs (Pl. XXVI. 280). Two Glass Slips, with Ledge (283). Set of Live Traps (Pl. XXVII. 284). Frog-plate (Pl. XXVI. 286). Set of Three Fishing Tubes (Pl. XXVI. 290). Special Apparatus for the Study of Petrology (310). Darker's Series of Selenites (Pl. XXII. 313). Two Double-image Prisms and Selenite Film, and Brass Plate with holes (319). Set of 6 Crystals, showing rings round the optic axis (Pl. XXII. 321). Tourmaline (Pl. XXII. 322). Sorby's Spectroscope (Pl. XXIII. 330). Sorby's Dichroiscope (Pl. XXIII. 332). Sorby's Standard Spectrum-scale (Pl. XXIII. 333). Beck's Vertical Camera Lucida (Pl. XXIV. 340). Wollaston's Camera Lucida (Pl. XXIV. 341). Neutral Tint Camera (Pl. XXIV. 342). Leeson's Goniometer (Pl. XXIV. 344). Cobweb Micrometer (Pl. XXIV. 345). Eye-piece Micrometer, with Jackson's Adjusting-screw (Pl. XXIV. 346). Stage Micrometer (Pl. XXIV. 351). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266).	

The whole packed in an Upright Spanish-Mahogany Case, with two boxes containing the apparatus.

NOTE.

Nos. 1A *to* 3C may be fitted in a *Handsome Spanish Mahogany-winged Case* with glass panels, the wings fitted with forty-two drawers with porcelains let into the front and numbered knobs, with space for 1000 objects lying flat, and four deeper drawers containing the apparatus for the Microscope, for £22 extra.

DESCRIPTION OF "THE INTERNATIONAL" MICROSCOPE-STAND WITH SWINGING SUBSTAGE.

The International Microscope-Stand has a tripod (A) for its base, upon which is placed a revolving fitting (B), graduated to degrees, by which means the microscope can be turned round without being lifted from the table, and the amount of such rotation registered ; upon this fitting two pillars are firmly fixed, and between them the limb (C) can be elevated or depressed to any angle, and tightened in its position by the lever (D). The limb carries at one end the body (E) (Binocular or Monocular), the Eye-pieces and Object-glasses, in its centre the Compound Stage (F), beneath which is the circular plate (J) carrying the Swinging-bar with the Substage (G) ; and at the lower end another bar carrying the Mirror (H). Each of these parts requires a separate description.

THE BINOCULAR BODY.

The upper or eye-piece ends of the Binocular tubes are fitted with racks and pinion for varying the distances between the two eye-pieces, to suit the distances between the eyes of various persons ; and arrangements are made for racking out one tube more than the other, to suit special irregularities or inequalities between the eyes of the observer.

The body is moved up and down with a quick movement by means of a rack and pinion actuated by the milled heads (K).

THE FINE ADJUSTMENT.

The fine adjustment moves the whole body, together with the milled heads (K), in a fitting of the most accurate workmanship which extends the entire length of the upper portion of the limb of the microscope. Within the substance of this limb a powerful lever is suspended and the milled head (L) acting by means of a micrometer screw upon one end of this lever moves the body by its means. The adjustment thus formed is at once unusually delicate and decided.

THE STAGE.

The Compound Stage is of an entirely new construction : it is attached to the limb on a pivot, and can be rotated so as to be set at any inclination, the angle being recorded on the divided plate (R), or can be turned completely over, so that the object can be viewed by light of any obliquity without any interference from the thickness of the stage ; the object can be simply placed upon the Stage without being fixed, or, if necessary, it can be clamped by carefully bringing down the spring-piece (M), the lower ledge will slide up or down, and the object may be pushed sideways ; thus forming a coarse adjustment. Finer movements in vertical and horizontal directions are effected by means of two milled heads (N and O), the screws attached to which are met by opposing springs, so as to avoid all strain or loss of time. The whole Stage revolves in a circular ring by the milled head (P), or this can be drawn out, and then the Stage turns rapidly by merely applying the fingers to the two ivory studs (Q, Q) fastened on the top plate, which is divided into degrees to register the amount of revolution.

Beneath and attached to the Stage is an iris diaphragm (S), which can be altogether removed, as shown in the Illustration from its dovetailed fitting, so as not to interfere during the rotation of the Stage. The variations in the aperture of this diaphragm are made by a pinion working into a racked arc and adjusted by the milled head (T).

THE SWINGING SUBSTAGE.

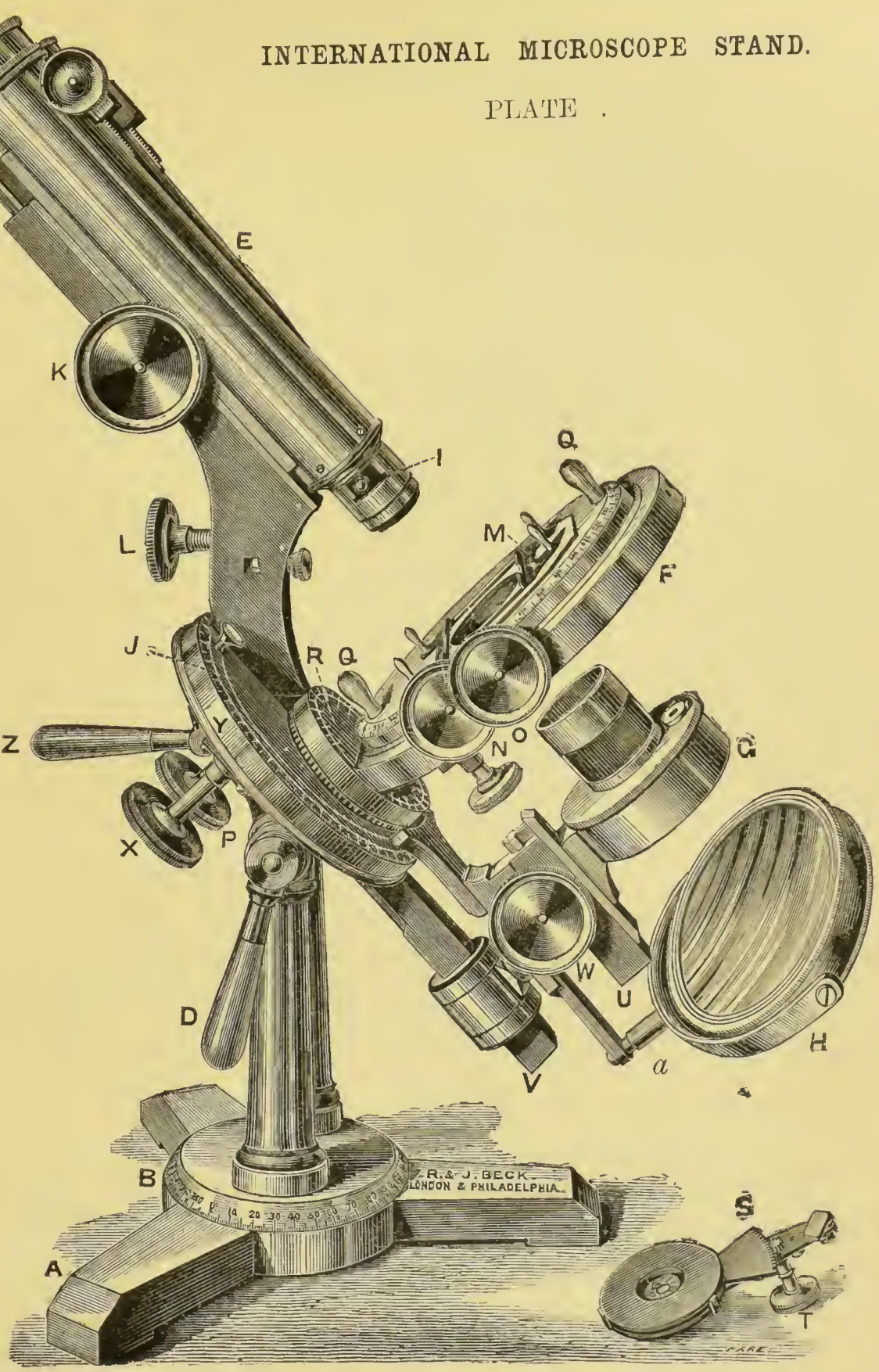
The substage (G), carrying the apparatus for illumination, fits into the bar U, and is racked up and down by the milled head (W). This bar is itself attached to an arc (J) working in the circular fitting (Y), and is rotated by means of the milled head (X), so that it can be carried round and above the Stage, and be thus used for illumination at any angle beneath the Stage, or for the examination of opaque objects above it. The amount of angular movement is recorded on the circle (Y), whilst the whole of this part of the stand is raised and lowered on a dovetailed fitting *in the optical axis of the Instrument* by the lever (Z), so as to focus the illumination, and the amount of such elevation or depression registered on a scale attached to the limb.

THE MIRROR.

The lower triangle bar (V) carries the mirrors (H), or a right-angle prism, when the illumination is required to be concentric with the optical axis of the instrument, and independent of the movements of other illuminating apparatus ; when desired, however, it slides on the bar U, and can then be moved above or below the Stage in the same way as the substage. The mirror-box swings in a rotating semicircle attached to a lengthening bar, which enables it to be turned from one side to the other, and revolves on a circular fitting for giving greater facilities in regulating the direction of the beam of light reflected ; the whole is made to reverse in the socket (*a*) so as to bring the centre of the mirror concentric with the axis of the Microscope in either case.

INTERNATIONAL MICROSCOPE STAND.

PLATE .



No. 1.—"THE INTERNATIONAL" MICROSCOPE STAND, with Swinging Substage.

THIS ILLUSTRATION IS DRAWN TO A SCALE OF ONE THIRD.

No.	DESCRIPTION.	Price. £	s.	d.
I.	"THE INTERNATIONAL" BINOCULAR MICROSCOPE STAND, with Swinging Substage, and new arrangements for rotating and revolving the Concentric Rotating Stage with Iris Diaphragm, and also for adjusting and rotating the Illuminating-apparatus, two pairs of Eye-pieces, Graduated Draw-tube, Pliers, Forceps, and Glass Slip. (PLATE I.)	50	0	0
I*.	"THE INTERNATIONAL" MONOCULAR MICROSCOPE STAND, with Swinging Substage, and new arrangements for rotating and revolving the Concentric Rotating Stage with Iris Diaphragm, and also for adjusting and rotating the Illuminating-apparatus, two Eye-pieces, Graduated Draw-tube, Pliers, Forceps, and Glass Slip. (PLATE I.)	43	0	0

INTERNATIONAL MICROSCOPE.

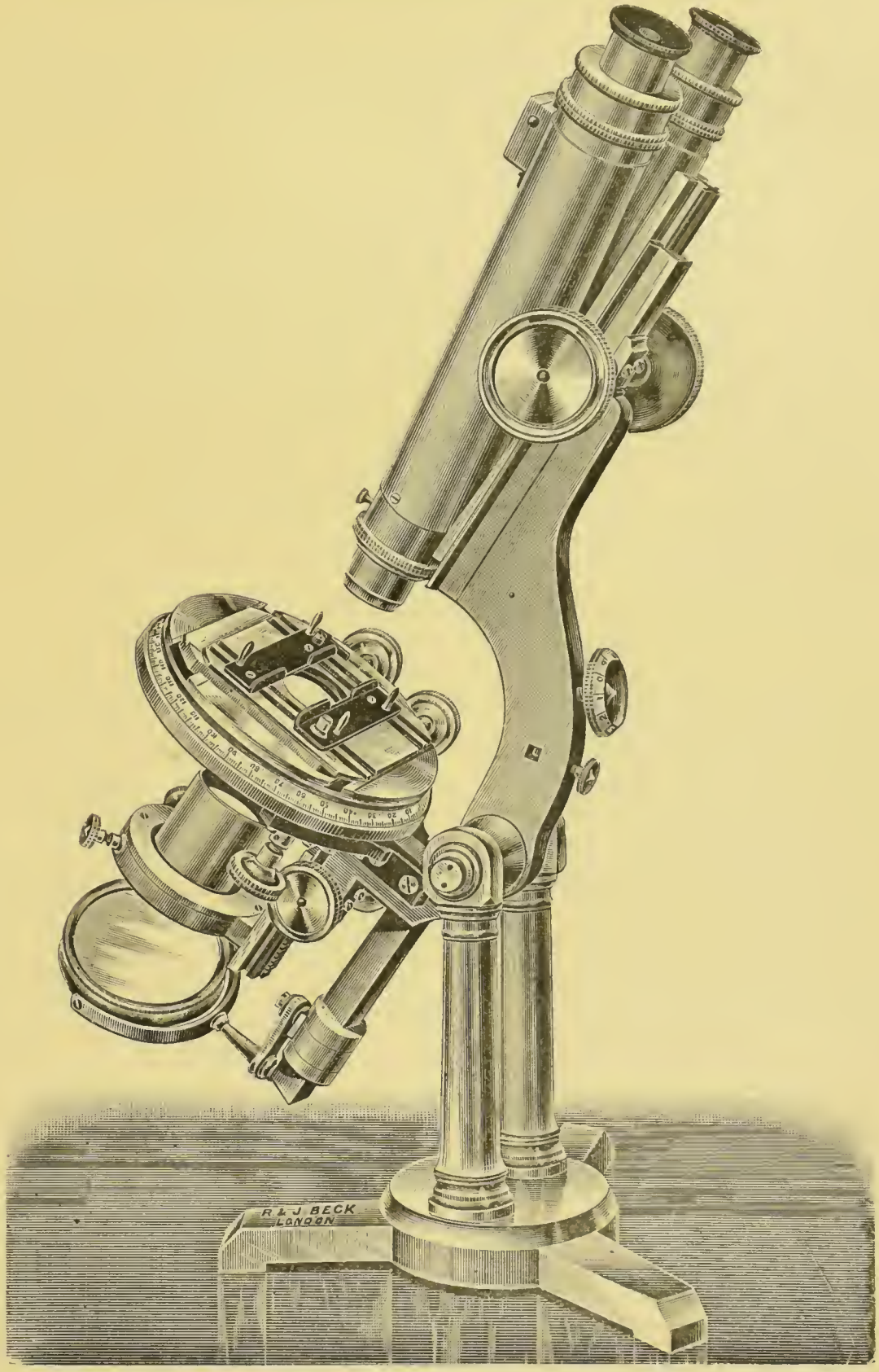
No.	DESCRIPTION.	Price.
		£ s. d.
I B.	"THE INTERNATIONAL" BINOCULAR MICROSCOPE, WITH SWINGING SUB-STAGE AND NEW ARRANGEMENTS FOR ROTATING AND REVOLVING THE CONCENTRIC ROTATING STAGE WITH IRIS DIAPHRAGM, AND ALSO FOR ADJUSTING AND ROTATING THE ILLUMINATING APPARATUS (PLATE I.) WITH THE FOLLOWING APPARATUS	130 0 0
	8 OBJECT-GLASSES, magnifying from 12 to 4000 linear ... viz.: 3 in. (12°), 1½ in. (23°), ⅔ in. (32°), $\frac{4}{10}$ in. (95°), ¼ in. (75°), ⅕ in. (120°), $\frac{1}{10}$ in. imm. (180°), $\frac{1}{15}$ in. imm. Binocular 180°).	
	LIEBERKUHNS to the following Object-glasses:—1½ (132), ⅔ (Pl. XVII. 133), $\frac{4}{10}$ (Pl. XVII. (135), ¼ (136).	
	7 EYE-PIECES, viz.: 1 pair No. 1, 1 pair No. 2, 1 pair No. 3, 1 No. 4 (Pl. XVII. 171). INDICATORS to 4 Eye-pieces (Pl. XVII. 175). GRADUATED DRAW-TUBE (Pl. XVII. 174). ERECTING-GLASS (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. ACHROMATIC CONDENSER, with 2 Diaphragm-plates and Iris Diaphragm (Pl. XVIII. 180). QUADRUPLE NOSE-PIECE in Aluminium (Pl. XIX. 194). MALTWOOD'S FINDER (Pl. XIX. 202). THREE DARK WELLS and HOLDER (Pl. XIX. 220). PARABOLIC LIEBERKUHN (Pl. XVII. 223). AMICI'S PRISM (Pl. XXI. 225). NACHET'S PRISM (Pl. XXI. 226). WENHAM'S PARABOLIC REFLECTOR (Pl. XXI. 227). RIGHT-ANGLE PRISM (Pl. XXI. 230). LARGE BULL'S-EYE (Pl. XX. 242). SIDE CONDENSER to limb (Pl. XX. 243). LEVER COMPRESSOR (Pl. XXV. 250). PARALLEL-PLATE COMPRESSOR (Pl. XXV. 251). WENHAM'S COMPRESSOR (Pl. XXV. 253). SCREW LIVE-BOX (Pl. XXV. 254). OPAQUE DISK REVOLVER, with THREE TRAYS OF DISKS and FORCEPS (Pl. XXV. 258). STAGE MINERAL-HOLDER (Pl. XXV. 265). LARGE GLASS TROUGH (Pl. XXVI. 280). TWO GLASS SLIPS with LEDGE (283). FROG-PLATE (Pl. XXVI. 286). SET OF THREE FISHING-TUBES (Pl. XXVI. 290). POLARIZING APPARATUS (Pl. XXII. 312). SELENITE STAGE (Pl. XXII. 315). WOLLASTON'S CAMERA LUCIDA (Pl. XXIV. 341). EYE-PIECE MICROMETER, with Jackson's Adjusting-screw (Pl. XXIV. 346). STAGE MICROMETER (Pl. XXIV. 349). STAGE FORCEPS (Pl. XXV. 263). BRASS PLIERS (Pl. XXV. 266).	
	The whole packed in an UPRIGHT SPANISH-MAHOGANY CASE, with one box containing the apparatus.	
I C.	"THE INTERNATIONAL" BINOCULAR MICROSCOPE, WITH SWINGING SUB-STAGE AND NEW ARRANGEMENTS FOR ROTATING AND REVOLVING THE CONCENTRIC ROTATING STAGE WITH IRIS DIAPHRAGM, AND ALSO FOR ADJUSTING AND ROTATING THE ILLUMINATING APPARATUS (PLATE I.) WITH THE FOLLOWING APPARATUS	95 0 0
	5 OBJECT-GLASSES, magnifying from 30 to 2000 linear ... viz.: 1½ in. (23°), ⅔ in. (32°), $\frac{4}{10}$ in. (65°), ⅕ in. (120°), $\frac{1}{10}$ in. imm. (180°).	
	LIEBERKUHNS to the following Object-glasses:—⅔ (Pl. XVII. 133), $\frac{4}{10}$ (Pl. XVII. 135).	
	6 EYE-PIECES, viz.: 1 pair No. 1, 1 pair No. 2, 1 pair No. 3 (Pl. XVII. 171). INDICATORS to 2 EYE-PIECES (Pl. XVII. 175). GRADUATED DRAW-TUBE (Pl. XVII. 174). ERECTING-GLASS (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. ACHROMATIC CONDENSER, with 2 Diaphragm-plates and Iris Diaphragm (Pl. XVIII. 180). BROOK'S DOUBLE NOSE-PIECE (Pl. XIX. 190). MALTWOOD'S FINDER (Pl. XIX. 202). THREE DARK WELLS and HOLDER (Pl. XIX. 220). PARABOLIC LIEBERKUHN (Pl. XVII. 223). WENHAM'S PARABOLIC REFLECTOR (Pl. XXI. 227). LARGE BULL'S-EYE CONDENSING LENS (Pl. XX. 242). SMALLER SIDE CONDENSING LENS (Pl. XX. 243). PARALLEL-PLATE COMPRESSOR (Pl. XXV. 251). WENHAM'S COMPRESSOR (Pl. XXV. 253). LARGE LIVE-BOX (Pl. XXV. 255). SMALL LIVE-BOX (Pl. XII. 256). OPAQUE DISK REVOLVER, with FORCEPS and THREE TRAYS OF DISKS (Pl. XII. 258). STAGE MINERAL-HOLDER (Pl. XXV. 265). LARGE GLASS TROUGH (Pl. XXVI. 280). TWO GLASS PLATES with LEDGE and COVERS (283). SET OF THREE FISHING-TUBES (Pl. XXVI. 290). POLARIZING APPARATUS (Pl. XXII. 312). WOOLLASTON'S CAMERA LUCIDA (Pl. XXIV. 341). EYE-PIECE MICROMETER, with Jackson's Adjusting-screw (Pl. XXIV. 346). STAGE MICROMETER (Pl. XXIV. 349). STAGE FORCEPS (Pl. XXV. 263). BRASS PLIERS (Pl. XXV. 266).	
	The whole packed in an UPRIGHT SPANISH-MAHOGANY CASE, with one box containing the apparatus.	

NOTE.

These Instruments, if Monocular instead of Binocular, cost £7 less.

PLATE II.

No. 2.—LARGE FIRST-CLASS MICROSCOPE STAND.



THIS ILLUSTRATION IS DRAWN TO A SCALE OF ONE-THIRD.

No.	Plate.	DESCRIPTION.	£	s.	d
2.	II.	LARGE FIRST-CLASS BINOCULAR MICROSCOPE STAND, with Concentric Rotating Stage and Iris Diaphragm. Substage with Rack-and-pinion Focussing and Centring Adjustments, Two pairs of Eye-pieces, Graduated Draw-tube, Pliers, Forceps, and Glass Slip	35	0	0
2*	II.	LARGE FIRST-CLASS MONOCULAR MICROSCOPE STAND, with Concentric Rotating Stage and Iris Diaphragm. Substage with Rack-and-pinion Focussing and Centring Adjustments, Graduated Draw-tube, Two Eye-pieces, Pliers, Forceps, and Glass Slip	28	0	0

FIRST-CLASS LARGE MICROSCOPES—No. 2. Plate II.

No.	DESCRIPTION.	Price. £ s. d.
2A.	LARGE FIRST-CLASS BINOCULAR MICROSCOPE, WITH CONCENTRIC ROTATING STAGE AND IRIS DIAPHRAGM (Plate II.), WITH THE FOLLOWING APPARATUS	80 0 0
	5 Object-glasses, magnifying from 30 to 1200 linear ... { 1½in. (23°), ⅔in. (32°), $\frac{4}{10}$in. (65°), ⅕in. (120°), ⅛in. Binocular (110°).	
	Lieberkuhns to the following Object-glasses:—⅔ (Pl. XVII. 133), $\frac{4}{10}$ (Pl. XVII. 135).	
	6 Eye-pieces: viz.: 1 pair No. 1, 1 pair No. 2, 1 pair No. 3 (Pl. XVII. 171). Indicator to 1 Eye-piece (Pl. XVII. 175). Graduated Draw-tube (Pl. XVII. 174). Erecting-glass (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Achromatic Condenser, with two Diaphragm-plates and Iris Diaphragm (Pl. XVIII. 180). Brook's Double Nose-piece (Pl. XIX. 190). Maltwood's Finder (Pl. XIX. 202). Tightening-key (Pl. XIX. 203). Three Dark Wells and Holder (Pl. XIX. 220). Parabolic Lieberkuhn (Pl. XVII. 223). Wenham's Parabolic Reflector (Pl. XXI. 227). Large Bull's-eye Condensing-lens on Stand (Pl. XX. 242). Small Side-condensing-lens (Pl. XX. 243). Wenham's Compressor (Pl. XXV. 253). Large Live-Box (Pl. XXV. 255). Small Live-box (Pl. XXV. 256). Stage Mineral-holder (Pl. XXV. 265). Large Glass Trough (Pl. XXVI. 280). Two Glass Plates with Ledge and Covers (283). Set of Three Fishing-tubes (Pl. XXVI. 290). Special Apparatus for the Study of Petrology (310). Neutral-tint Camera Lucida (Pl. XXIV. 342). Eye-piece Micrometer, with Jackson's Adjusting-screw (Pl. XXIV. 346). Stage Micrometer (Pl. XXIV. 349). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266).	
	The whole packed in an Upright Spanish-Mahogany Case, with one box containing the apparatus.	
2B.	LARGE FIRST-CLASS BINOCULAR MICROSCOPE, WITH CONCENTRIC ROTATING STAGE AND IRIS DIAPHRAGM (Plate II.), WITH THE FOLLOWING APPARATUS	60 0 0
	4 Object-glasses, magnifying from 30 to 1200 linear ... { 1½ in. (23°), ⅔ in. (32°), ⅕ in. (120°), ⅛ in. Binocular (110).	
	Lieberkuhn to the ⅔ Object-glass (Pl. XVII. 133).	
	6 Eye-pieces: viz.: 1 pair No. 1, 1 pair No. 2, 1 pair No. 3 (Pl. XVII. 171). Indicator to 1 Eye-piece (Pl. XVII. 175). Graduated Draw-tube (Pl. XVII. 174). Erecting-glass (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Achromatic Condenser, with two Diaphragm-plates (Pl. XVIII. 182). Tightening-key (Pl. XIX. 203). Three Dark Wells and Holder (Pl. XIX. 220). Parabolic Lieberkuhn (Pl. XVII. 223). Large Bull's-eye Condensing-lens (Pl. XX. 242). Small Side Condensing-lens (Pl. XX. 243). Large Live-box (Pl. XXV. 255). Two Glass Plates with Ledge and Covers (283). Polarizing Apparatus (Pl. XXII. 311). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266).	
	The whole packed in an Upright Honduras-Mahogany Case, with one box containing the apparatus.	
2C.	LARGE FIRST-CLASS BINOCULAR MICROSCOPE, WITH CONCENTRIC ROTATING STAGE AND IRIS DIAPHRAGM (Plate II.), WITH THE FOLLOWING APPARATUS	45 0 0
	3 Object-glasses, magnifying from 60 to 400 linear: 1½ in. (23°), ⅔ in. (32°), ⅓ in (120°).	
	4 Eye-pieces: viz.: 1 pair No. 1, 1 pair No. 2 (Pl. XVII. 171). Indicator to 1 Eye-piece (Pl. XVII. 175). Graduated Draw-tube (Pl. XVII. 174). Smaller Side Condenser (Pl. XX. 243). Large Live-box (Pl. XXV. 255). Two Glass Plates with Ledge and Covers (283). Tightening-key (Pl. XIX. 203). Wollaston's Camera Lucida (Pl. XXIV. 341). Stage Micrometer (Pl. XXIV. 349). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266).	
	The whole packed in an Upright Honduras-Mahogany Case, with one box containing the apparatus.	

NOTES.

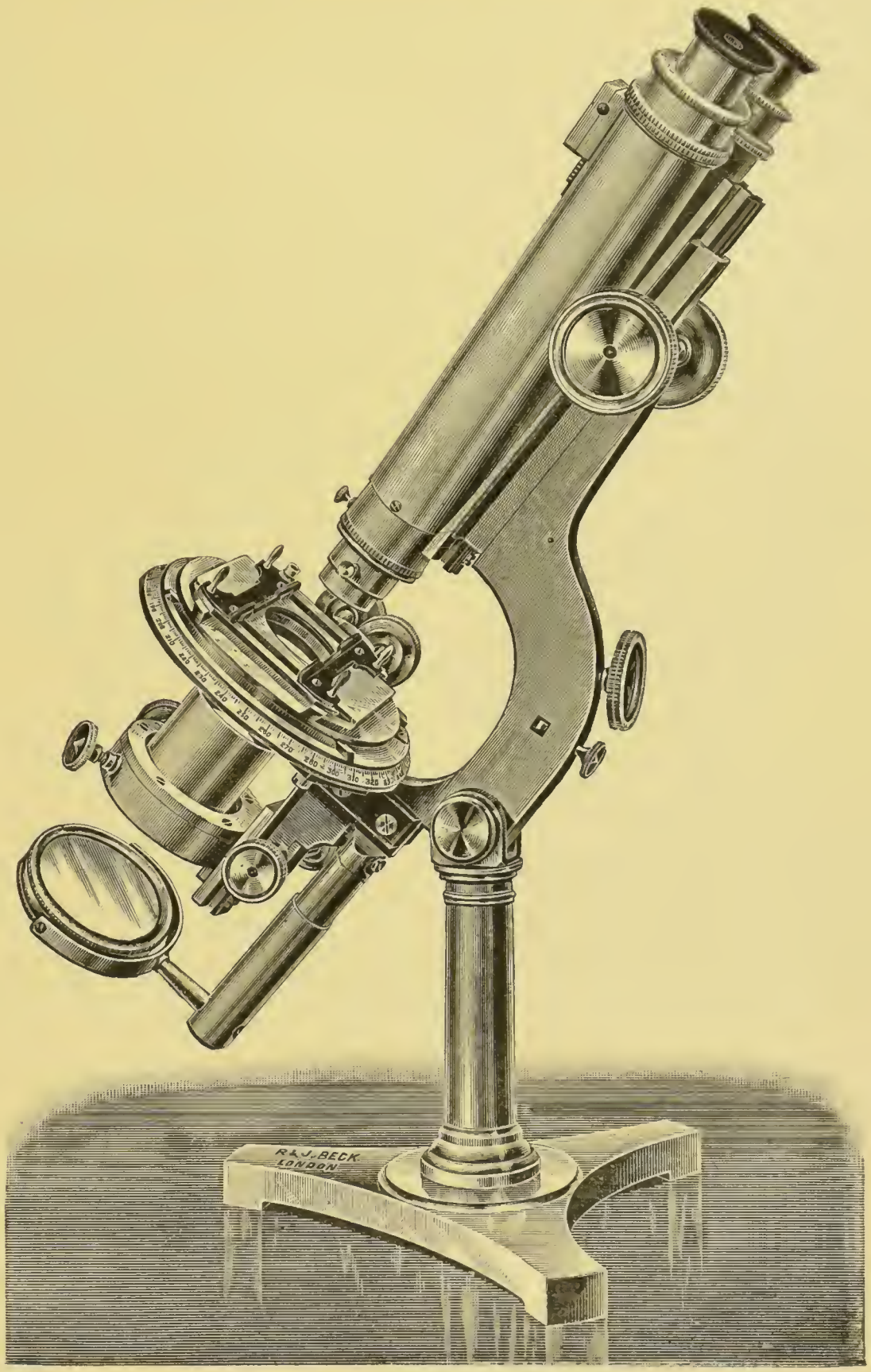
The Large First-class Microscopes, Nos. 2 A, 2 B, 2 C, can be packed, for portability, in a *Mahogany Case*, 19 inches long by 9 inches wide by 5 inches deep, for £3 6s. extra.

A Non-concentric Rotating Stage may be substituted to any of the above Instruments at a reduction of £4 10s. in the cost.

These Instruments, if Monocular instead of Binocular, cost £7 less.

PLATE III.

No. 3.—SMALL FIRST-CLASS MICROSCOPE STAND.



THIS ILLUSTRATION IS DRAWN TO A SCALE OF ONE THIRD.

No.	Plate.	DESCRIPTION.	Price.
			£ s. d.
3.	III.	SMALL FIRST-CLASS BINOCULAR MICROSCOPE STAND, with Concentric Rotating Stage and Centring Substage, Two pairs of Eye-pieces, Pliers, Forceps, and Glass Slip	30 0 0
3*.	III.	SMALL FIRST-CLASS MONOCULAR MICROSCOPE STAND, with Concentric Rotating Stage and Centring Substage, Two Eye-pieces, Pliers, Forceps, and Glass Slip	25 0 0

SMALL FIRST-CLASS MICROSCOPE.—No. 3. Plate III.

No.	DESCRIPTION.	Price. £ s. d.
3A.	SMALL FIRST-CLASS BINOCULAR MICROSCOPE. (Plate II.)	80 0 0
	6 Object-glasses, magnifying from 20 to 2000 linear ... { 1½ in. (23°), ⅔ in (32°), $\frac{4}{10}$ in. (65°), ⅕ in. (120°), ⅛ in. (130°), $\frac{1}{25}$ in. imm. Binocular (180°). Lieberkuhns to the following Object-glasses: ⅔ (Pl. XVII. 133) and $\frac{4}{10}$ (Pl. XVII. 135). 6 Eye-pieces, viz., 1 pair No. 1, 1 pair No. 2, 1 pair No. 3 (Pl. XVII. 171). Indicators to 2 Eye-pieces (Pl. XVII. 175). Graduated Draw-Tube (XVII. 174). Erecting-glass (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Achromatic Condenser, with 2 Diaphragm-plates and Iris Diaphragm (Pl. XVIII. 180). Brook's Double Nose-piece (Pl. XIX. 190). Maltwood's Finder (Pl. XIX. 202). Three Dark Wells and Holder (Pl. XIX. 220). Parabolic Lieberkuhn (Pl. XVII. 223). Wenham's Parabolic Reflector (Pl. XXI. 227). Large Bull's-eye Condensing-lens (Pl. XX. 242). Small Side Condensing-lens (Pl. XX. 243). Parallel-plate Compressor (Pl. XXV. 251). Wenham's Compressor (Pl. XXV. 253). Large Live-Box (Pl. XXV. 255). Small Live-box (Pl. XXV. 256). Opaque Disk Revolver and Forceps, with 1 tray of disks (Pl. XXV. 257). Large Glass Trough (Pl. XXVI. 280). Two Glass Plates with Ledge and Covers (283). Set of Three Fishing Tubes (Pl. XXVI. 290). Polarizing Apparatus (Pl. XXII. 312). Wollaston's Camera Lucida (Pl.XXIV.341). Eye-piece Micrometer, with Jackson's Adjusting Screw (Pl. XXIV. 346). Stage Micrometer (Pl. XXIV. 349). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266). The whole packed in a Strong Flat Spanish-Mahogany Case.	
3B.	SMALL FIRST-CLASS BINOCULAR MICROSCOPE. (Plate II.)	66 0 0
	5 Object-glasses, magnifying from 20 to 1200 linear ...{ 1½ in. (23°), ⅔ in (32°), $\frac{4}{10}$ in. (65°) ⅕ in. (120°), ⅛ in. Binocular (110°). Lieberkuhns to the following Object-glasses:—⅔ (Pl. XVII. 133) and $\frac{4}{10}$ (Pl. XVII. 135). 6 Eye-pieces, viz.: 1 pair No. 1, 1 pair No. 2, 1 pair No. 3 (Pl. XVII. 171). Graduated Draw-tube (Pl. XVII. 174). Erecting-Glass (Pl. XVII. 173), for use with the ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Achromatic Condenser, with 2 revolving Diaphragm-plates (Pl. XVIII. 182). Brook's Double Nose-piece (Pl. XIX. 190). Maltwood's Finder (Pl. XIX. 202). Three Dark Wells and Holder (Pl. XIX. 220). Parabolic Lieberkuhn (Pl. XVII. 223). Wenham's Parabolic Reflector (Pl. XXI. 227). Large Bull's-eye Condensing-lens (Pl. XX. 242). Small Side Condensing-lens (Pl. XX. 243). Wenham's Compressor (Pl. XXV. 253). Small Live-box (Pl. XXV. 256). Large Glass Trough (Pl. XXVI. 280). Two Glass Plates with Ledge and Covers (283). Set of Three Fishing-tubes (Pl. XXVI. 290). Polarizing Apparatus (Pl. XXII. 312). Wollaston's Camera Lucida (Pl. XXIV. 344). Eye-piece Micrometer, with Jackson's Adjusting-screw (Pl. XXIV. 346). Stage Micrometer (Pl. XXIV. 349). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266). The whole packed in a Strong Flat Spanish-Mahogany Case.	
3C.	SMALL FIRST-CLASS BINOCULAR MICROSCOPE. (Plate II.)	45 0 0
	2 Object-glasses, magnifying from 60 to 720 linear:—⅔ in. (32°), ⅕ in. (120°). Lieberkuhn to the ⅔ Object-glass (Pl. XVII. 133). 5 Eye-pieces, viz.: 1 pair No. 1, 1 pair No. 2, 1 No. 3 (Pl. XVII. 171). Graduated Draw-tube (Pl. XVII. 174). Erecting-glass (Pl. XVII. 173), for use with ⅔ Object-glass, for erecting the Image and varying the power from 5 to 150 linear. Smaller Side Condenser (Pl. XX. 243). Three Dark Wells and Holder (Pl. XIX. 220). Parabolic Leiberkuhn (Pl. XVII. 223). Small Live-box (Pl. XXV. 256). Two Glass Plates with Ledge and Covers (283). Wollaston's Camera Lucida (Pl. XXIV. 311). Stage Micrometer (Pl. XXIV. 349). Stage Forceps (Pl. XXV. 263). Brass Pliers (Pl. XXV. 266). The whole packed in a Strong Flat Spanish-Mahogany Case.	

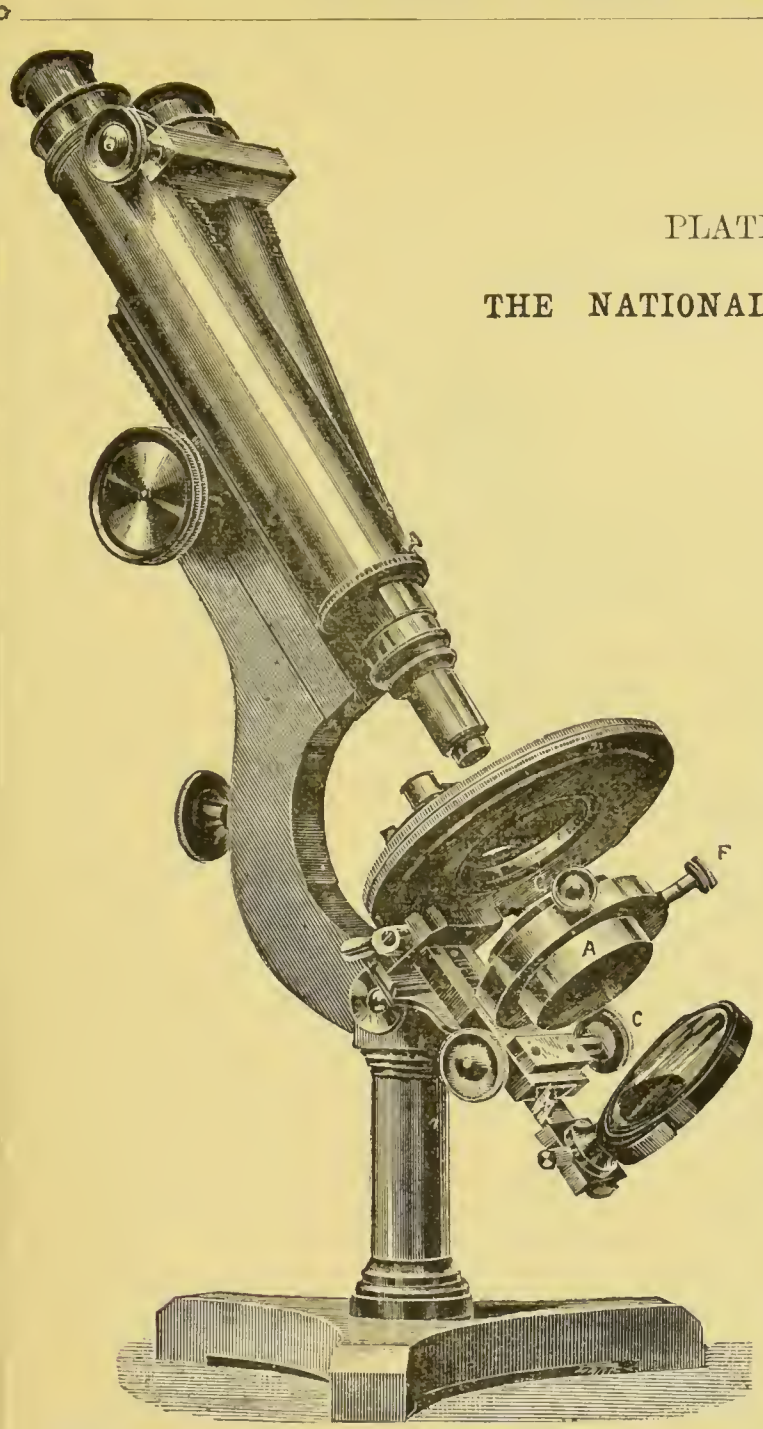
NOTES.

The "Small First-Class Microscope," with complete apparatus, can be packed for portability in a case measuring only 17 inches long by 8 inches wide and 4 inches deep, for £2 extra.

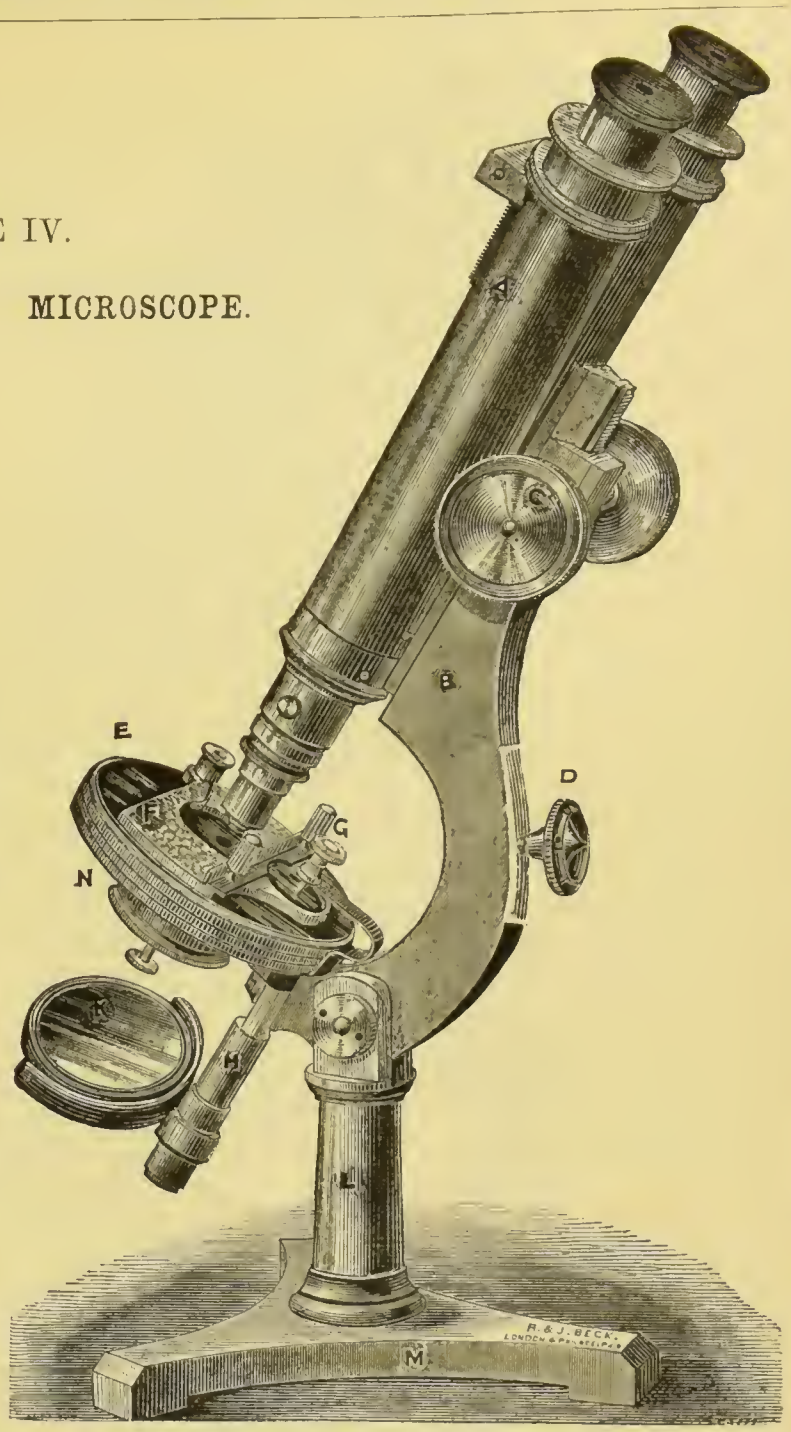
The price of Instruments Nos. 3A, 3B, and 3C, if Monocular instead of Binocular, is £5 less.

PLATE IV.

THE NATIONAL MICROSCOPE.



STAND No. 13, with complete Substage Adjustments. Rack-and-pinion, Focussing Motion, Centring Screws, &c.



STAND No. 14, with plain Substage Fitting.

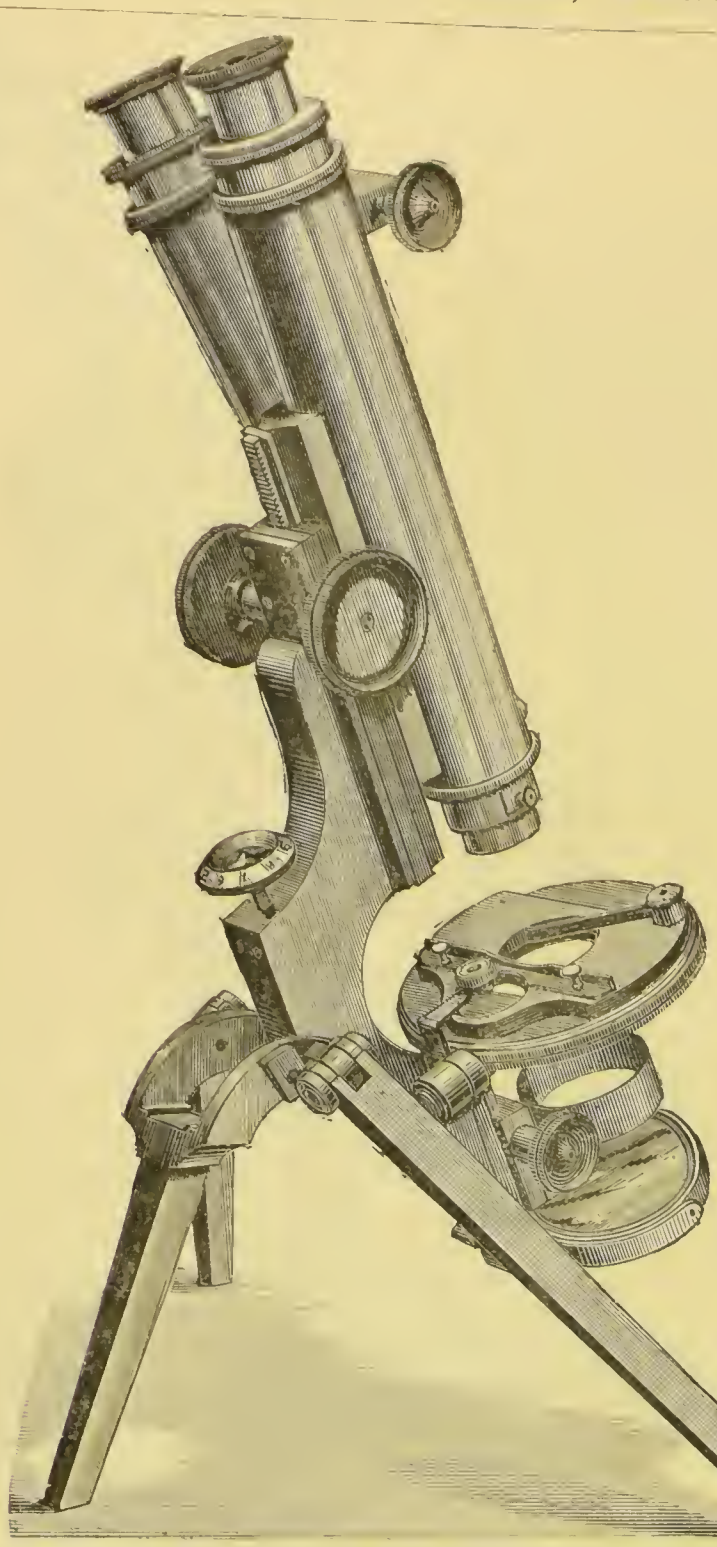
THE ILLUSTRATIONS ON THIS PAGE ARE DRAWN TO A SCALE OF ONE THIRD.

DESCRIPTION.	Price. Stand No. 13. £	s.	d.	Price. Stand No. 14. £	s.	d.
THE BINOCULAR NATIONAL MICROSCOPE STAND. (PLATE IV.) ... With one pair of Eye-pieces (Pl. XXIV. 398), Concave Mirror, Diaphragm, Forceps, Glass Plate, Pliers, &c.	13	3	0	9	10	0
THE BINOCULAR NATIONAL MICROSCOPE, with plain Concentric Rotating Stage. (PLATE IV.) ... ... $\frac{2}{3}$in. (106) and $\frac{1}{4}$in. (111) Object-glasses, two pairs of Eye-pieces (Pl. XVII.) Stage Forceps, Side Condenser on Stand (Pl. XX. 244), Glass Plate with Ledge and pair of Pliers. In Mahogany Case	20	3	0	16	10	0
THE BINOCULAR NATIONAL MICROSCOPE, with Concentric Rotating Stage, with screw movements ... ... 5 Object-glasses, 3in. (101), $\frac{2}{3}$in. (106), $\frac{1}{2}$in. (108), $\frac{1}{4}$in. (111), and $\frac{1}{8}$in. (113) Object-glasses, Triple Nose-piece, Flat and Concave Mirrors, three pairs of Eye-pieces (Pl. XVII.), Dark Well (Pl. xix. 380), Achromatic Condenser and Fitting (Pl. XVIII. 381), Wenham's Parabolic Reflector (Pl. xxi. 382), Flat Mirror (383), Polarizing Apparatus (Pl. xxii. 384), Wollaston Camera Lucida (385), Stage Micrometer (Pl. XXIV. 350), Small Live Box (Pl. XXV. 362), Glass Trough (Pl. xxvi. 281), Stage Forceps, Side Condenser on Stand (Pl. xx. 244), Glass Plate with Ledge, pair of Pliers. In Mahogany Case.	38	13	0	35	0	0
CASES FOR NATIONAL MICROSCOPES, £1 1s.						
THE PRICE OF ANY OF THE ABOVE MICROSCOPES WITH A MONOCULAR INSTEAD OF A BINOCULAR INSTRUMENT IS £3 10s. LESS.						

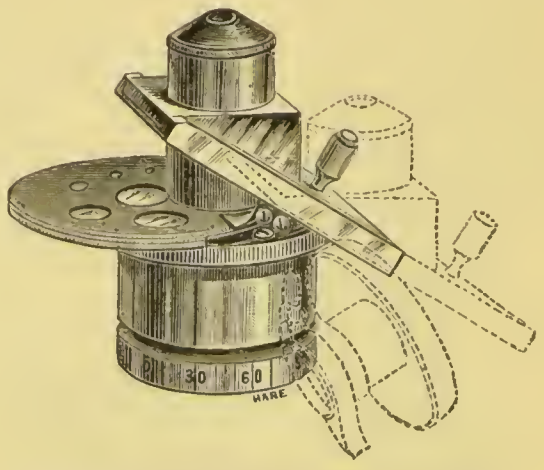
NOTES.

Prices of the Apparatus are detailed on pages 27-36. The details and prices of the Object-glasses are given on page 26.

PLATE V.



No. 16.—PORTABLE NATIONAL MICROSCOPE.

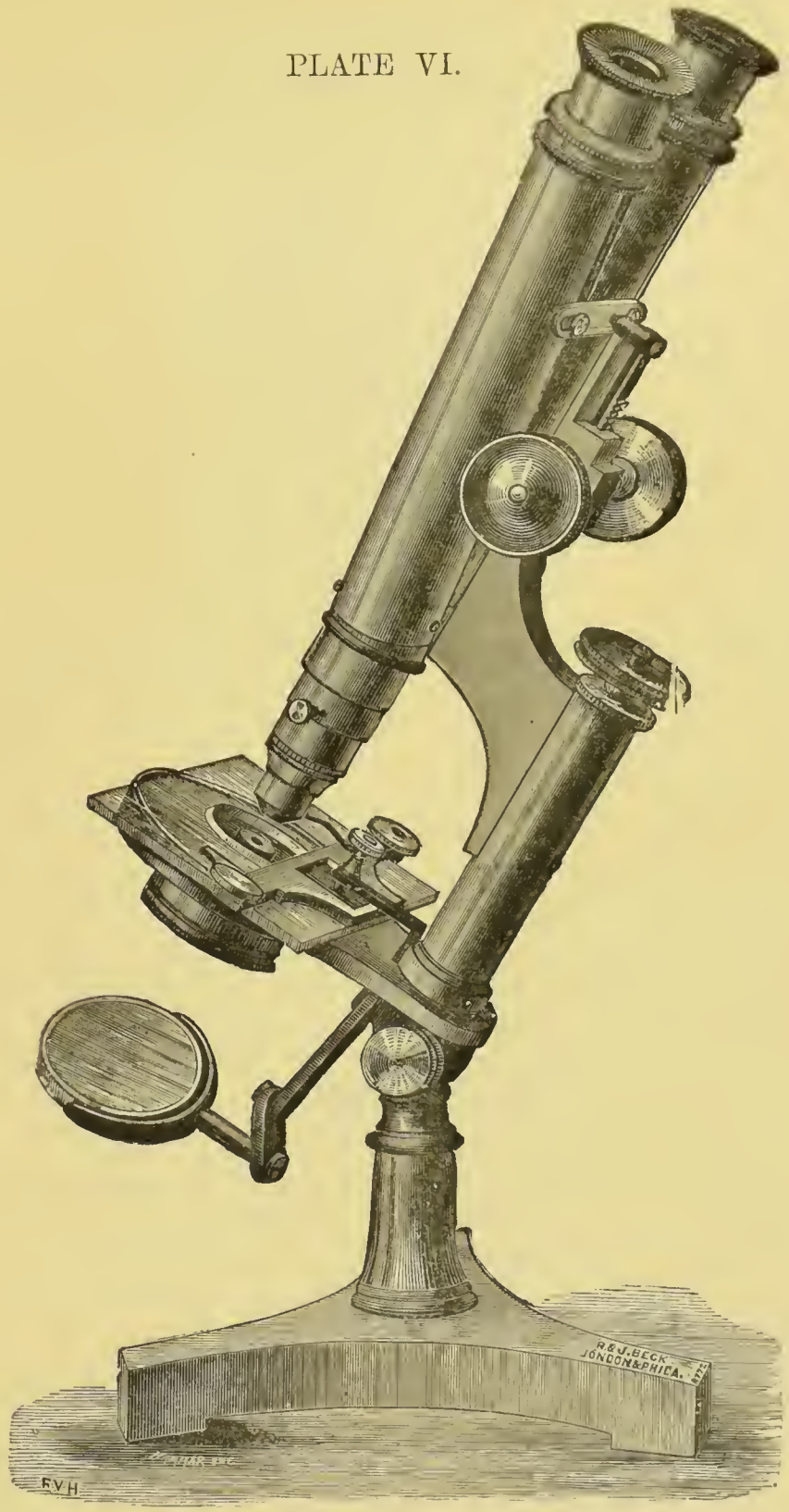


No. 372. COMPOUND SUBSTAGE APPARATUS.

THE ILLUSTRATION OF THE MICROSCOPE IS DRAWN TO A SCALE OF ONE THIRD, THE COMPOUND APPARATUS TO A SCALE OF ONE HALF.

No.	DESCRIPTION.	Price. £	s.	d.
16.	BINOCULAR PORTABLE NATIONAL MICROSCOPE STAND. (PLATE V.) ... With one pair of Eye-pieces (Pl. XVII.), Concave and Flat Mirror, Forceps (Pl. XXV. 403), Pliers, Glass Plate, &c. In Mahogany Case, measuring 10½ in. by 7½ in. by 3½ in.	20	0	0
16A.	BINOCULAR PORTABLE NATIONAL MICROSCOPE. (PLATE V.) ... ... With 2 in. (103), ⅔ in. (106), and ¼ in. (111) Object-glasses, one pair of Eye-pieces (Pl. XVII.), Compound piece of Apparatus, combining Achromatic Condenser, Spot-lens, and Polariscope (Pl. V. 372), Side Condenser on Stand (Pl. XX. 244), Forceps (Pl. XXV. 403), Pliers, Glass Plate, &c. In Mahogany Case, measuring 10½ in. by 7½ in. by 3½ in. THE PRICE OF THE ABOVE MICROSCOPE (Nos. 16, 16A) WITH A MONOCULAR INSTEAD OF A BINOCULAR INSTRUMENT is £3 10s. LESS. THE PRICE OF THE MICROSCOPE-STAND (No. 16) WITHOUT A RACK-AND-PINION SUBSTAGE IS £2 10s. LESS.	32	0	0
372.	COMPOUND SUBSTAGE APPARATUS (PLATE V.), consisting of Wide-angle Achromatic Condenser, with Double Diaphragms, Dark-ground Illuminator, & Polarizing Apparatus. The Condenser, which is quite Achromatic, has an angle of 180°, that can be varied at will by the diaphragms. It can be drawn away when not in use, as shown in Plate V., by sliding it down the inclined fitting without altering the position of the substage. The front lens is removable for work with low powers, and for dark-ground illumination is replaced by a truncated lens. Below the Condenser is placed a revolving Polarising Prism, which can also be thrown out, as shown in Plate V., when not in use; and between the Polarising Prism and Condenser are two revolving diaphragm-plates, one containing a series of apertures for varying the angle of the Condenser, the other containing the different selenites and a blue glass disk for moderating the light. It will thus be seen that with this piece of apparatus the Polariscope may be used by itself, in combination with the Achromatic Condenser or with dark-ground illumination. AND ALL THE DIFFERENT MODES OF ILLUMINATION REQUISITE FOR GENERAL WORK MAY BE OBTAINED WITH THIS COMPOUND PIECE OF SUBSTAGE APPARATUS.	6	6	0

PLATE VI.



No 30.—THE BINOCULAR ECONOMIC MICROSCOPE.

THIS ILLUSTRATION IS DRAWN TO A SCALE OF TWO FIFTHS.

No.	DESCRIPTION.	Price. £	s.	d.
30.	THE BINOCULAR ECONOMIC MICROSCOPE-STAND, with Rack-and-pinion coarse Adjustment, fine Adjustment by Screw, Glass Stage of best construction, Mirror on Lengthening Arm, for use with Opaque objects, Two pairs of Eye-pieces, Flat and Concave Mirrors, and Diaphragm	8	0	0
30A.	THE STAND as above, 3 Object-glasses 2 inch (151), 1 inch (152), and $\frac{1}{4}$ inch (154), Forceps, Pliers, Glass Slip with Ledge. In Mahogany Case...	10	10	0
	FOR MONOCULAR ECONOMIC MICROSCOPES *see page* 19			

SMALL MODEL MICROSCOPES.

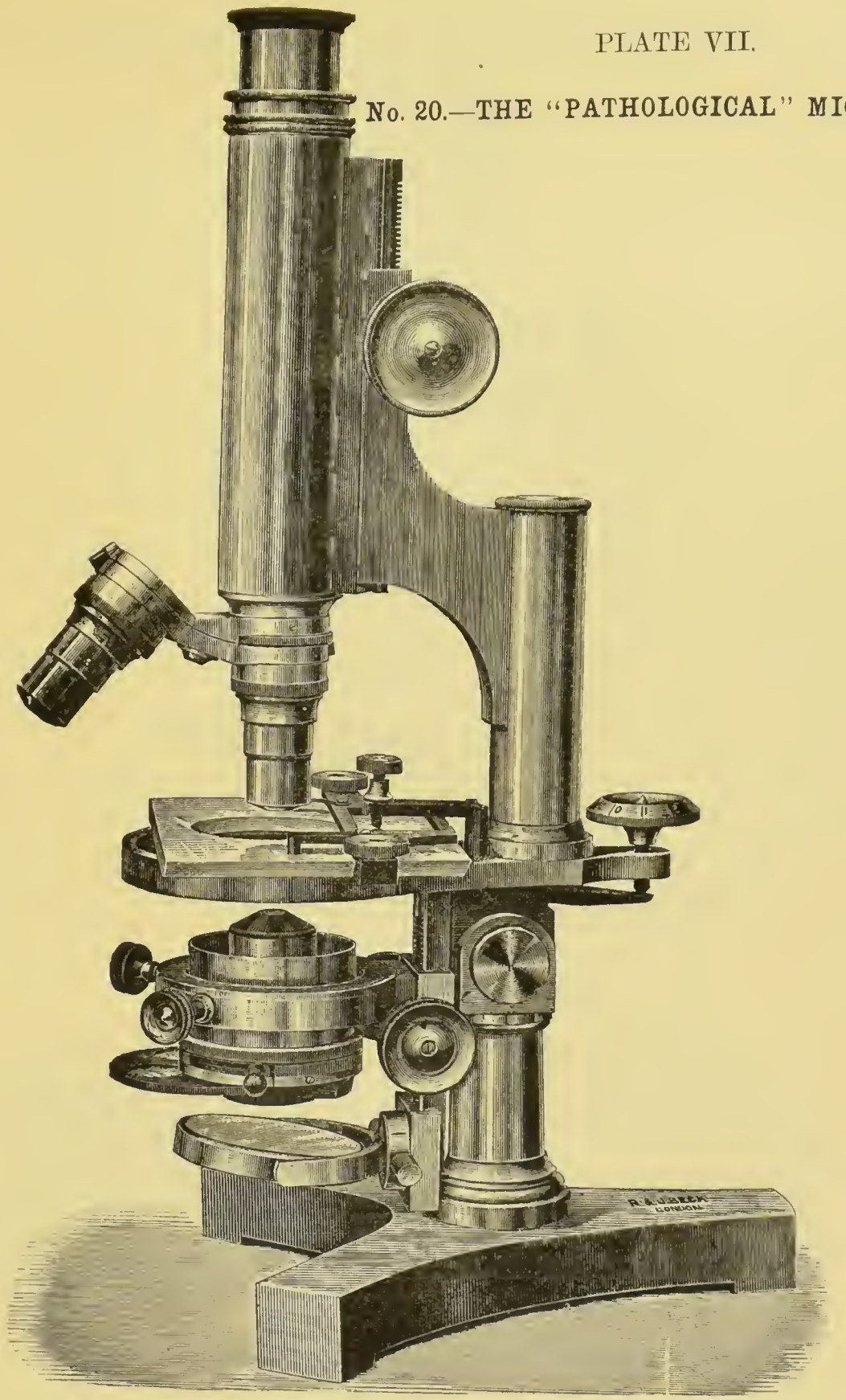
These instruments, although not possessing the extensive adjustments of those previously enumerated, and although they are in all cases made Monocular, are the instruments which will commend themselves to the *Scientific Investigator* for laboratory work, or to the student of *Medicine*, *Zoology* or *Petrology*.

PRICES OF THE PATHOLOGICAL MICROSCOPE (Plate VII. Page 15.)

No.	Plate.	DESCRIPTION.	Price. £ s. d.
20.	VII.	THE PATHOLOGICAL MICROSCOPE (Plate VII.), with Rack-and-pinion coarse Adjustment, Lever fine Adjustment, Glass Stage of the best construction, and a Substage with rack-and-pinion movement and centring arrangement, with new wide-angle Achromatic Condenser (175°), fitted with two Diaphragm-plates (one containing a series of blue glasses for modifying the light, the other a series of openings to vary the aperture) (Pl. XVIII. No. 182), with two Eye-pieces, Concave and Plane Mirror. In Mahogany Case ...	12 10 0
20A.	VII.	THE PATHOLOGICAL MICROSCOPE (Plate VII.), with Rack-and-pinion coarse Adjustment, Lever fine Adjustment, Glass Stage of the best construction, and a Substage with rack-and-pinion movement and centring arrangement, with new wide-angle Achromatic Condenser (175°), fitted with two Diaphragm-plates (one containing a series of blue glasses for modifying the light, the other a series of openings to vary the aperture) (Pl. XVIII. No. 182), with 1 in. (152) and $\frac{1}{6}$ in. (155) or $\frac{1}{2}$ in. (153) and $\frac{1}{6}$ in. (155) Object-glasses, two Eye-pieces, Concave and Plane Mirror. In Mahogany Case ...	15 10 0
20D.	VII.	THE PATHOLOGICAL MICROSCOPE, with new Wide Angle Achromatic Condenser, fitted with Iris Diaphragm for varying the aperture, and Diaphragm-plate containing a series of blue glasses for modifying the light (No. 180). Concave and Plane Mirror, Two Eye-pieces, three Object-glasses, 1 in. (152), $\frac{1}{6}$ in. (155), $\frac{1}{12}$ in. Oil-immersion (120), Double Nose-piece. In Mahogany Case	22 14 0
20B.	VII.	THE PATHOLOGICAL MICROSCOPE (Plate VII.), with Rack-and-pinion coarse Adjustment, Lever fine Adjustment, Glass Stage of the best construction, and a Substage with rack-and-pinion movement and centring arrangement, with new wide-angle Achromatic Condenser (175°), fitted with Iris Diaphragm for varying the aperture, and Diaphragm-plate, containing a series of blue glasses for modifying the light (Pl. XVIII. No. 180), with two Eye-pieces, $\frac{2}{3}$ in. (106), $\frac{1}{2}$ in. (108), $\frac{1}{4}$ in. (111), and 1 in. (114) Object-glasses, Double Nose-piece (392), Concave and Plane Mirror, in Mahogany Case ...	27 0 0

PLATE VII.

No. 20.—THE "PATHOLOGICAL" MICROSCOPE.



THIS ILLUSTRATION IS DRAWN TO A SCALE OF TWO FIFTHS.

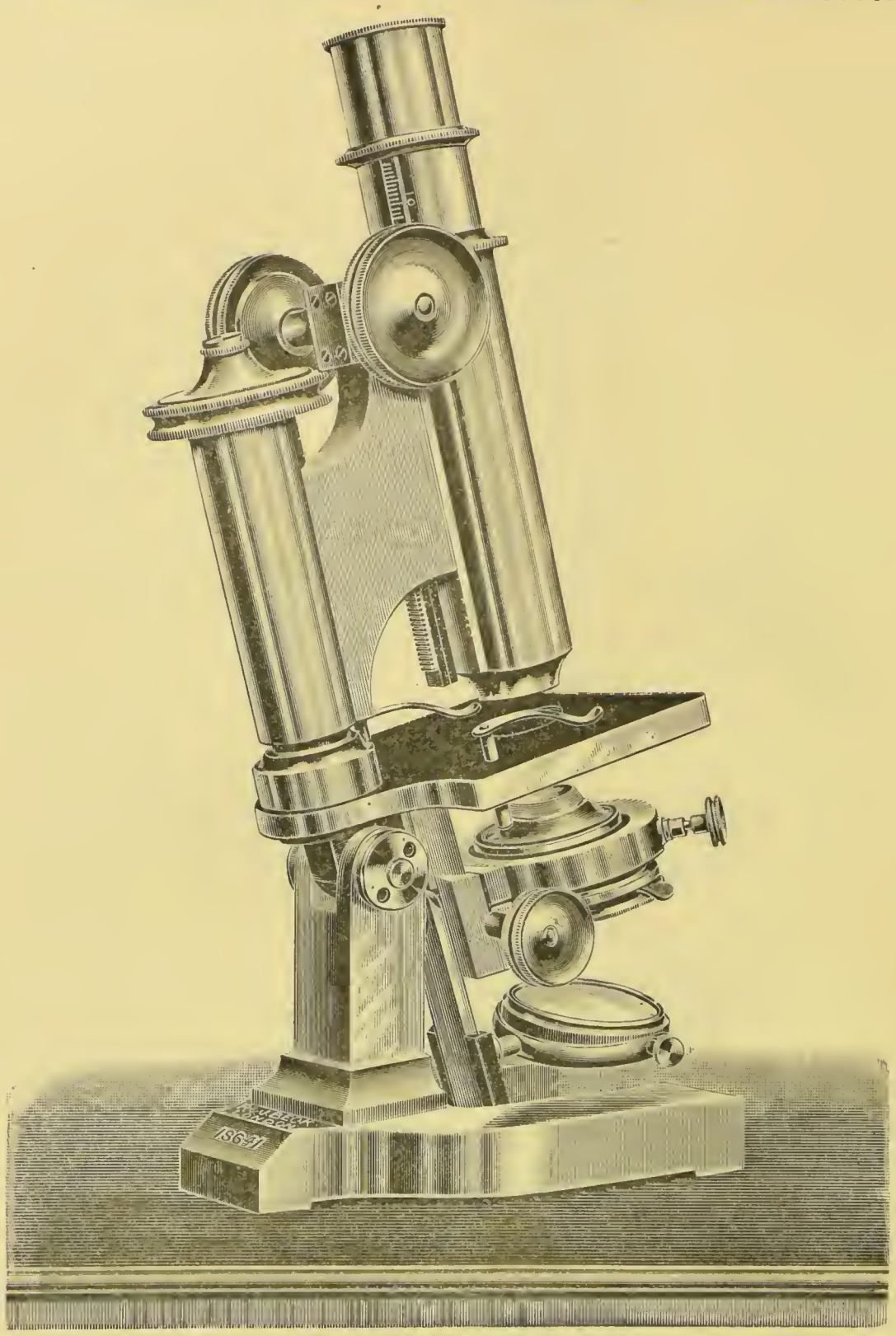
The Pathological Microscope—as indicated by the above figure—possesses all the adjustments necessary for the most delicate clinical and bacteriological work. The workmanship is throughout of the best, and owing to the unusual rigidity of the pillar and foot the instrument is perfectly steady and free from vibration, whether it be used with the tube in a horizontal, vertical, or inclined position.

It is made either with a Traversing Glass Stage, as shown in figure, or with a large Square Stage. Upon the latter, a Traversing Mechanical Stage (No. 391a, Page 29) can be placed at will. At an extra cost of 21s. the instrument is supplied with a Removable Base, and packed in a Portable Case for travelling, measuring 11 in. by 7 in. by 4 in.

All forms of Substage Condensers and most of the apparatus enumerated on Pages 27 to 36 will fit this Instrument.

PLATE VIII.

No 31.—IMPROVED "CONTINENTAL" LARGE MODEL MICROSCOPE.

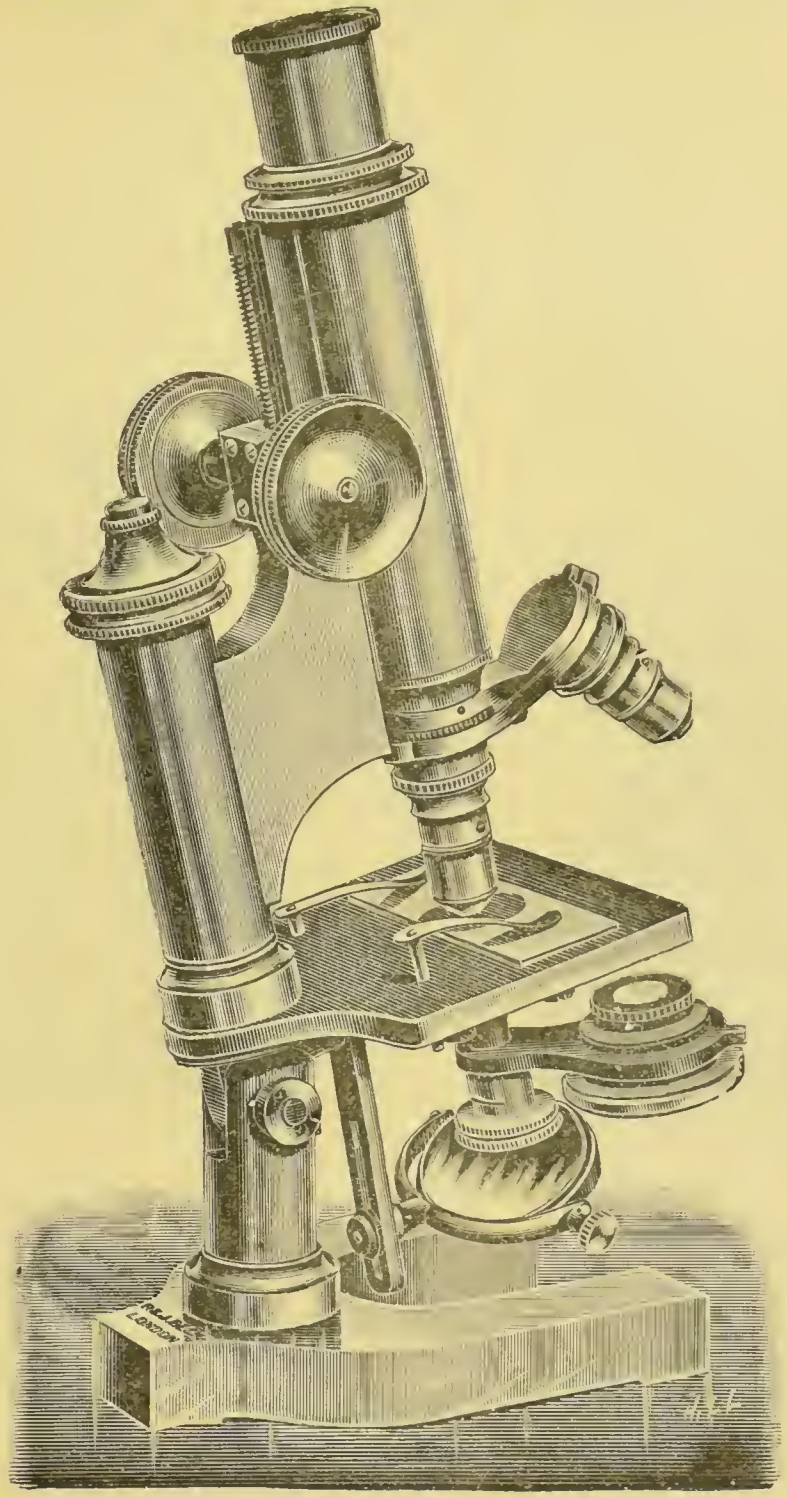


This Instrument, while not so steady as the "PATHOLOGICAL" MICROSCOPE *when in a horizontal position*, is of equal workmanship in every way, and is suitable for the same class of delicate investigation.

No.	Plate	DESCRIPTION	Price £	s.	d.
31A.	VIII.	THE STAND, with Rack-and-pinion, Centring Substage and Double Mirror. Abbé Condenser and Iris Diaphragm. Two Eye-pieces, two Object-glasses, 1 inch (152A), $\frac{1}{4}$ inch (154). In Polished Mahogany Case with Lock and Key and Handle	11	0	0
31B.	VIII.	THE STAND as above. Two Eye-pieces, two Object-glasses, $\frac{2}{3}$ inch (152B), $\frac{1}{6}$ inch (155A). In Polished Mahogany Case with Lock and Key and Handle	11	10	0
31D.	VIII.	THE STAND as above. Two Eye-pieces, three Object-glasses, $\frac{2}{3}$ inch (152B), $\frac{1}{6}$ inch (155A), $\frac{1}{12}$ Oil-immersion (120). Triple Nose-piece, in Polished Mahogany Case, with Lock and Key and Handle	18	0	0

PLATE IX.

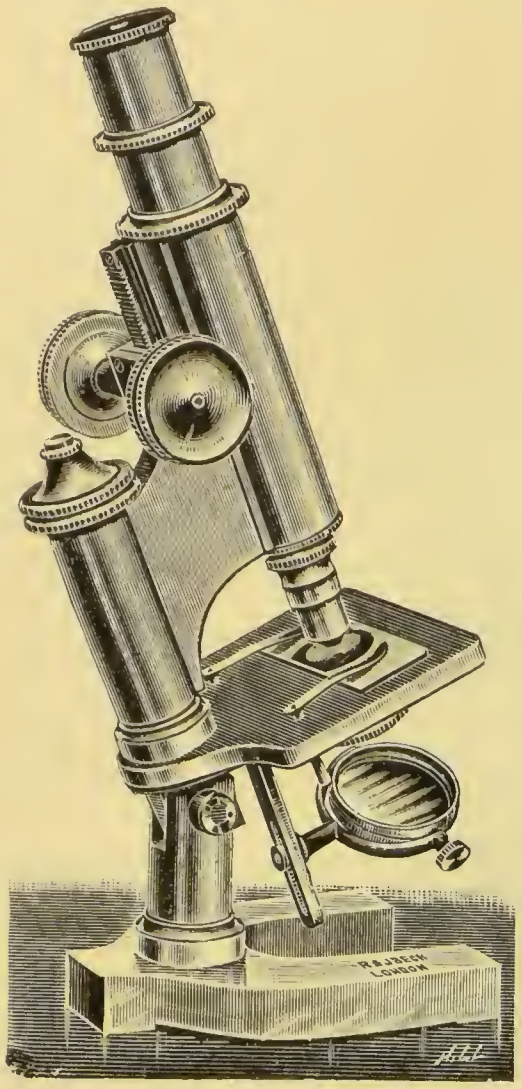
No. 29.—IMPROVED "CONTINENTAL" MICROSCOPE—With Substage.



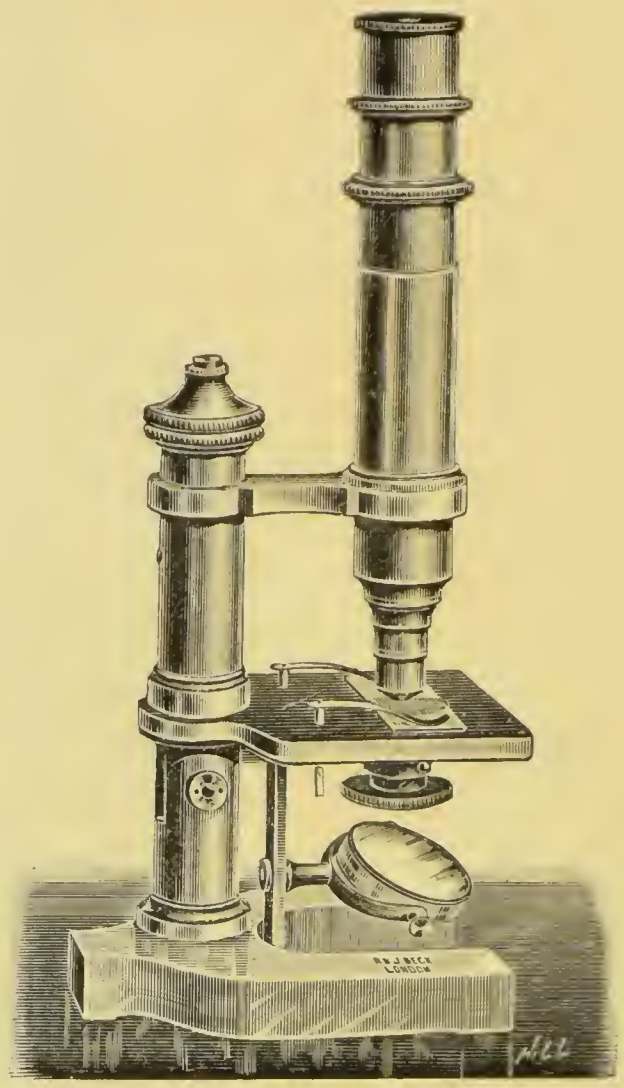
No.	Plate.	DESCRIPTION.	Price.
		WITH RACK-AND-PINION ADJUSTMENT.—PLATE IX.	£ s. d.
29B.	IX.	THE IMPROVED "CONTINENTAL" MICROSCOPE STAND, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, Double Mirror on Sliding Bar, complete Substage with focussing and swinging adjustments, Abbé Condenser, and Iris Diaphragm. Two Eye-pieces, two Object-glasses, $\frac{2}{3}$ in. (152B) and $\frac{1}{6}$ in. (155A). In strong case with handle and lock	8 15 0
29D.	IX.	THE STAND, as above. Two Eye-pieces, four Object-glasses, 1 in. (152A), $\frac{1}{2}$ in. (153), $\frac{1}{6}$ in. (155A), $\frac{1}{12}$ in. Oil-immersion (120). Double Nose-piece. In strong case with handle and lock	15 18 6
		WITH SLIDING ADJUSTMENT.	
27B.		THE IMPROVED "CONTINENTAL" MICROSCOPE STAND, with sliding coarse adjustment, fine adjustment by Screw, Double Mirror, on Sliding Bar, complete Substage with focussing and swinging adjustments, Abbé Condenser and Iris Diaphragm. Two Eye-pieces, two Object-glasses, $\frac{2}{3}$ in. (152B) and $\frac{1}{6}$ in. (155A). In strong case with handle and lock	7 10 0

PLATE X.

IMPROVED "CONTINENTAL" MICROSCOPE.



No. 25.

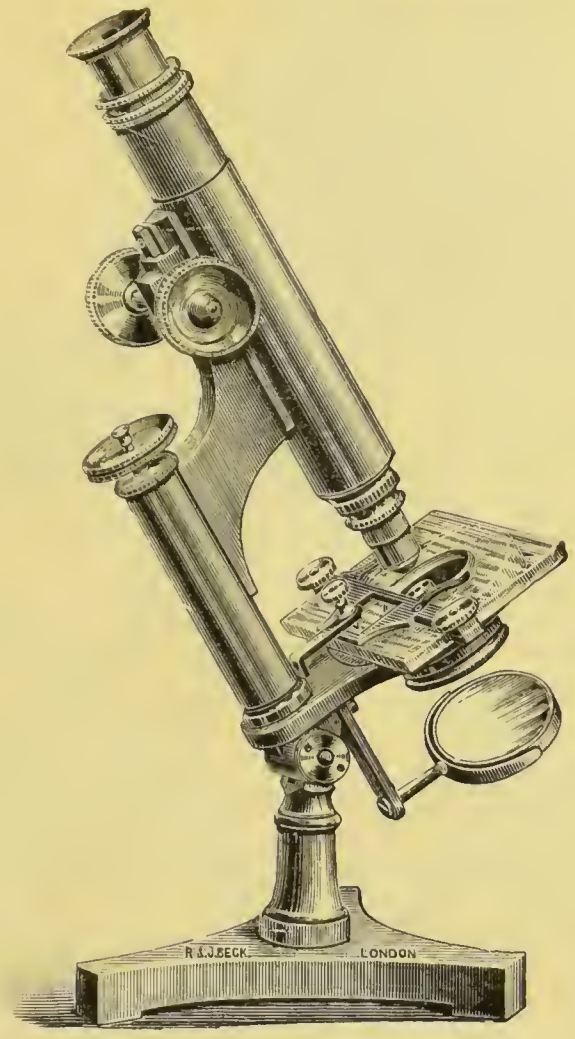


No. 23.

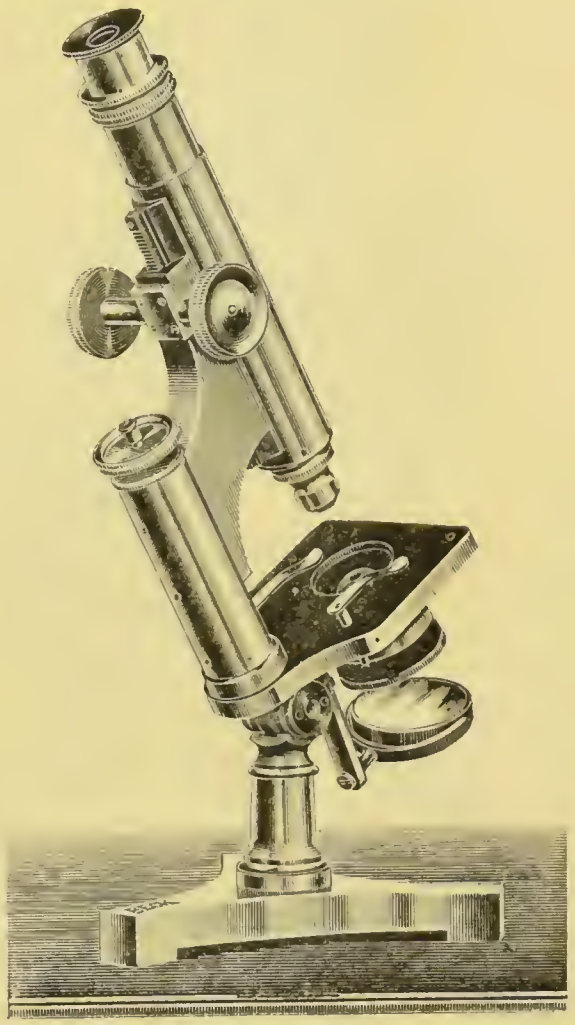
No.	Plate.	DESCRIPTION.	Price. £ s. d.
25A.	X.	THE IMPROVED "CONTINENTAL" MICROSCOPE STAND, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, Double Mirror on Sliding Bar, and Iris Diaphragm. Two Eye-pieces, two Object-glasses, 1 in. (152A) and ¼in. (154). In Polished Mahogany Case with handle and lock	6 10 0
25B.	X.	THE STAND, as above. Two Eye-pieces, two Object-glasses, ⅔ in. (152B) and in. (155A). In Polished Mahogany Case, with handle and lock... ...	7 5 0
23A.	X.	THE IMPROVED "CONTINENTAL" MICROSCOPE STAND, with sliding coarse adjustment, fine adjustment by Screw, Double Mirror on Sliding Bar, and Iris Diaphragm, Two Eye-pieces, two Object-glasses, 1 in. (152A), and ¼ in. (154.) In Polished Mahogany Case, with handle and lock ...	5 5 0
23B.	X.	THE STAND, as above. Two Eye-pieces, two Object-glasses, ⅔ in. (152B), and ⅛ in. (155A). In Polished Mahogany Case, with handle and lock ...	6 0 0

PLATE XI.

THE MONOCULAR "ECONOMIC" MICROSCOPE.



No. 28.

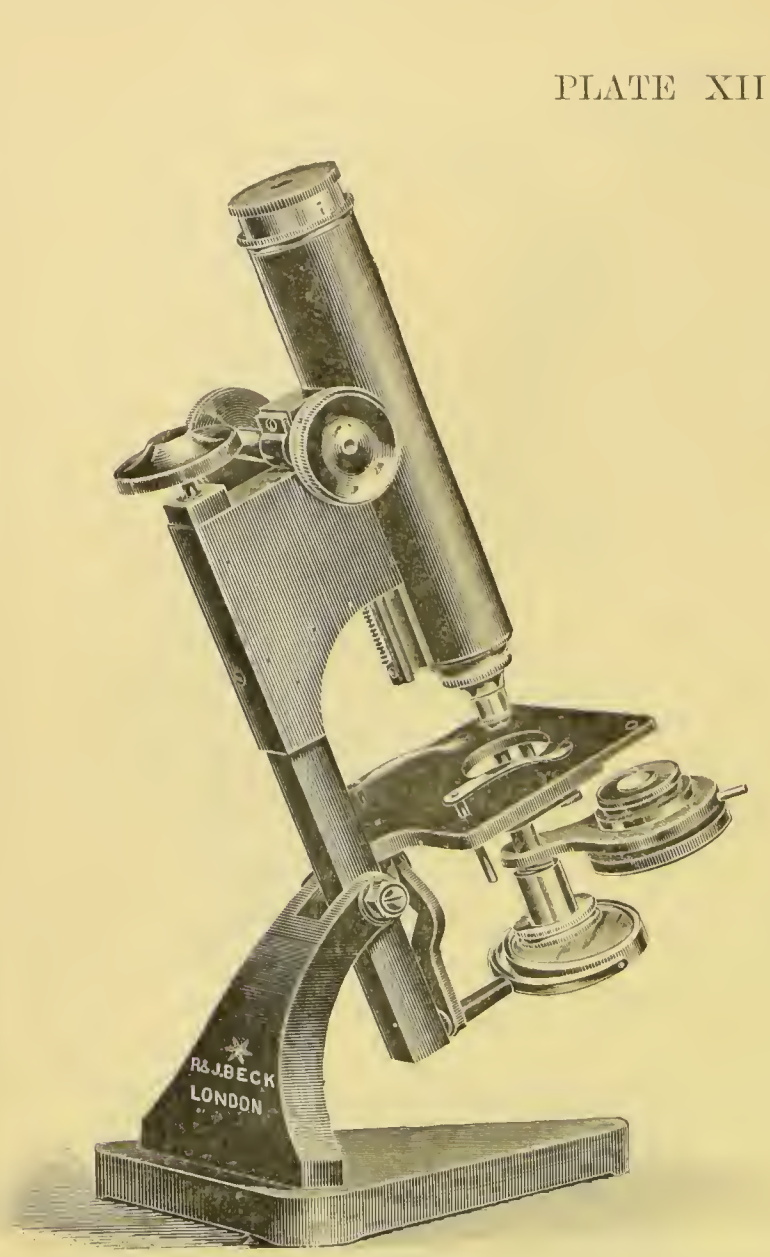


No. 26.

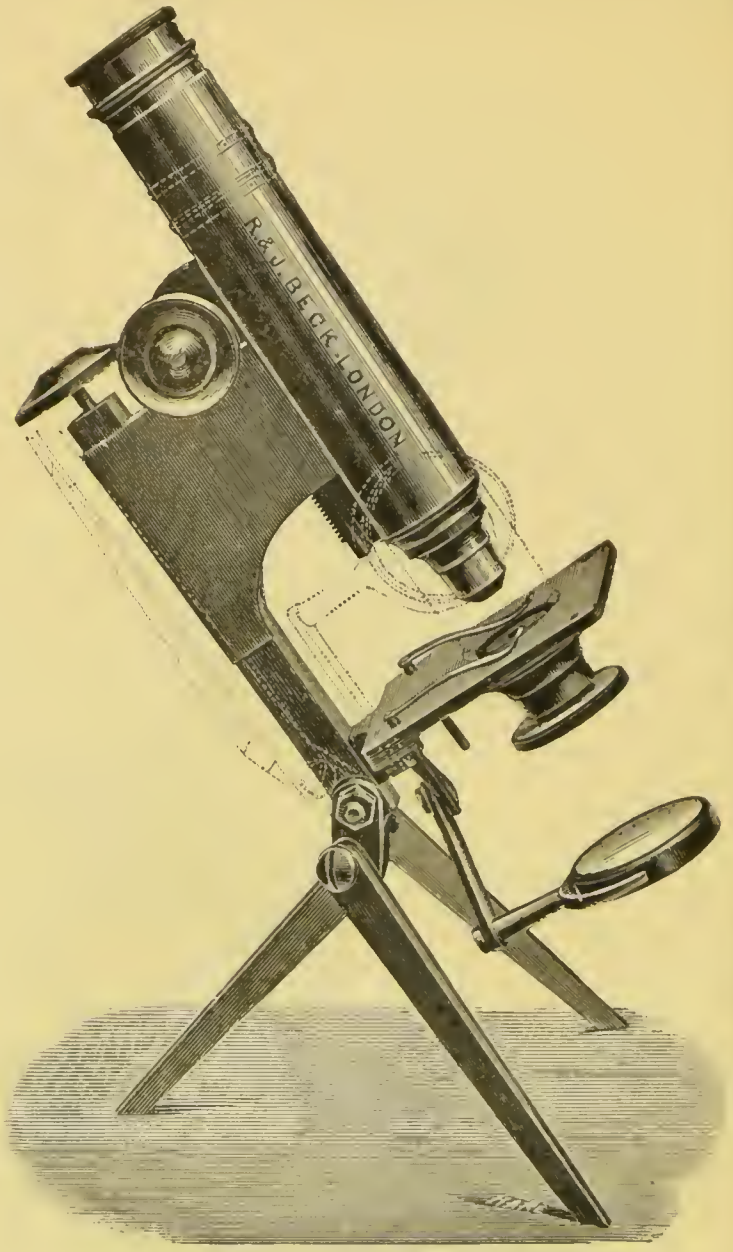
No.	Plate.	DESCRIPTION.	Price. £	s.	d.
28.	XI.	THE MONOCULAR ECONOMIC MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, Glass Stage of the best construction. Concave and Plane Mirror, Side Condensing Lens and Diaphragm, Two Eye-pieces	6	0	0
28A.	XI.	THE STAND as No. 28. Two Eye-pieces, two Object-glasses, 1 inch (152) and $\frac{1}{4}$ inch (154). Forceps, Pliers, Glass Slip with Ledge. In mahogany case ...	8	0	0
28B.	XI.	THE STAND as No. 28. Two Eye-pieces, two Object-glasses $\frac{1}{2}$ inch (153) and $\frac{1}{6}$ inch (155). Achromatic Condenser, with Shutter and Blue Glass, Forceps, Pliers, Glass Slip with Ledges. In Mahogany Case	10	0	0
26.	XI.	THE MONOCULAR ECONOMIC MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, Concave Mirror, and Diaphragm, in Mahogany Case. Two Eye-pieces	4	10	0
26A.	XI.	THE STAND as No. 26. Two Eye-pieces, two Object-glasses 1 in. (152), and $\frac{1}{4}$ inch (154). Side Condensing-lens, Forceps, Pliers, Glass Slip with Ledge, in Mahogany Case	6	12	6
26B.	XI.	THE STAND as No. 26. Two Eye-pieces, two Object-glasses, 1 inch (152) and $\frac{1}{6}$ inch (155), or $\frac{1}{2}$ inch (153) and $\frac{1}{6}$ inch (155). Achromatic Condenser, in Mahogany Case	8	8	0
26C.	XI.	THE STAND as No. 26, with apparatus as No. 26B, but with $\frac{1}{8}$ inch Object-glass (156) instead of $\frac{1}{6}$ inch (155)	9	10	0

For Binocular Economic Stand see page 13.

PLATE XII.



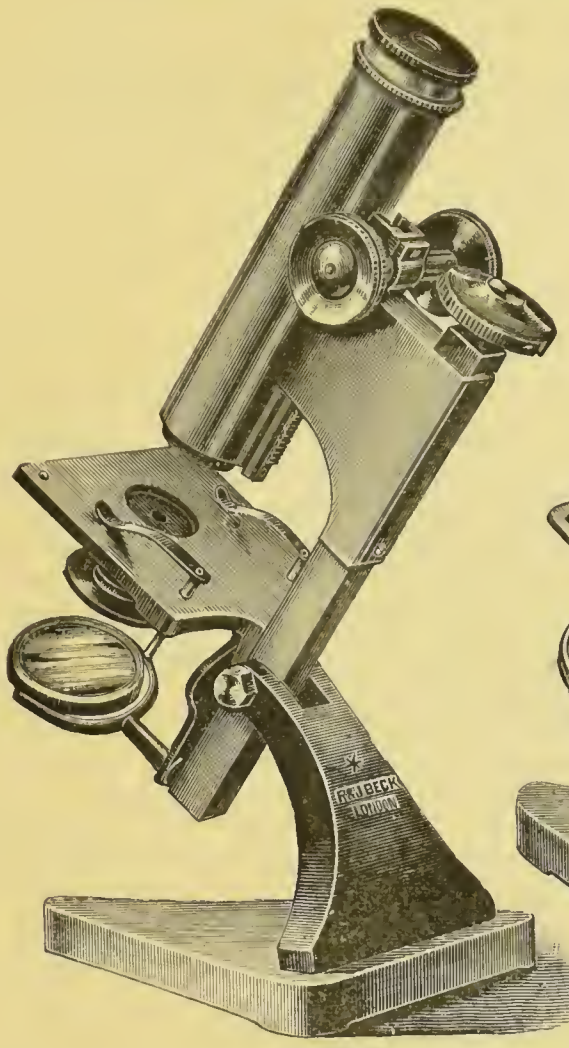
No 41.
THE BACTERIOLOGICAL "STAR" MICROSCOPE.



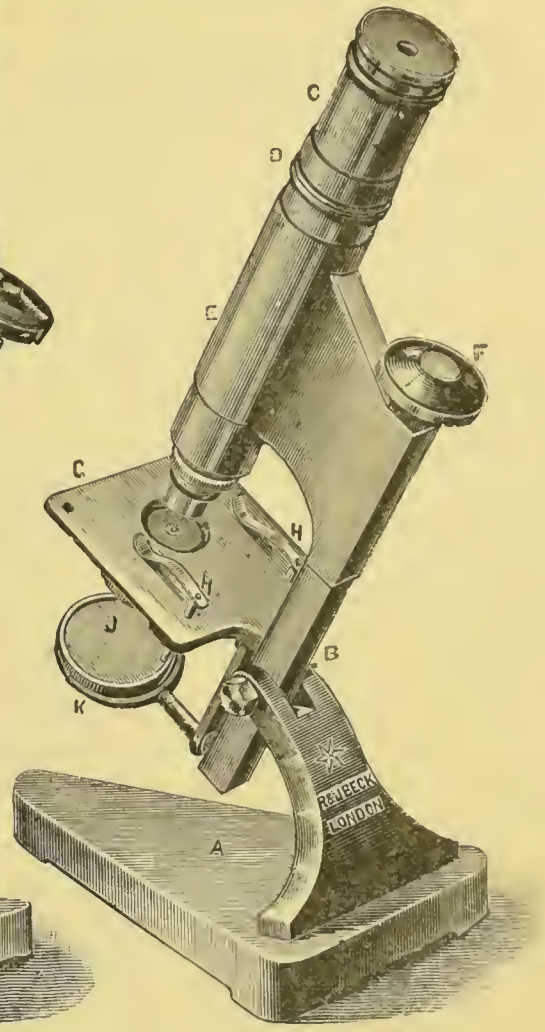
No 43.
THE PORTABLE "STAR" MICROSCOPE

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
41*.	XII.	THE BACTERIOLOGICAL "STAR" MICROSCOPE STAND, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, Double Mirror, complete Substage, with Focussing and Swinging Adjustment, Abbé Condenser with Iris Diaphragm. Two Eye-pieces. In Walnut Case	4	7	6
41B.	XII.	THE STAND as 41*. Two Eye-pieces, two Object-glasses, ½ inch (153) and $\frac{1}{6}$ inch (155). In Walnut Case	7	2	6
41E.	XII.	THE STAND as 41*. Two Eye-pieces, two Object-glasses, ½ inch (153) and $\frac{1}{12}$ inch Oil-immersion (120). In Walnut Case	10	5	6
41D.	XII.	THE STAND as 41*. Two Eye-pieces, four Object-glasses, 1 inch (152A), ½ inch (153), $\frac{1}{6}$ inch (155), $\frac{1}{12}$ inch Oil-immersion (120). Double Nose-piece. In Walnut Case	14	5	6
39*.		THE BACTERIOLOGICAL "STAR" MICROSCOPE with Sliding coarse adjustment, fine adjustment by Screw, Double Mirror, complete Substage, with Focussing and Swinging Adjustment, Abbé Condenser with Iris Diaphragm. One Eye-piece. In Walnut Case	3	7	6
39C.		THE STAND as 39*. One Eye-piece, two Object-glasses, ⅔ inch (152B) and $\frac{1}{6}$ inch (155A). In Walnut Case	5	14	0
43*.	XII.	THE PORTABLE "STAR" MICROSCOPE-STAND, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, Double Mirror, and Iris Diaphragm. In Solid Leather Case 6½ in. by 4¼ in. by 3¼ in.	4	0	0
43.	XII.	THE PORTABLE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces 1 in. Object-glass (152A), Double Mirror, and Iris Diaphragm. In Solid Leather Case 6½ in. by 4¼ in. by 3¼ in.	4	13	0
43A.	XII.	THE PORTABLE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, two Object-glasses 1 in. (152A) and ¼ in. (154), Double Mirror, and Iris Diaphragm. In Solid Leather Case 6½ in. by 4¼ in. by 3¼ in. ... ... This Microscope is supplied in a Walnut instead of a Leather Case at the same price.	5	14	0

PLATE XIII.—THE "STAR" MICROSCOPE.



No. 42.



No. 40.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
42.	XIII.	THE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, 1 in. Object-glass (152A), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	3	3	0
42A.	XIII.	THE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, two Object-glasses 1 in. (152A) and ¼ in. (154), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	4	4	0
42C.	XIII.	THE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, two Object-glasses ⅔ in. (152B) and ⅙ in. (155A), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	4	17	6
42D.	XIII.	THE "STAR" MICROSCOPE, with Rack-and-pinion coarse adjustment, fine adjustment by Screw, two Eye-pieces, four Object-glasses, 1 in. (152A), ½ in. (153), and ⅙ in. (155), 1/12 in. Oil-Immersion (120), Double Nose-piece, Abbé Condenser, Double Mirror, and Iris Diaphragm. In Walnut Case, with handle and lock	14	10	0
40.	XIII.	THE "STAR" MICROSCOPE, with fine adjustment by Screw, sliding coarse adjustment, one Eye-piece, 1 in. Object-glass (152A), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	2	2	0
40A.	XIII.	THE "STAR" MICROSCOPE, with fine adjustment by Screw, sliding coarse adjustment, one Eye-piece, two Object-glasses 1 in. (152A) and ¼ in. (154), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	3	3	0
40C.	XIII.	THE "STAR" MICROSCOPE, with fine adjustment by Screw, sliding coarse adjustment, one Eye-piece, two Object-glasses, ⅔ in. (152 B) and ⅙ in. (155A), Double Mirror, and Iris Diaphragm. In Cloth-covered Wooden Case	3	16	6
40D.	XIII.	THE "STAR" MICROSCOPE, with fine adjustment by Screw, sliding coarse adjustment, two Eye-pieces, four Object-glasses, 2 in. (151), 1 in. (152A), ½ in. (153), ⅙ in. (155), Movable Top-stage, Eye-piece, and Stage Micrometers. Packed in Walnut Case, with handle and lock	7	8	6

PETROLOGICAL MICROSCOPES.

No. 19.—LARGE MODEL. PLATE XIV.

This instrument has a rack and pinion coarse adjustment; fine adjustment by lever and micrometer screw with divided milled head; Concentric Rotating Stage with divided circle at circumference; vertical and horizontal divisions on surface of stage to act as finders; Sub-stage on swinging arm with spiral screw focussing motion. The sub-stage carries a polarizing (Nicol) prism in a rotating fitting, which is divided on its circumference and is supplied with a catch to hold prism at points of extinction. Above the prism is a removable condenser for giving oblique light with axial illumination.

A centring arrangement is supplied on the nose-piece, or may be supplied to the stage if preferred. Over the nose-piece is a slide carrying a Kleins quartz plate, or a quartz wedge may be used in this fitting. Immediately above this is the analyzing prism which slides in or out of position as required.

The draw-tube carries a slide containing a Bertrand lens which can be pushed in or out, and the draw-tube is provided with a rack-and-pinion adjustment for focussing this when examining the rings and brushes of crystals.

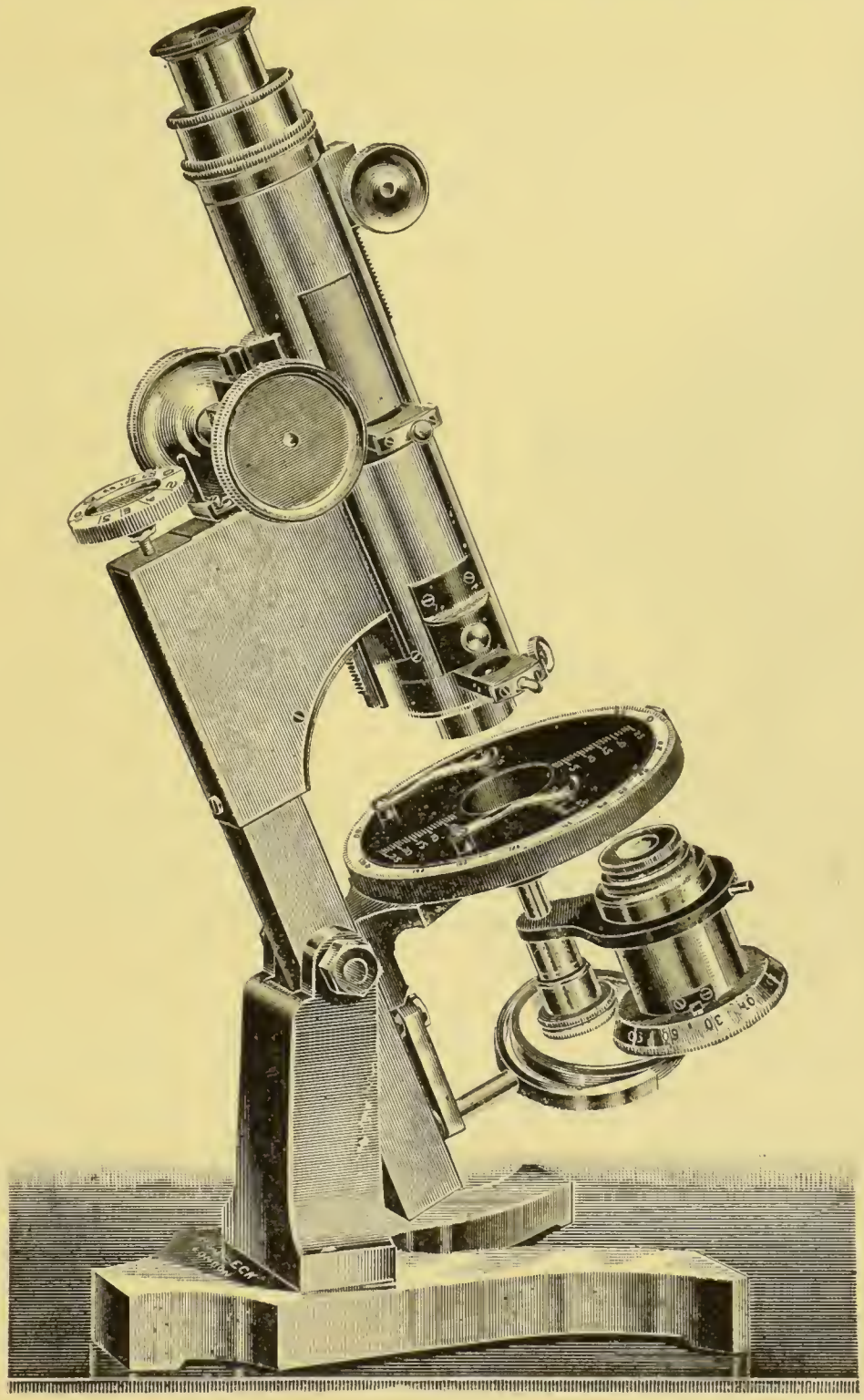
The instrument is substantially constructed and well finished throughout.

SPECIAL PETROLOGICAL APPARATUS.

DESCRIPTION.	Price £	s.	d.
Eye-piece, containing Bertrand's Right and Left Handed Quartz Plate	2	10	0
Additional Analyzer in Divided Rotating Fitting, to fit over Eye-piece	1	15	0
Stauroscopic Calc-Spar Plate, to fit above Special Analyzer fitting	0	10	6
Quartz Wedge...	0	18	0
Micro-Spectroscopes. See page 33.			
Goniometer. See page 33.			
Micrometers. See page 33.			
All the Object-glasses on page 26, and most of the Apparatus on pages 27 to 36, will fit or can be adapted to Petrological Microscopes.			

PLATE XIV.

No. 19.—LARGE MODEL PETROLOGICAL MICROSCOPE.



No. 19.

No	Plate.	DESCRIPTION	Price. £ s. d.
19.	XIV.	LARGE MODEL PETROLOGICAL MICROSCOPE STAND as above, with Eye-piece, provided with Cross Wires. Complete Polarizing Apparatus as described, Condenser for axial work, with Crystals, Klein's quartz plate, Bertrand lens, Double Mirror in strong cabinet with handle and lock	18 18 0
		AN EXTRA LARGE POLARIZING PRISM (Ahren's), with a field ¾ in. square, can be supplied in place of present Polarizer, at 35/- extra.	
19A.	XIV.	The above Instrument, with addition of Eye-piece fitted with Bertrand right and left-handed quartz plate. Additional Analyzer in revolving divided fitting to be placed over eye-piece. Micrometer to drop into eye-piece. Stage Micrometer. Quartz wedge, goniometer eye-piece, and 3 object-glasses, 2 in. (103), 1 in. (105a), ½ in. (108)	32 0 0

PLATE XV.

No. 22.—SMALLER MODEL PETROLOGICAL MICROSCOPE.

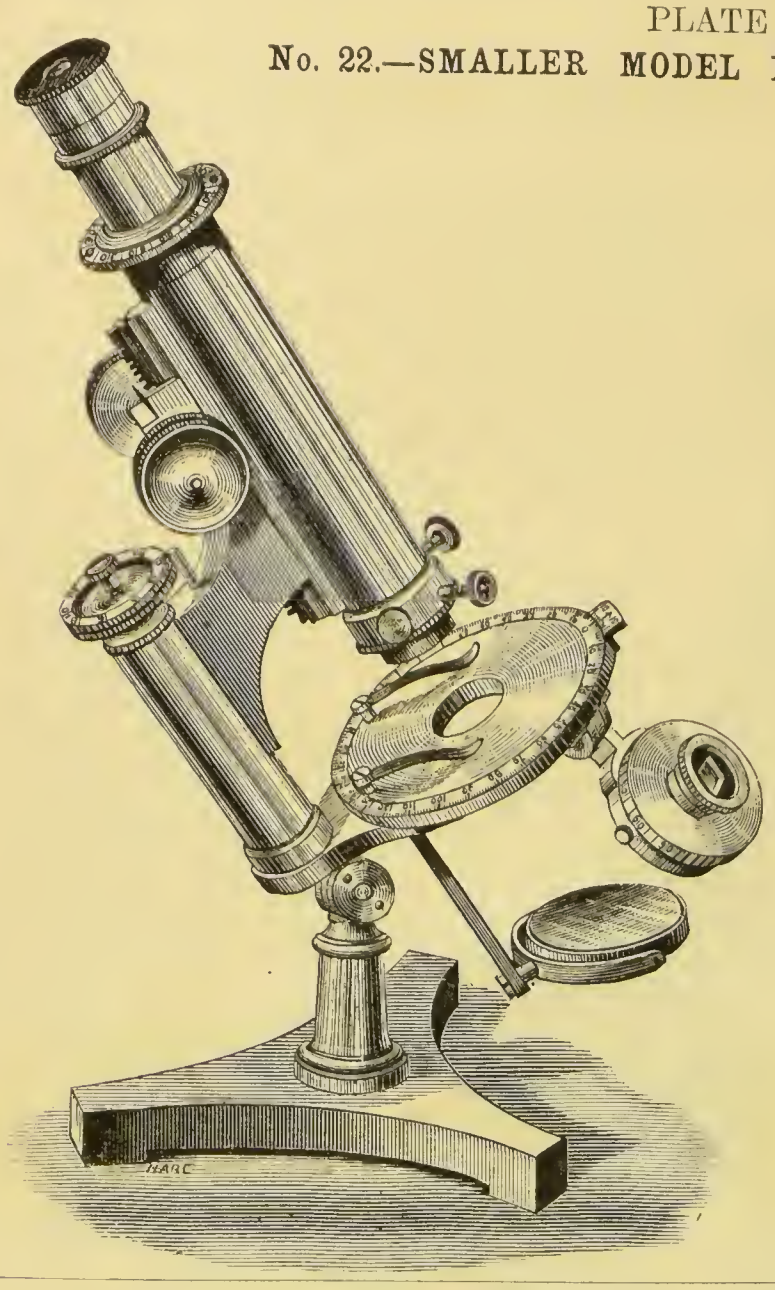


Fig. 4.

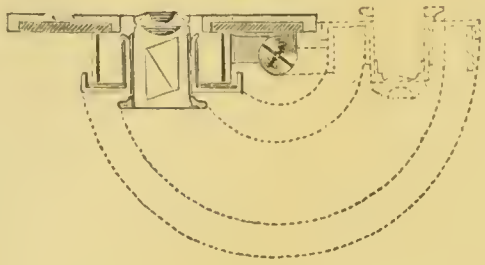
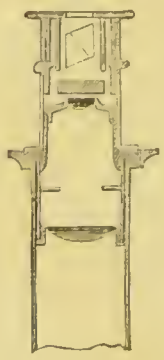


Fig. 2.



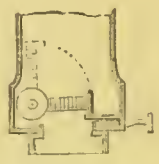


Fig. 3.

DESCRIPTION.

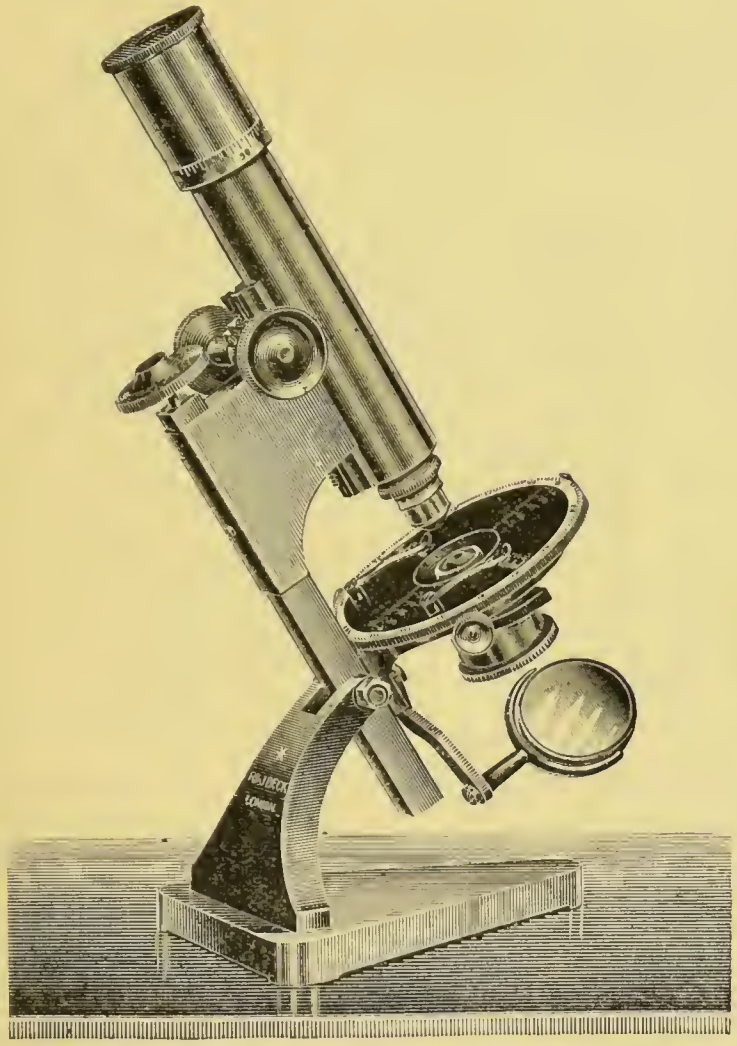
The fitting, containing the analyzer, rotates freely over the Eye-piece (Fig. 2), and has an index which moves over a divided plate fixed to the draw-tube, and thus records the position of the analyzer. Between the analyzer and Eye-piece is placed a plate of calcspar cut at right angles to the optic axis for stauroscopic observations, which can be removed at pleasure. The Eye-piece has cross webs in the focus of the top lens, and is kept in position by a stud which falls into a slot. The rotating polarizer also has a divided circle to register its position, and is fitted into a swinging arc which is in contact with the bottom of the stage, thus excluding any false light. By means of a hinge it can instantly be turned away from the stage (as shown in Fig. 4) when ordinary illumination is required. A condenser of large aperture, fitting into the tube of the polarizer above the prism, is intended for the examination of interference rings and brushes in crystals with convergent light. This also is easily removed when not required. When the Instrument is used for this purpose, a lens is screwed into the lower end of the draw-tube.

From the foregoing description it will be seen this Stand can be used as a Polariscope, Stauroscope, or an ordinary Microscope, the fitting which takes the polarizer being adapted to receive all other illuminating apparatus.

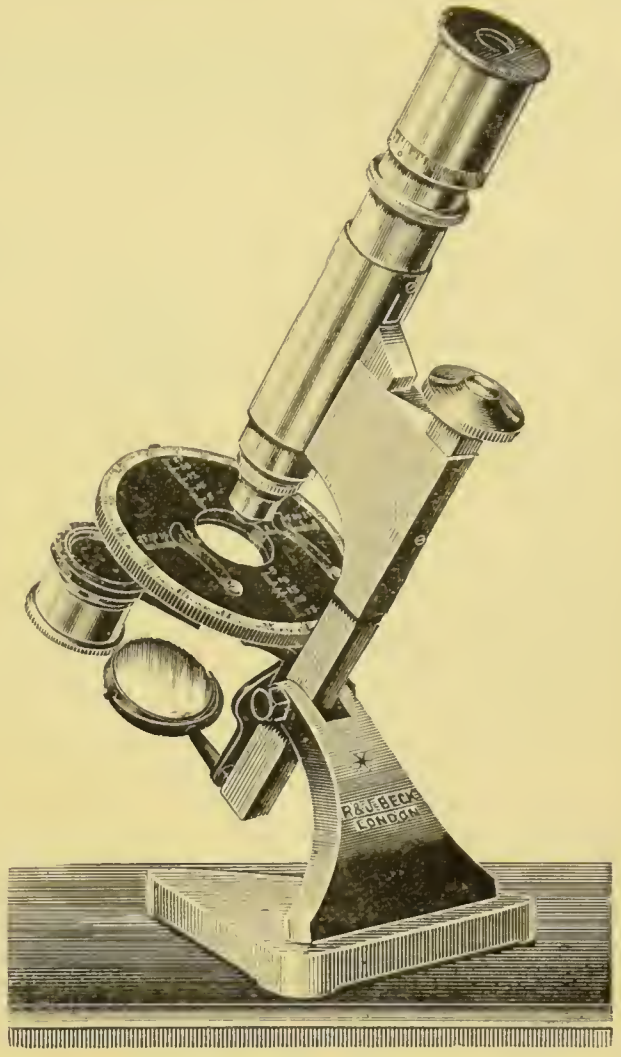
No	Plate.	DESCRIPTION.	Price. £	s.	d.
22.	XV.	THE LITHOLOGICAL MONOCULAR MICROSCOPE STAND (PLATE XXIV.), with complete Polarizing Apparatus and High-angled Condenser, Calcspar and Klein's Quartz Plate, Revolving Graduated Stage and Eye-piece with Cobwebs, Centring Nose-piece, Divided Milled Head to Slow Motion, and Lens fitting into Draw-tube for examination of Sections of Crystals, &c., Concave and Plane Mirror, no Object-glass, packed in Mahogany Case ..	13	0	0
22A.	XV.	THE LITHOLOGICAL MONOCULAR MICROSCOPE (PLATE XXIV.), with complete Polarizing Apparatus and High-angled Condenser, Calcspar and Klein's Quartz Plate, Revolving Graduated Stage and Eye-piece with Cobwebs, Centring Nose-piece, Divided Milled Head to Slow Motion, and Lens fitting into Draw-tube, for examination of Sections of Crystals, &c., Concave and Plane Mirror, with 1 inch and ¼ inch Objectives, packed in Mahogany Case	15	0	0
A15.	XV.	ADDITIONAL BINOCULAR BODY, with two pairs of Eye-pieces, fitting the above Stand...	5	0	0

PLATE XVI.

STUDENTS' PETROLOGICAL MICROSCOPE.



No. 48
WITH RACK AND PINION, COARSE ADJUSTMENT.



No. 50
WITH SLIDING COARSE ADJUSTMENT.

DESCRIPTION.

This Microscope is made in two forms, one of which is provided with a rack-and-pinion, the other with a Sliding Coarse Adjustment. In other respects they are similar. The fine adjustment is by means of a micrometer screw. The stage revolves concentrically with the optic axis, and has a centring adjustment ; it is provided with a graduated scale of degrees on the circumference, and finder divisions in horizontal and vertical directions. The polarizer swings in and out on an arm below the stage, and is provided with a revolving fitting with spring catches to hold it at the points when the prisms are crossed. The analyzer is in a similar rotating fitting provided with spring detents, which revolves freely over the eye-piece. The eye-piece is provided with cross wires, a converging system of lenses can be supplied to fit over the polarizer for axial illumination.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
48A.	XVI.	STUDENTS' PETROLOGICAL MICROSCOPE, with rack-and-pinion Coarse Adjustment, Fine Adjustment by Screw. Two Eye-pieces, one provided with Cross Wires, the other with a Micrometer, Polarizer, and Analyzer, as described above, Condensing System of Lenses to fit over Polarizer, Plate of Quartz cut at Right Angles to the Axis, ¼ Wave Plate of Mica, 1 in. and ¼ in. Object-glasses in Mahogany Cases	9	5	0
50A.	XVI.	STUDENTS' PETROLOGICAL MICROSCOPE as above, but with Sliding in place of rack-and-pinion Coarse Adjustment, and without Condenser or Quartz and Mica Plates	7	10	0

BEST ACHROMATIC OBJECT-GLASSES.

Applicable to all Microscopes in this Catalogue, and all made with the Universal Screw.

1st SERIES.

These Object-glasses have a higher aperture and are better finished than the 2nd Series. All powers higher than ½ inch, except the Oil-Immersion Lenses, have a Correction Collar.

No.	Focal length.	Air Angle of Aperture about	Price.	Approximate Table of Magnifying-Powers.					
				Linear magnifying-power, with 10-inch body-tube and eye-pieces.			Add for each inch of draw-tube drawn out, with eye-pieces.		
				No.1.	No.2.	No.3.	No.1.	No.2.	No.3.
		°	£ s. d.						
100.	4 inches.....	9	1 10 0	10	16	30	1	1·6	3
101.	3 inches.....	7	1 10 0	15	24	45	1·5	2·4	4·5
102.	3 inches.....	12	2 10 0						
103.	2 inches.....	10	1 10 0	22	36	67	2	3·2	6
104.	2 inches.....	17	2 10 0						
105.	1½ inch	23	2 10 0	30	48	90	3	4·8	9
105a.	1 inch	25	2 10 0	50	80	150	5	8	15
106.	⅔ inch	25	2 0 0	70	112	210	7	11·2	21
107.	⅔ inch	32	2 10 0						
108.	½ inch	45	2 10 0	100	160	300	10	16	30
109.	4/10 inch	65	4 0 0	125	200	375	12·5	20	37
110.	4/10 inch	95	5 0 0	150	240	450	15	24	45
111.	¼ inch	75	3 10 0	200	320	600	20	32	60
112.	¼ inch	120	4 10 0	250	400	750	25	40	75
113.	⅛ inch	130	5 0 0	400	640	1200	40	64	120
114.	1/10 imm. (water)	180	5 5 0	500	800	1500	50	80	150
115.	1/15 imm. (water)	180	8 0 0	750	1200	2250	75	120	225
116.	1/20 imm. (water)	180	10 0 0	1000	1600	3000	100	160	300
117.	1/40 inch	160	20 0 0	2000	3200	6000	200	320	600

OIL-IMMERSION SERIES.

120.	1/12 inch	1·25 N.A.	5 10 0	600	960	1800	60	90	160
121.	1/15 inch	1·25 N.A.	9 0 0	800	1280	2400	85	125	220
122.	1/20 inch	1·25 N.A.	12 0 0	1000	1600	3000	100	160	300

2nd SERIES.

These Object-Glasses are of smaller aperture, but are constructed optically with equal care. They have no Correction Collar, but are of the best optical quality.

No.	Focal length.	Angle of Aperture about	Price.	Approximate Table of Linear Magnifying-Power, with 6-inch body and eye-pieces			Add for each inch of draw-tube drawn out, with eye-piece		
				No.1.	No.2.	No.3.	No.1.	No.2.	No.3.
		°	£ s. d.						
150.	3 inches.....	6	1 0 0	7	10	18	2	3	6
151.	2 inches.....	8	1 0 0	15	21	35	3	5	10
151a.	1½ inch	15	1 5 0	18	27	50	4	6	12
152.	1 inch	18	1 5 0	35	50	90	6	10	18
152b.	⅔ inch	20	1 5 0	46	68	120	10	15	25
153.	½ inch	38	1 5 0	70	100	183	13	20	37
154.	¼ inch	80	1 5 0	133	200	350	22	33	57
155.	1/6 inch	110	2 5 0	183	283	516	33	50	83
155a.	1/6 inch	90	1 15 0	183	283	516	33	50	83
156.	⅛ inch	110	3 10 0	250	380	690	44	66	115

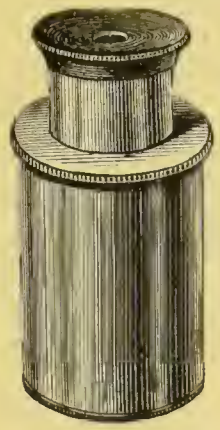
HIGH-POWER BINOCULAR OBJECT-GLASSES.

Specially constructed for use with the Binocular Microscope.

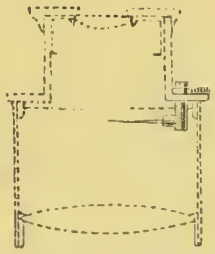
These Object-glasses are constructed with the Universal Screw and very short fittings, so that the back lens comes very near to the Binocular Prism, and by this means the fields of both eye-pieces are fully illuminated.

No.	Focal length.	Angle of Aperture about	Price.	Approximate Table of Linear Magnifying-Power, with 10-inch body and eye-pieces			Add for each inch of draw-tube drawn out, with eye-pieces		
				No.1.	No.2.	No.3.	No.1.	No.2.	No.3.
		°	£ s. d.						
139.	½ inch	38	2 0 0	100	160	300	10	16	30
140.	¼ inch	80	2 10 0	175	285	550	25	35	50
141.	1/6 inch	110	3 0 0	260	425	815	30	45	80
142.	⅛ inch	110	4 0 0	350	570	1080	50	70	120
143.	1/10 imm.....	180	5 0 0	435	715	1350	65	85	150
144.	1/15 imm.....	180	6 6 0	655	1065	2020	95	135	230

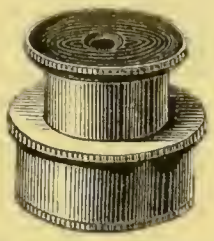
PLATE XVII.—MICROSCOPE APPARATUS.—Eye-pieces, Erecting Glass, Lieberkuhns, etc.



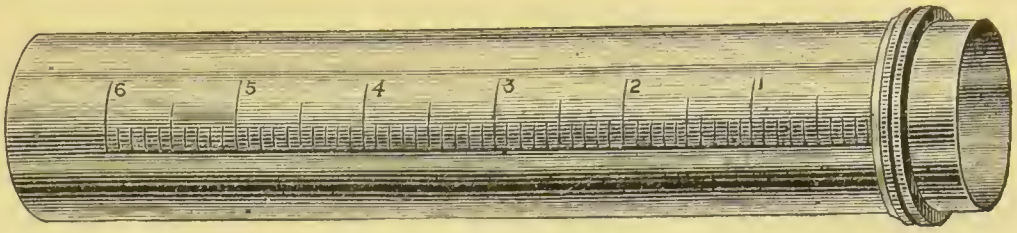
No. 171.—No. 1 Eye-piece.



No. 175.—Indicator.



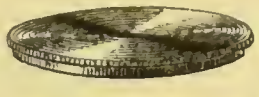
No. 170.—Orthoscopic Eye-piece.



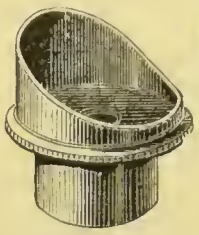
No. 174.—Draw-tube.



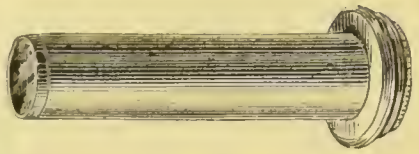
No. 135.—$\frac{1}{16}$ Lieberkuhn.



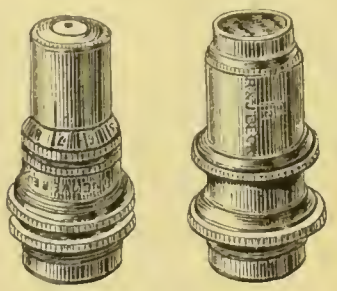
No. 133.—$\frac{2}{3}$ Lieberkuhn.



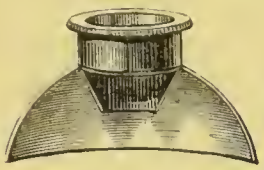
No. 172.—Eyeshade.



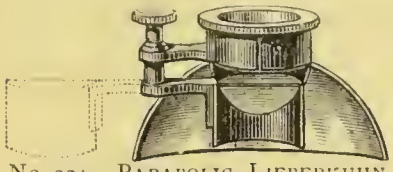
No. 173.—Erecting Glass.



Object-glasses



No. 223.—Parabolic Lieberkuhn.



No. 224.—Parabolic Lieberkuhn with Sorby's Reflector.



No. 143.—High-power Binocular Object-glass.

THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE-HALF.

Huyghenian Eye-pieces, suitable for all forms of microscopes are supplied of five different sizes, with the following approximate magnifying powers:—No. 1 × 5, No. 2 × 8, No. 3 × 15, No. 4 × 20, No. 5 × 20. Unless otherwise ordered, the two eye-pieces which are supplied as being best suited for general work are Nos. 1 and 2. No. 3 is a useful power, but we do not recommend Nos. 4 and 5 for constant use, as, owing to their unusually high power the light is much reduced, and it should always be borne in mind that the best method of increasing power is by a change in the object-glass and not the eye-piece.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
171	XVII.	EYE-PIECES, for Large Model Microscope Stands Nos. 1, 2 and 3	0	15	0
398	...	EYE-PIECES, for Large Model Microscope Stands Nos. 13, 14, and 16	0	13	6
399	...	EYE-PIECES, for Small Model Microscope Stands, Nos. 20, 26, 28, and 30	0	10	6
364	...	EYE-PIECES for Small Model Microscopes without Caps, for Stands Nos. 31, 29, 27, 25, 23, 41, 43, 42, 40	0	7	6
170	XVII.	ORTHOSCOPIC EYE-PIECES for all microscopes, giving a specially large field	0	18	0
172	XVII.	EYESHADES for eyepieces, Nos. 171, 398, 399, 170 per pair	0	5	6
175	XVII.	INDICATOR TO EYE-PIECE £0 2 6 and	0	5	0
173	XVII.	ERECTING GLASS. To fit into Drawtube to erect the image for use with low powers for dissecting	0	10	6
174	XVII.	DRAW-TUBE TO MICROSCOPE £0 3 0 to	0	8	0
293	...	ADAPTERS, to fit any Object-glass to the Universal or other screw each	0	3	0
397	...	FALSE MILLED-HEADS for use at Soirees	0	5	6

The Parabolic Lieberkuhn in connection with a Bull's Eye Condenser gives the most perfect illumination for opaque objects with low powers. It can be arranged to fit a series of object-glasses from 3 in. to $\frac{2}{3}$ in. The Sorby attachment can be used only with the lowest powers.

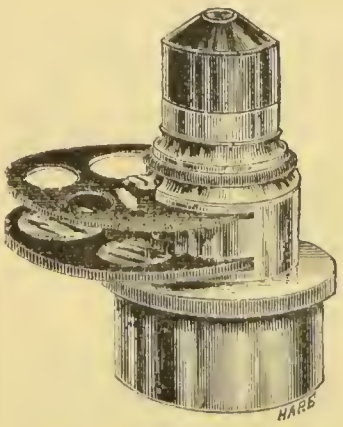
223	...	PARABOLIC LIEBERKUHN, fitted to the $1\frac{1}{2}$ in. and $\frac{2}{3}$ in Object-glasses	1	0	0
224	..	PARABOLIC LIEBERKUHN, as No. 223, with the addition of Sorby's Reflector	1	15	0

PRICES OF LIEBERKUHN FOR OBJECT-GLASSES (Plate XVII).

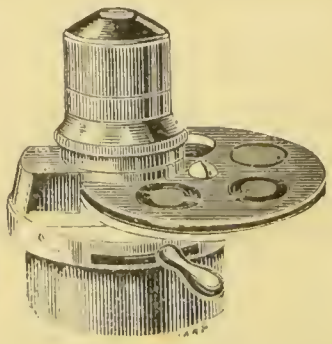
No.	For Object-glass.	Price. £	s.	d.	No.	For Object-glass.	Price. £	s.	d.	No.	For Object-glass.	Price.	s.	d.
130	3 in.	0	12	6	132	$1\frac{1}{2}$ in.	0	12	6	133	$\frac{2}{3}$ in.	0	8	0	135	$\frac{1}{16}$ in.	0	5	6
131	2 in.	0	12	6	13 2	1 in.	0	8	0	134	$\frac{1}{2}$ in.	0	5	6	136	$\frac{1}{4}$ in.	0	4	6

In ordering Lieberkuhns the Object-glasses should be sent in order that they may be accurately adjusted.

PLATE XVIII.—MICROSCOPE APPARATUS—Substage Condensers.



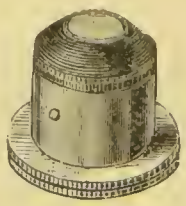
No. 182.—Achromatic Condenser.



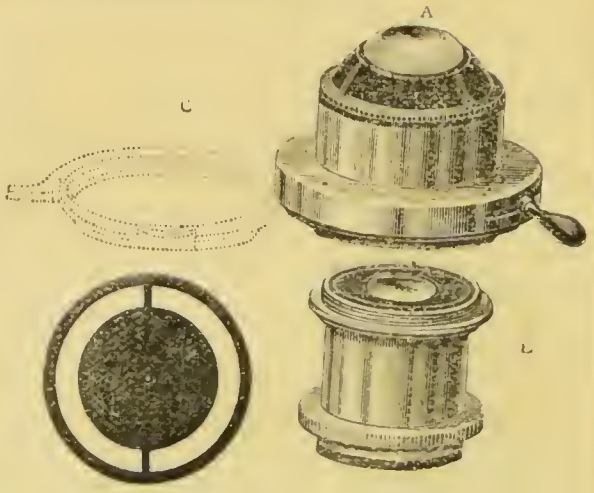
No. 180.—Achromatic Condenser.

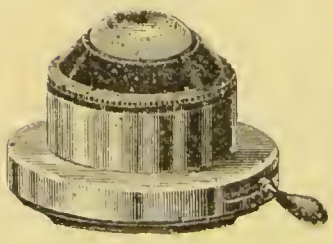


Adapter.

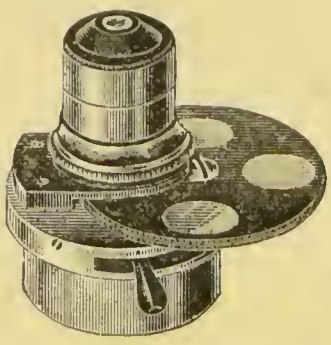


No. 357.—Substage Condenser.

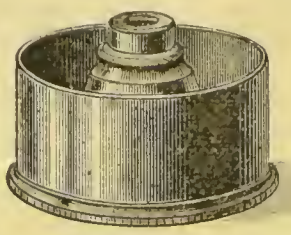




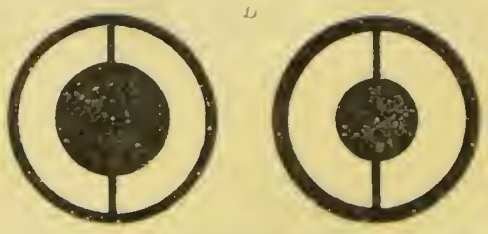
No. 185.—Abbé Condenser.



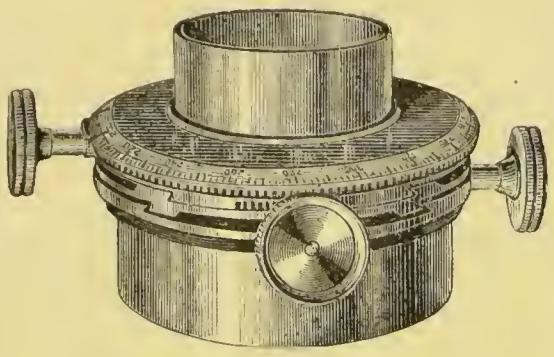
No. 180*.—Achromatic Condenser.



No. 381.—Achromatic Condenser.



No. 187.—Compound Substage Apparatus



No. 200.—Adapter for Apparatus for "International" Stand.

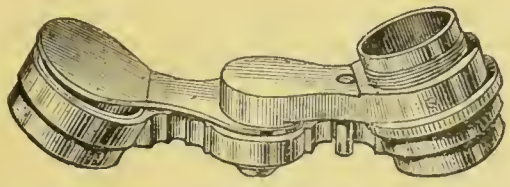


No. 186.—Substage with Focussing and Swinging Adjustment and Abbé Condenser.

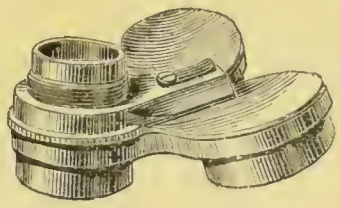
THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE HALF.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
180	XVIII.	ACHROMATIC CONDENSER, with aperture 180°, with Iris Diaphragm to cut down the aperture, and with 2 Revolving Diaphragm Plates, one containing a series of blue glasses of different tints for modifying the light, the other a series of central patches for stopping out the central rays for oblique or dark-field illumination	5	5	0
180*	XVIII.	ACHROMATIC CONDENSER exactly as above, but with 1 Revolving Diaphragm Plate, carrying series of blue glasses of different tints for modifying the light ...	4	4	0
181	...	WIDE-ANGLE CONDENSER, exactly similar to No. 180, but with a non-achromatic system of lenses, 1·35 Numerical Aperture	5	5	0
182	XVIII.	ACHROMATIC CONDENSER, with aperture 180°, similar to 180, but provided only with 2 Diaphragm Plates, one with a series of apertures for reducing the angle of the condenser, the other supplied either with a series of blue glasses for modifying the light, or a series of central patches as desired	3	5	0
185	XVIII.	ABBÉ CONDENSER, non-achromatic, with Iris Diaphragm, for cutting down lens aperture	2	10	0
187	XVIII.	COMPOUND SUBSTAGE APPARATUS, comprising wide angle Condenser, with Iris Diaphragm and dark ground, or oblique illuminator, Polarizing Apparatus with extra large wide angle, polarising prisms, and Selenites, complete .. ... The Above Condensers Fit Microscopes No. 1, 2, 3, 13, 14, 16, 20, 31.	7	7	0
186	XVIII.	SUBSTAGE with focussing and swinging adjustment and ABBÉ CONDENSER, (1 N.A.) with Iris Diaphragm made for fitting to existing small model stand in a similar manner to that supplied in No. 29. Can be applied to Microscopes Nos. 25, 23, 28, 26, 43, 42, 40, (fittings to microscope extra)	1	10	0
381	XVIII.	SMALL ACHROMATIC CONDENSER, suitable for Microscopes Nos. 14, 30, 28, 26	1	2	0
357	XVIII.	SUBSTAGE CONDENSER and fitting for "Star" Microscope, can be applied to Microscopes Nos. 25, 23, 43, 42, 40	0	10	6
199	...	ADAPTER for Substage to use Object-glass as Condenser	0	2	6
200	XVIII.	ADAPTER, for centring or throwing out of centre the illuminating apparatus, moved by racks and pinions, applicable only to "The International," Microscope No. 1	5	10	0

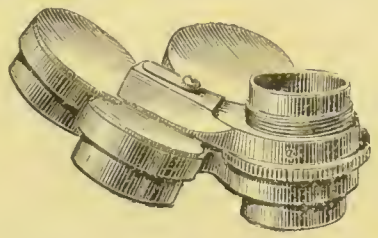
PLATE XIX.—MICROSCOPE APPARATUS. Nosepieces, Mechanical Stages, Dark Wells, &c.



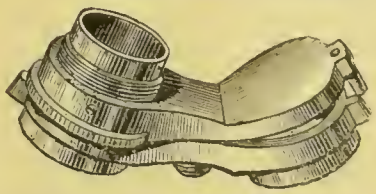
Nos. 190 & 191.—Double Nose-piece.



No. 192.—Triple Nose-piece.



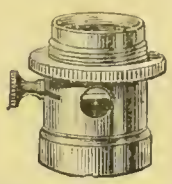
No. 194.—Quadruple Nose-piece.



No. 97 & 392*.—Double Nose piec

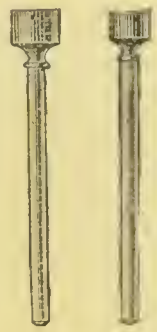


No. 21.—Beck's Patent Illuminator.

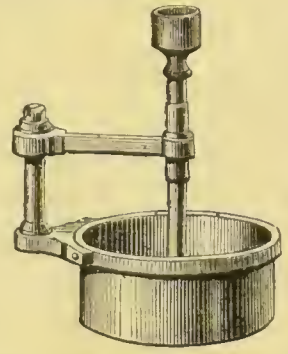




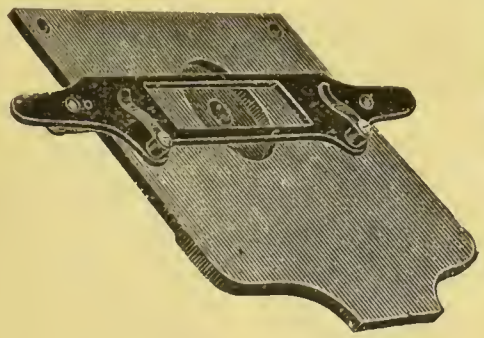
No. 234.



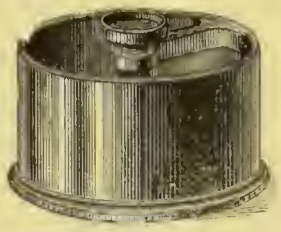
No. 233.



No. 220.—Three Dark Wells and Holder.



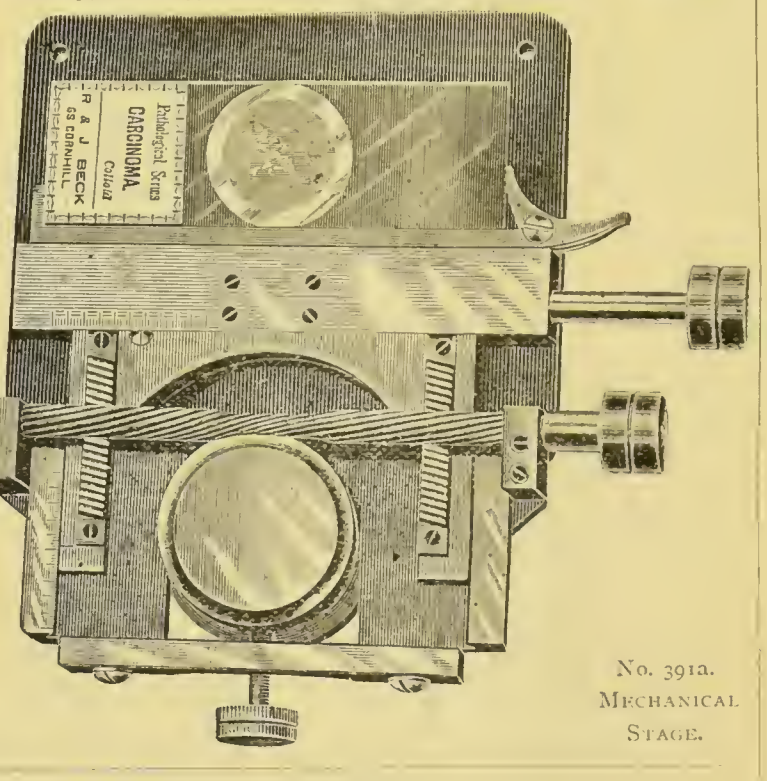
No. 395.—Movable Top Stage.



No. 380.—Dark Well.



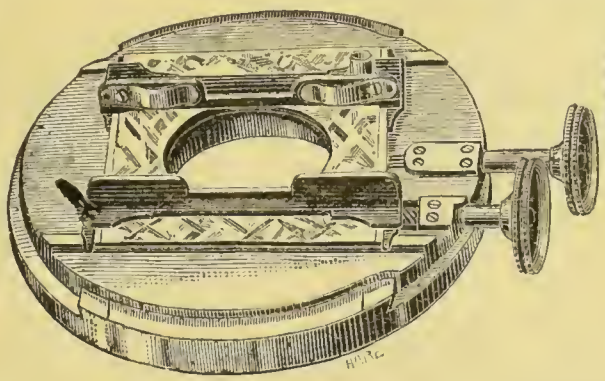
No. 356.—Dark Well.



No. 391a. Mechanical Stage.



No. 203. Tightening Key.



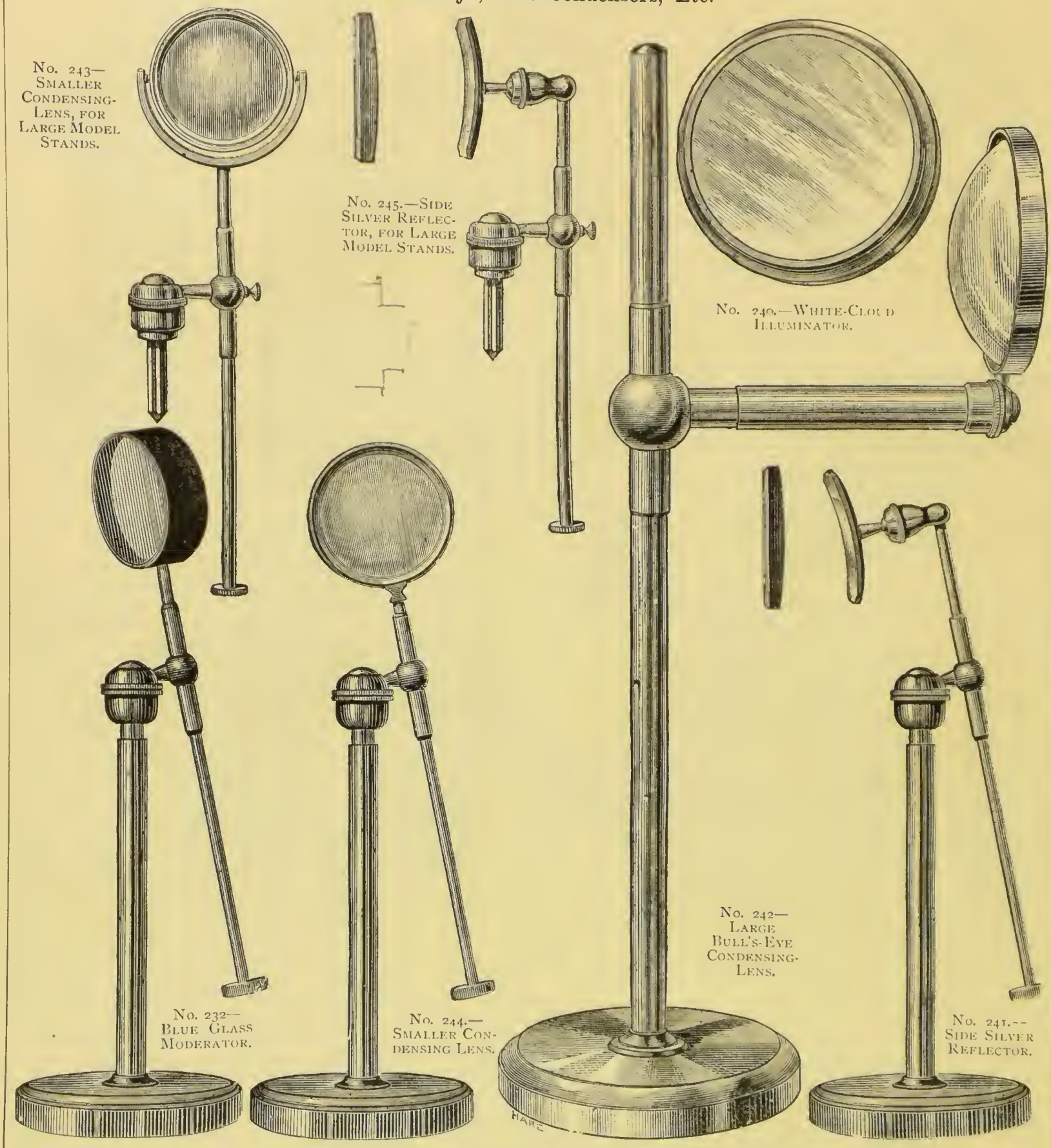
No. 391.—Stage, with Mechanical Movements.

THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE HALF.

No.	Plate.	DESCRIPTION	Price. £	s.	d.
391	XIX.	STAGE, with Horizontal and Vertical Mechanical movement, sliding object holder and revolving fitting complete, suitable for Microscopes Nos. 13, 14, 16, 20, 28. (The Microscopes must be sent to us for this to be fitted)	3	10	0
391A	...	STAGE, with Horizontal and Vertical Mechanical movements, suitable for Microscopes with plain flat stages Nos. 20 (plain stage), 31, 29, 27, 25, 23, 21. This stage can be removed from the instrument when not required	3	10	0
395	XIX.	MOVABLE TOP STAGE, for Star Microscope	0	3	6
190	XIX.	DOUBLE NOSE-PIECE, for Large Model Microscopes Nos. 1, 2, 3	1	10	0
191	XIX.	DOUBLE NOSE-PIECE, Aluminium for Large Model Microscopes	2	5	0
392	XIX.	DOUBLE NOSE-PIECE, for all Smaller Microscopes	0	16	6
392*	XIX.	DOUBLE NOSE-PIECE, bronzed form	0	12	6
192	XIX.	TRIPLE NOSE-PIECE, for all Microscopes	2	0	0
192*	...	TRIPLE NOSE-PIECE, bronzed form	1	4	0
193	...	TRIPLE NOSE-PIECE, Aluminium	2	15	0
194	XIX.	QUADRUPLE NOSE-PIECE, for Large Model Microscopes	3	5	0
195	...	QUADRUPLE NOSE-PIECE, Aluminium	4	4	0
220	XIX.	DARK WELLS, for giving black ground when Lieberkuhns are used. Set of 3 and holder for Microscopes Nos. 1, 2, 3	0	8	6
380	XIX.	DARK WELL for Microscopes Nos. 13, 14, 16, 30, 20, 31, 24, 28	0	4	6
356	XIX.	DARK WELL for Microscopes Nos. 25, 23, 43, 42, 40	0	3	6
233	XIX.	WENHAM'S SEMI-DISK ILLUMINATOR, on Wire for oblique illumination	0	5	6
234	XIX.	SMALL EQUILATERAL PRISM, on Wire, for oblique illumination	0	5	6
221	XIX.	BECK'S PATENT ILLUMINATOR, for illuminating Opaque Objects under high powers	0	10	6
222	...	BECK'S PATENT ILLUMINATOR, as above, with addition of Diaphragm	0	13	0
203	XIX.	TIGHTENING KEY for Microscopes Nos. 1, 2, 3	0	4	6

PLATE XX.—MICROSCOPE APPARATUS.

Bull's-Eye, Side Condensers, Etc.



No. 243—Smaller Condensing-Lens, for Large Model Stands.

No. 245.—Side Silver Reflector, for Large Model Stands.

No. 240.—White-Cloud Illuminator.

No. 232—Blue Glass Moderator.

No. 244.—Smaller Condensing Lens.

No. 242—Large Bull's-Eye Condensing-Lens.

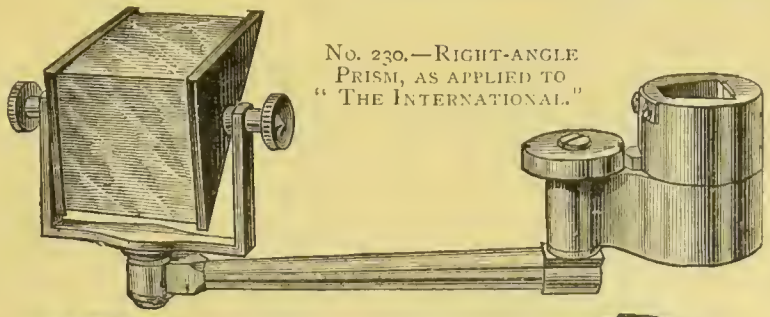
No. 241.—Side Silver Reflector.

THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE HALF.

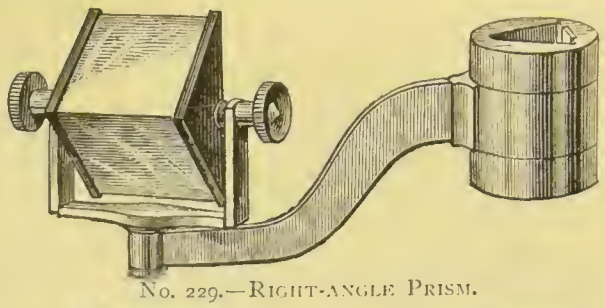
No.	Plate.	DESCRIPTION.	Price.
240.	XX.	WHITE CLOUD ILLUMINATOR to fit on Mirror	£0 11 6
241.	XX.	SIDE SILVER REFLECTOR, on Stand	1 3 0
245	XX.	SIDE SILVER REFLECTOR, with fitting to Limb of Microscopes, Nos. 1, 2, 3	1 0 0
242.	XX.	LARGE BULL'S-EYE CONDENSING LENS, on Stand	1 1 0
243.	XX.	CONDENSING LENS, with fitting to Limb of Microscope, Nos. 1, 2, 3 ...	0 15 0
244.	XX.	CONDENSING LENS, on Stand	0 12 0
401.	...	CONDENSING LENS, on Stand, simpler stand	0 8 0
305.	...	CONDENSING LENS, to fit to Stage of Microscopes, Nos. 20, 31, 29, 27, 25, 23, 24, 28, 41, 43, 42, 40	0 5 0
232.	XX.	BLUE GLASS MODERATOR, on Stand...	0 12 0

PLATE XXI.—MICROSCOPE APPARATUS.

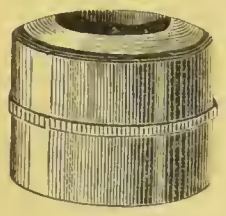
Dark Ground and Other Substage Illuminators.



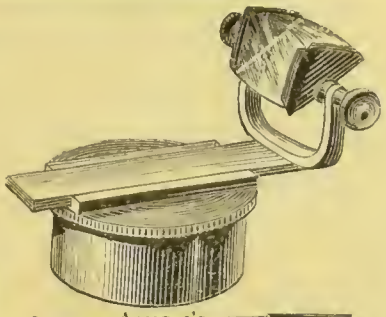
No. 230.—Right-angle Prism, as applied to "The International."



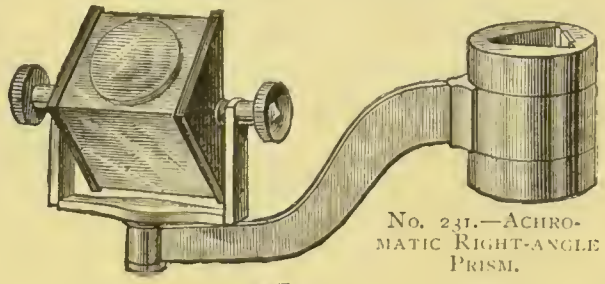
No. 229.—Right-angle Prism.



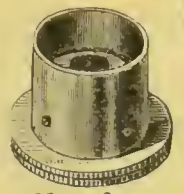
No. 228.—Spot-lens



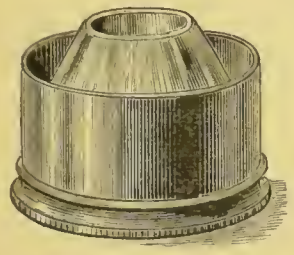
No. 225.—Amici's Prism.



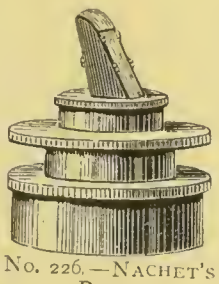
No. 231.—Achromatic Right-angle Prism.



No. 358.—Spot-lens.



No. 382.—Parabolic Reflector.



No. 226.—Nachet's Prism



No. 227.—Wenham's Parabolic Reflector.

No. 210.—Amici's Prism on Stand.

No. 211.—Equilateral Prism.

No. 212.—Adapter for Object-glass as Condenser.

THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE-HALF.

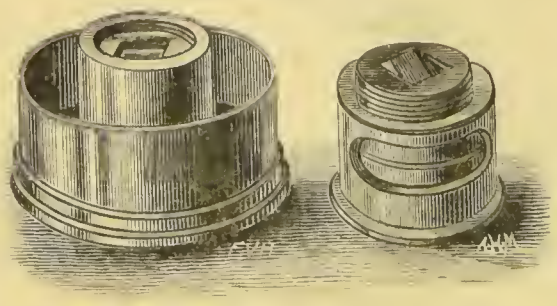
No.	Plate.	DESCRIPTION.	Price. £	s.	d.
227	XXI.	PARABOLIC REFLECTOR, with adjustable stop for Microscopes, Nos. 1, 2, 3 ..	1	7	6
382	XXI.	PARABOLIC REFLECTOR, for Stands Nos. 13, 14, 16, 30, 20. 31, 24, 26. 28 ..	1	2	0
228	XXI.	SPOT LENS, for Stands Nos. 1, 2, 3, 13	0	11	6
		SPOT LENS, for Stands Nos. 14, 30, 20, 31, 26, 28	0	7	6
358	XXI.	SPOT LENS, for Stands Nos. 23, 25, 43, 42, 40	0	5	6
210	XXI.	AMICI'S PRISM, for Oblique Illumination on Stand	1	15	0
225	XXI.	AMICI'S PRISM, for Microscopes Nos. 1, 2, 3, 13, 16, 20, 31	1	15	0
226	XXI.	NACHET'S PRISM, for Microscopes Nos. 1, 2, 3, 13, 16, 20, 31	1	0	0
229	XXI.	RIGHT-ANGLE PRISM, for reflecting the light more perfectly than the Flat Mirror, for Microscopes Nos. 2 and 3	2	2	0
230	XXI.	RIGHT-ANGLE PRISM, as applied to "The International" Microscope No. 1 ..	3	3	0
231	XXI.	ACHROMATIC RIGHT-ANGLE PRISM, as Condenser instead of Mirror ..	2	5	0
211	XXI.	EQUILATERAL PRISM, on Stand, for Oblique Illumination	1	3	0
212	XXI	ADAPTER, on Stand, for use of Object-glass as Condenser	0	11	0

PLATE XXII.—MICROSCOPE APPARATUS.

Polarizing Apparatus.



No. 322.—Tourmaline.



No 384.—Polarizing Apparatus.



B.



No. 320.—Double Image Prism.

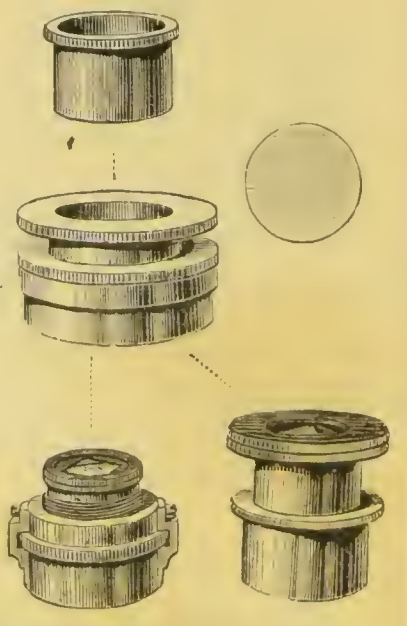
G.

A.

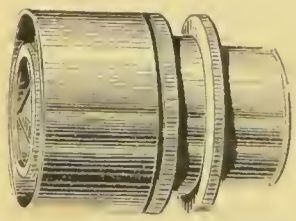


No. 359
Polarizing Apparatus.

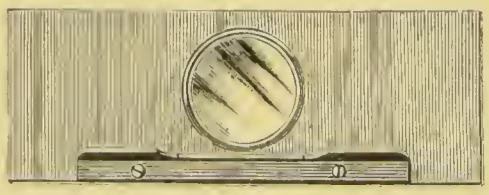
No. 311.



No. 311.—Polarizing Apparatus.



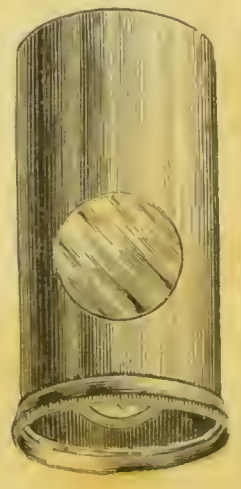
No. 312.—Extra Large Polarizer.



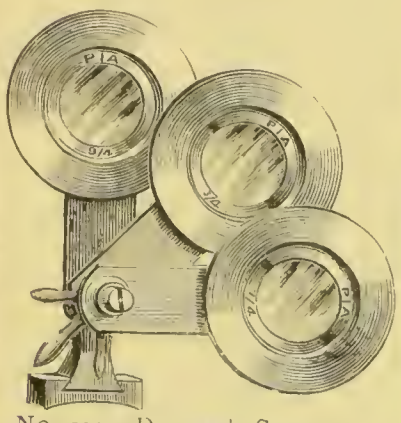
No 315.—Selenite-stage.



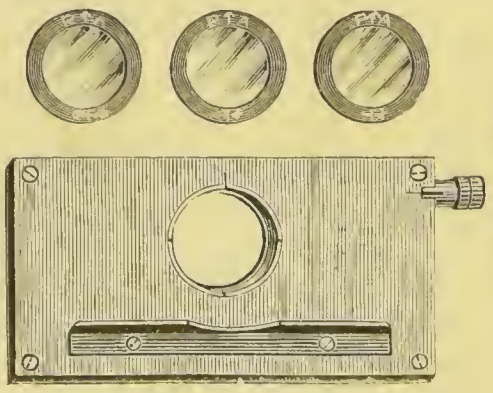
No. 314 -Selenite on Slip.



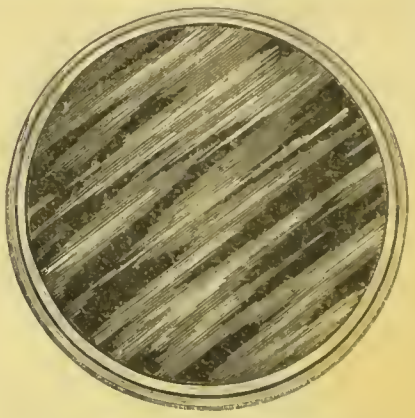
No. 318. Bundle of Glass Polarizer.



No. 313.—Darker's Selenites, for First-class Stands.



No. 316.—Darker's Selenite-stage.



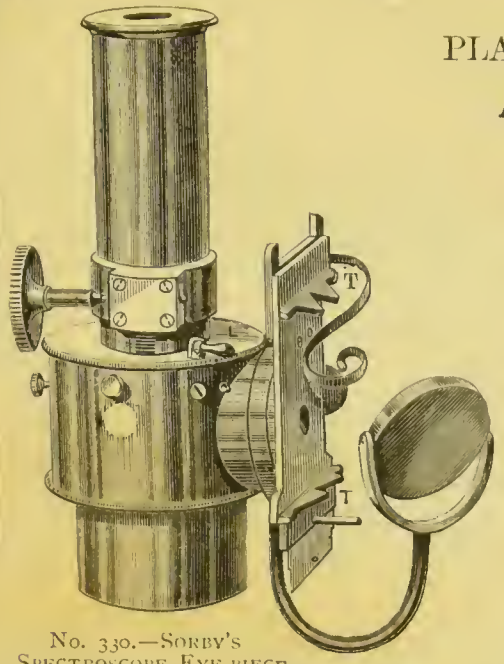
No. 317.—Black Glass Polarizer.

THE ILLUSTRATIONS ON THIS PAGE ARE DRAWN TO A SCALE OF ONE HALF.

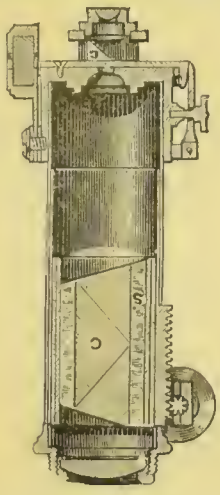
No.	Plate.	DESCRIPTION.	Price £	s.	d.
310		SPECIAL APPARATUS FOR THE STUDY OF PETROLOGY, for Microscopes No. 1, 2, 3, consisting of Analyzing prism in graduated rotating fitting, with spring stops at every 90°. Plate of calespar cut at right angles to the axis fitting between the Analyzer and the Eye-piece, for Stauroscopic work. Lens to fit into draw-tube for viewing crystals. Cross cobwebs in Eye-piece. Centring Nose-piece with Klein's quartz plate mounted in it in such a way as to be rapidly swung in and out of the field. Large polarizing prism in divided rotating fitting, with spring stops at every 90°	10	10	0
311	XXII.	POLARIZING APPARATUS, with 1 Film of Selenite, for Microscopes Nos. 1, 2, 3	2	10	0
312	XXII.	POLARIZING APPARATUS, with extra large Polarizing Prism, for Microscopes Nos. 1, 2, 3	4	8	0
384	XXII.	POLARIZING APPARATUS. Smaller Prisms for Microscopes Nos. 13, 14, 16, 30, 20, 31, 26, and 28	1	15	0
359	XXII.	POLARIZING APPARATUS, for Microscopes Nos. 29, 27, 25, 23, 41, 43, 42, 40.	1	10	0
313	XXII.	DARKER'S SERIES OF SELENITES, for Microscopes Nos. 1, 2, 3	3	0	0
314	XXII.	SELENITE FILM, of two colours	0	2	6
315	XXII.	SELENITE STAGE, Red and Green, or Blue and Orange ... ... each	0	7	6
316	XXII.	DARKER'S SELENITE STAGE, giving 13 tints	2	2	0
317	XXII.	BLACK GLASS, for Polarizing Light	0	11	6
318	XXII.	BUNDLE OF GLASS, for Polarizing Light, for Microscopes Nos. 1, 2, 3 ...	1	3	0
319	...	TWO DOUBLE-IMAGE PRISMS AND SELENITE FILM, with fittings to Eye-piece, and brass plate with holes	2	2	0
320	XXII.	SINGLE DOUBLE-IMAGE PRISM, in fitting	1	0	0
321	XXII.	CRYSTALS to show rings round the Optic Axis ... ... each from	0	10	6
322	XXII.	TOURMALINES... ... ... from	1	0	0

PLATE XXIII.—MICROSCOPE APPARATUS.

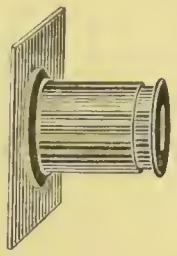
Apparatus for Spectroscopic Observations.



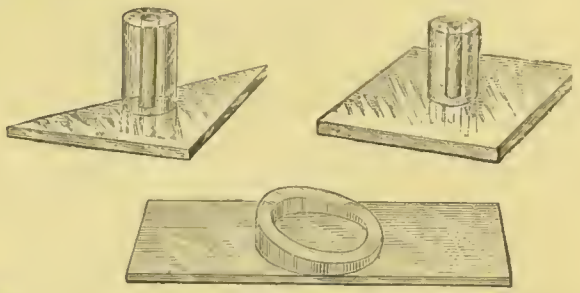
No. 330.—Sorby's Spectroscope Eye-piece.



No. 331.—Sorby's Binocular Spectroscope.



No. 333.—Standard Spectrum-scale.



No. 334.—Cells for use with Spectroscope.

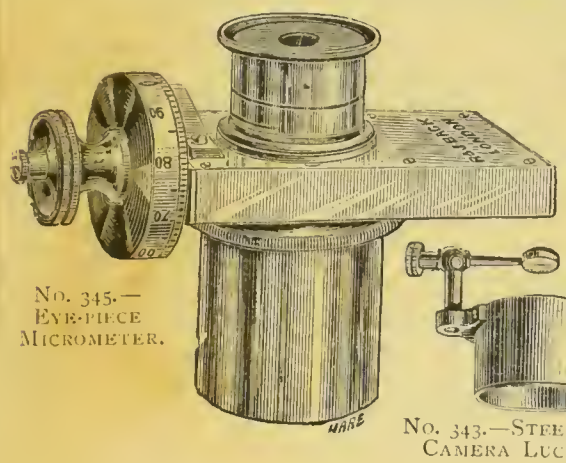


No. 332.—Sorby's Dichroiscope.

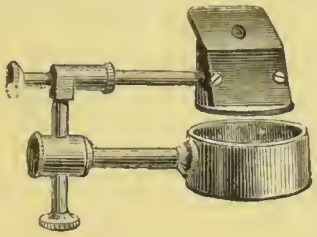
THE ILLUSTRATIONS ON THIS PLATE ARE DRAWN TO A SCALE OF ONE HALF.

No.	Plate.	DESCRIPTION.	Price.
330.	XXIII.	SORBY'S SPECTROSCOPE EYE-PIECE, made to fit any Microscope ...	£6 6 0
331.	XXIII.	SORBY'S BINOCULAR SPECTROSCOPE, for Microscopes Nos. 1, 2, 3 ...	6 6 0
332.	XXIII.	SORBY'S DICHROISCOPE, made to fit any Microscope	0 15 0
333.	XXIII.	SORBY'S STANDARD SPECTRUM-SCALE, Quartz, between Nicol's Prisms	1 10 0
334.	XXIII.	CELLS for use with Sorby's Spectroscope, 6 sizes assorted ... ... per doz.	0 8 6

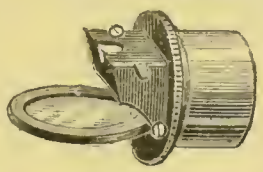
Plate XXIV.—APPARATUS FOR DRAWING AND MEASUREMENT.



No. 345.—Eye-piece Micrometer.



No. 340.—Vertical Camera Lucida



No. 341.—Wollaston's Camera Lucida.



No. 349.—Stage Micrometer, mounted in Brass.

No. 343.—Steel-Disk Camera Lucida.



No. 347



No. 342. Neutral-tint Camera Lucida.



No. 346.—Eye-piece Micrometer.



No. 350—Stage Micrometer, mounted in Card.



No. 202.—Maltwood's Finder.



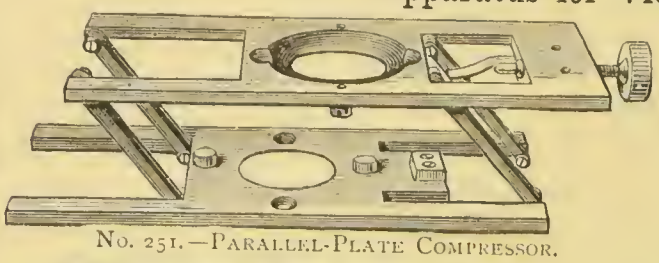
No. 344.—Leeson's Goniometer.

THE ILLUSTRATIONS ON THIS PLATE ARE DRAWN TO A SCALE OF ONE HALF.

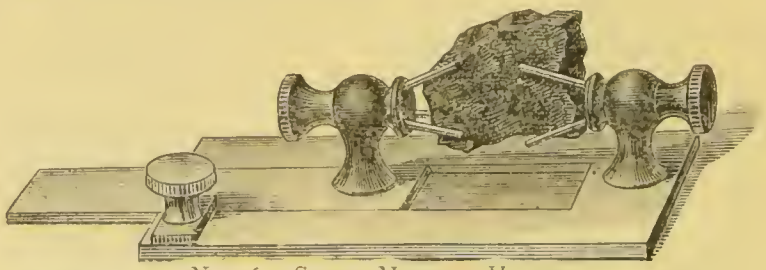
No.	Plate.	DESCRIPTION.	Price.
202.	XXIV.	MALTWOOD'S FINDER for registering and finding required portions of objects, in case	£0 8 0
340.	XXIV.	BECK'S VERTICAL CAMERA LUCIDA	0 18 0
341.	XXIV.	WOLLASTON'S CAMERA LUCIDA, with Magnifying Lens	0 15 0
360.	...	WOLLASTON'S CAMERA LUCIDA, without Magnifying Lens	0 10 0
342.	XXIV.	NEUTRAL-TINT GLASS CAMERA LUCIDA	0 5 6
343.	XXIV.	STEEL DISK CAMERA LUCIDA	0 16 6
344.	XXIV.	LEESON'S GONIOMETER	2 10 0
345.	XXIV.	EYE-PIECE MICROMETER, with Traversing Cobweb moved by Micrometer-screws reading to thousandths of an inch	4 10 0
346.	XXIV.	EYE-PIECE MICROMETER, with Jackson's Adjusting-screw	1 0 0
347.	XXIV.	EYE-PIECE MICROMETER, on Glass Plate, to drop into Eye-piece... ...	0 5 6
348.	..	GLASS PLATE RULED IN SQUARES FOR DRAWING, to drop into Eye-piece	0 7 6
349.	XXIV.	STAGE MICROMETER, mounted in brass, 100 and 1000 of inch	0 10 0
350.	XXIV.	STAGE MICROMETER, mounted in card, 100 and 1000 of inch, or of $\frac{1}{10}$ths and $\frac{1}{100}$ths of mm.	0 5 0
351.	...	STAGE MICROMETER, mounted in brass, part of English inch and metre ...	0 15 0

PLATE XXV.—MICROSCOPE APPARATUS.

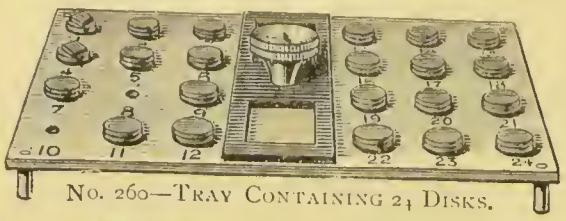
Apparatus for Viewing Live and Unmounted Objects.



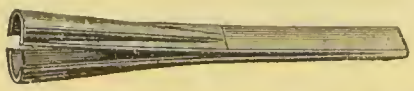
No. 251.—Parallel-Plate Compressor.

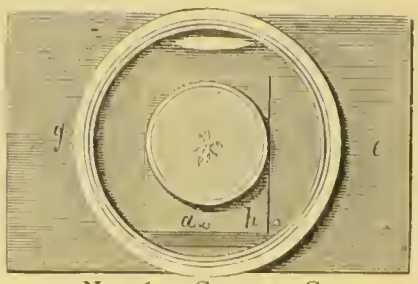


No. 265—Stage Mineral-Holder.

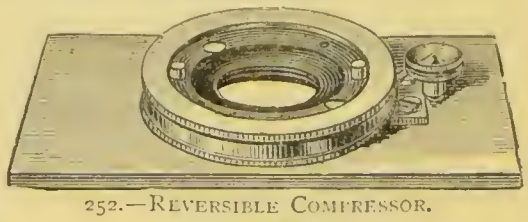


No. 260—Tray Containing 24 Disks.

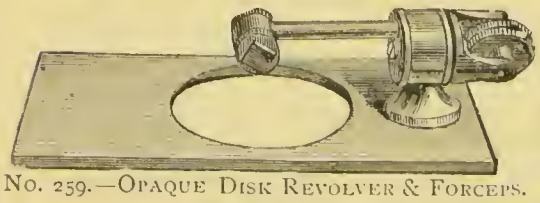




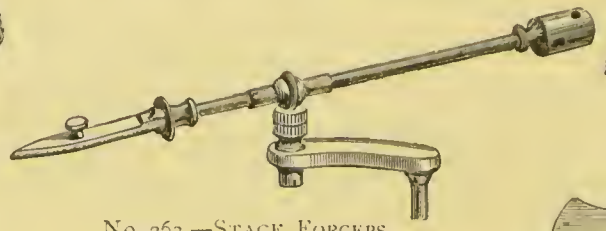
No. 267.—Growing-Cell.



252.—Reversible Compressor.



No. 259.—Opaque Disk Revolver & Forceps.



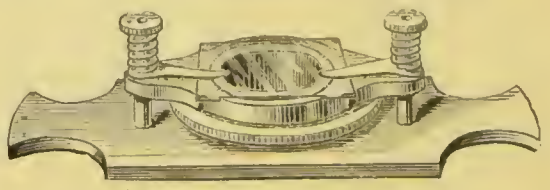
No. 263.—Stage Forceps.



No. 253.—Wenham's Compressor



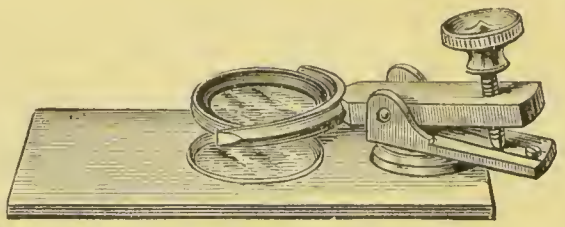
No. 264—Paper-Pointed Forceps.



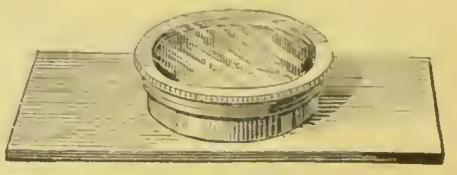
No. 254.—Screw Live-Box.



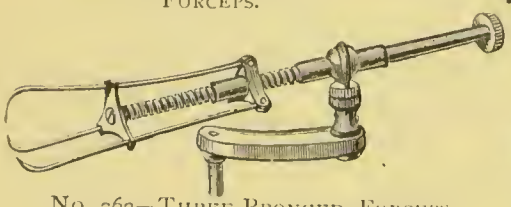
No. 366—Improved Stage Forceps.



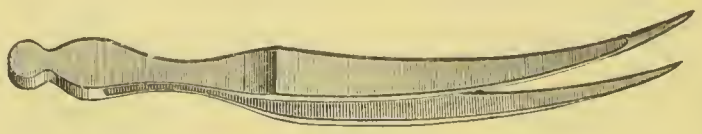
No. 250.—Lever Compressor.



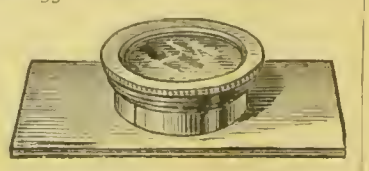
No. 255.—Large Live-Box.



No. 262—Three-Pronged Forceps, Screw-Adjustment.



No. 266.—Best Brass Forceps.



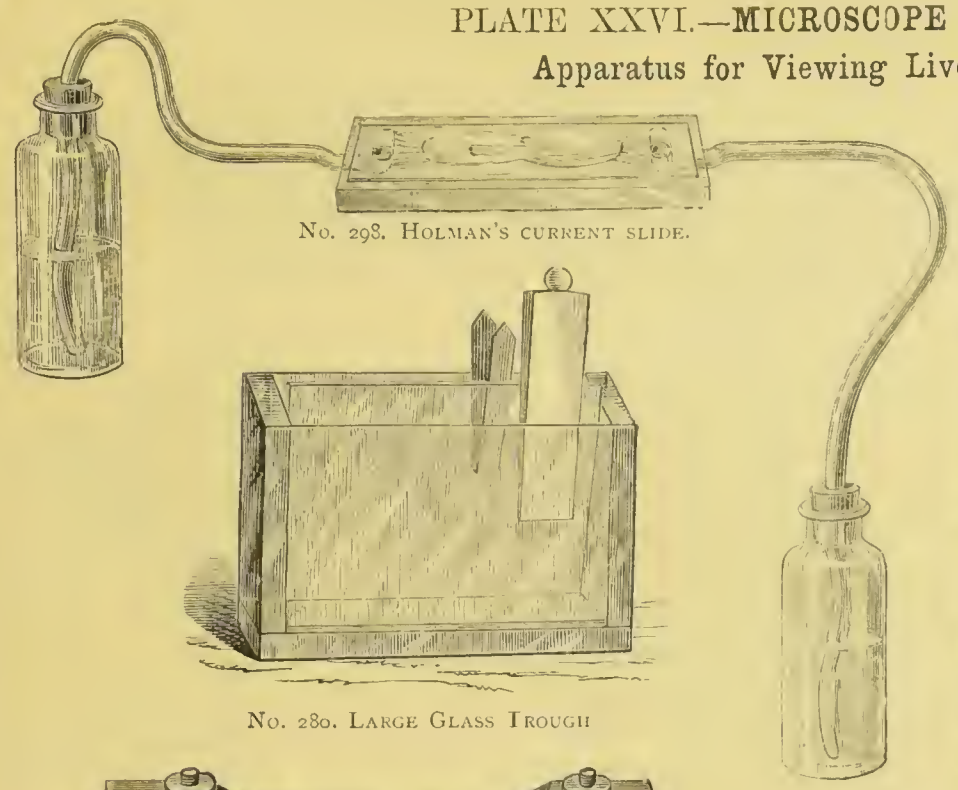
No. 362.—Small Live-Box

THESE ILLUSTRATIONS ARE DRAWN TO A SCALE OF ONE HALF.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
250.	XXV.	LEVER COMPRESSOR	0	17	6
251.	XXV.	PARALLEL-PLATE COMPRESSOR	1	3	0
252.	XXV.	REVERSIBLE COMPRESSOR	1	3	0
253.	XXV.	WENHAM'S COMPRESSOR, for use with Wenham's Parabola	0	5	0
254.	XXV.	SCREW LIVE-BOX	0	12	0
254A.	XXVI.	ROUSSELET'S LIVE-BOX (See next Page)	0	10	0
255.	XXV.	LARGE LIVE-BOX	0	6	6
256.	...	SMALLER LIVE-BOX...	0	5	0
362.	XXV.	SMALL LIVE-BOX	0	4	6
257.	...	OPAQUE-DISK REVOLVER, One Tray of Disks, in Case	1	18	0
258.	...	OPAQUE-DISK REVOLVER, with 3 trays of Disks, Forceps, Capsule of Gold Size, in Mahogany Case, complete	3	3	0
259.	XXV.	OPAQUE-DISK REVOLVER AND FORCEPS	1	1	0
260.	XXV.	TRAYS containing 24 Disks ... ... each	0	10	6
261.	...	THREE-PRONGED FORCEPS, in German Silver, with Screw-adjustment ...	0	18	0
262.	XXV.	THREE-PRONGED FORCEPS	0	15	0
263.	XXV.	STAGE FORCEPS	0	9	0
366.	XXV.	STAGE FORCEPS	0	4	6
367.	...	PLIERS	0	1	0
264.	XXV.	PAPER-POINTED FORCEPS	0	1	0
265.	XXV.	STAGE MINERAL-HOLDER	1	1	0
266.	XXV.	BEST BRASS FORCEPS	0	6	0
267.	XXV.	GROWING-CELL, for preserving objects alive in water for many days ...	0	10	0

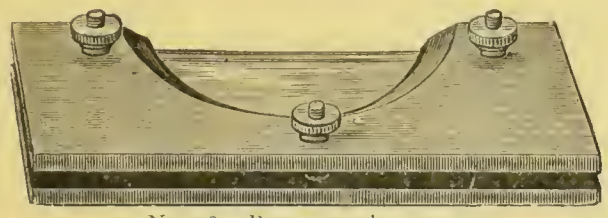
PLATE XXVI.—MICROSCOPE APPARATUS.

Apparatus for Viewing Live Objects.



No. 298. Holman's current slide.

No. 280. Large Glass Trough



No. 282. Botterell's trough



No. 254A. Rousselet's Live-box Full size)



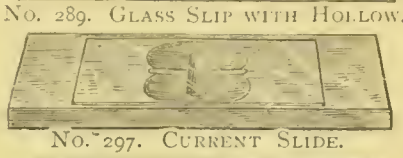
No. 286. Frog-plate.



No. 288. Glass Slip with Hollow Ledge and Lip.



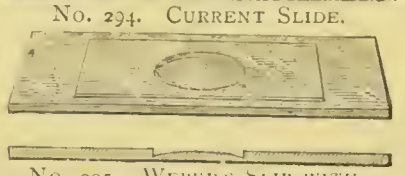
No. 289. Glass Slip with Hollow.



No. 297. Current Slide.



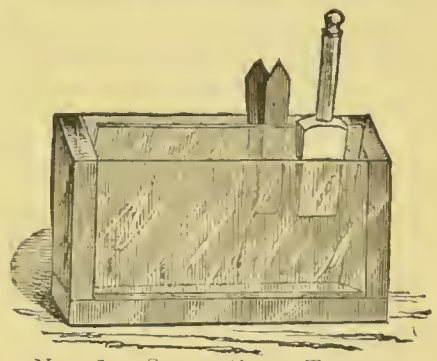
No. 294. Current Slide.



No. 295. Weber's Slip with Convex Cell.



No. 296. Current Slide.



No. 281. Small Glass Trough.



No. 290. Fishing-tubes.

THE ILLUSTRATIONS ON THIS PAGE ARE DRAWN TO A SCALE OF ONE HALF.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
280.	XXVI.	LARGE GLASS TROUGH, with Wedge and Spring complete	0	7	6
281.	XXVI.	SMALLER GLASS TROUGH, with Wedge and Spring complete	0	6	0
363.	...	SMALL GLASS TROUGH, with Wedge and Spring complete	0	5	6
282.	XXVI.	BOTTERELL'S TROUGH, in Vulcanite	0	3	6
282*	...	BOTTERELL'S LIFE SLIDE	0	3	0
283.	...	GLASS SLIP with Ledge	0	1	0
286.	XXVI.	FROG-PLATE, with Bag, etc., complete	0	10	6
287.	...	GLASS SLIP with Hollow and Ledge	0	1	6
288.	XXVI.	GLASS SLIP with Hollow and Ledge and Lip	0	4	6
289.	XXVI.	GLASS SLIP with Hollow	0	0	2
290.	XXVI.	GLASS TUBES, Set of Three	0	1	0
291.	...	OPAL GLASS, for moderating the light, 3 by 1 inch	0	0	3
292.	...	BLUE GLASS, for moderating the light, 3 by 1 inch, Three Tints	0	0	3
294.	XXVI.	CURRENT SLIDE	0	5	6
295.	XXVI.	WEBER'S SLIP with Convex Cell	0	3	6
296.	XXVI.	CURRENT SLIDE	0	3	6
297.	XXVI.	CURRENT SLIDE	0	3	6
298.	XXVI.	HOLMAN'S CURRENT SLIDE	0	7	6

PLATE XXVII.—MICROSCOPE APPARATUS.—Live-Traps.

Fig. V.

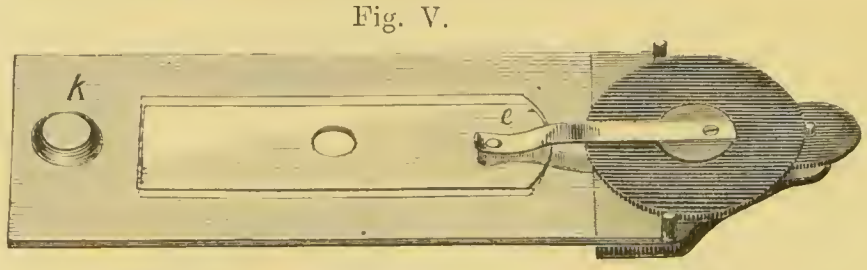


Fig. VI.

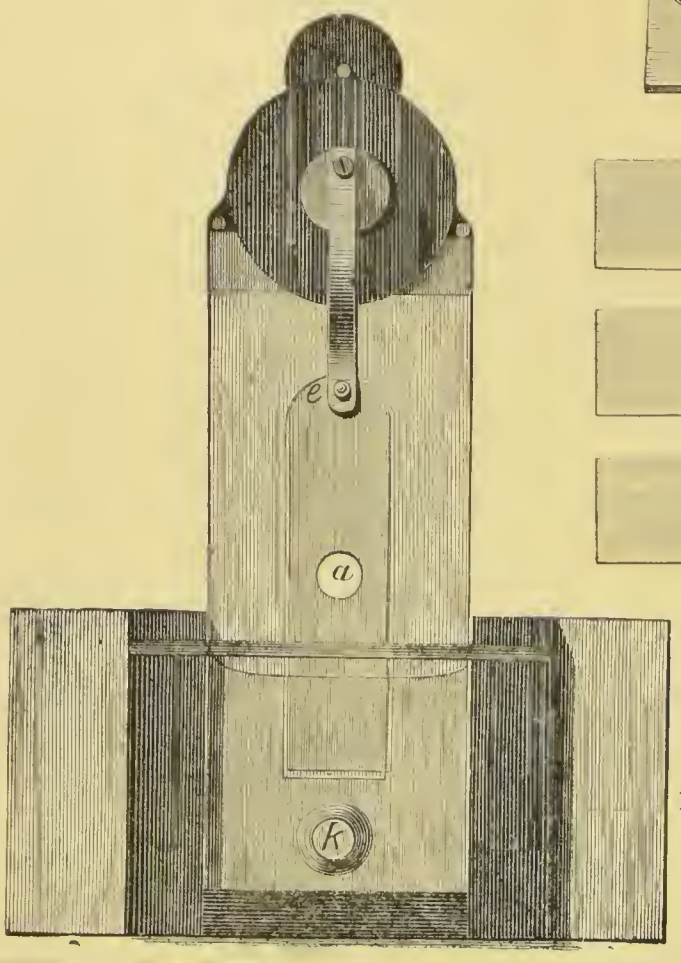


Fig. II.

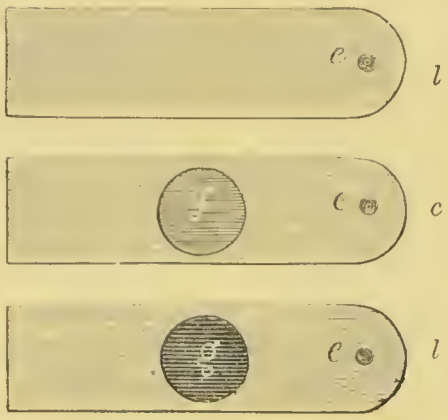


Fig. III.

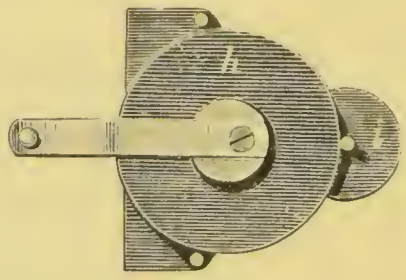


Fig. VI

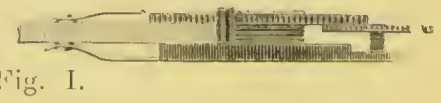


Fig. I.

No. 173.



THE ILLUSTRATIONS ON THIS PAGE ARE DRAWN TO THE FULL SIZE.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
284.	XXVII.	SET OF SIX LIVE-TRAPS AND TROUGH, in Case, complete	1	18	0
285.	XXVII.	SINGLE LIVE-TRAP (Fig. V.)	0	8	0

DESCRIPTION OF A NEW FORM OF LIVE-TRAP. By Richard Beck (*Microscopical Journ.*) Oct., 1865.

In endeavouring to examine under the Microscope many small living objects, I had often felt a great want of some piece of apparatus by which the specimen could be confined in a small space without injury, and yet in a manner that permitted the use of the necessary Object-glasses and apparatus.

The contrivance is simply a plate of glass (Fig. I.), with a small drilled hole (*a*), covered above and below with pieces of thin glass similar to those in Fig. II. But some arrangement is required to keep these thin glass covers sufficiently in contact with, and yet free to move upon, the perforated plate; this is effected by two light springs attached to a piece of brass (Figs. III. & IV.), which can be clamped at the end of the glass plate; and these parts collectively, as in Fig. V., constitute the whole of the apparatus; but one or two points of detail require a little explanation.

The piece of brass with the springs (Fig. III. & IV.) is clamped to the glass plate by first screwing down the larger milled head (*h*) until it just comes in contact with the glass, and then by screwing up the smaller milled head (*i*) against the under side of the larger one, which is thus pressed sufficiently upon the glass plate without any fear of breaking it; for it will plainly be seen that, as the resistance to the screwing down of the larger milled head alone is on one side only, the milled head, after once coming down upon the glass, would tilt with any extra screwing, and thus not only fail to hold, but also almost certainly break the plate. It is therefore necessary to understand the principle on which the two milled heads are used, or insecurity in clamping and breakage may prove sources of considerable inconvenience.

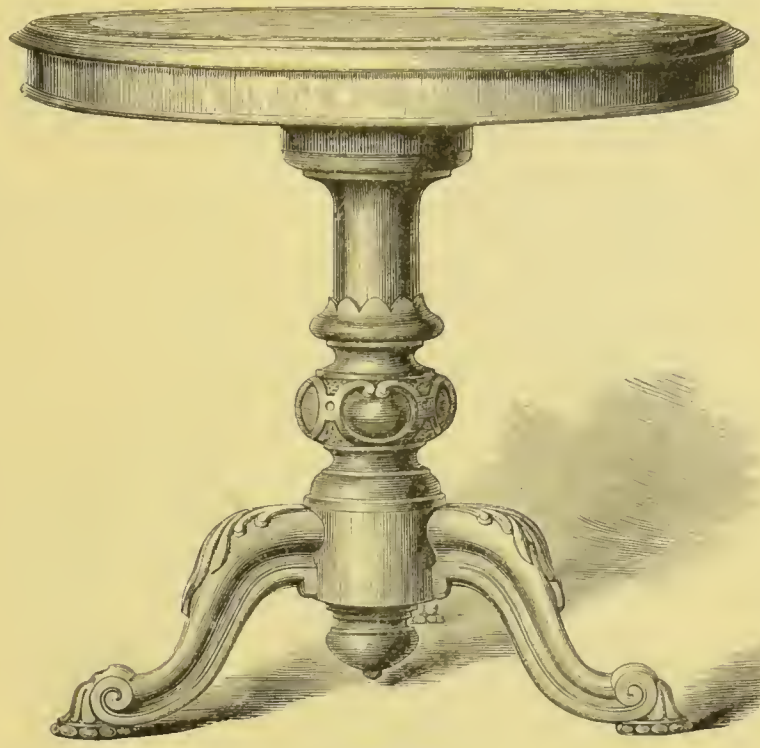
Each perforated glass plate is provided at the opposite end to that where the springs are clamped, with a small boss (*k*) on either side, so that the slide may run parallel with the stage of the Microscope when placed upon it.

The thin covers (Fig II.) are each provided with a small brass boss (*e*); and when this is pushed under a corresponding hollow (*l*) on the other side of either spring, they form a centre from which the cover may be turned either over the perforation in the glass plate or on one side of it.

I presume that the rapidity with which small quantities of water dry up when under the Microscope has been the annoying experience of all observers; and yet, without limiting the amount of fluid, there is always more or less difficulty in confining objects in a small space. If, however, after placing such specimens in this trap the free end of the glass plate be inserted in a small trough of water, as shown in Fig. VI., the fluid will rise by capillary attraction between the thin covers and the plate, and supply every deficiency caused by evaporation. With all fluid objects I have found it necessary to use silver instead of steel springs, as the latter rust almost immediately.

The facility with which all the parts of this apparatus can be taken to pieces and perfectly cleaned is also a feature of some importance.

PLATE XXVIII.—**TABLES**, &c.

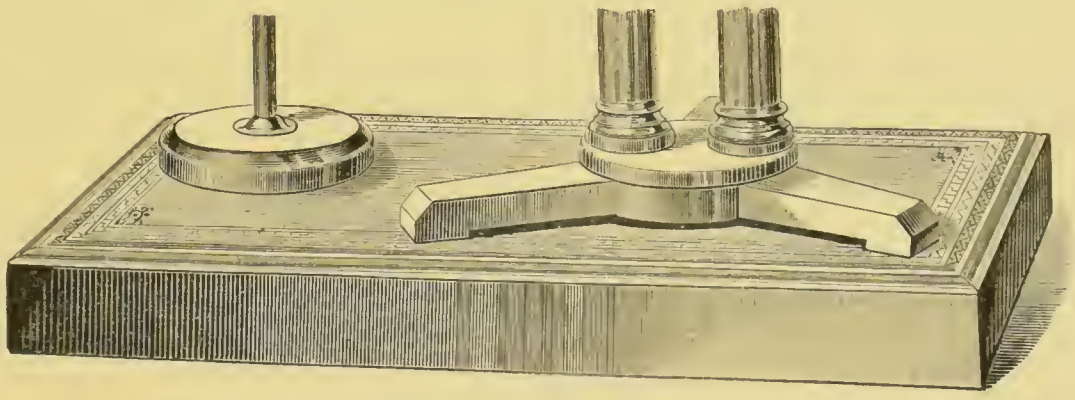


No. 491.

THIS ILLUSTRATION IS DRAWN TO A SCALE OF ONE TENTH.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
630.	XXVIII.	REVOLVING TABLE, especially arranged for Microscopic purposes, in Walnut, Rosewood, Mahogany, or Oak, with handsome Leather Top, Gilt Border ..	9	5	0
631.		IRON CENTRE for the above	1	7	6

PLATE XXIX.



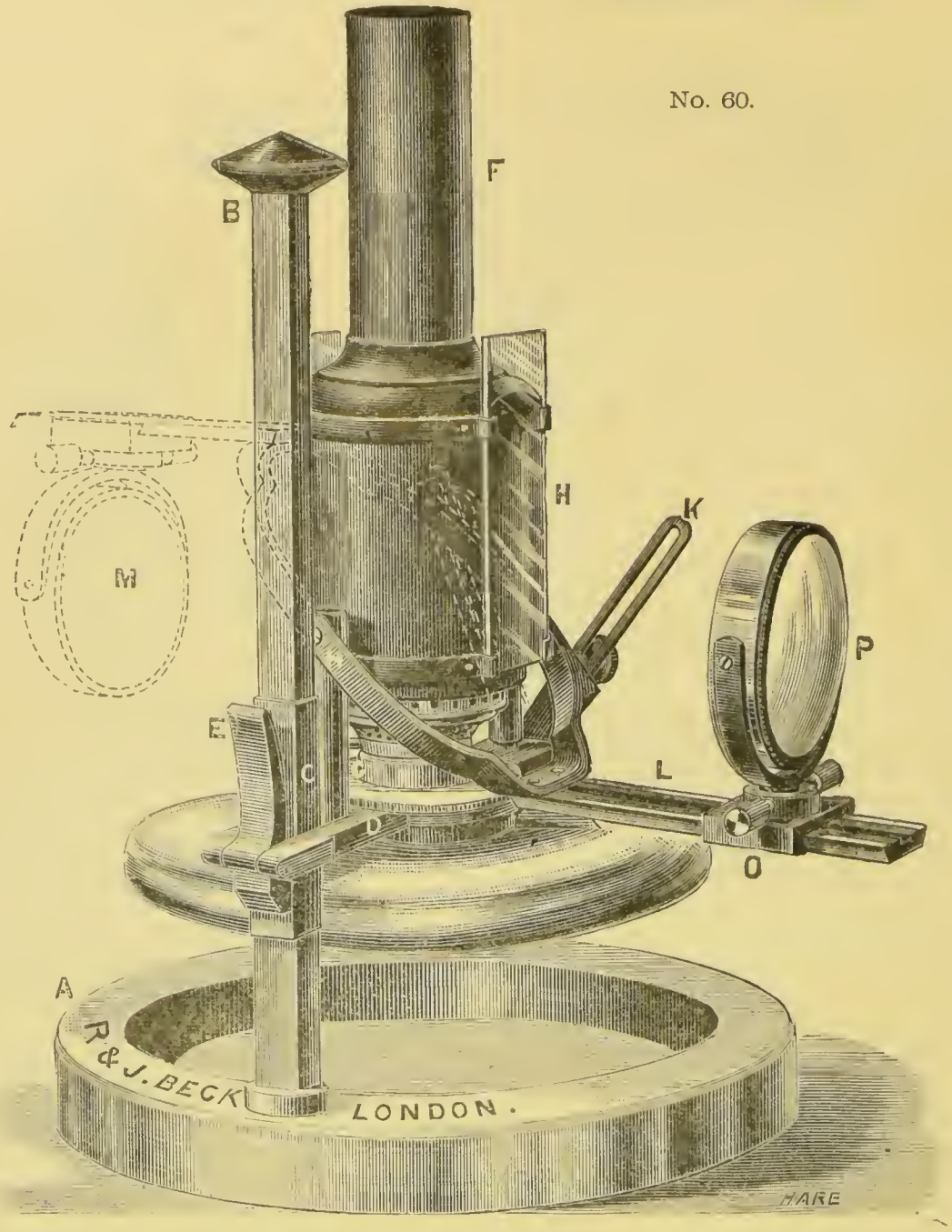
No. 495.—WALNUTWOOD ROLLING STAND.

THIS ILLUSTRATION IS DRAWN TO A SCALE OF ONE FOURTH.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
632.	XXIX.	WALNUTWOOD STAND, with Leather Top, on Rollers, to carry a Microscope and Lamp round a Table	1	3	0
633.	...	BELL-GLASS SHADES AND STANDS, with handsome Leather Cover, to place over a Microscope ... (Prices according to size of Microscope) from	0	2	6

PLATE XXX.—BECK'S "COMPLETE" LAMP.

No. 60.



DESCRIPTION OF LAMP.

For Pathological and Physiological investigation, as also for many other branches of microscopical research, a lamp more delicate in its adjustments and giving a greater control over the light than those ordinarily in use is requisite.

To meet this want we have constructed a lamp whereby more perfect illumination of both opaque and transparent objects can be obtained.

The base A consists of a heavy ring, into which a square brass rod B is screwed. The square rod carries a socket C with an arm D, to which the lamp is attached. This socket fits the square rod loosely, but is kept in any position by a lever E, which is pressed firmly against the square rod by a strong spring. If the lever and the opposite side of the socket are taken between the thumb and finger, the pressure of the lever on the bar is removed, and the lamp can be raised or lowered to the desired position, when by releasing the hold the lamp is at once clamped.

On each side of the burner, and attached to the arm D, is an upright rod G, to one of which the chimney is fixed, independent of the reservoir of the lamp, but fitting closely over the burner, thus enabling the observer to revolve the burner and reservoir, and obtain either a thin intense light or a broad and diffused one, without altering the position of the chimney. The chimney F is made of thin brass, with two openings opposite to each other, into which slide 3 × 1 glass slips of either white, blue or opal glass, the latter serving as a reflector.

The glass reservoir, although holding enough oil to burn for several hours, is made very flat, and drops into the annular base, thereby bringing the flame of the lamp within 3 inches of the table, rendering it much more serviceable for direct illumination (without the mirror) and for other purposes.

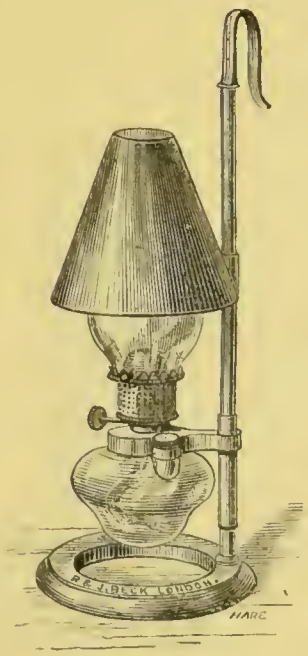
A semi-circle swings from the two uprights G, to which it is attached by the pins H, placed level with the middle of the flame; to this semi-circle is fixed a dove-tailed bar L, carrying a sliding fitting O, which bears a Herschel condenser P.

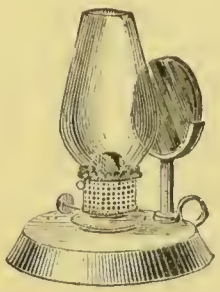
This condenser, swinging with the middle of the flame as a centre, is always at the same distance from it; and thus, when once focussed, needs no further alteration for any change in the inclination of the beam of light. The condenser is fixed at any inclination by a milled head working in a slotted piece of brass K, fixed to the arm D.

When used for transparent illumination, the condenser is not required below the horizontal position; but when the lamp is required for the illumination of opaque objects, the chimney having been temporarily removed, and the milled head fixing the condenser arm having been loosened, the arm with the condenser can be thrown over the lamp, as shown in the illustration at M, and the chimney being replaced, the light, which now comes through the opposite opening of the chimney, can be condensed at a large angle below the horizontal.

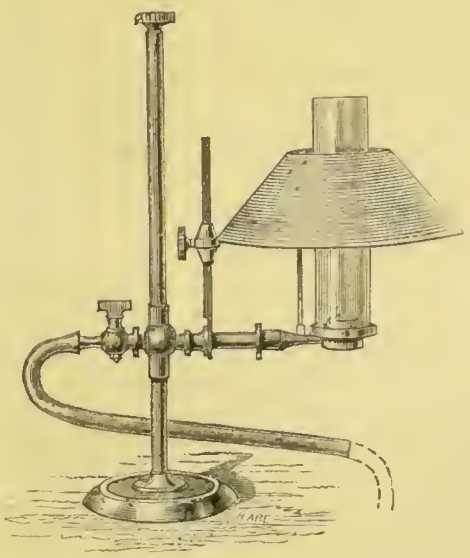
PLATE XXXI.—LAMPS.

No 61.

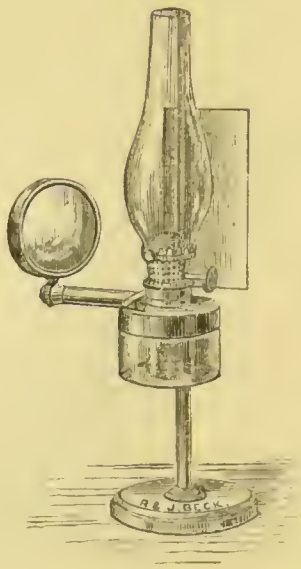




No. 62.



No. 64.



Nc. 65

THE ILLUSTRATIONS ON THIS PAGE ARE DRAWN TO A SCALE OF ONE SEVENTH.

MICROSCOPE LAMPS.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
59.	...	THE BECK COMPLETE BELMONTINE LAMP, with Condenser, and with divisions on stem and arms to register position, in Mahogany Case	3	5	0
60.	XXX.	THE BECK COMPLETE BELMONTINE LAMP, with Condenser	2	10	0
61.	XXXI.	BELMONTINE OIL LAMP, with flat wick	0	18	0
62.	XXXI.	DUMPY LAMP, with flat wick	0	15	0
63.	...	CASE for Lamp No. 61, and 1 Chimney	0	12	6
64.	XXXI.	IMPROVED SMALL GAS LAMP	2	2	0
65.	XXXI.	BELMONTINE OIL LAMP, with flat wick, and Bull's-eye on Stand	1	15	0
66.	...	LAMP CHIMNEYS for Nos. 61 and 62	0	0	6
67.	...	FLAT WICKS for Nos. 61 and 62 ... . per dozen	0	0	6
68.	...	GALLON CAN OF BELMONTINE	0	4	6

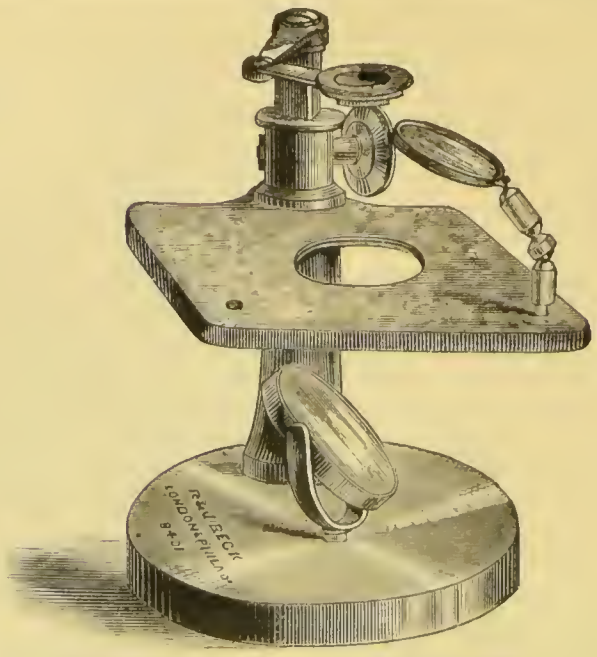
CASES FOR MICROSCOPES. Nos. 1, 2, and 3.

80.	BEST UPRIGHT CASE, IN SPANISH MAHOGANY, for Nos. 1 and 2, with best brass handle, two boxes for Apparatus	5	0	0
81.	BEST UPRIGHT CASE, IN SPANISH MAHOGANY, for Nos. 1 and 2, with best brass handle, only one box for Apparatus	4	2	6
82.	UPRIGHT CASE, IN HONDURAS MAHOGANY, for Nos. 1 and 2, with best brass handle, two boxes for Apparatus	3	10	0
83.	UPRIGHT CASE, IN HONDURAS MAHOGANY, for Nos. 1 and 2, with best brass handle, one box for Apparatus...	2	15	0
84.	BEST UPRIGHT CASE, IN SPANISH MAHOGANY, for No. 3, with best brass handle and box for Apparatus...	3	15	0
85.	UPRIGHT CASE, IN HONDURAS MAHOGANY, for No. 3, with best brass handle and box for Apparatus	2	15	0
86.	STRONG FLAT CASE, IN SPANISH MAHOGANY, for No. 3, with best brass handle	2	0	0
87.	BEST HANDLE, for Microscope Cases	0	8	0

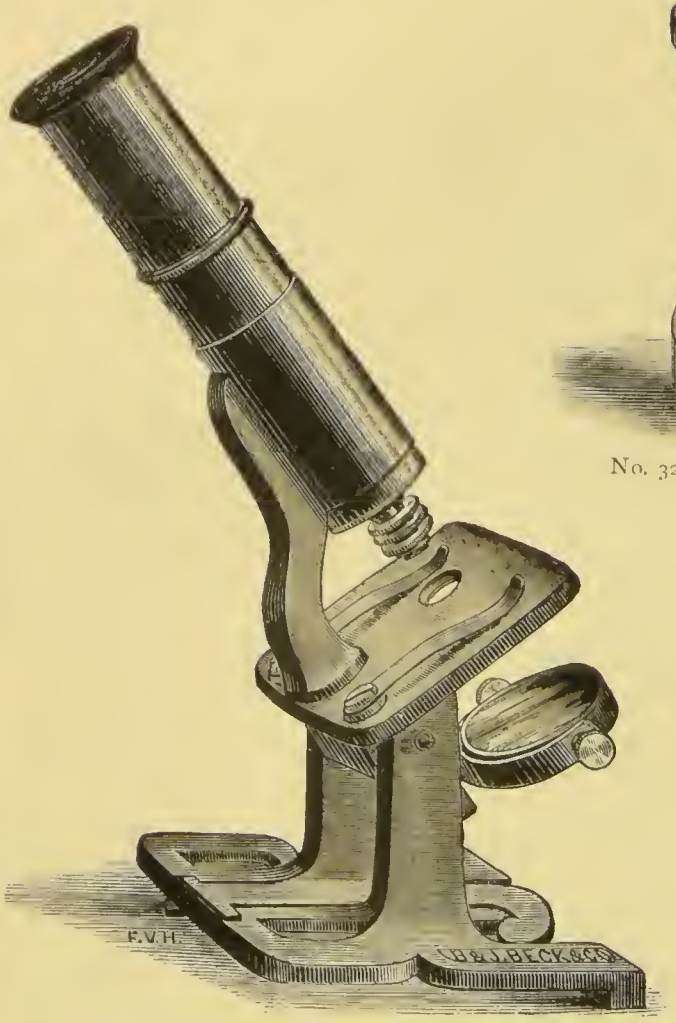
NOTE.

The Cases for instruments going to hot climates should be brass-bound, and all blocks screwed in. This adds to the expense, according to the amount of Apparatus.

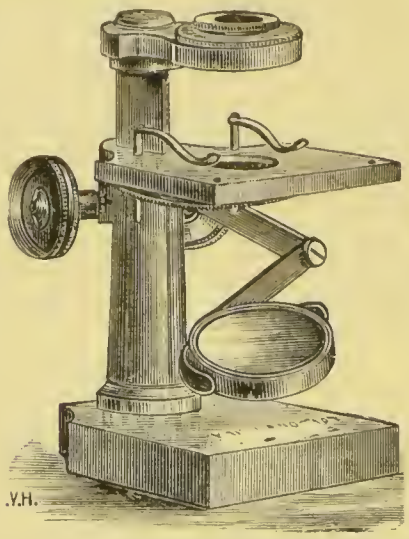
PLATE XXXII.—DISSECTING MICROSCOPES, &c.



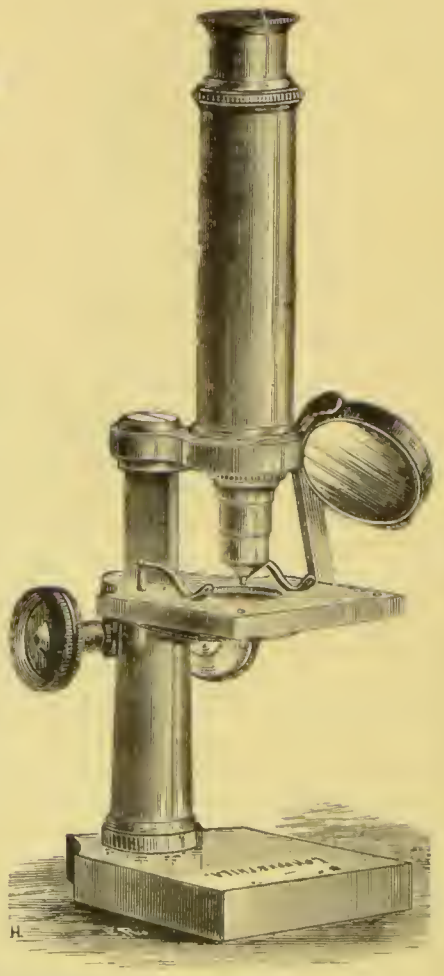
No. 32.—Small Dissecting Microscope.

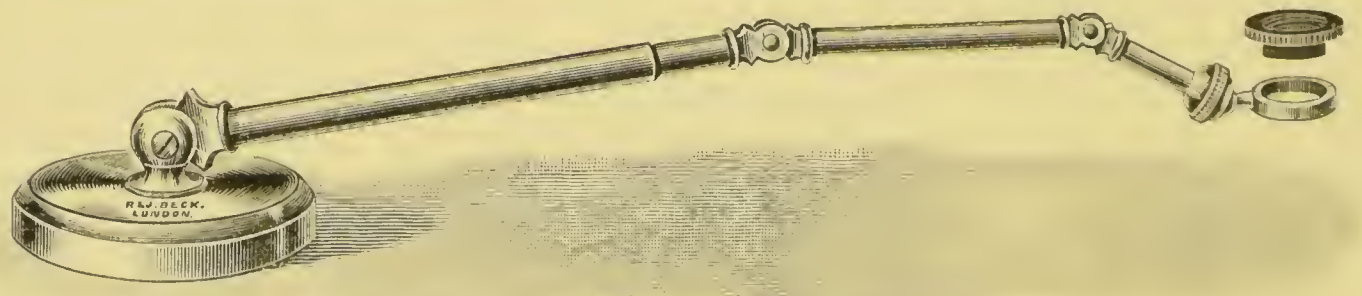


No. 36.—Universal Household Microscope.

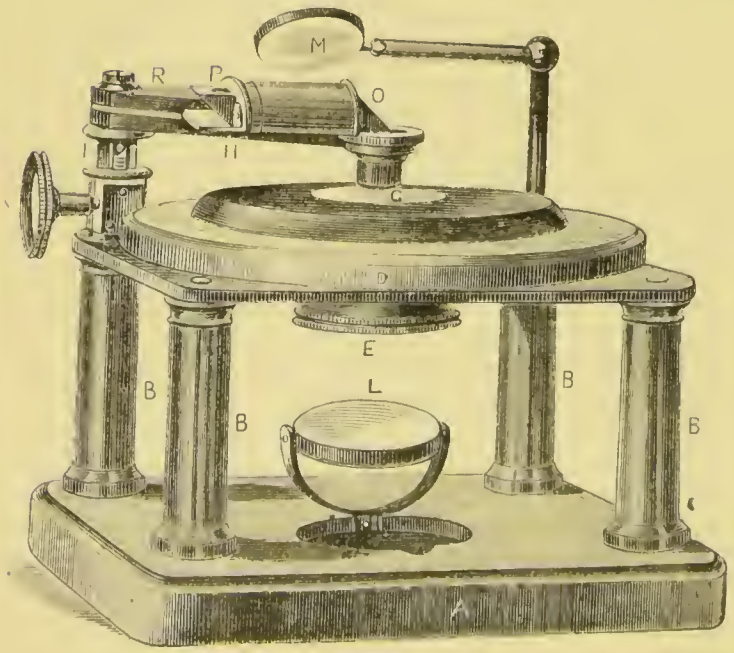


No. 34.—Histological Dissecting Microscope.

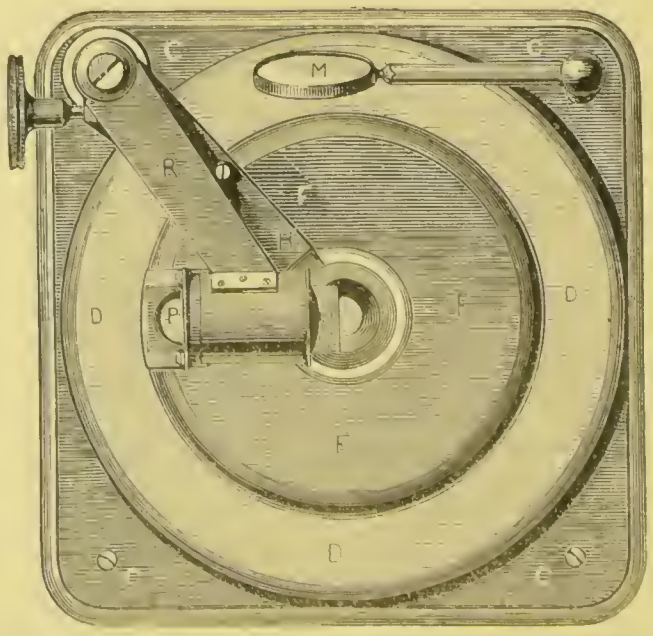




No. 33.—Lankester's Dissecting Stand.



No. 38 & No. 451. Improved Dissecting Single Microscope.



THE ILLUSTRATION OF NO. 36 IS DRAWN TO A SCALE OF ONE HALF; THE REST TO A SCALE OF ONE THIRD.

DISSECTING MICROSCOPES.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
32A.		SMALL DISSECTING MICROSCOPE .. .. Brass Stand with broad Circular Base, Jointed Arm for carrying Lenses, Rack-and-pinion Adjustment to focus, Concave Mirror and Side Condensing-lens, two single Lenses (1½ and 1-inch focus), in Strong Mahogany Case with handle and lock.	2	10	0
32.	XXXII.	SMALL DISSECTING MICROSCOPE, with one Lens, no Case nor Condenser	1	14	0
420.		SINGLE LENS, 1 in. focus	0	5	6
421.		SINGLE LENS, ¾ in. focus	0	5	6
422.		CODDINGTONS of ¾ or ½ inch focus	0	10	6
425.		HAMPDEN POCKET MICROSCOPE	2	11	0
34A.	XXXII.	HISTOLOGICAL DISSECTING MICROSCOPE .. .. This Instrument combines a Compound with a Single and Dissecting Microscope. It is very compact. The stout arm holding the single lenses is made so that a Compound body fitted with the Universal Screw can be substituted. It has a Rack-and-pinion adjustment. The Mirror can be adjusted for transparent or opaque objects. It is fitted with a single lens (1 in. focus) and a ¼ Economic (154), one Eye-piece, a pair of Brass Pliers, &c., in Mahogany Case with lock.	4	0	0
36A.	XXXII.	UNIVERSAL HOUSEHOLD MICROSCOPE .. .. The Stand is provided with a hinged joint. The base is of Cast Iron, forming the monogram "R. & J. B.," bronzed. There is a draw-tube to the body. The Object-glass separates, and is of three powers, viz., from 20 to 100 diameters. A pair of Brass Forceps, two Glass Slips, and one Object accompany the Instrument. The whole packed in a neat Walnut-wood Case.	0	16	0
33.	XXXII.	LANKESTER'S DISSECTING STAND, with adjustments to carry lenses	1	15	0
38A.	XXXII.	IMPROVED DISSECTING SINGLE MICROSCOPE .. .. . Stand with complete sliding and revolving Stage-plates; One Arm to carry the lenses, with Rack-and-pinion Adjustment; Side Condenser on lengthening arm; Mirror with complete adjustments; Two single lenses and two Achromatic Triplets, ¾ and ½ inch focus. The whole packed in a strong Mahogany Case.	5	10	0

No.	Plate.	ADDITIONAL APPARATUS For No. 38a.	Price. s.	d.
430.		CODDINGTON LENS, 1 in. focus	10	6
431.		CODDINGTON LENS, ¼ in. focus	10	6
432.		CODDINGTON LENS, ⅛ in. focus	10	6
433.		HOLDER for Glass Slips ...	5	6
434.		TWO BRASS SAUCERS with Glass bottoms	3	6
435.		TWO FLAT GLASSES	1	6
436.		TWO CONCAVE GLASSES ...	4	0
437.		ONE PIECE OF BOX-WOOD covered with Cork	1	0
438.		ONE PIECE OF LEAD & CORK	1	0

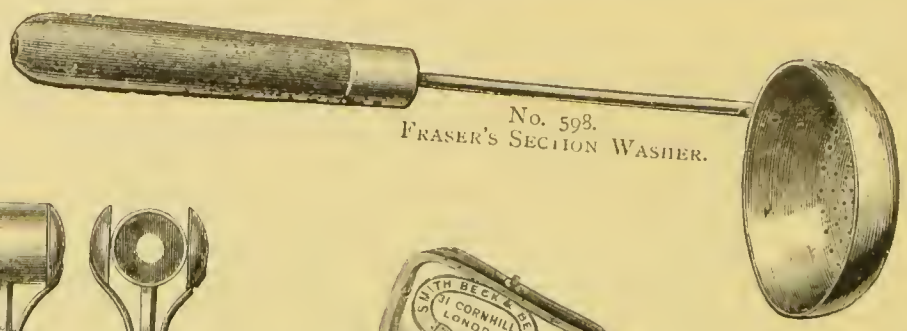
No.	ADDITIONAL APPARATUS For No. 38a.			
439.	ONE GUTTA-PERCHA TRAY loaded with Lead	0	3	6
440.	ONE PAIR of STEEL FORCEPS	0	3	6
441.	TWO PAIRS OF SCISSORS ...	0	7	0
442.	ONE NEEDLE-HOLDER ...	0	1	0
443.	TWO KNIVES	0	4	0
444.	TWO HOOKS	0	4	0
445.	TWO POINTS	0	4	0
446.	WOODEN TRAY for holding Dissecting-Instruments ...	0	8	0
447.	BOX for Additional Apparatus ...	0	8	0

No.	Plate.				
450.		ALL THE ABOVE ADDITIONAL APPARATUS (Nos. 430-447), IF ORDERED AT ONCE	4	0	0
451.	XXXII.	BINOCULAR PRISMS AND ARM for carrying ditto for No. 38A	2	15	0
452.		BINOCULAR PRISMS AND ARM, as above, but with Eye-pieces	3	3	0
455.		BECK'S ACHROMATIC TRIPLETS, mounted for Nos. 32, 34, 38, ¼, ½, ¾ inch focus	0	15	0
456.		BECK'S ACHROMATIC TRIPLETS, mounted in Gold, ¼, ½, or ¾ inch focus	3	3	0
457.		BECK'S ACHROMATIC TRIPLETS, mounted in Silver, ¼, ½, or ¾ inch focus	1	10	0
458.		BECK'S ACHROMATIC TRIPLETS, mounted in German Silver, ¼, ½, or ¾ inch focus	1	1	0
459		BECK'S ACHROMATIC TRIPLETS, mounted in Tortoiseshell, ¼, ½, or ¾ inch focus	0	18	0
460.		DOUBLET, mounted in Tortoiseshell, for the pocket .. .. 10s. and	0	12	6
461.	XXXIII.	CODDINGTON LENS, mounted in Gold, ½ or ¾ inch focus	2	17	6
462.	XXXIII.	CODDINGTON LENS, mounted in Silver, ½ or ¾ inch focus	1	5	0
463.		CODDINGTON LENS, mounted in German Silver or Nickel Plated, ½ or ¾ inch focus	0	15	0
464.	XXXIII.	COMBINATION OF THREE LENSES, mounted in Tortoiseshell, on Brass Stand, with Adjusting Arm and Sliding Forceps for holding an object ..	1	9	6
465.		COMBINATION OF THREE LENSES, in Tortoiseshell, on Brass Stand, with Adjusting Arm	0	19	0
466.		COMBINATION OF THREE LENSES, in Tortoiseshell, with Socket for fitting, on Brass Stand	0	12	6
467.	XXXIII.	COMBINATION OF THREE LENSES, mounted in Tortoiseshell, for the pocket..	0	11	6

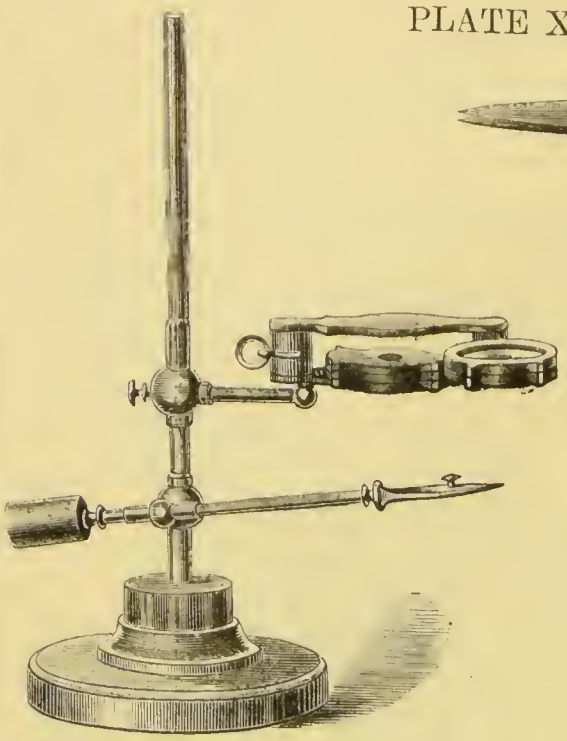
PLATE XXXIII.—DISSECTING INSTRUMENTS.



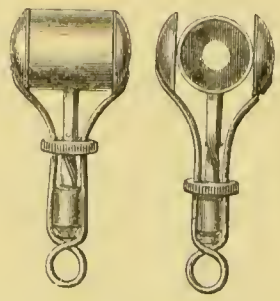
No. 538.—Valentine's Knife.



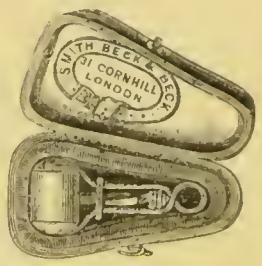
No. 598.
Fraser's Section Washer.



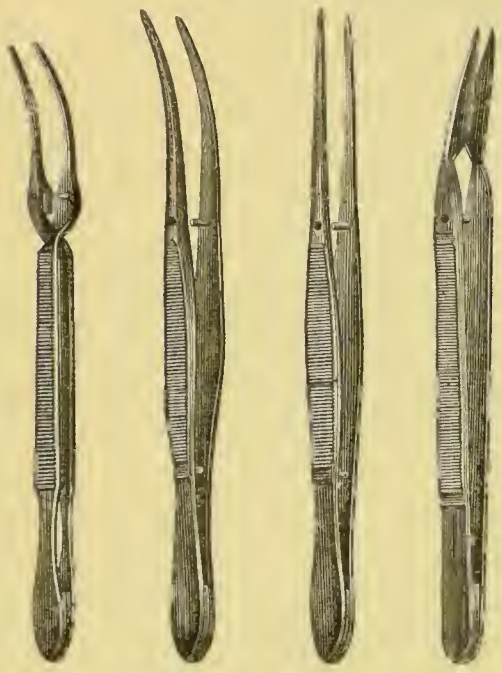
No. 464.—Hand Magnifier, on Stand.



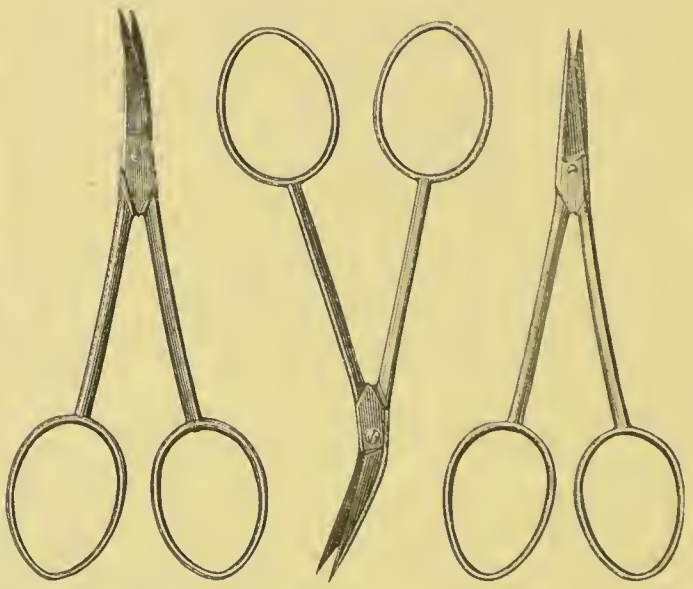
No. 462.—Coddington Lens.



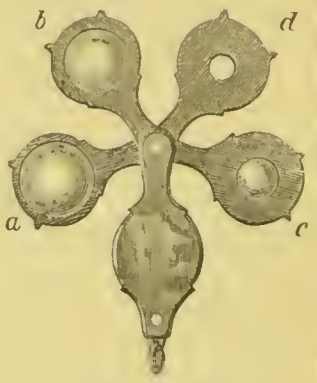
No. 461.—Coddington Lens, Mounted in Gold.



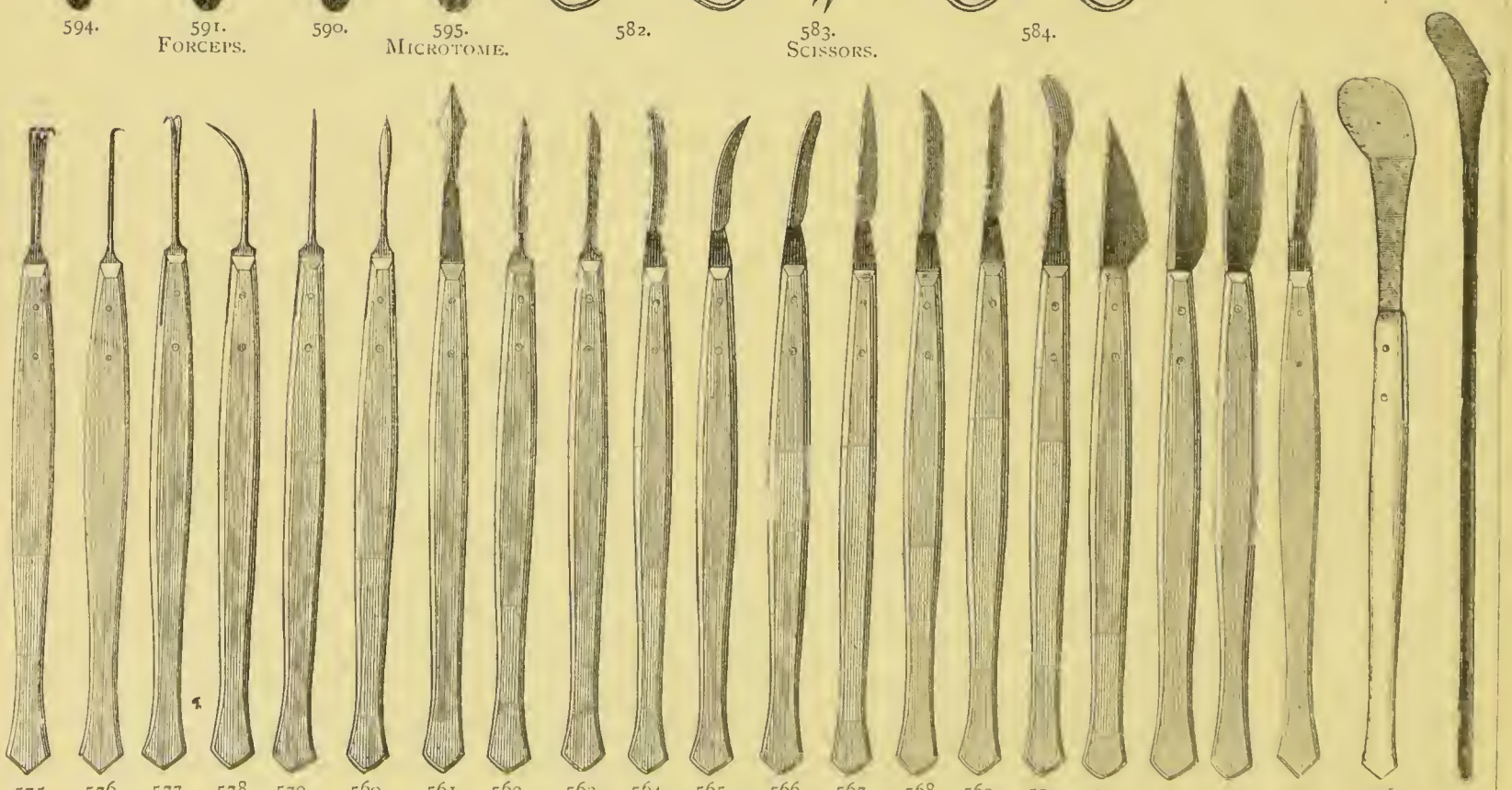
594. 591. Forceps. 590. 595. Microtome.



582. 583. Scissors. 584.



No. 467.—Hand Magnifiers.



575. 576. 577. 578. 579. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 596. 597.

Dissecting-Knives.

DISSECTING INSTRUMENTS.

No.	DESCRIPTION.	Price. £	s.	d.
538.	VALENTINE'S KNIFE, for making sections in soft substances, in case. Plate XXXIII.	0	16	6
	VALENTINE'S KNIFE, without case	0	12	6
556.	BLOW-PIPES, German Silver	0	1	6
557.	RAZOR	0	1	0
558.	RAZOR, hollow ground	0	2	0
559.	CARTILAGE KNIVES	0	5	6
560-574	DISSECTING KNIVES, ivory handles. Plate XXXIII. ... ... each	0	1	9
573a.	DISSECTING KNIVES, ebony handles	0	1	6
575-579	HOOKS AND NEEDLES, ivory handles. Plate XXXIII.	0	1	9
580.	NEEDLES IN WOODEN HANDLES. Plate XXXIII. ... ... 1d. and	0	0	2
681.	NEEDLE HOLDERS	0	1	0
581a.	PLATINUM NEEDLES	0	1	6
580a.	NEEDLES, with adjusting handles...	0	0	3
582.	SCISSORS, curved. Plate XXXIII.	0	3	9
583.	SCISSORS, elbow „ „	0	5	6
584.	SCISSORS, straight „ „	0	2	6
585.	SCISSORS, spring „ „	0	8	6
586.	SEEKERS ... ... 6d. and	0	1	0
587.	CHAIN HOOKS	0	2	0
588.	FORCEPS, bone	0	7	6
589.	FORCEPS, straight	0	1	0
590.	FORCEPS, straight. Plate XXXIII.	0	2	6
591.	FORCEPS, curved „ „	0	2	6
592.	FORCEPS, straight, with aluminium points for work with acids	0	5	6
593.	FORCEPS, German silver, with broad points for cover glasses	0	3	6
593a.	FORCEPS, nickel plated, with fine points for dissecting	0	3	6
594.	FORCEPS, retaining. Plate XXXIII.	0	5	0
595.	FORCEPS, cutting „ „	0	5	6
596.	SECTION LIFTER, aluminium. Plate XXXIII.	0	2	0
596a.	SECTION LIFTER, German silver	0	0	6
597.	SECTION LIFTER, copper. Plate XXXIII.	0	0	2
598.	FRASER'S SECTION WASHER. Plate XXXIII.	0	3	6
599.	SILVER SPUTUM SPREADER	0	2	0
719.	TRAYS OF GUTTA-PERCHA for dissecting, 12in. by 10in.	0	8	6
720.	TRAYS OF EBONITE, 6½ by 4¾, 9d.; 8½ by 6½, 1s. 6d.; 13 by 11, 3s. 4d....			
721.	SHEET CORK, ⅛in. thick, in pieces 11 by 3½ ... ... each	0	0	3
722.	CORK, weighted with lead	0	1	0
723.	CHAMOIS LEATHER for wiping knives ... ... 1s. 9d. and	0	2	6

DISSECTING INSTRUMENT CASES.

(For Mounting Material Cases see Page 50).

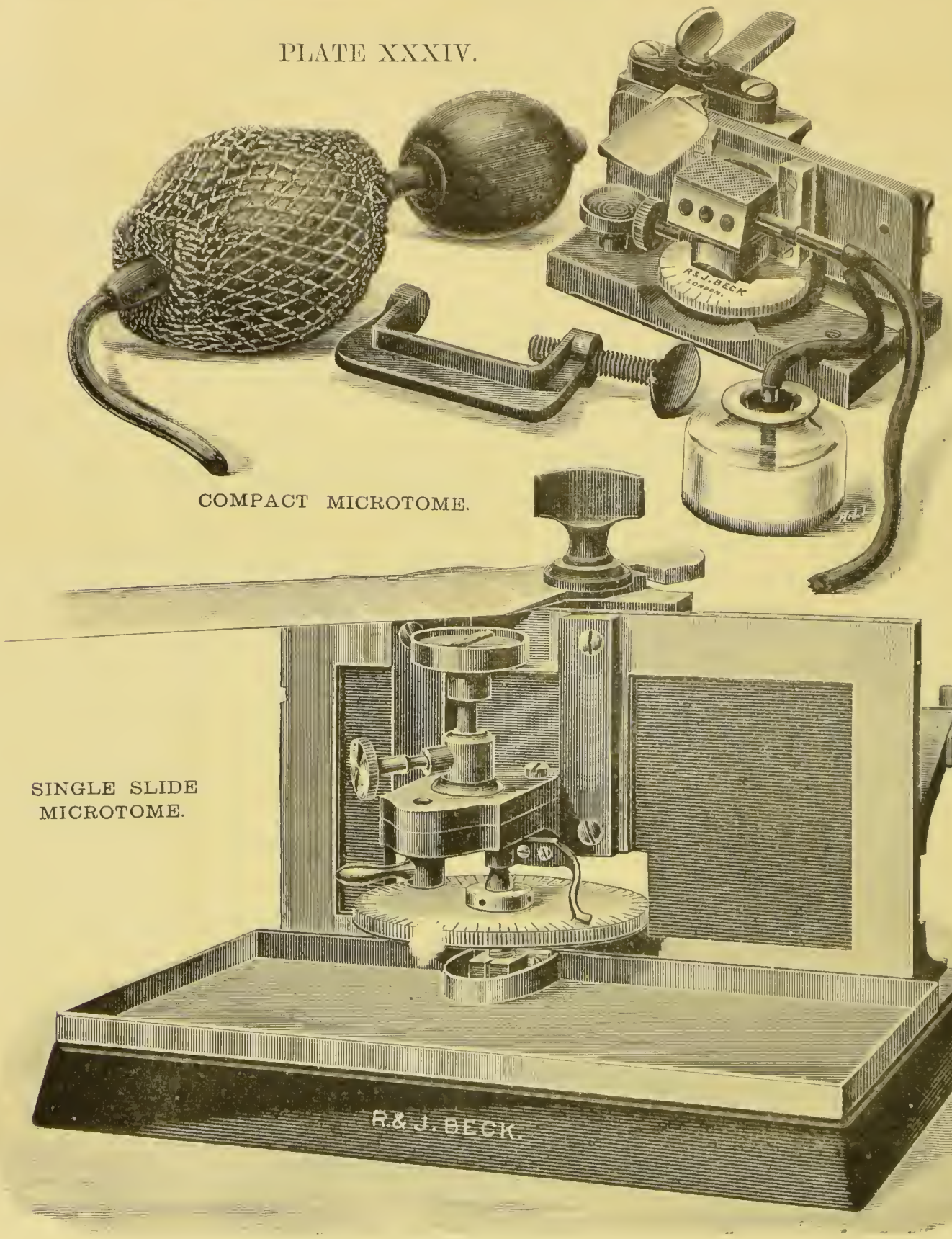
600.	MOROCCO LEATHER CASE OF DISSECTING INSTRUMENTS, containing 4 knives, 3 pairs of Scissors (curved, plain, and elbow), 3 pairs of Forceps (curved, cutting, and plain), 1 Point, 1 curved ditto, 1 Single Hook, 1 Double Hook	2	2	0
601.	SMALL MOROCCO LEATHER CASE OF DISSECTING INSTRUMENTS, containing 2 Knives, 1 Pair of Curved Scissors, 1 pair of Curved Forceps, 1 Point, 1 Single Hook	0	17	6
601a.	SMALL WOODEN CASE OF DISSECTING INSTRUMENTS, containing 4 Scalpels, 2 pairs of Forceps, 2 pairs of Scissors, and 1 Seeker	0	15	6
601b.	SMALL WOODEN CASE OF DISSECTING INSTRUMENTS, containing 3 Scalpels, 1 pair of Forceps, 1 pair of Scissors	0	11	6
601c.	WOODEN CASE OF DISSECTING INSTRUMENTS, containing 3 Scalpels, 1 pair of Bone Forceps, 2 pairs of Scissors, 1 pair of Forceps, 1 Razor, 1 German Silver Blow-pipe, 1 Seeker	1	5	0
601d.	WOODEN CASE OF DISSECTING INSTRUMENTS, containing 6 Scalpels, 1 pair of Bone Forceps, 1 pair of Scissors, 1 pair of Large Forceps, 1 Flat Razor, 1 German Silver Blow-pipe, 1 Seeker...	1	15	0
602.	STUDENT'S CASE OF INSTRUMENTS, containing Embedding Box, 2 Needles in Handles, 1 pair of Forceps, Razor, ½ gross Slips, ½ oz. Thin Glass, ½ doz. Watch Glasses, Section Lifter	0	12	6
606.	STUDENT'S CASE OF DISSECTING AND MOUNTING MATERIALS, containing 1 pair of Scissors, 1 pair of Forceps, 2 Scalpels, 6 Needles, 1 best Hollow-ground Army Razor, ½ gross Glass Slips, ½ oz. Cover Glasses, 6 Watch Glasses, 2 Stoppered Bottles, Bottle with Camel Hair Brush, 1 Capsule, 1 Funnel, 1 Section Lifter, 1 Glass Rod, 1 Pipette, 3 Camel Hair Brushes, 1 Packet Filter Papers, 1 Packet Printing Labels, in wooden case	1	2	6

THE COMPACT MICROTOME.

We have introduced this Microtome in order to supply the want of a small compact Freezing and Embedding Microtome, capable of doing good work. The knife-carrier runs on a strong slide, and the object holder is raised by turning the large milled head which is fixed to the Micrometer screw on which it rests. The whole, with exception of bellows and bottle, packs into a case measuring 5½ in. by 3 in. by 3¼ in.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
476.	XXXIV.	THE COMPACT MICROTOME, with Embedding Cell, one knife and clamp for table. Packed in case	2	8	0
477.	XXXIV.	THE COMPACT MICROTOME, with Embedding Cell, one knife and clamp for table, with addition of complete Ether Freezing apparatus. Packed in case	3	3	0
478.	...	ADDITIONAL KNIVES ... ... each	0	3	6
479.	...	WALNUT CASE to hold Instrument complete, except extra Bellows and Bottle	0	4	0

PLATE XXXIV.

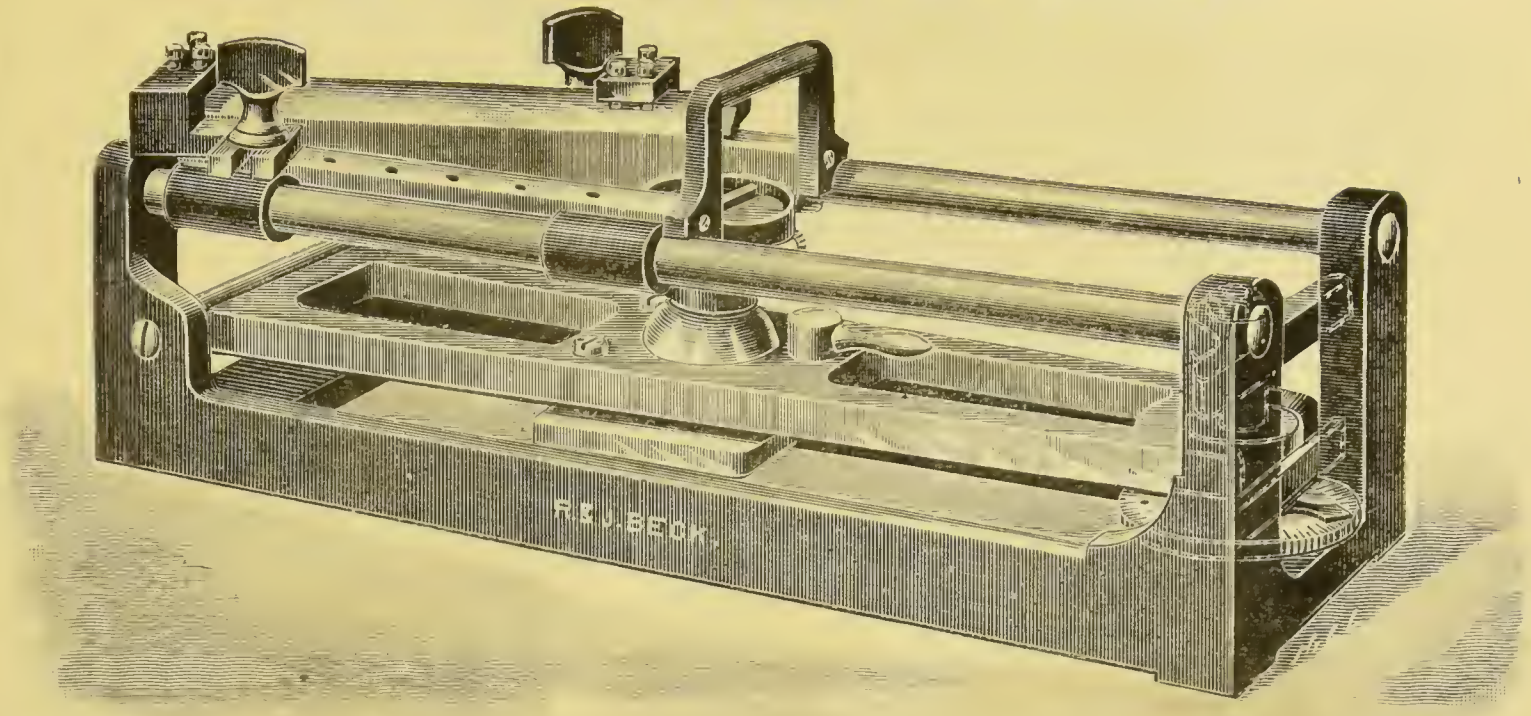


COMPACT MICROTOME.

SINGLE SLIDE MICROTOME.

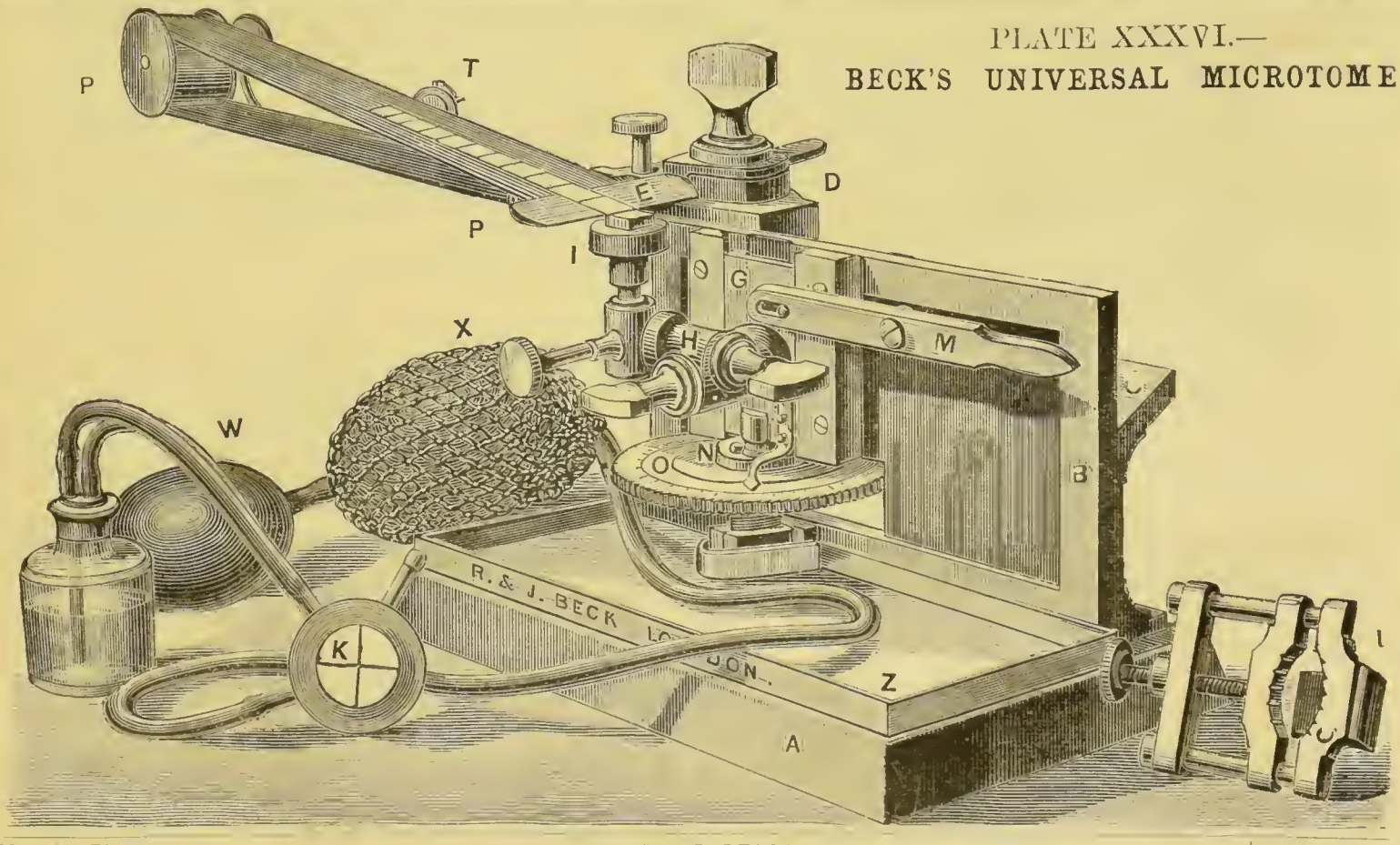
No.	Plate	DESCRIPTION.	Price. £	s.	d.
496.	XXXIV.	SINGLE SLIDE MICROTOME, without knife, with one Embedding Cell ...	4	10	0
497.	...	FREEZING ATTACHMENT AND BELLOWS, complete	0	18	0
498.	XXXIV.	DIAGONAL KNIVES, blades 5⅜ inches each. By Walb	0	12	0
499.	...	AUTOMATIC FEED ATTACHMENT supplied to above Microtome	1	0	0

PLATE XXXV.—THE DOUBLE SLIDE MICROTOME.



No.	Plate.	DESCRIPTION.	Price. £	s.	d.
473.	XXXV.	DOUBLE SLIDE MICROTOME, with two Embedding Cells, no Knives or Case	8	15	0
474.	XXXV.	DOUBLE SLIDE MICROTOME, with two Embedding Cells and one Knife, cutting-blade 7 in. long. By Walb. The whole packed in case	10	0	0
475.	...	ETHER FREEZING ATTACHMENT to fit the Microtome, extra	0	18	0

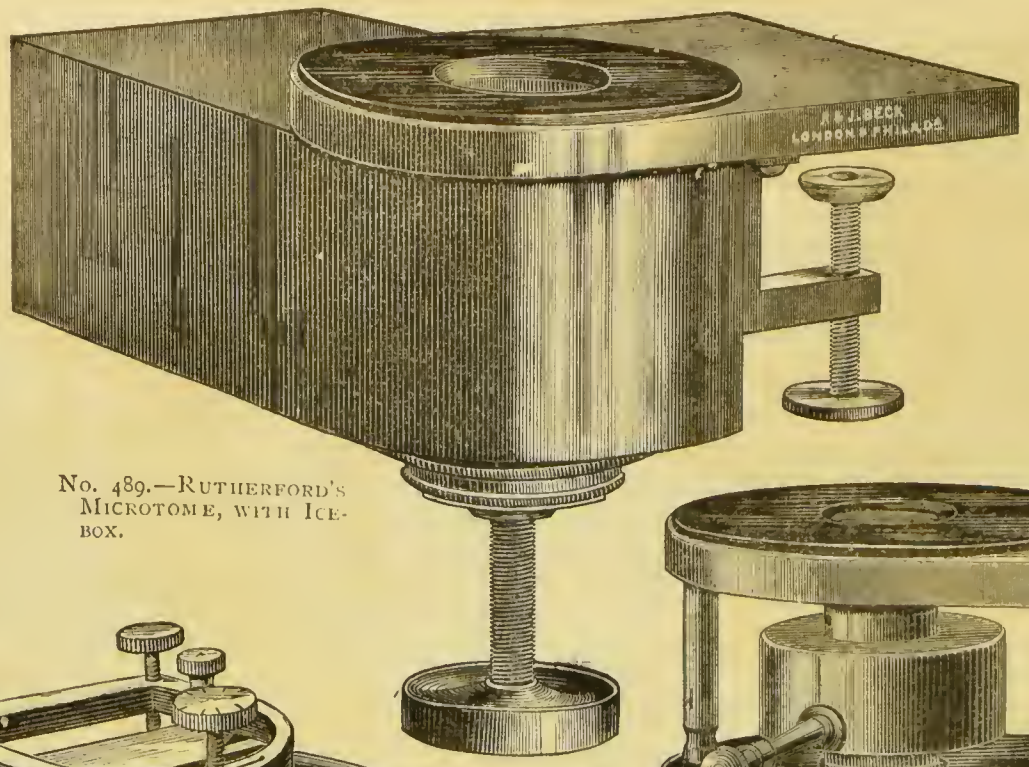
PLATE XXXVI.— BECK'S UNIVERSAL MICROTOME



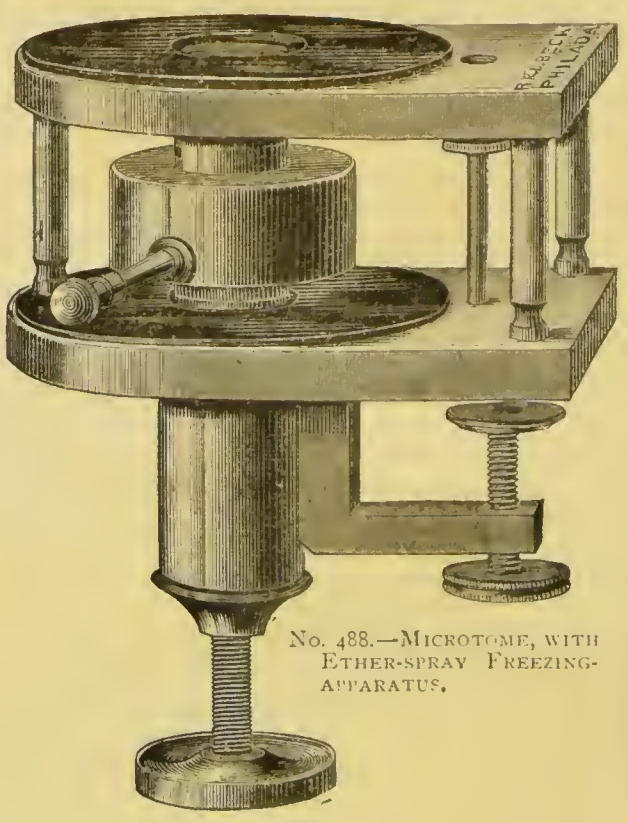
No.	Plate.	DESCRIPTION.	Price. £	s	d.
493.	XXXVI.	BECK'S UNIVERSAL MICROTOME, with Automatic Feed, Ether Freezing Apparatus, Complete Ribbon Cutting Apparatus, two Diagonal and two Straight Knives, Wheel-and-Crank Apparatus (by the turning of which the Instrument is worked), and all adjustments, complete	15	15	0
494.	XXXVI.	DITTO, DITTO, without the Wheel-and-Crank motion, but exactly as shown in Figure	12	12	0
495.	XXXVI.	DITTO, DITTO, with no Ribbon Cutting Apparatus or Straight Knives ...	8	8	0

Ice-box for cutting Sections when frozen with Ice and Salt, and Special Apparatus for cutting under Spirit are also applied to the above Microtome.

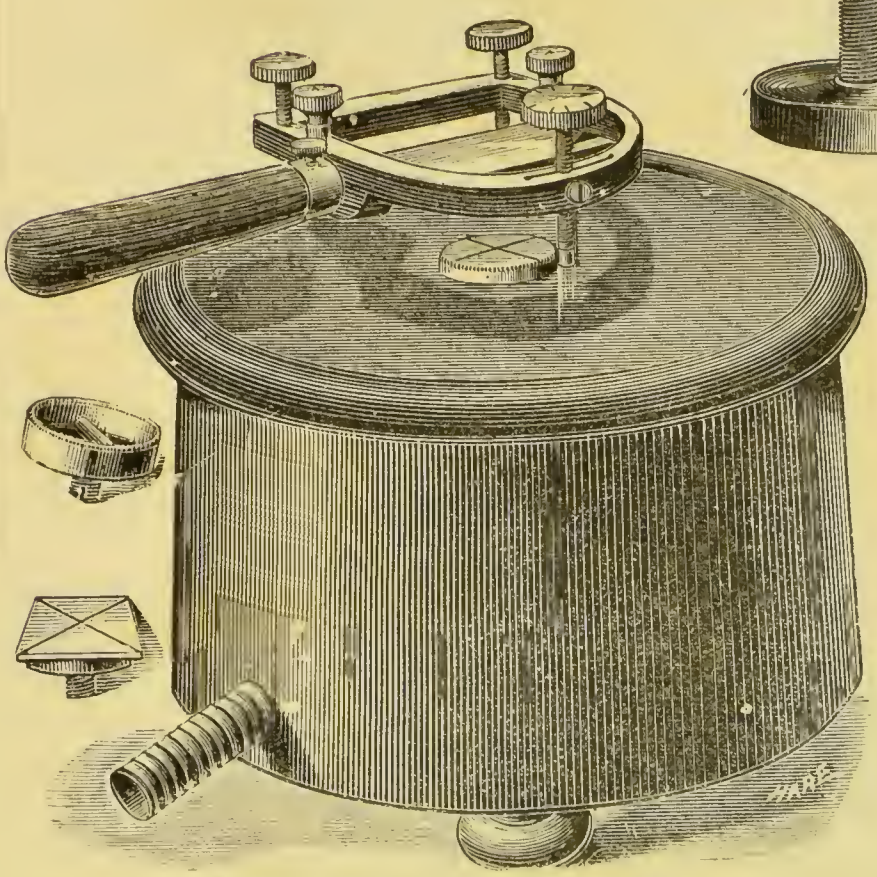
PLATE XXXVII.—MICROTOMES.



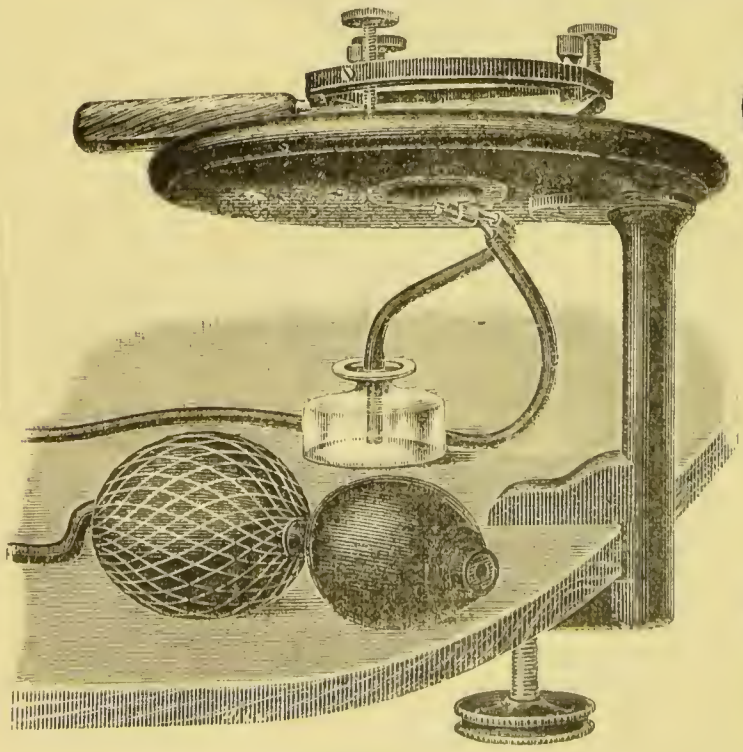
No. 489.—Rutherford's Microtome, with Ice-box.



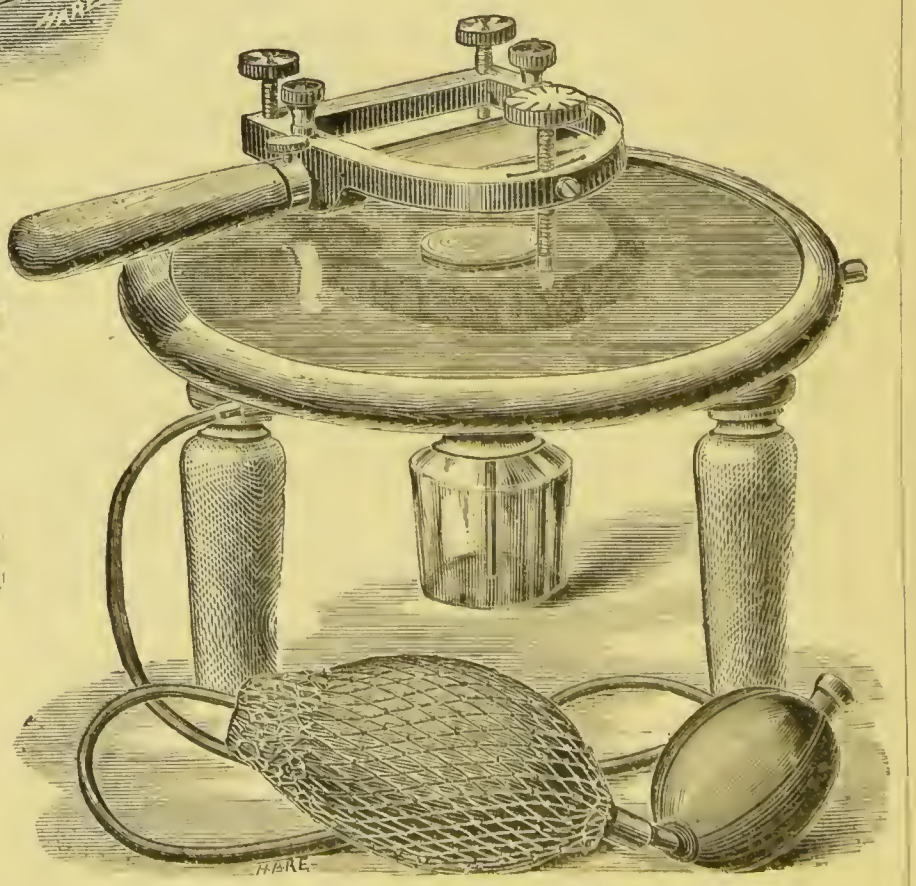
No. 488.—Microtome, with Ether-spray Freezing-apparatus.



No. 481.—Ice and Salt Microtome.

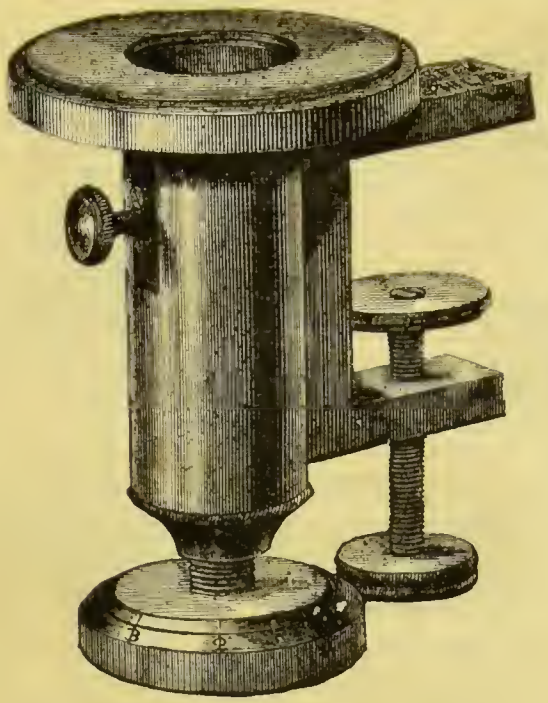


No. 480*.

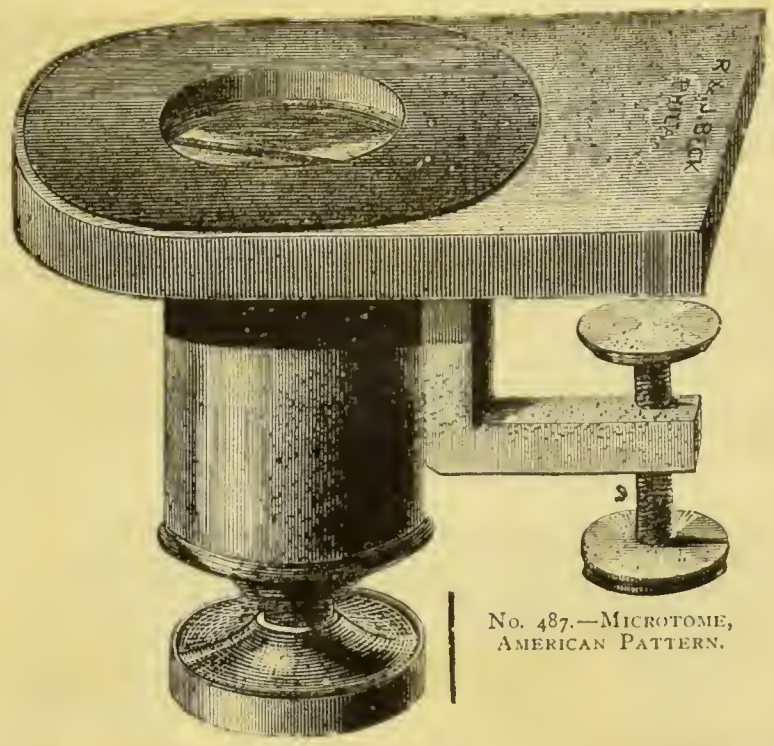


No. 480.—Ether-freezing Microtome.

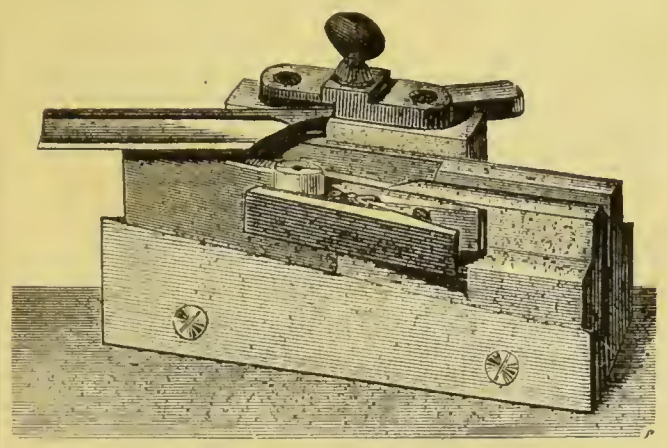
PLATE XXXVIII.—MICROTOMES.



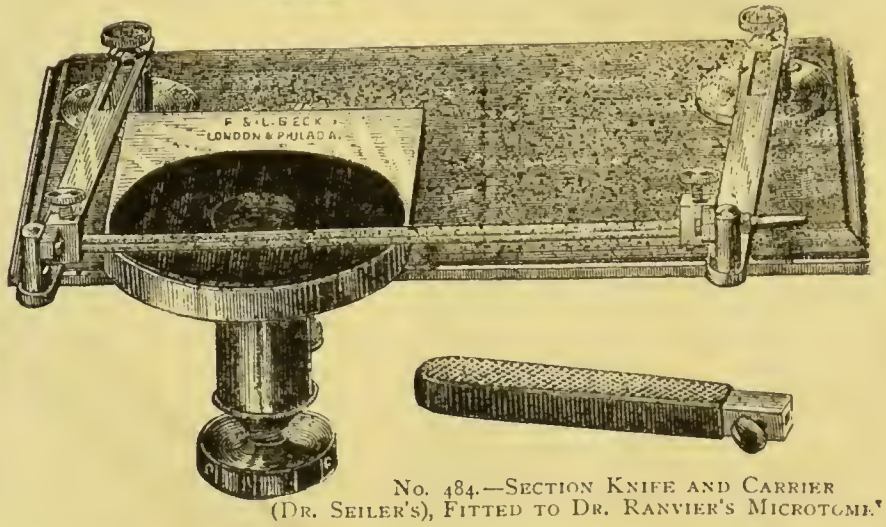
No. 485.—Embedding Microtome.



No. 487.—Microtome, American Pattern.



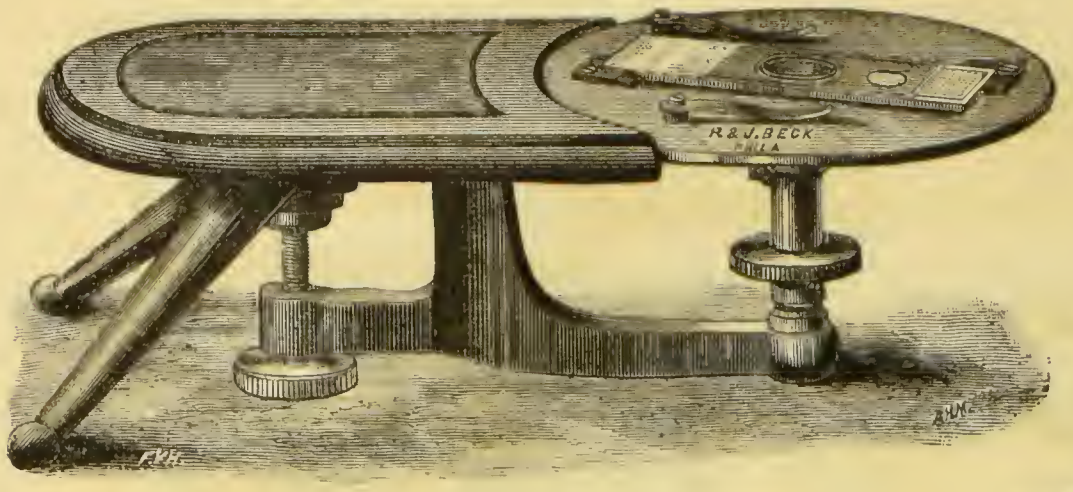
No. 490.—Section Cutter (Rivet's).



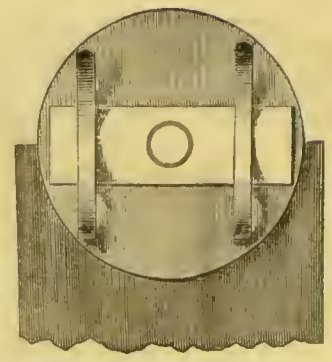
No. 484.—Section Knife and Carrier (Dr. Seiler's), Fitted to Dr. Ranvier's Microtome.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
480	XXXVII.	ETHER-FREEZING MICROTOME WITH RAZOR AND CARRIER, complete	2	15	0
480*	XXXVII.	ETHER-FREEZING MICROTOME (Williams' Form), with Clamp for Table ...	3	3	0
481	XXXVII.	WILLIAMS'S ICE AND SALT-FREEZING MICROTOME WITH RAZOR AND CARRIER, complete...	2	10	0
482	XXXVII.	CARRIER AND RAZOR, with Handle, for above two Microtomes	1	5	0
483	..	DR. SEILER'S SECTION-KNIFE AND CARRIER, adapted to any Microtome	2	2	0
484	XXXVIII.	DR. SEILER'S SECTION-KNIFE AND CARRIER, fitted to Microtome 487	3	12	0
485	XXXVIII.	MICROTOME (Dr. Ranvier's), with Glass Top and Binding Screw	1	7	6
486	...	MICROTOME, for embedding	0	10	6
487	XXXVIII.	MICROTOME (American Army Pattern), with Glass Top and Clamp for Table	1	10	0
488	XXXVII.	MICROTOME (Beck's Adaptation of Lewis's Ether Spray), with Atomiser	3	0	0
489	XXXVII.	MICROTOME (Rutherford's), large size, with Ice-box for freezing	2	17	6
489A	...	CATHCART'S ETHER-FREEZING MICROTOME, with Bellows, Spray Points, Bottle, Plane Iron, and Clamp for Table	0	19	9
489B	...	CATHCART'S ETHER-FREEZING MICROTOME, with Bellows, Spray Points, Bottle, Plane Iron, and Clamp for Table, improved form, with addition of Embedding Cells	1	5	0
490	XXXVIII.	SECTION CUTTER (Rivet's), in Wood, with Knife	0	15	0
492	...	EMBEDDING-BOXES, for cutting Sections	0	0	2

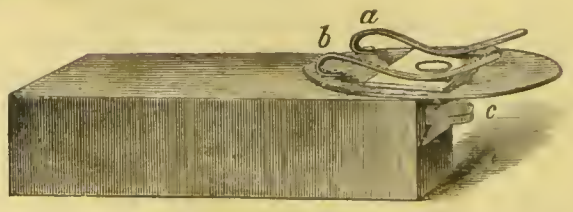
PLATE XXXIX.—MOUNTING INSTRUMENTS.



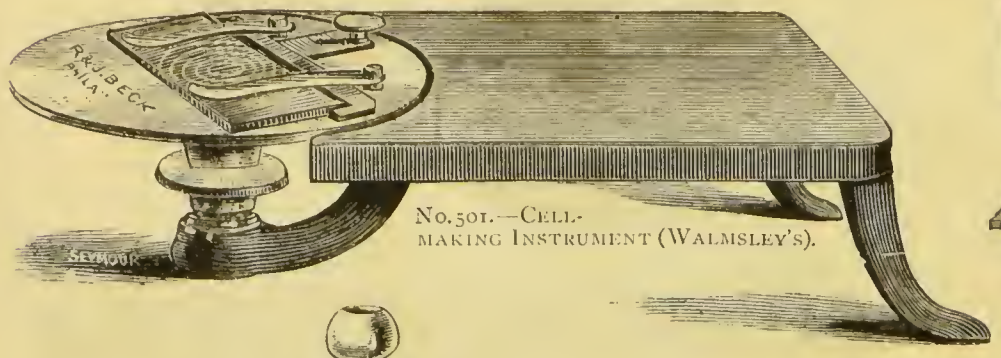
No. 504.—Cell-making Instrument.



No. 502.—Cell-making Instrument (Shadbolt's).



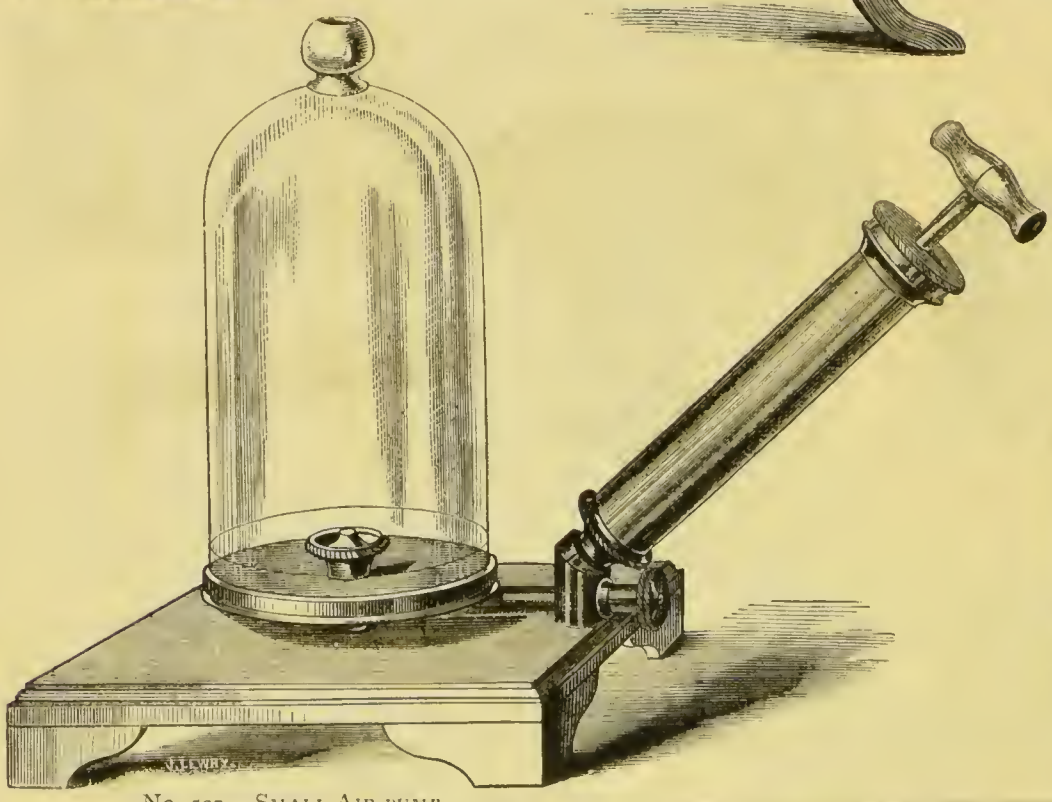
No. 502.—Cell-making Instrument (Shadbolt's).



No. 501.—Cell-making Instrument (Walmsley's).



No. 500.—Page's Forceps.



No. 537.—Small Air-pump.



No. 619.—Capillary Bottle.

No. 624.—Capped Bottle.



Bottle of Marine Glue.



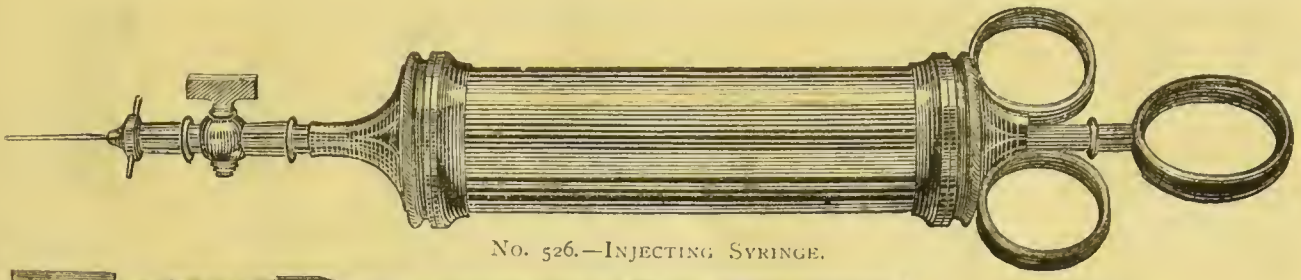
Tin-capsule Bottle.



No. 505.—Brass Table.

No. 507.—Small Spirit Lamp.

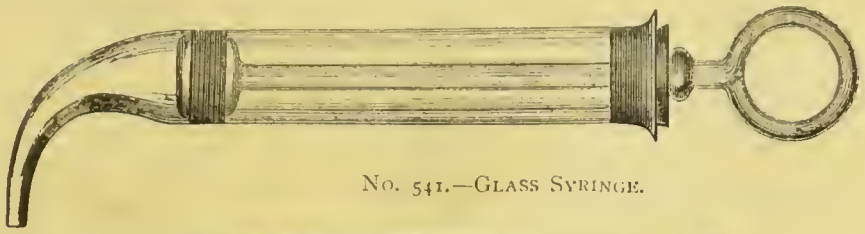
PLATE XL.—MOUNTING INSTRUMENTS.



No. 526.—Injecting Syringe.



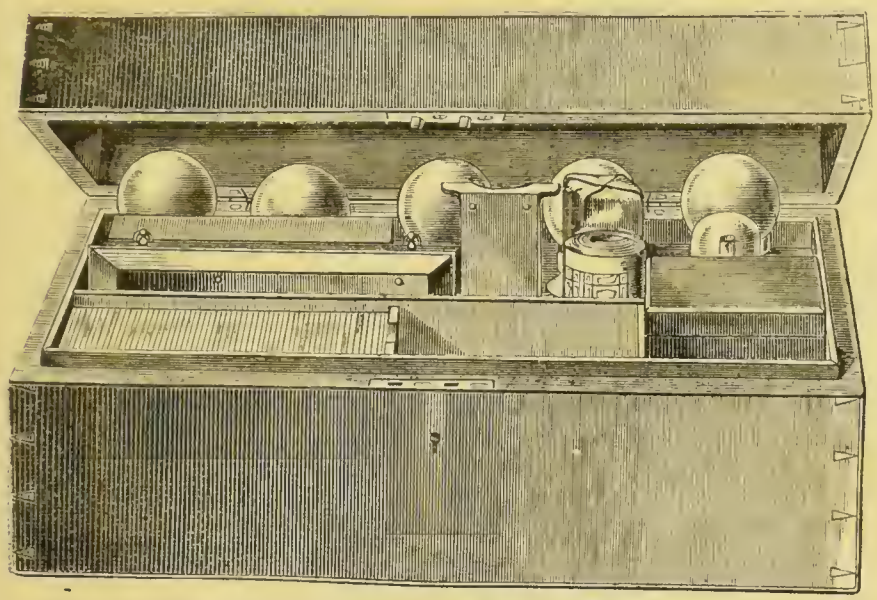
No. 512.—Glazier's Diamond.



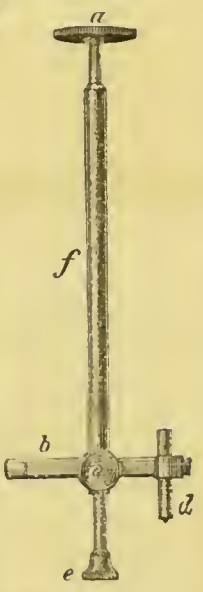
No. 541.—Glass Syringe.



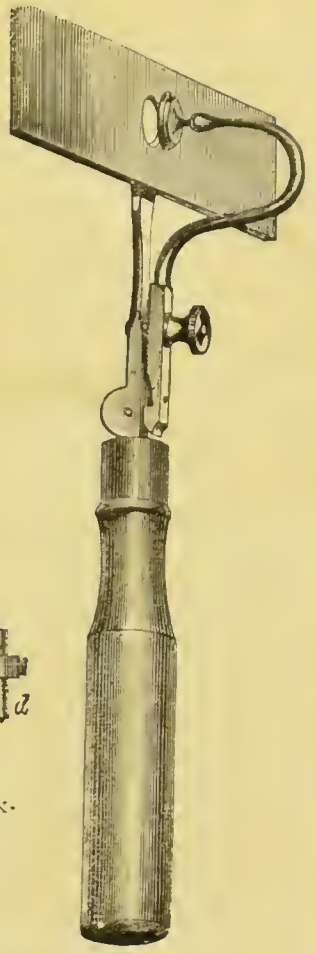
No. 513.—Writing Diamond.



No. 471.—Collection of Mounting Materials.

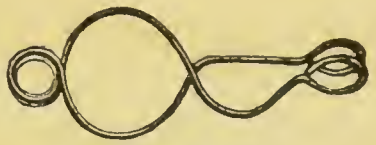


No. 510. Disk-cutting Instrument.

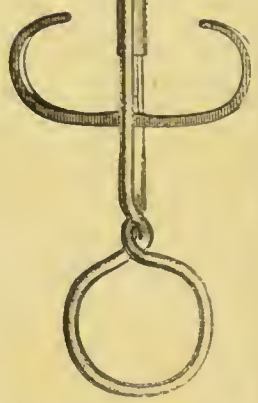


No. 535.—Smith's Mounting Instrument.

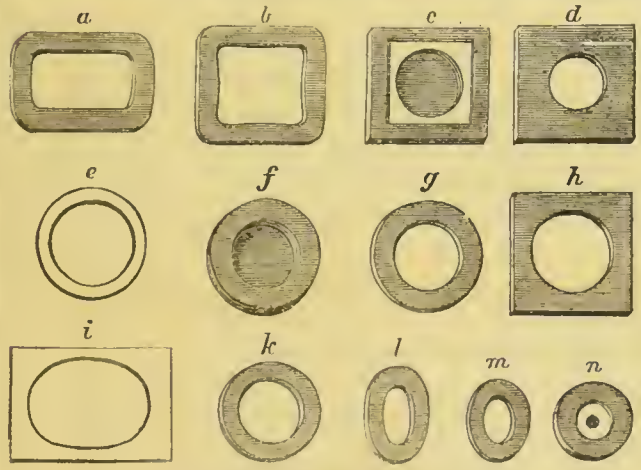




No. 536.—Mounting Clip.



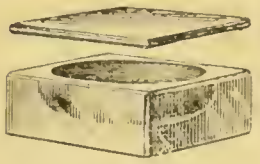
No. 540.—Quekett's Forceps.



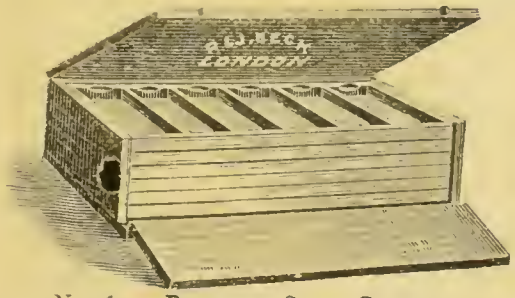
No. 610.—Glass Cells.



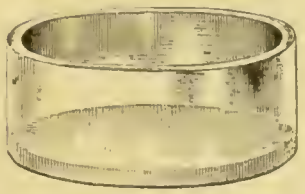
No. 613.—Glass Capsule.



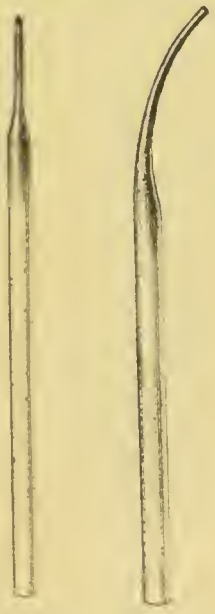
No. 613A.—Square Glass Capsule.



No. 654.—Portable Slide Cabinet.



No. 613.—Glass Capsule.

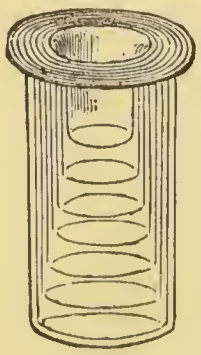


No. 542.—Pipettes.

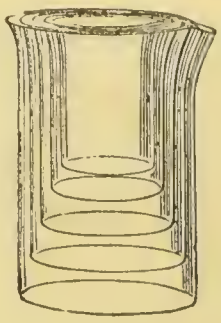


No. 612.—Watch-glass

PLATE XLI. MOUNTING MATERIALS.



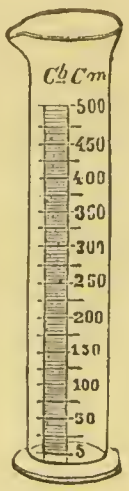
No. 742
PLAIN BEAKER GLASSES.



No. 743.
BEAKER GLASSES WITH LIP.



No 717
FUNNEL



No. 740.
GLASS MEASURE



No. 774.
PIPETTE STOPPERED BOTTLE.



No. 775.
STOPPERED BOTTLE WITH ROD



No. 76.
DROP BOTTLE



No. 779.
BOTTLE WITH CAMEL-HAIR BRUSH.



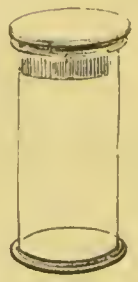
No. 715.
PESTLE AND MORTAR.



No. 612a.
COVERED GLASS BOX.



No. 741. WASH BOTTLE.



No 770 STOPPERED JAR.

MOUNTING INSTRUMENTS AND MATERIALS.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
500	XLI.	PAGE'S WOODEN FORCEPS, for holding Glass Slips when heated ..	0	2	6
501	XLI.	CELL-MAKING MACHINE (WALMSLEY'S CENTRING ADJUSTMENT) ..	0	10	6
502	XLI.	CELL-MAKING MACHINE (SHADBOLT'S)	0	6	0
503	..	CELL-MAKING MACHINE (SIDLE'S "CONGRESS"), Self-centring ..	1	10	0
504	XLI.	CELL-MAKING MACHINE, Lever and Springs, with removable Legs and Clamp for Table	1	10	0
505	XXXIX.	SMALL BRASS TABLE, for Heating objects	0	9	0
506	..	SMALL BRASS TABLE, for Heating objects	0	5	6
507	XXXIX.	SMALL SPIRIT LAMP	0	2	6
508		SMALL SPIRIT LAMP	0	1	6
510	XL.	INSTRUMENT for cutting Circles of Thin Glass, in Case	1	13	0
512	XL.	GLAZIER'S DIAMOND, for cutting Plate or Window Glass	1	0	0
513	XL.	WRITING DIAMOND, for cutting or writing on Thin Glass .. .	0	8	6
515	..	THIN GLASS, for Covering Objects, per oz. (Squares / Circles) No. 1, 4/6 / 5/3; No. 2, 3/6 / 4/6; No. 3, 2/9 / 3/6 — ⅞ in. ¾ in. and ⅝ in. only. Special Sizes charged extra.			
518		THIN GLASS, EXTRA THIN .. .. per oz.		12	0
520	..	GLASS SLIPS, Three inches long by One inch wide, extra thin per gross 10s., per dozen	0	1	0
521	..	GLASS SLIPS, Three inches long by One inch wide per gross 4s. 6d., per dozen	0	0	6
521a	..	GLASS SLIPS, Three inches long by One inch wide per gross 3s., per dozen	0	0	4
522	..	WOODEN SLIPS, with Hole in Centre, used when Objects are Mounted between Thin Glass .. .. per dozen	0	1	0
523	..	GLASS SLIPS with Hollow .. .. per dozen	0	1	6
524	..	COLOURED LABELS, for covering Object Slips . .. per hundred	0	2	0
525	..	LABELS for writing the names of Objects upon, ruled .. per hundred	0	0	2
526	XL.	SYRINGE FOR INJECTING ANIMAL TISSUES, 2 oz. Stopcock and 4 Nozzles, in Case, Complete	1	7	0
527	..	SYRINGE FOR INJECTING ANIMAL TISSUES, 1 oz. Stopcock and 4 Nozzles, 2nd size	1	4	0
528	..	SYRINGE FOR INJECTING ANIMAL TISSUES, ½ oz. Stopcock and 4 Nozzles, 3rd size	0	18	6
529	..	HYPERDERMIC SYRINGE as used by Koch and others, specially convenient for the ready mode in which it can be disinfected	0	5	0
534		WATCHMAKER'S GLASS	0	1	6
535	XL.	SMITH'S MOUNTING INSTRUMENT, for pressing down the cover on the slip of glass.	0	7	6
536	XL.	MOUNTING CLIPS, for pressing down the cover on the slip of glass, 2d. each, per doz.	0	1	6
537	XXXIX.	SMALL AIR PUMP, used in the mounting of objects	1	13	0
540	XL.	QUEKETT'S FORCEPS, for taking specimens out of deep jars . ..	0	8	0
541	XL.	GLASS SYRINGE for taking objects out of water	0	3	6

MOUNTING MATERIALS.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
542.	XL.	PIPETTES ... ... each from	0	0	2
542A.	XLII.	PIPETTES, with India-rubber Tube and Ball	0	1	9
543.	...	GLASS STIRRING-RODS	0	0	1
543A.	...	GLASS STIRRING-RODS, Drawn out to a fine point	0	0	2
544.	...	GOWAN'S COVER-GLASS HOLDER	0	1	9
545.	...	CAMEL-HAIR BRUSHES ... ... per dozen	0	1	0
610.	X.	GLASS CELLS, of various Sizes, Shapes, and Depth ... per dozen	0	2	0
611.	...	EBONITE CELLS ... ... per hundred	0	1	6
612.	XL.	WATCH-GLASSES, stout, with flat bottom ... per gross 15s., per dozen	0	1	6
612A.	XLI.	GLASS BOXES, with Covers— 1½in. in diameter, 6d. each. 3½in. in diameter, 1s. 4d. each. 2 „ „ 8d. „ 4 „ „ 1s. 9d. „ 2⅝ „ „ 9d. „			
613.	XL.	GLASS CAPSULES— 1½in. by 1in., 3d. 1½in. by 2in., 4d. 2¼ „ 1 3d. 2¼ „ 2 4d. 3 „ 1 4d. 3 „ 2 5d.			
613A.	XL.	GLASS CAPSULE, square, with cover, black or white ... ... each	0	0	4
613B.	...	GLASS CIRCLES, for covering Capsules— 1½in. in diameter, 0s. 6d. per doz. 5in. in diameter, 2s. 6d. per doz. 2 „ „ 0s. 6d. „ 6 „ „ 3s. 0d. „ 2½ „ „ 0s. 8d. „ 7 „ „ 4s. 0d. „ 3 „ „ 0s. 9d. „ 8 „ „ 5s. 0d. „ 3½ „ „ 1s. 0d. „ 9 „ „ 8s. 0d. „ 4 „ „ 1s. 6d. „ 10 „ „ 12s. 0d. „			
614.	...	MOUNTING CARD	0	0	2
619.	XXXIX.	CAPILLARY BOTTLES ... ... per dozen	0	15	0
620.	..	MOROCCO CASE, for holding 24 Collecting Bottles	0	5	6
621.	...	MOROCCO CASE, for holding 12 Collecting Bottles	0	3	6
624.	XXXIX.	CAPPED BOTTLES, for containing Fluids used in Mounting Objects 1oz. 1s., 2oz. 1s. 6d., 4oz.	0	1	9
625.	...	STOPPERED BOTTLES— 1oz. 2oz. 4oz. 6oz. WIDE AND NARROW-NECKED per doz. 2s. 6d. 3s. 3s. 6d. 4s. 6d. „ „ per gross 28s. 33s. 39s. 48s.			
715.	XLI.	PORCELAIN PESTLES AND MORTARS— 3 in., 0s. 11d. each. 5¼in., 1s. 8d. each. 3½ 1s. 2d. „ 6 1s. 10d. „ 4 1s. 3d. „ 7 3s. 0d. „			
717.	XLI.	FUNNELS, Glass fluted— 2 in., 3d. each. 3 in., 4d. each. 4in., 6d. each. 2½ 3d. „ 3½ 5d. „ 5 8d. „			
718.	..	FILTER PAPERS ... ... per packet, from	0	0	3
740.	XLI.	GLASS MEASURES, graduated into cubic centimetres— 10 cc., 0s. 10d. 250 cc., 2s. 6d. 25 cc., 1s. 0d. 500 cc., 3s. 0d. 50 cc., 1s. 3d. 1000 cc., 5s. 6d. 100 cc., 1s. 9d			
741.	XLI.	WASH BOTTLES ... ...16oz. 1s. 6d., 20oz.	0	1	8

MOUNTING MATERIALS.

No.	Plate.	DESCRIPTION.	Price. £	s.	d.
742.	XLI.	BEAKER GLASSES, tall, in sets of 8	0	4	9
743.	XLI.	BEAKER GLASSES, squat, with spout, in sets of 6	0	5	0
744.	...	BELL GLASSES, tall form, for covering Microscopes when not in use ... from	0	2	6
745.	...	BELL GLASSES, short form ... ... from	0	1	3
746.	...	TEST TUBES, in sets of 6, in cardboard case	0	0	6
747.	...	TEST TUBE STANDS for one dozen...	0	1	3
748.	..	WHITE SAUCERS, in nests of 5	0	1	0
749.	...	WHITE PORCELAIN SLABS, 12 in. by 12 in.	0	4	6
	...	WHITE PORCELAIN SLABS, 8 in. by 8 in.	0	1	6
750.	...	BLACKENED PLATE GLASS, 12 in. by 12 in. $\frac{1}{4}$ in. thick	0	4	6
751.	...	GLASS BENCHES, for arranging glass plates and slides in tiers in damp chamber ... ... per dozen	0	3	6
770.	XLI.	WIDE MOUTH GLASS JARS, with ground stoppers, 9 in. high by 4 in. wide	0	3	6
774.	XLI.	BOTTLES, with pipette stoppers, with caoutchouc covered pipette	0	1	6
775.	XLI.	BOTTLES, with solid rod and stopper, 1 oz. 1s. ; 2 oz.	0	1	3
776.	XLI.	DROP BOTTLES, with pipettes, $\frac{1}{2}$ oz. 4d. ; 1 oz.	0	0	6
777.	...	INDIA-RUBBER TOPS for Drop Bottles	0	0	1
778.	..	BOTTLES, with caps and stoppers, 1 oz.	0	1	0
779.	XLI.	BOTTLES, with camel-hair brushes attached to cork	0	0	4

Chemical Scales and Weights of the best make supplied to order.

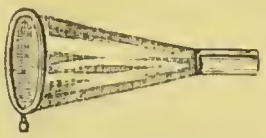
MOUNTING MATERIAL CASES.

470.		COLLECTION OF MOUNTING MATERIALS AND DISSECTING INSTRUMENTS ... ... Consisting of Williams's Microtome, with Razor and 3 Knives complete (481); Embedding Microtome (487); Instrument for cutting Circles of thin glass (510); Glazier's Diamond (512); Writing Diamond (513); Cell-making Instrument (504); Brass Table (505) and Lamp (507); Page's Forceps (500); Case of Dissecting Instruments (600), containing 4 Knives, 2 Hooks, 2 Points, 3 pairs of Scissors, 3 pairs of Forceps, and Needle-holder; Valentine's Knife (538); Section Lifter in Aluminium (506); 2 Section Lifters, copper (597); 1 oz. Thin Glass, mixed (515); 1 oz. Thin Glass (517); $\frac{1}{2}$ gross 3 by 1 in. Glass Slips, thin (520); 2 gross 3 by 1 in. glass Slips (521); 3 dozen Wooden Slips (522); 3 dozen Glass Cells (610); 200 Ebonite Cells (611); 200 Labels (524); 3 Glass Capsules (613); 1 dozen Watch-glasses (612); 6 Pipettes (542); 5 Capped Bottles, containing Canada Balsam, Hollis Glue, Gold-size, Glycerine, and Marine Glue, Bottle of Deane's Medium; 3 Stoppered Bottles for containing Chloroform, Nitric Acid, and Liq. Potassiæ. The whole packed in a strong Dovetailed Mahogany Case.	18	18	0
471.	XL.	COLLECTION OF MOUNTING MATERIALS ... ... Consisting of Writing Diamond (513); Cell-making Machine (504); Brass Table (505) and Lamp (507); Page's Forceps (500); Case of Dissecting Instruments (601); Aluminium Section Lifter (596); 1 oz. Thin Glass, mixed (515); 1 oz. Thin Glass (517); 1 gross 3 by 1 in. Glass Slips (521); 3 dozen Wooden Slips (522); 2 dozen Cells (610); 100 Ebonite Cells (611); 150 Labels (524); 1 dozen Watch-glasses (612); 6 Pipettes (542); 5 Capped Bottles, containing Canada Balsam, Hollis Glue, Gold-size, Glycerine, and Marine Glue; Bottle of Deane's Medium. The whole packed in a strong Mahogany Case.	6	6	0
472.		COLLECTION OF MOUNTING MATERIALS ... ... Consisting of Writing Diamond (513); Cell-making Machine (502); Brass Table (505) and Lamp (507); Page's Forceps (500); 1 pair of Straight Forceps (590); 1 pair of Curved Forceps (591); 1 pair of Scissors (584); 2 Knives; $\frac{1}{2}$ oz. Thin Glass, mixed (515); 6 dozen 3 by 1 in. Glass Slips (521); 1 dozen Glass Cells (610); 50 Ebonite Cells (611); 100 Labels (524); 1 dozen Watch-glasses (612); 2 Glass Capsules (613); 5 Bottles, containing Canada Balsam, Hollis Glue, Gold-size, Glycerine, and Marine Glue; Small Bottle of Deane's Medium. In Mahogany Case.	3	10	0
468.		MAHOGANY CASE, with the necessary Staining Fluids and Mounting Materials for the staining and mounting Bacteria, Physiological and Pathological Specimens, containing Dr. Gibbes's Double Stain, New Purple Stain, Log-wood, Picrocarmine, Safranine Absolute Alcohol, Balsam Solution, Watch-glasses, Glass Dish, Filtering Paper, Glass Slips, thin Cover Glasses, Steel Forceps, Needle in handle	1	5	0
469.		SPUTUM TEST CASE, containing all requisites for rapid demonstration of the Tubercle Bacillus, including Dr. Gibbes's Double Stain, Methylated Spirit, Balsam Solution, thin Cover Glasses, Glass Slips, Glass Capsule, Watch-glasses, Sputum Spreader, Cover Glass, Forceps, Needles, and full directions for use, in French polished Mahogany Case	2	2	0

PLATE XLII.—COLLECTING APPARATUS.



No. 542A.—India-rubber Ball Pipette.



No. 702.—Net with Bottle.



No. 700.—Collecting Stick.



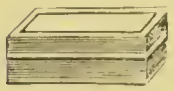
617 616 615 Collecting Bottles.



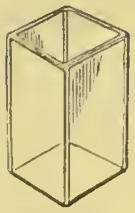
No. 618. Flat Bottles.



No. 618A.—Wooden Blocks for Posting.



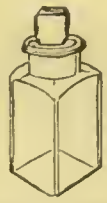
No. 628.—Collecting Box.



No. 771.—Square Bottle without Neck.



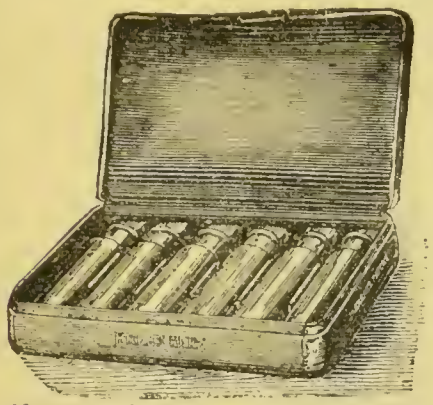
No. 772.—Square Corked Bottle.



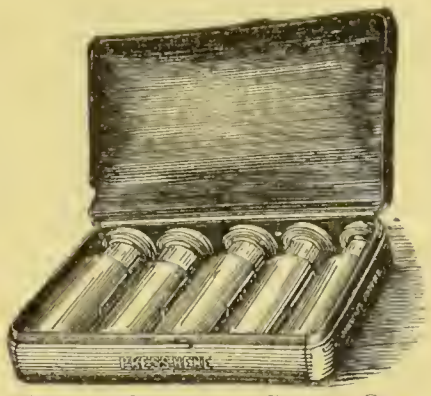
No. 773.—Square Stoppered Bottle.



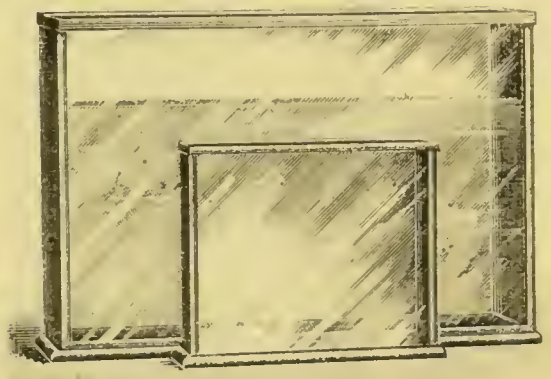
No. 716. Killing Bottle.



No. 627.—Collecting Bottle Case.



No. 627.—Collecting Bottle Case.

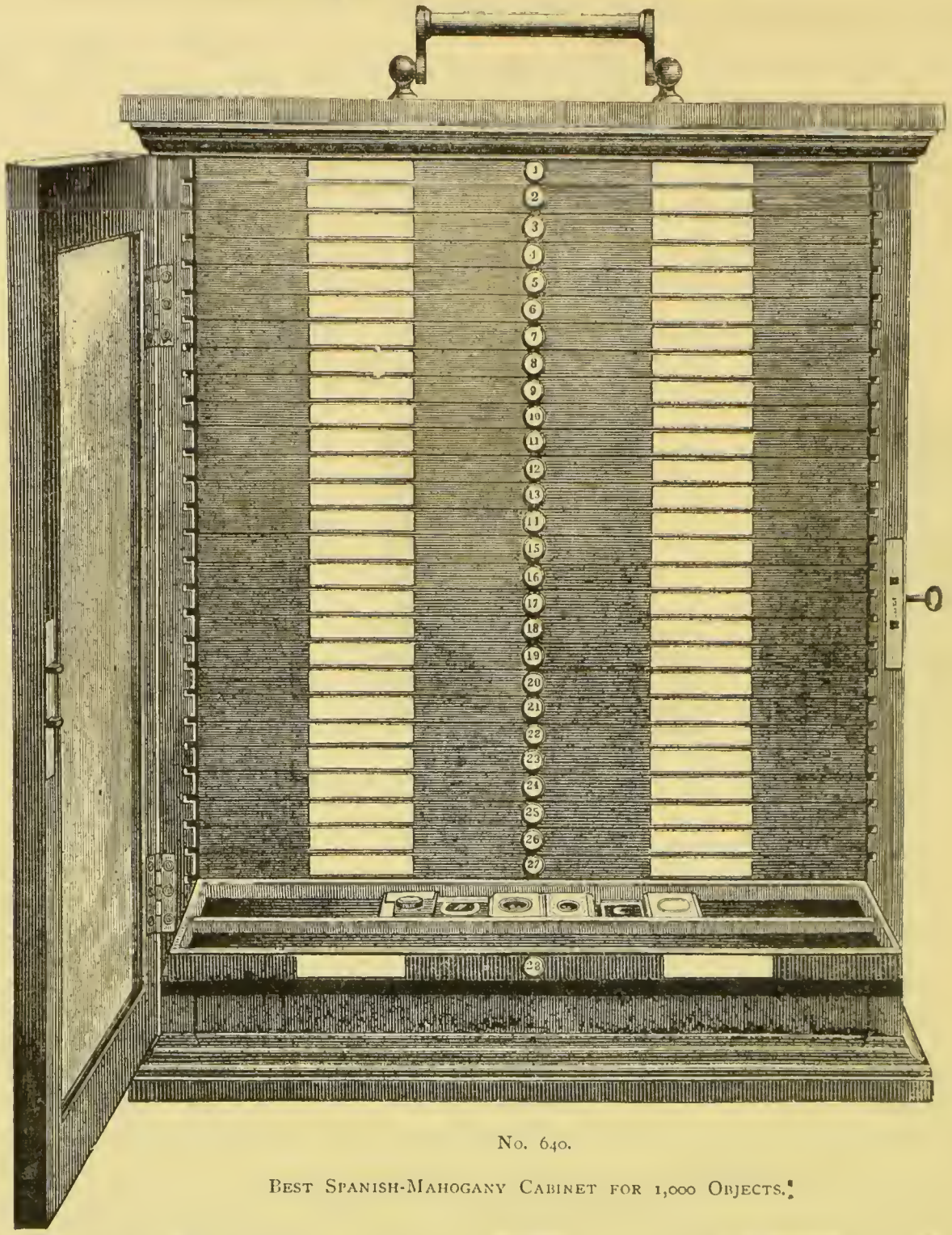


No. 708.—Narrow Tanks.

No.	Plate.	COLLECTING APPARATUS.	Price. £	s.	d.
542A.	XLII.	PIPETTES, with India-rubber Tube and Ball	0	1	9
615	XLII.	SMALL COLLECTING BOTTLES ... . (per doz.)	0	1	0
616	XLII.	SMALL COLLECTING BOTTLES ... ... (per doz.)	0	1	6
617	XLII.	SMALL COLLECTING BOTTLES ... ... (per doz.)	0	2	0
617A.		SMALL COLLECTING BOTTLES (1 in. diameter by 3 in. long) (per doz.)	0	3	0
618	XLII.	SMALL FLAT COLLECTING BOTTLES ... . (per doz.)	0	3	0
618A.	XLII.	WOODEN BLOCKS, for sending bottles by post, according to size of bottle. Special quotations for quantities ... ... (Per dozen), 6d. to	0	1	0
622		SIX COLLECTING BOTTLES, in Tin Case for Pocket ($7\frac{1}{2}$ in. by $5\frac{1}{2}$ in. by $1\frac{1}{2}$ in).	0	6	6
623		SIX COLLECTING BOTTLES (1 oz.) in Tin Case for pocket ($5\frac{1}{2}$ in. by $3\frac{1}{2}$ in. by 1 in.)	0	4	6
627	XLII.	METAL POCKET CASES, velvet lined, size $4\frac{1}{16}$ in. by $2\frac{7}{8}$ in. by $\frac{15}{16}$ in. :— Containing 5 Bottles, corked	0	3	0
		„ 10 Short Bottles in two rows, corked	0	3	6
	XLII.	„ 6 Stoppered Bottles	0	5	6
628	XLII.	CARDBOARD BOXES, with glass tops for collecting, oblong, in nests of four	0	1	6
629		CARDBOARD BOXES, with glass tops for collecting, circular, in nests of seven	0	2	6
700	XLII.	THE NEW COLLECTING STICK, with lengthening rod, ring, bottle, and cutting hook, complete	0	12	6
701		NET RING	0	1	6
702	XLII.	NET, with Bottle at end...	0	3	6
702A.		BOTTLES FOR COLLECTING STICK	0	1	0
703		WATERPROOF BAG to carry small net	0	1	0
704		SURFACE NET, 10 in. diameter, with bag for holding weights ... . Other sizes to order.	0	5	0
705		WIRE GAUZE FILTERS to fit mouth of net for preventing weeds and other large objects from entering the net ... ... From	0	3	0
514		IRONWORK OF DREDGE for deep sea fishing. The material of which the bag or net is made should vary according to the coast to be dredged... ...	1	13	0
706		ROPE for use with nets... ... ... 40 yards	0	2	6
707		SWIVELS	0	0	4
708	XLII.	NARROW TANKS, with parallel glass sides for keeping and examining pond life From	0	1	6
716	XLII.	KILLING BOTTLE for Insects	0	2	6
771	XLII	SQUARE BOTTLES, Necks cut off ... ... each	0	0	8
772	XLII.	SQUARE BOTTLES, Corked ... ... (per doz.)	0	4	6
773	XLII.	SQUARE BOTTLES, Stoppered ... ... (per doz.)	0	10	0

PLATE XLIII.

CABINETS FOR MICROSCOPIC OBJECTS.



No. 640.

Best Spanish-Mahogany Cabinet for 1,000 Objects.

THE ILLUSTRATION ON THIS PAGE IS DRAWN TO A SCALE OF ONE-FOURTH.

No.	DESCRIPTION.	Price. £	s.	d.
640	BEST SPANISH-MAHOGANY CABINET, with Glass Panel and Deep Drawer at bottom, to hold 1,000 Objects	9	10	0
641	HONDURAS-MAHOGANY CABINET, without Glass Panel and Deep Drawer, to hold 1,000 Objects	7	0	0
642	BEST SPANISH-MAHOGANY CABINET, with Glass Panel, to hold 750 Objects	6	10	0
643	HONDURAS-MAHOGANY CABINET, without Glass Panel, to hold 750 Objects	5	10	0
644	BEST SPANISH-MAHOGANY CABINET, with Glass Panel, to hold 500 Objects	5	0	0
645	HONDURAS-MAHOGANY CABINET, without Glass Panel, to hold 500 Objects	4	0	0

NOTES.

In the above Cabinets there are Porcelains let into the fronts of the Drawers. The Drawers are numbered, and the Specimens lie flat.

Cabinets made to any Size and of every Description to Order.

CABINETS FOR MICROSCOPIC OBJECTS.

No.	DESCRIPTION.	Price. £	s.	d.
650.	PORTABLE HORIZONTAL SLIDE-CABINET, in Mahogany, for 12 dozen Objects ...	1	10	0
650A	PORTABLE HORIZONTAL SLIDE CABINET, in Pine, for 12 dozen Objects	1	0	0
651.	PORTABLE HORIZONTAL SLIDE-CABINET, in Mahogany, for 6 dozen Objects ...	0	15	0
652.	PORTABLE HORIZONTAL SLIDE-CABINET, in Pine, for 6 dozen Objects	0	12	6
653.	PORTABLE HORIZONTAL SLIDE-CABINET, in Mahogany, for 3 dozen Objects ...	0	7	6
654.	PORTABLE HORIZONTAL SLIDE-CABINET, in Pine, for 3 dozen Objects (Plate XL.)	0	5	6
655.	POCKET SLIDE-CABINET, for 1 dozen Objects, in Pine	0	2	6
656.	CARDBOARD CABINET, to hold 2 gross of Objects	0	8	9
656A	CARDBOARD CABINET, to hold 1 gross of Objects	0	5	6
656B	CARDBOARD CABINET, to hold ½ gross of Objects	0	4	0
657.	QUARTO BOOK CABINET, for 144 Objects, fitted with Steel Springs, to keep the Objects in Position	2	10	0
658.	MAHOGANY CASE, fitted with Racks, to hold 144 Objects	0	16	0
659.	MAHOGANY CASE, fitted with Racks, to hold 72 Objects	0	8	0
660.	MAHOGANY CASE, fitted with Racks, to hold 24 Objects	0	3	0
661.	CARDBOARD BOXES, fitted with Racks, to hold 24 Objects ... ... each	0	1	0
662.	CARDBOARD BOXES, fitted with Racks, to hold 12 Objects ... ... each	0	0	9
663.	CARDBOARD BOXES, fitted with Racks, to hold 6 Objects ... ... each	0	0	6
664.	DEAL BOXES, fitted with Racks, to hold 72 Objects ... ... each	0	1	0
665.	POSTAL BOXES, to take 4 Objects ... ... per dozen	0	2	0
666.	POSTAL BOXES, to take 2 Objects ... ... per dozen	0	1	6
667.	SINGLE MAHOGANY RACKS, for Objects, Engine-cut ... ... per foot	0	0	6
668.	DOUBLE MAHOGANY RACKS, for Objects, Engine-cut ... ... per foot	0	1	0

BOXES TO HOLD OBJECTS, ANY SIZE MADE TO ORDER.

STAINING SOLUTIONS AND MOUNTING FLUIDS.

Solution of Aniline Blue
Solution of Safranine
Solution of Logwood
Solution of Gentian Violet
Solution of Magenta
Solution of Methyl. Blue
Solution of Methyl. Green
Solution of Eosine
Picrocarmine (Ranvier's)
New Purple Stain
Benzole
Xylol

Solution of Borax Carmine
Solution of Alum Carmine
Orth's Picro Lithium Carmine
Haematoxylin (Ehrlich's)
Do. (Kleinenberg's)
Do. (Delafield's)
Ziehl Neelson's Stain
Solution of Fuchsin
Gram's Iodine Stain
Nitrate of Silver, five per cent.
Aniline Oil
Ehrlich Biondi Triple Stain

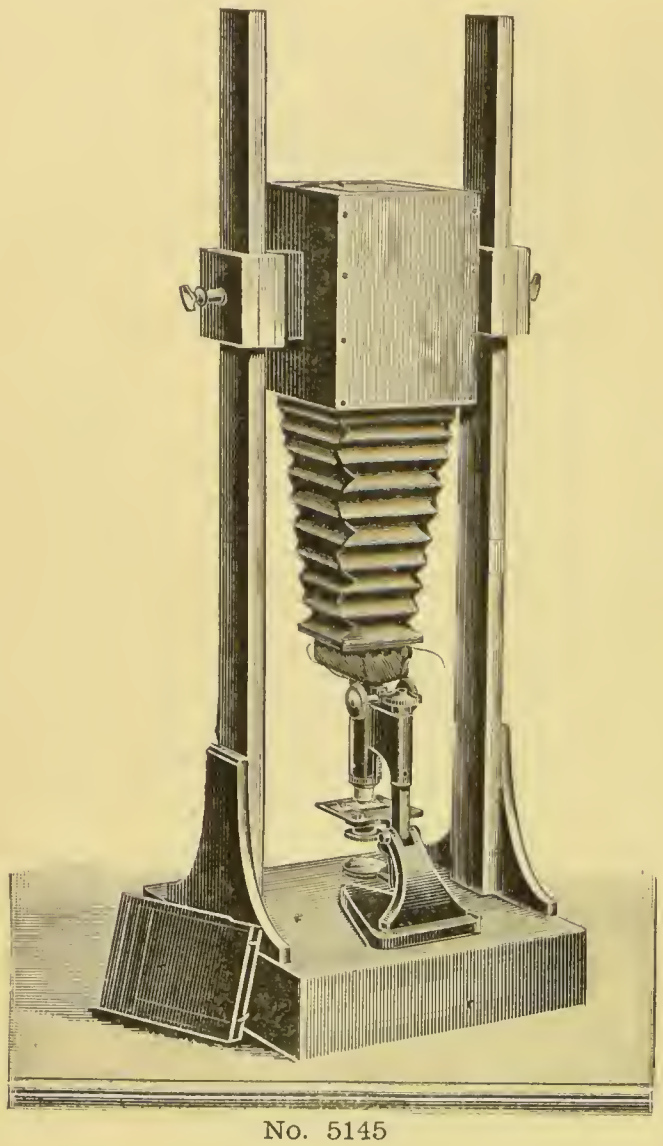
THE ABOVE SUPPLIED IN 2 OZ. STOPPERED BOTTLES, 1S. EACH.

	£	s.	d.
Haematoxylic Eosin (Renaut's), 2 oz. ...	0	2	0
Gabbett's Double Stain { Sol I. Carb. Fuchsin 2 oz. 1s. / Sol. II. Methyl. Blue and Sul. Acid, 2 oz., 1s. }	0	2	0
Dr. Gibbe's Double Stain for Tubercle Bacillus, 2 oz.	0	1	6
Chloride of Gold, in 15 grain tubes ...	0	1	9
Schultz's Solution, 1 oz.	0	2	0
Osmic Acid, one per cent. solution, ¼ oz. ...	0	1	3
Acetic Acid Glacial, 2 oz.	0	0	6
Bell's Cement, 1 oz.	0	1	6
Dammar Solution, 1 oz. in bottle with dropper	0	2	0
Balsam Solution for mounting, 1 oz., in bottle with dropper	0	1	0
Balsam Solution, 2 oz. in capped bottle with dropper	0	2	9
Balsam in Benzol, 1 oz.	0	1	0
Balsam in Xylol, 1 oz.	0	1	0
Canada Balsam, pure, 1 oz.	0	1	0

	£	s.	d.
Pure Glycerine, 2 oz.	0	0	6
Oil of Cloves, 2 oz.	0	2	0
Farrant's Medium, ½ oz.	0	1	0
Deane's Medium, ½ oz.	0	1	0
Glycerine Jelly, ½ oz.	0	1	0
Celloiden, 1 oz. packet	0	3	6
Cedar Oil, 1 oz.	0	1	0
Cedar Oil, thickened, 1 oz.	0	1	4
Hollis's Glue, per bottle	0	0	6
Marine Glue ,, ... 6d., 1/0, and	0	2	0
Gold Size ,, ... 6d., 1/0, and	0	2	0
Asphalt ,, .. 6d., 1/0, and	0	2	0
White Zinc Cement, per bott... 6d., 1/0, and	0	2	0
Mucilage, per bottle ... ... 6d. and	0	1	0
Picric Acid, 2 oz.	0	0	6
Scherring's Celloidin, per oz.	0	3	6
Paraffin Wax, 45°, 1s. 10d.; 52°, 2s. 3d.; 50°, 2s. 4d.			
Paraffin Wax, mixture ready for embedding per lb.	0	2	0
Nelson's No. 1 Sheet Gelatine, ½ lb. packet...	0	3	0

PLATE XLIV.

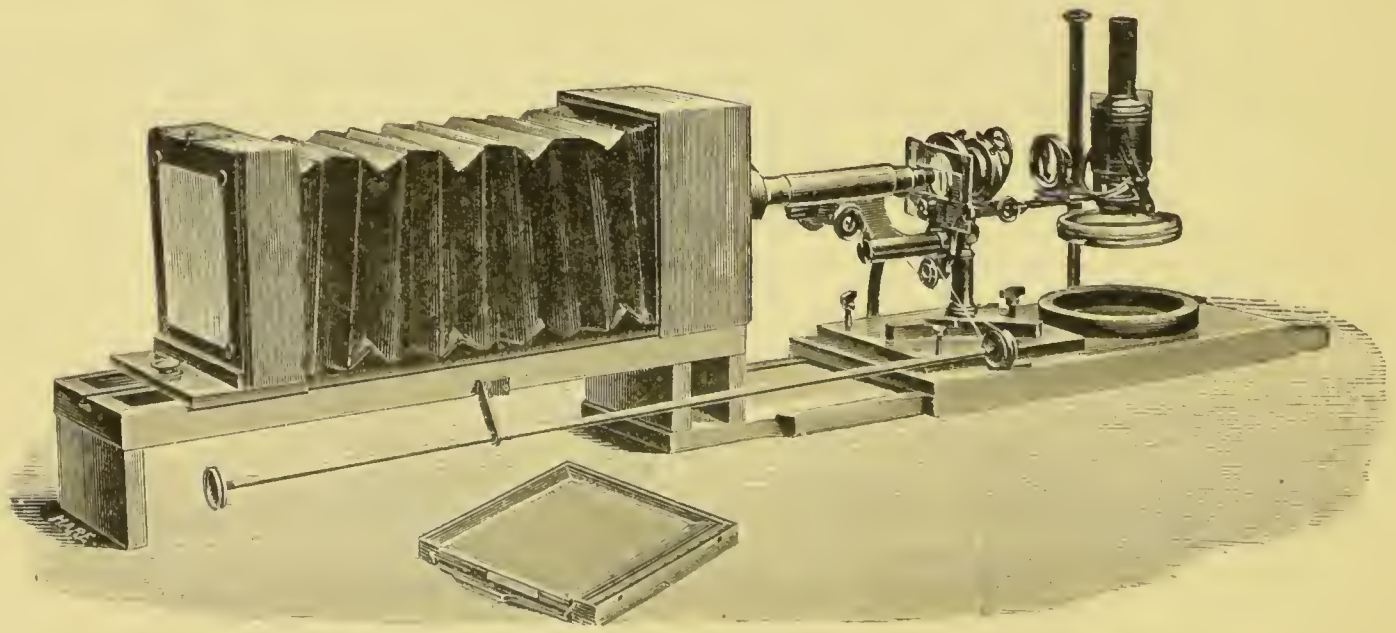
MICROPHOTOGRAPHIC CAMERAS.



No. 5145

5145.—SIMPLE FORM OF MICROPHOTOGRAPHIC CAMERA, for use with the Microscope in a vertical position, with raising and lowering motion to Camera and extending bellows. One Double Plate Holder and Ground Glass.

£4 15s.



No. 5140.

No.	DESCRIPTION.	Price. £	s.	d.
5140.	MICROPHOTOGRAPHIC CAMERA, with extending bellows, focussing-screens, movable platform for Microscope and Lamp, with levelling-screw for Microscope, with double plate-holder to take either 5 by 4 or ¼-plates, slow-motion apparatus, &c., as shown in figure ...	7	0	0
5141.	MICROPHOTOGRAPHIC CAMERA, as above, but made in best Spanish Mahogany, with leather bellows, and finished throughout in best style	10	0	0
5144.	RIGHT ANGLE PRISM and elbow fitting, for arranging object for micro-photography when instrument is in a horizontal position	1	10	0

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