

TELEPHONE No. 2,741.

SEVENTH EDITION. 65.



ILLUSTRATED CATALOGUE

OF

MICROSCOPES

OBJECTIVES,

AND

ACCESSORY APPARATUS

MANUFACTURED AND SOLD BY

W. WATSON & SONS,

Opticians to Her Majesty's Government,

313, HIGH HOLBORN, LONDON, W.C.

(TWO DOORS FROM CHANCERY LANE.)

Established 1837.

MERCHANTS, SHIPPERS AND THE TRADE SUPPLIED.

Hours of Business 9 a.m. to 7 p.m.; on Saturdays, 9 a.m. to 4 p.m.

IN issuing this new Catalogue we include all the various improvements in Microscope Stands, which we have introduced within the last two years to meet the advanced requirements of the present time.

Foremost, among late improvements in Microscopes must be noted the SWINGING SUBSTAGE—an adaptation of a circle behind the stage, with the arm holding the Mirror, able to rotate in it concentrically with the object, and with the outer edge of the circle divided so that the angle of inclination of the Substage may at any time be read off and registered, so that it may be placed in the same position again when required to reproduce a similar result. The great advance in microscopic power which the new construction yields no one who has had any experience in working with the Microscope can fail to appreciate. The ease and quickness with which light of any required obliquity can be obtained; the intelligibility of the effects seen; the little trouble necessary to reproduce these effects; more important still, the power of illuminating test and other delicate objects with an oblique central ray,—render it far in advance of the old form Stands with fixed tail-pieces.

For the illumination of transparent objects a $1\frac{1}{2}$ -inch or 2-inch objective forms a most efficient condenser, although this gives a pencil of but small angle, yet on tilting the Substage arm we can throw it upon the object at any angle required—say 60 degrees or 70 degrees—thus equalling in resolving power an expensive achromatic condenser of 120 degrees or 140 degrees aperture; but from the fact of its being an oblique central ray, and therefore free from the enormous aberrations inseparable from a peripheral ray of such an angle as obtained by the usual condenser, is far more effective in its power of bringing out minute markings.

Also dark ground illumination may be obtained without the aid of any accessory apparatus, by the mirror only: all that is necessary is to tilt it till the rays fall upon the object too obliquely to enter the objective, and we obtain a perfectly black ground with good definition with one power.

It is quite evident that from henceforth no instrument made without the Swinging Substage can lay claim to be called *first-class*, we therefore have devoted special pains to the design and manufacture of these forms of Stands, and the large increase of business which has accrued to us from the demand for them proves that our efforts have not been unappreciated. In the following pages will be found several different patterns varying from the simplest to the most elaborate; and the Prices for all, in accordance with our usual custom, are quoted as low as first-class work can be supplied for. We would also just make mention of our improved form of Mechanical Stage, full description of which will be found in the body of this Catalogue.

Thanking our Friends and Customers for past favours, and soliciting a continuance, which will have, as always, our best attention.

We remain,

Your obedient faithful Servants,

W. WATSON & SONS.

313, HIGH HOLBORN,
LONDON.

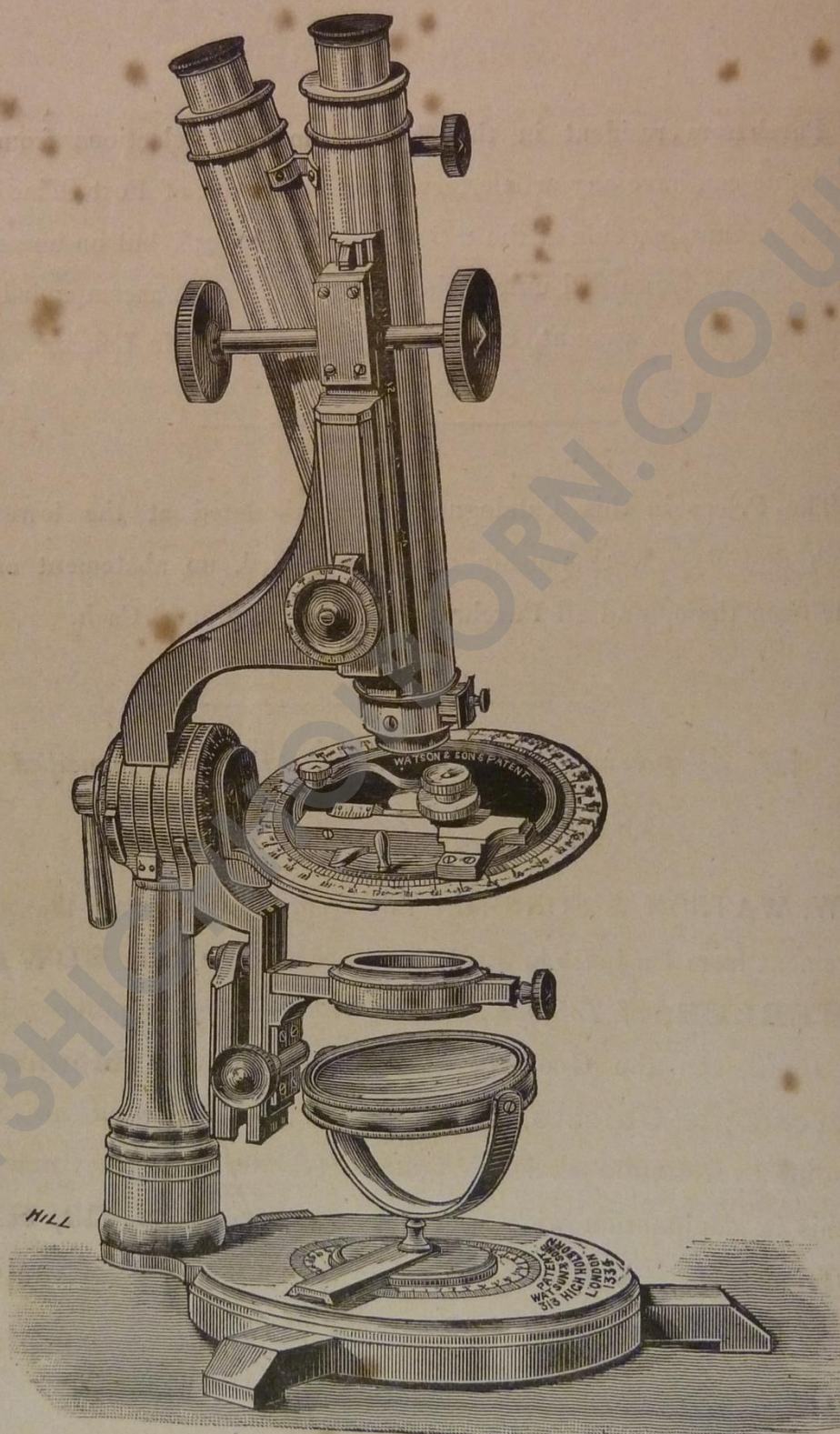
TELEPHONE No. 2,741.

Purchasers resident in the Country making selections from this Catalogue can have any article forwarded on receipt of Post-Office Order for the amount, payable at the "*General Post-Office*;" but on no account can Goods be forwarded unless the Order for same is accompanied by a remittance for the amount, or a satisfactory reference in London.

The Prices in this Catalogue being calculated at the lowest for which first-class workmanship can be supplied, no abatement can be made from them, and all Purchases must be for prompt Cash.

 *All previous Editions of this Catalogue are cancelled.*

W. WATSON & SONS take this opportunity to state that, on the retirement from Business in June, 1884, of the late **Mr. EDWARD WHEELER**, of *Tollington Road, Holloway*, they purchased from that Gentleman the Goodwill of his Business as a **Mounter of Microscopic Objects**, together with the whole of his Stock, including over 40,000 choice Mounted Specimens, and they now carry on this in conjunction with their ordinary Business at **313, HIGH HOLBORN**. A Classified List of the principal Objects will be sent post-free to any address on application,



WATSON & SONS' PATENT MICROSCOPE STAND.

W. WATSON & SONS'
NEW MICROSCOPE STAND.
(PATENTED).

THE NEW STAND enables the observer to examine an object as he would if it were held in the hand and viewed by the naked eye—that is, to turn it about in every possible way towards a ray of light proceeding in a fixed direction, and so, without once losing sight either of the light or the object, to observe its varied appearances when illuminated by light of every degree of obliquity.

This is the fundamental idea underlying its construction, and in this consists the great difference between it and all the old forms of Stand (although it has all the uses of the latter) where, consequent upon the object remaining fixed, the only way in which its illumination can be varied is by moving the illuminating ray—a cumbrous method, which, in the amount of accessory apparatus it requires, the comparative unintelligibility of the results it affords, and the amount of time it consumes, is in every way inferior to the new one.

An inspection of the figure will show how this idea is worked out. On the top of a strong pillar, to which it is attached by a massive cradle joint, allowing of inclination in a vertical plane, is fixed the arm carrying the body, which latter is provided with rack adjustment and a new and improved fine adjustment, rendering unnecessary the usual unsatisfactory loose nose-piece. The stage is so fixed with regard to the arm, that the object when lying upon it is in a line with the centre of the cradle joint, so that upon inclining the body the object moves with it and is presented at every possible vertical angle to a ray proceeding to it in a given direction.

The stage is of a new and improved construction, patented by us, of which a separate description will be found on page 7. Beneath the stage is the substage arm, carrying the usual screw-centreing and rack-adjusting substage, this is attached to a sector in the rear of the stage in which it traverses concentric with the object. Behind this substage arm is a strong bar, provided with a dovetailed groove into which the mirror bar slides. This is so pivoted to the substage arm as to allow the latter to be moved aside and the mirror used alone, when requisite, without the trouble of taking the substage away altogether. This is a great advantage, as it permits the substage and any apparatus it may be carrying to be placed into or out of position in a moment. With the mirror in the position here indicated the Stand has all the uses of the old forms of Microscope, and can be employed in exactly the same way; but even then its peculiar motions round the object as a centre give it very great advantages in every class of investigation.

But it is when the mirror occupies the position now to be described that the peculiar properties of the new Stand are brought fully into play. The upright pillar carrying the body and stage is attached at its foot to a massive circular plate carrying a graduated circle, which rotates round a point exactly beneath the centre of the stage, and moving independently and concentrically within this is another smaller circle having a dovetailed groove ploughed across it, into which the mirror bar can be slid when withdrawn from the substage arm. A spring catch attached to the dovetailed circle falls into a notch in the mirror bar when the centre of the mirror is exactly beneath the centre of the stage. This is the most useful position for the mirror, as a ray falling from a source of light upon it may be reflected upwards perpendicularly upon the object when the body of the Microscope is vertical; then, without interfering again either with the mirror or lamp, or interposing any accessory apparatus whatever, but simply by inclining the body the light is thrown upon the object with a gradually increasing obliquity, until when the instrument is nearly horizontal a perfectly dark ground illumination can be obtained even with the highest powers, while the gradual way in which the light becomes more and more oblique immediately under the eye, and (neither the object nor the light being once lost sight of) the capability of arresting the inclination at the point where the most suitable illumination for the object under examination is obtained, give to the observer powers he has never before had at his command in any form of Microscope yet produced. The horizontal rotation mentioned above allows the object to be directed to the light at every angle in azimuth—to borrow a term from the astronomer—as the cradle joint on the top of the pillar gives every angle in altitude. As the object occupies the centre of both these motions, by a combination of the two it can of course be placed in every possible position. These angles are read, the latter by a graduated circle on the outside of the cradle joint, giving the inclination of the body to the vertical; the former by means of the graduated circle at the foot. Readings of these circles being taken with the mirror placed as above described at any time, by so fixing the instrument that the circles read the same, any effect previously obtained will be exactly reproduced *irrespective of the position of the lamp*—a point of the greatest importance to workers with high powers.

There is a third divided circle on the substage sector, giving the inclination of the substage to the axis of the body. A strong clamp on the outer side of the cradle joint holds the body firmly at any inclination, and a graduation on the slide of the course adjustment enables the working distance of objectives to be measured and compared.

PRICES.

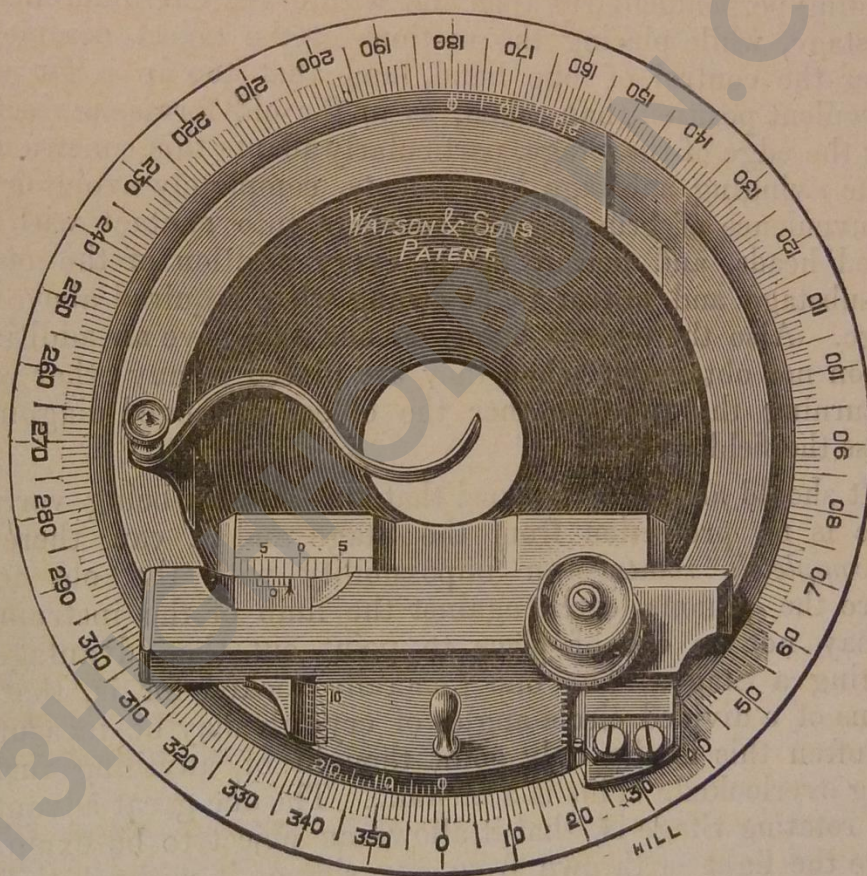
Patent Binocular Stand (*as illustrated*), with

One Pair of Eye-pieces	...	...	...	£35	0	0
Ditto	ditto, Monocular	...	...	£31	10	0

W. WATSON & SONS'

NEW PATENT

Mechanical Stage for the Microscope



In this Stage is offered to the Microscopist, for the first time, the combined advantages of an exceedingly thin but firm Stage, having delicate mechanical motions and a complete rotation. Its excessive thinness (may be less than one quarter of an inch) allows the employment of rays of the greatest obliquity, one of the first requirements of modern microscopy, and one which no other form of Mechanical Stage yet devised will meet. Although so thin, rigidity is in no way sacrificed. The strength of a Stage

depends only on the thickness of its base plate, and although when compared with the old pattern Stages, built up by several layers of plates, to give the necessary motions in various directions, to about $\frac{3}{4}$ inch or 1 inch thick, and looking large and strong, the new one would appear at first sight frail, it needs only acquaintance to find this is an error. The base plate of the new one is $\frac{3}{16}$ inch thick—quite as thick as the under plate of any of the older form. The thinness is obtained by moving on this, only *one* plate, $\frac{1}{50}$ inch thick, which slides dead true upon it, and moves in any direction up, down or across, being propelled by motions in the box at the bottom of the stage.

The position of the milled heads, both upon one axis, standing perpendicularly upon and within the circumference of the stage, while placing the motions of the object completely under the control of one hand, and that too in a far more convenient position than when, as in the old forms, projecting from the edge of the Stage, particularly adapts this construction to the swinging substage instruments, completely avoiding the inconvenience of bringing the substage into contact with the milled heads, and permitting in every position of the object the substage and mirror to be swung when required above the Stage. Also the pinions being on one axis give an additional motion not obtainable when they are placed in any other way; by turning the two together the object is moved diagonally across the field of view.

It should also be mentioned that the pinions being vertical, there is no projection from the Stage and it can therefore be *completely rotated*—an impossibility with the old form, where the pinions catch against the limb of the instrument. It may not be out of place to point out the advantage of rotating a Stage. The one generally looked for is, that by means of a divided circle angles of crystals may be measured; and often this is the only point thought of, anything further being overlooked. This is a mistake. The one great advantage of a rotating Stage is, that it allows an object to be examined while the light is thrown from any side of it without shifting the mirror; for instance, suppose an object lying horizontally on the Stage and the mirror swung on the right hand: the object then is lit from its right side; but turn the Stage half round and the rays fall upon it from the opposite side—turn it only a quarter revolution and the rays fall across it; so by turning the Stage you throw light on your object from every side of it, and are able to find the most suitable illumination for its examination.

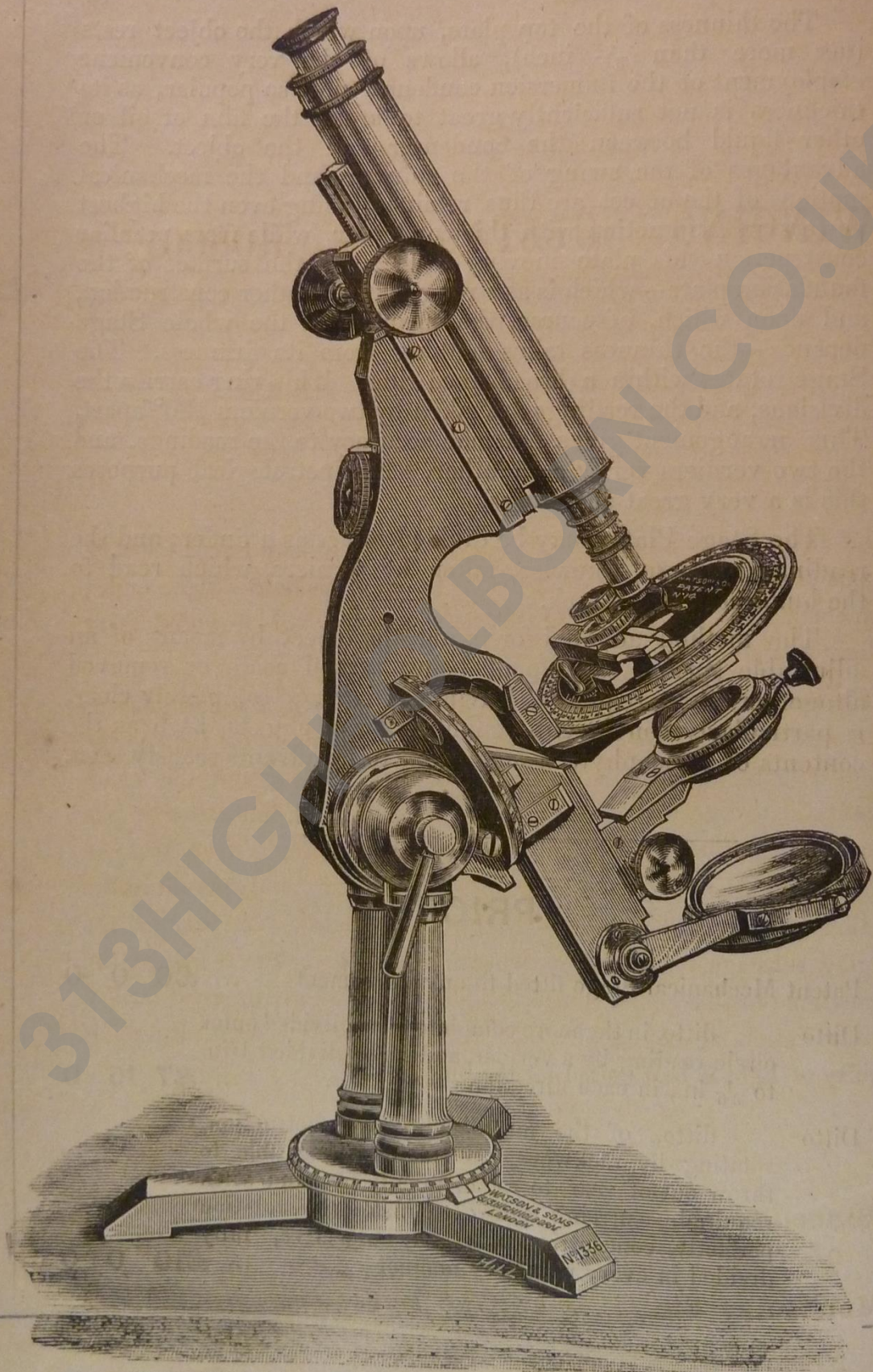
The thinness of the top plate, upon which the object rests (not more than $\frac{1}{50}$ inch), allows of the very convenient employment of the immersion condenser now so popular, as its thickness is not sufficiently great to break the film of oil or other liquid between the condenser and the object. The advantages of the swing of the substage and the mechanical motions of the object are thus retained, using even the highest powers in conjunction with this condenser, while from peculiar construction this plate moving dead upon the surface of the foundation plate—which is as strong as in any other construction, and upon which, of course, the firmness of the whole Stage depends—the thinness takes nothing from its firmness. The Stage rotates within a broad fixed ring. This ring carries the divisions, and the readings are taken by two verniers 180° apart. This arrangement gives extreme accuracy to the readings, and the two verniers verify each other. For petrological purposes this is a very great advantage.

The Stage Plates may be divided to act as a finder; and the readings of these, likewise, taken by verniers, which read to the hundredth of an inch.

The method adopted for fixing the object by means of an adjustable spring, capable of being turned aside or removed altogether when requisite, leaving the Stage completely clear, is particularly convenient—enabling large objects, such as the contents of a Zoophyte trough, &c., to be advantageously seen.

PRICES.

Patent Mechanical Stage fitted to any instrument	... £6 0 0
Ditto ditto, in the more complete form, divided outer circle reading by a vernier, and finder divided 1-in. to $\frac{1}{50}$ in., in each direction	... £7 15 0
Ditto ditto, of the most elaborate construction, rotating by rackwork, the pinion being able to throw out of gear, to rotate quickly by hand when required, centring screw to make the rotation perfectly concentric with any objective, fully divided in every necessary manner	... £10 0 0



MR. CROSSLEY'S SWINGING SUBSTAGE MICROSCOPE.

A NEW FORM OF
SWINGING SUBSTAGE MICROSCOPE,

DESIGNED BY

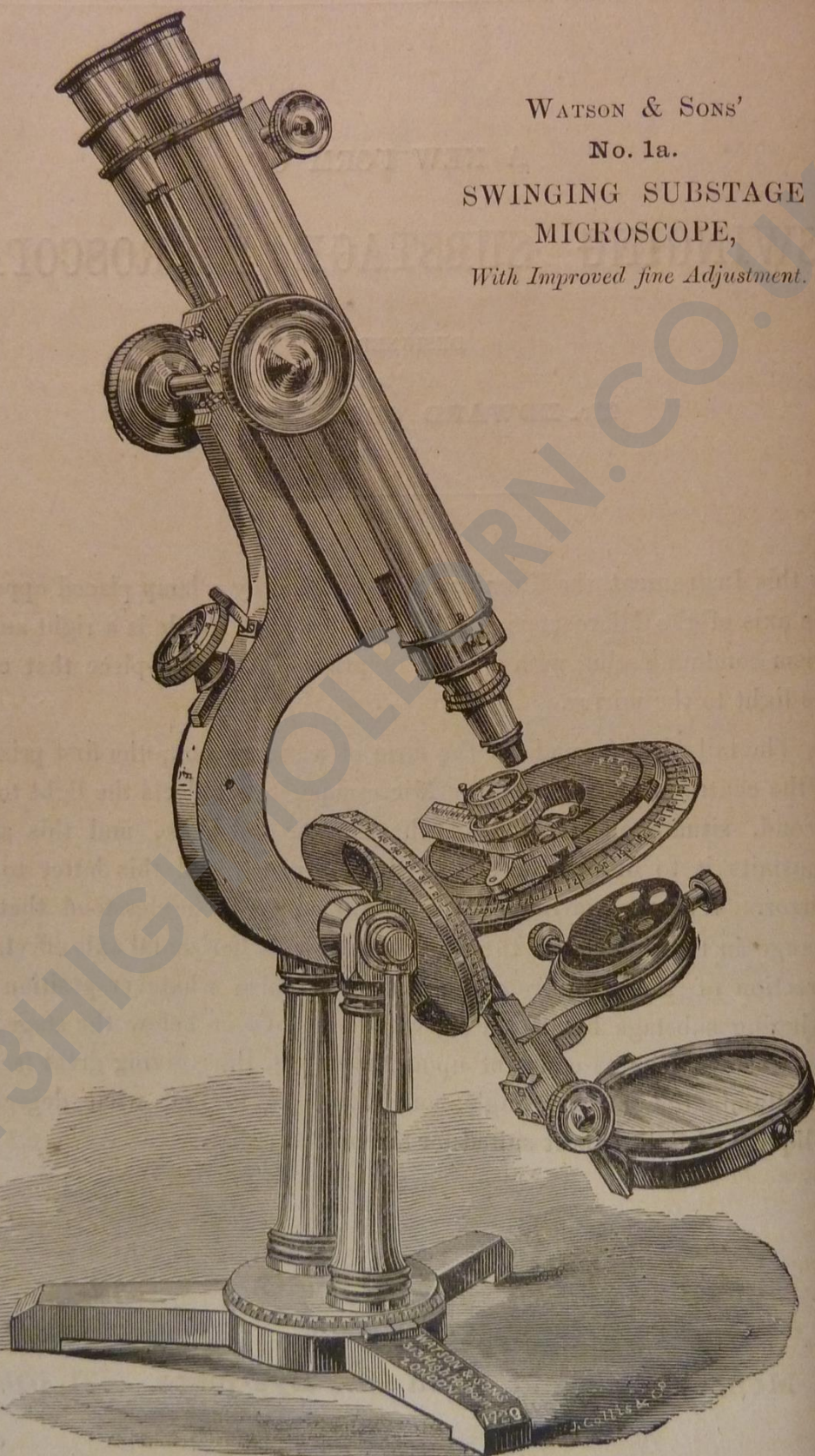
Mr. EDWARD CROSSLEY, F.R.A.S.

IN this Instrument the illumination is effected by a lamp placed opposite the axis of the Microscope. This is hollow, and inside is a right-angled prism communicating with a train of prisms in the tail-piece that carry the light to the mirror.

The tail-piece is made in the form of a square box, the first prism is in the centre of the axis of the Microscope, this reflects the light to the second, situate on the top of the box or tail-piece, and this again transmits it to one at the end of the tail-piece, and this latter to the mirror. With this arrangement it will easily be understood that no change in the position of the Microscope on its horizontal axis affects the direction of the light from the lamp, and also whatever position the swinging substage be placed in, whether above or below the stage, the illumination remains constant upon the object, thus giving great facility for illumination at any angle, and also ease to find what degree of obliquity of light is best suited for the object.

A Binocular Stand (*as above*), with One pair
of Eye-pieces £35 0 0

A Monocular Stand, with One Eye-piece £31 10s. 0



WATSON & SONS'

No. 1a.

SWINGING SUBSTAGE
MICROSCOPE,

With Improved fine Adjustment.

Total height of Instrument placed vertically and racked down 18 inches.

No. 1a.

SWINGING SUBSTAGE MICROSCOPE.

This Stand is mounted on double pillars fixed to a rotating base plate on a flat tripod, has quick and fine adjustments to focus, the mirror arranged to swing either above or below the stage, our patent concentric rotating stage fully divided and with mechanical motions. This Instrument is of finest quality, most handsome appearance, finished entirely in bright brass, and is probably the most convenient pattern Instrument extant for ease of manipulation and facility of obtaining desired results.

Binocular, with 1 pair of eye-pieces	...	...	...	£25
Monocular, with 1 eye-piece	...	...	...	£22
Handsome mahogany Cabinet with inside Case packed for variety of apparatus	...	...	...	£5 5s.

The following Apparatus may be recommended to complete either of the above Stands:—

First quality, $\frac{1}{8}$ -in. Object Glass	...	...	...	£5 5s.
Ditto $\frac{1}{4}$ -in. ditto	...	...	...	£3 15s.
Ditto $\frac{1}{2}$ -in. ditto	...	...	...	£2 15s.
Ditto 1-in. ditto	...	...	...	£1 15s.
Ditto 2-in. ditto	...	...	...	£1 15s.
Ditto 3-in. ditto	...	...	...	£1 15s.
Ditto 4-in. ditto	...	...	...	£1 2s.
Extra pair Eye-pieces, B	...	...	...	£1 5s.
Ditto ditto C	...	...	...	£1 5s.
Ditto ditto D	...	...	...	£1 13s.
One pair Eye-pieces, C. Kelner	...	...	...	£2 4s.
Large size Polariscope, with rotating analyser	...	...	...	£2 2s.
Set of rotating Selenites to fit Substage	...	...	...	£3 3s.
Quadruple Nose-piece	...	...	...	£2 10s.
Graduating Diaphragm	...	...	...	17s. 6d.
Wollastons Camera Lucida	...	...	...	£1 1s.
Parabolic Illuminator	...	...	...	£1 10s.
Spot Lens	...	...	...	10s. 6d.
Parabolic side silver Reflector	...	...	...	£1 3s.
Compressorium	...	...	...	£1 10s.
Largest Stand Condenser	...	...	...	£1 10s.
Eye-piece Micrometer, with Jackson's adjusting screw	...	...	...	£1 15s.
Stage Micrometer	...	...	...	5s.
Light Moderator	...	...	...	7s. 6d.
One each of Live Boxes, 10/6, 7/6, 5/-	...	...	...	£1 3s.
Stage Forceps, 7/6, Hand Forceps, 2/6	...	...	...	10s.
Two Glass Troughs, 4/6, 1/6	...	...	...	6s.
Two Glass Stage Plates	...	...	...	2s.
Handsome mahogany Cabinet, with inside Case, fitted for apparatus	...	...	...	£5 5s.

The whole of the above if purchased at the same time, £45.

Or any of the Objectives or Apparatus enumerated on pages 31 and 32 are suitable.

No. 2a.

SWINGING SUBSTAGE MICROSCOPE.

Similar pattern to No. 1a, but smaller in size, and has concentric rotating glass stage with universal motions instead of the patent stage, finished all bright.

Binocular, with 1 pair of eye-pieces	...	...	£18 10s.
Monocular, with 1 eye-piece	...	...	£15 15s.
Handsome mahogany Cabinet, suitable, with packings for apparatus			£2 10s.

Suitable Apparatus to complete the above Stands.

First quality, $\frac{1}{8}$ -in. Object Glass	...	...	...	£5 5s.
Ditto $\frac{1}{4}$ -in. ditto	...	...	...	£3 15s.
Ditto 1-in. ditto	...	...	...	£1 15s.
Ditto 2-in. ditto	...	...	...	£1 15s.
Ditto 3-in. ditto	...	...	...	£1 15s.
Ditto 4-in. ditto	...	...	...	£1 2s.
Extra pair of Eye-pieces, B	...	...	...	£1 5s.
Ditto ditto C	...	...	...	£1 5s.
Ditto ditto D	...	...	...	£1 13s.
Large Polariscope	...	...	...	£1 15s.
Best Angular Double Nose-piece (bright)	...	...	...	£1 1s.
Graduating Diaphragm	...	...	...	17s. 6d.
Wollastons Camera Lucida	...	...	...	£1 1s.
Parabolic Illuminator	...	...	...	£1 10s.
Best Spot Lens	...	...	...	10s. 6d.
Parabolic side silver Reflector	...	...	...	£1 3s.
Large Stand Condenser	...	...	...	£1 1s.
Stage Micrometer	...	...	...	5s.
Light Moderator	...	...	...	7s. 6d.
Two Live Boxes, 7/6, 5/6	...	...	...	13s.
Stage Forceps, 7/6, Hand Forceps, 2/-	...	...	...	9s. 6d.
Two Glass Troughs, 4/6, 1/6	...	...	...	6s.
Two Glass Stage Plates	...	...	...	2s.
Upright mahogany Cabinet, with inside fitted Drawers for apparatus				£2 10s.

The whole of the above if purchased at one time, £30.

PETROLOGICAL MICROSCOPE.

A Monocular Microscope of the very highest quality, with quick and fine adjustments to focus, concentric rotating stage fitted with adjustments that it may immediately and accurately be centred by the user to any objective employed, and divided to degrees for measuring angles, the eye-piece furnished with cross lines, and having immediately above it the analyser in a fitting carrying a divided circle so that it may be easily set at right angles to the polariser, or moved round any required angle; there is also a calcspar plate to use on the eye-pieces for stauroscopic examination. The Polariser has a divided circle for setting by, and is arranged in a fitting which can be immediately turned on one side out of the field when required to do so; it is also furnished with condensing Lenses for use in showing the brushes in crystals, a Klein's quartz plate is also supplied in brass fitting to go into the nose of the Microscope immediately above the objective, and both the fine and coarse motions for focussing are divided, the whole Instrument is finished in bright brass, with 1 eye-piece, in mahogany case, fitted for apparatus ... **£13 13s.**

SUITABLE ADDITIONAL APPARATUS.

		£	s.	d.			£	s.	d.
1/4-in. Object Glass	90 deg. with				Wollaston's Camera Lucida	...	0	15	0
adjustment	...	2	10	0	Stand Condenser	...	0	10	6
Best 1-in. 25 deg.	...	1	15	0	Stage Forceps	...	0	8	6
Extra Eye-pieces B	...	0	12	6	Stage Micrometer	...	0	5	0
Ditto ditto C	...	0	12	6					

The above if purchased at one time **£7.**

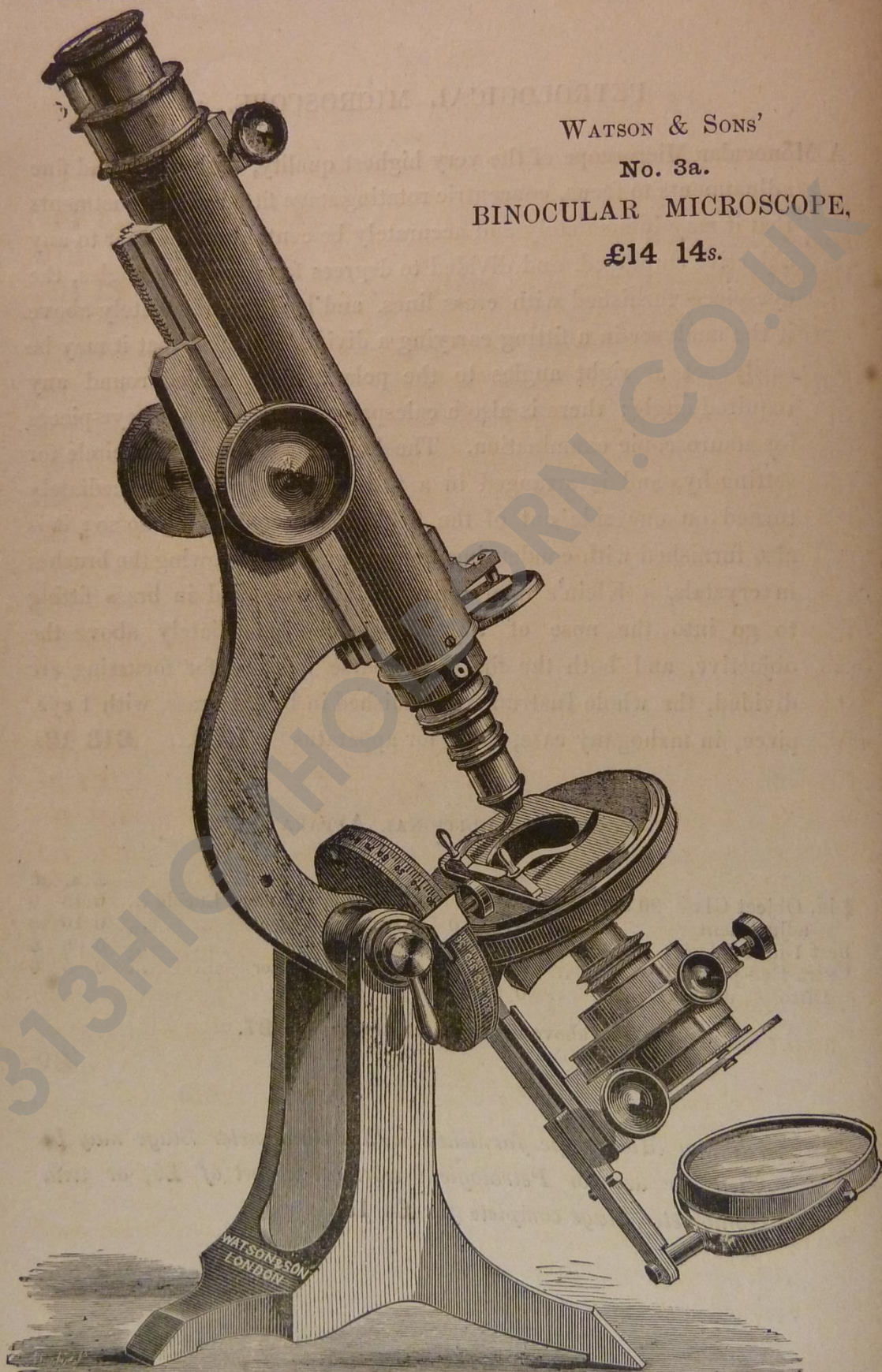
Any ordinary Microscope furnished with a Goniometer Stage may be fitted for use for Petrological work at a cost of £5, or with Goniometer Stage complete for £8 15s.

WATSON & SONS'

No. 3a.

BINOCULAR MICROSCOPE,

£14 14s.



Total height of Instrument when placed vertically and racked down $14\frac{1}{2}$ inches.

No. 3a.

SWINGING SUBSTAGE MICROSCOPE.

On solid foot as illustrated with rotating glass stage with universal motions.

Binocular, with 1 pair of eye-pieces	...	...	...	£14 14s.
Monocular, with 1 eye-piece	...	...	...	£12
Upright mahogany Cabinet for either	...	...	...	£1 10s.

Suitable Apparatus to complete the above Stands.

First quality, $\frac{1}{4}$ -in. Object Glass, 90 deg.	...	...	...	£2 10s.
Ditto 1-in. ditto	...	...	...	£1 15s.
Ditto 2-in. ditto	...	...	...	£1 15s.
Ditto 4-in. ditto	...	...	...	£1 2s.
Extra pair of Eye-pieces, B.	...	...	...	£1 5s.
One Eye-piece each, C 12/6, D 16/6	...	...	...	£1 9s.
Large Polariscopes	...	...	...	£1 15s.
Bent double Nose-piece	...	...	...	17s. 6d.
Graduating Diaphragm	...	...	...	17s. 6d.
Beale's neutral tint Camera Lucida	...	...	...	7s. 6d.
Wenham's Parabolic Illuminator	...	...	...	£1 10s.
Parabolic side silver Reflector	...	...	...	£1 3s.
Best Spot Lens	...	...	...	19s. 6d.
Stand Condenser	...	...	...	10s. 6d.
Live Cage	...	...	...	5s. 6d.
Stage Micrometer	...	...	...	5s.
Two Glass Troughs	...	...	...	6s.
Glass Stage Plate	...	...	...	1s.
Upright mahogany Cabinet for Instrument, and fitted for above apparatus	...	...	...	£2

The whole of the above if purchased at one time, £18.

Suitable for any Microscope.

WATSON & SONS' Universal Microscope Lamp, on polished brass stand with porcelain shade, an extremely convenient pattern to use, and very efficient, with mahogany case £1 1s.

No. 1.

JACKSON MODEL
BINOCULAR MICROSCOPE
STAND.W.J. CARPENTER, SC.
GREAT BRITAIN

No. 1.

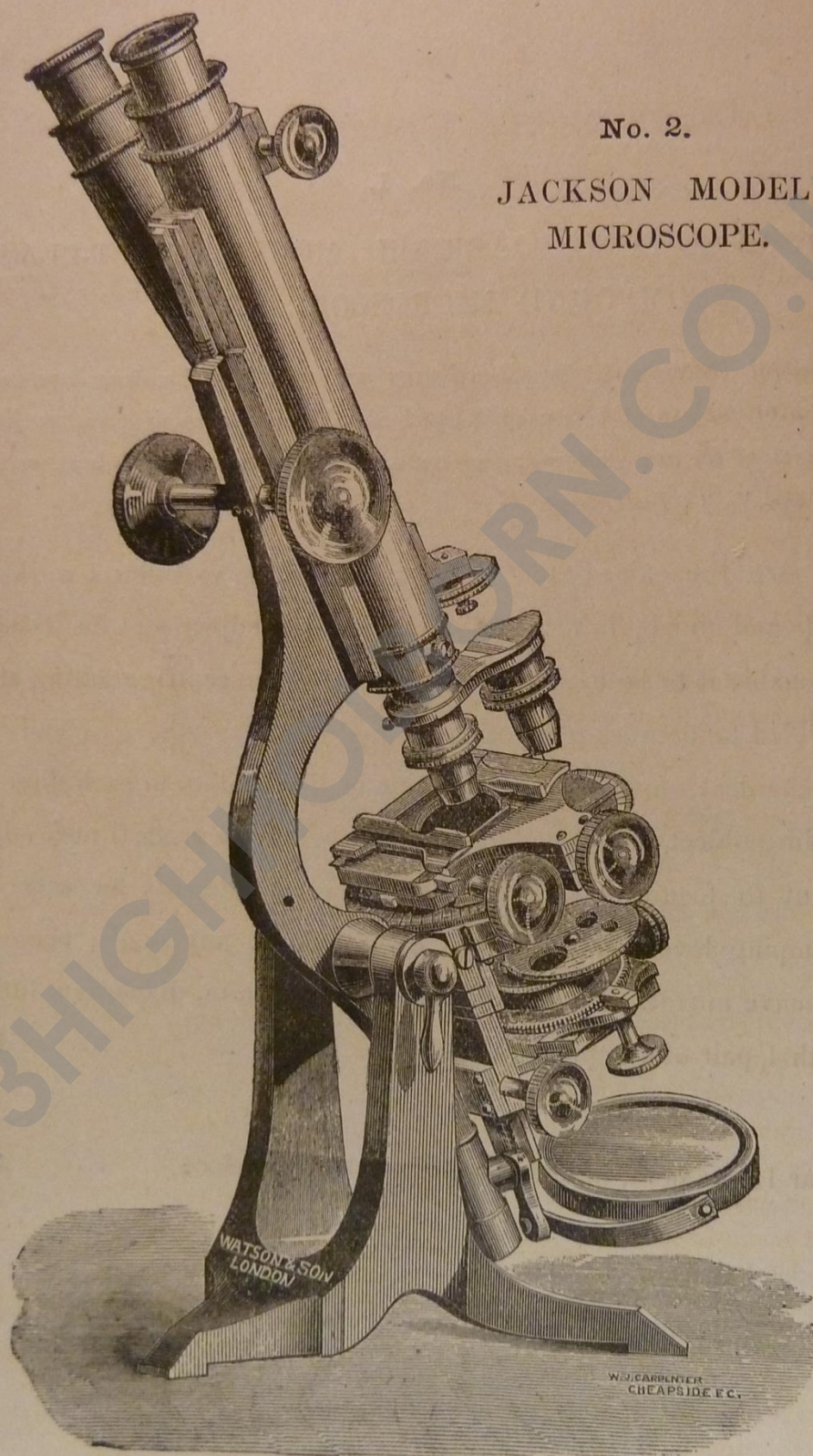
WATSON & SONS' JACKSON MODEL FIRST-CLASS
COMPOUND MICROSCOPE STAND.

Very useful Instruments for all ordinary purposes, but of course have not the facility for use of oblique light obtained with the Swinging Substage Instruments of the new patterns: they are now only made to order, being superseded by the No. 1A Instrument.

Largest size Binocular Stand as illustrated, of the very finest workmanship and finish, having sufficient range of adjustment for focussing to enable it to be used with any objective, concentric rotating stage, divided to degrees for measuring angles of crystals, &c., and with mechanical movements, giving one inch of motion in each direction, sliding object holder and clamp; substage with vertical rack adjustment to focus, and rectangular screw adjustments for centring, clamping lever for fixing the instrument at any angle, plane and concave mirrors mounted on a double crank arm, diaphragm fitting; with 1 pair of eye-pieces, either A or B £25

A similar Instrument, but Monocular, with 1 eye-piece £21

The Set of Apparatus quoted on page 11 to complete the No. 1a Stands would be also suitable for these Instruments.



Total height of Instrument, placed vertically and racked down,
 $15\frac{1}{2}$ inches.

No. 2.

JACKSON MODEL COMPOUND MICROSCOPE.

Large size first-class Binocular Stand with sufficient range of coarse adjustment to focus a 4-in. objective, lever fine adjustment, concentric rotating stage, divided to degrees, and with mechanical movements giving $\frac{3}{4}$ -in. of motion in each direction, sliding object holder and clamp, rack to eye-pieces to adjust to width of user's eyes, large double mirror on jointed arm, clamping bar for fixing the instrument at any angle, diaphragm fitting beneath the stage with wheel of stops. This instrument is of finest workmanship and finish; with 1 pair of eye-pieces £13 13s.

A similar Instrument, but Monocular, with 1 eye-piece ... £10 10s.

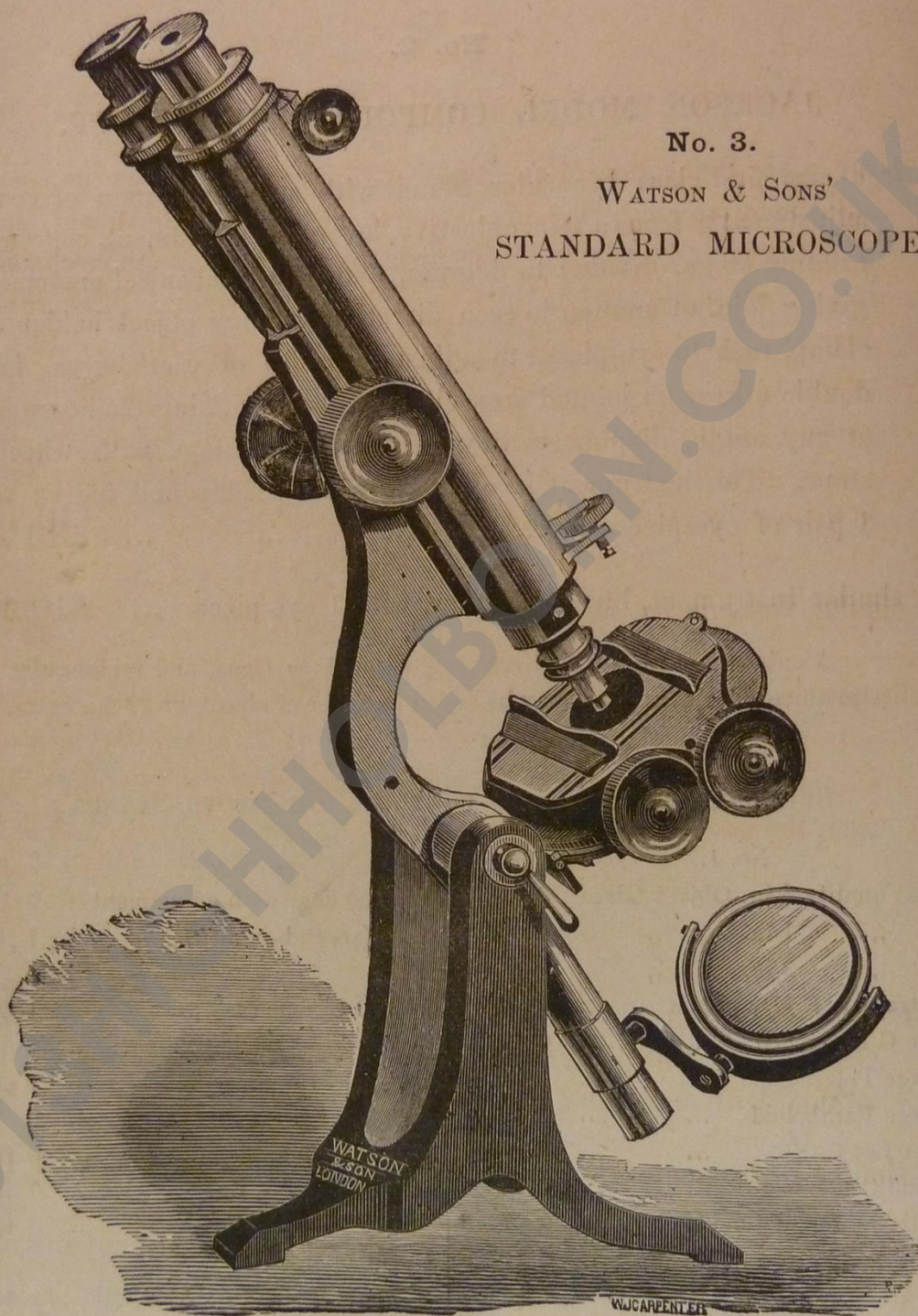
A substage with vertical rack adjustment to focus, and rectangular adjustments for centring may be added to either of above for £2 2s. extra.

SUITABLE APPARATUS TO COMPLETE THE ABOVE STANDS.

No. 1.	£	s.	d.	No. 2.	£	s.	d.
First quality $\frac{1}{4}$ -in. Object Glass	3	15	0	$\frac{1}{4}$ -in. 90 deg. with adjustment	2	10	0
„ 1-in. „	1	15	0	1-in. (second quality)	...	1	2 0
„ 2-in. „	1	15	0	2-in. „	...	1	2 0
Extra pair B Eye-pieces	...	1	5 0	Pair B Eye-pieces	...	1	5 0
One C Eye-piece	...	0	12 6	Polariscope	...	1	5 0
Large Polariscope	...	1	15 0	Paraboloid	...	1	2 0
Large Paraboloid	...	1	10 0	Spot Lens	...	0	7 6
Spot Lens	...	0	7 6	Stand Condenser	...	0	10
Stand Condenser	...	0	16 6	Beale's Camera Lucida	...	0	7 6
Beale's Camera Lucida	...	0	7 6	Bent double Nose-pieces	...	0	17 6
Bent double Nose-piece	...	0	17 6	Upright mahogany Case for			
Parabolic Side Silver Illuminator	1	3	0	Instrument and Apparatus	1	15	0
Upright mahogany Cabinet for							
Instrument and Apparatus	2	10	0	The above if all purchased at one			
				time			
The above if purchased all at one				time			
time							

time £16 10s.

time £11.



No. 3.

WATSON & SONS'
STANDARD MICROSCOPE.

STANDARD BINOCULAR MICROSCOPE.

Height when racked down, $14\frac{3}{8}$ inches.

No. 3.

WATSON & SONS' "STANDARD" MICROSCOPE.

A large size Binocular Microscope, with sufficient range of coarse adjustment to focus a 4-in. objective, lever fine adjustment, rack adjustment to draw tubes, concentric rotating stage, with mechanical movements, giving $\frac{3}{4}$ -in. of motion in each direction, large double mirror on an arm, jointed immediately below the stage to allow of throwing light at a great angle of obliquity, diaphragm fitting and wheel of stops beneath the stage, with 1 pair of eye-pieces, best 1-in. objective 25 deg., and $\frac{1}{4}$ -in. objective 90 deg., stand condenser, in mahogany case £16 10s.

A similar Instrument, Monocular £14

Substage, with rack adjustment to focus, and rectangular centreing adjustments, fitted so that the whole of it with the focussing adjustment can be removed when required to use very oblique light from the mirror £2 2s.

No. 4.

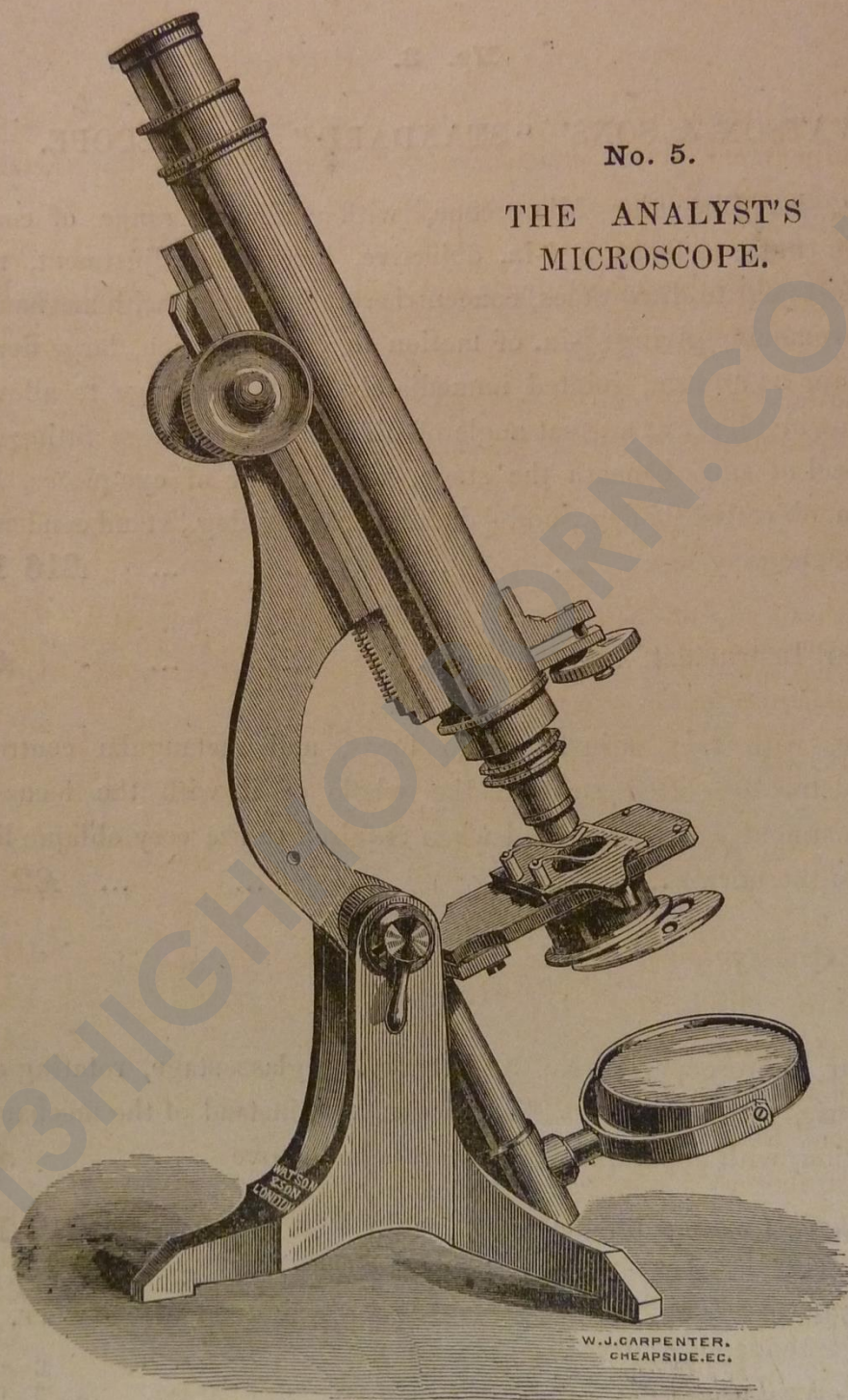
Binocular Microscope, as No. 3, but having glass stage, rotating concentric, with universal sliding movements, instead of the mechanical motion, with apparatus, &c., as described above ... £15

A similar Instrument, Monocular £12 10s.

ADDITIONAL APPARATUS SUITABLE FOR STANDARD MICROSCOPE.

	£	s.	d.		£	s.	d.
Extra pair B Eye-pieces ...	1	5	0	$\frac{1}{8}$ -in. Objective 100 deg. ...	3	0	0
One C Eye-piece ...	0	12	6	$\frac{1}{8}$ -in. for Binocular ...	2	15	0
Large Polarising Apparatus ...	1	15	0	2-in. Objective ...	1	15	0
Large Paraboloid ...	1	10	0	Double Nose-piece ...	0	17	6
Neutral Tint Camera Lucida ...	0	7	6	Live Box ...	0	7	6
Stage Forceps ...	0	7	6	Zoophyte Trough ...	0	3	6
Hand ditto ...	0	2	0	Glass Stage Plate ..	0	1	0

The above if purchased at one time £14.



ANALYST'S MICROSCOPE.

Height when placed vertically and racked down, $14\frac{1}{2}$ inches.

No. 5.

THE ANALYST'S MICROSCOPE.

Large and extremely solid Monocular Microscope with rackwork coarse adjustment, giving sufficient range for 4-in. objective, fine adjustment, universal sliding stage, diaphragm fitting under stage with wheel of stops, double mirror, plane and concave, with B eye-piece, $\frac{1}{8}$ -in. objective of 80 deg., and 1-in. of 16. deg., stand condenser, in mahogany cabinet £7 15s.

A similar Instrument, Binocular, with 2 eye-pieces, and sliding adjustment to draw tubes £10 10s.

Mechanical stage with rotary motion extra to above Instrument if required £2 10s.

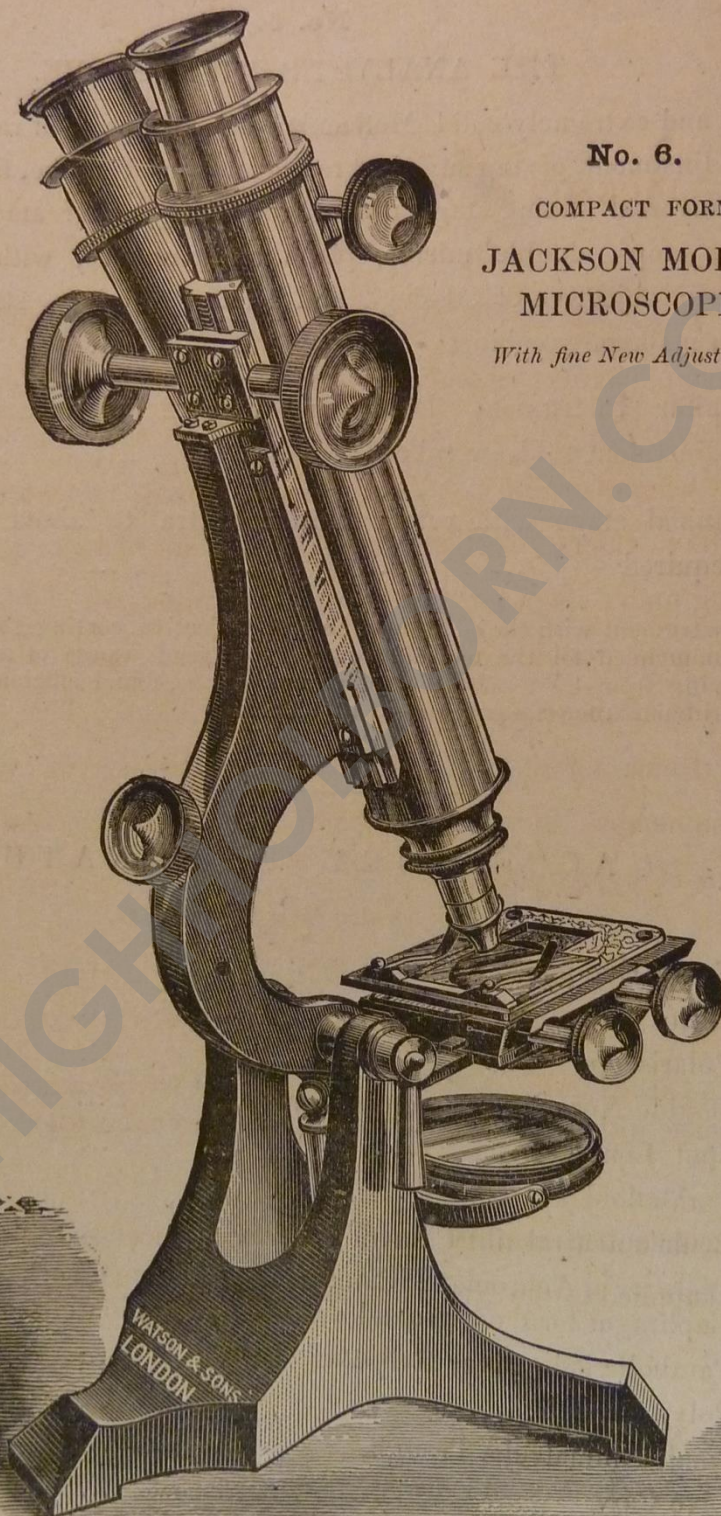
This Instrument with the addition of an $\frac{1}{8}$ -in. Objective, costing £3 extra, is strongly recommended for the use of Brewers, it gives a range of magnifying power varying from 80 to 600 diameter, and will be found efficiently to answer all requirements for the purposes of this Trade.

ACCESSORY APPARATUS

Suitable for these Microscopes.

Extra Eye-pieces, B	...	...	...	...	10s. 6d.
Ditto ditto, D	...	...	...	...	12s. 6d.
Polariscope	...	...	...	...	£1 5s.
Double Nose Piece, angular form	...	...	...	...	17s. 6d.
Spot Lens	...	...	...	...	8s. 6d.
Paraboloid	...	...	...	...	£1 1s.
Beale's neutral tint Camera Lucida	...	...	...	...	7s. 6d.
Webster's Achromatic Condenser, with rackwork for adjustment, diaphragm for dark ground or oblique illumination, and cap	...	...	...	...	£2 2s.
Parabolic side silver Reflector	...	...	...	...	£1 3s.
Polyp Trough	...	...	...	...	5s. 6d.
Small Animalculæ Trough	...	...	...	...	1s.
Live Cage	...	...	...	...	5s. 6d.
Stage Forceps	...	...	...	...	5s. 6d.

The above if all purchased at one time £8 10s.



No. 6.

COMPACT FORM

JACKSON MODEL
MICROSCOPE,

With fine New Adjustment.

Total height when placed vertically and racked down $14\frac{1}{2}$ inches.

No. 6.

JACKSON MODEL MICROSCOPE STAND,
WITH NEW FINE ADJUSTMENT.

Compact Binocular Stand of the very highest quality and finest workmanship, having rackwork adjustment to focus, and WATSON & SONS' improved fine adjustment, which is perfectly free from lateral motion even when working with the highest powers, rackwork adjustment to draw tubes, mechanical and rotary movements to stage, tube fitting under stage for illuminating apparatus, wheel of diaphragms, extra large double mirror on an arm jointed immediately below the stage to allow of obtaining very oblique light. This Instrument is of extreme solidity and of most convenient size, it can be strongly recommended to anybody requiring one for constant use; with

1 pair of eye-pieces	...	...	...	...	£10 10s.
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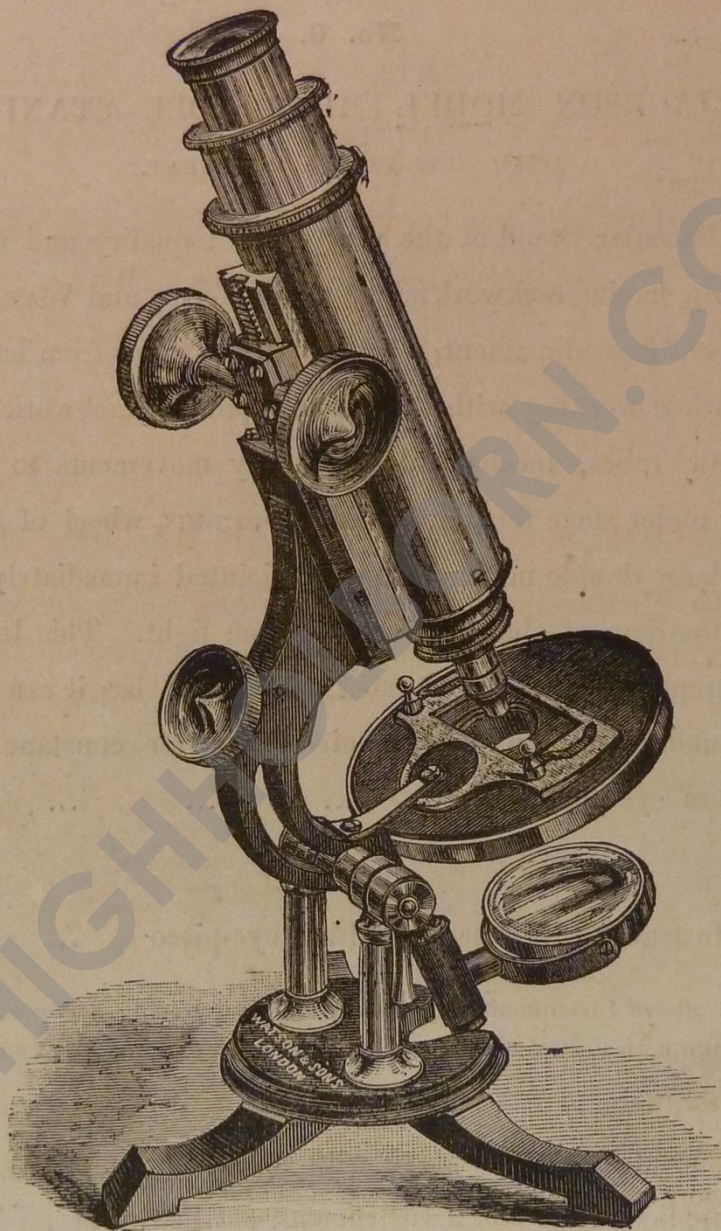
A similar Instrument, Monocular, with 1 eye-piece	...	£8
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The above Instrument may also be supplied having a concentric rotating glass stage with universal motions instead of the one quoted at same price.

Or with concentric rotating stage with mechanical motions, similar to that supplied to the No. 2 Instrument, costing extra £2 10s.

Any of the Sets of Apparatus quoted with other Microscopes are suitable to this Stand and may be added at their respective costs.

WATSON & SONS' WALES' FORM AMERICAN
MICROSCOPE.



The peculiar advantage of this pattern Instrument proceeds from the sliding arc by which the body is attached to the foot, which causes that the centre of gravity of the Instrument is always the same, whether the tube be placed upright or horizontal, so it is perfectly firm in either position and allows of a lightness of construction which is impossible with any other pattern except at the sacrifice of steadiness. This Instrument is fitted with WATSON & SONS' improved form fine adjustment and first-class $\frac{1}{5}$ -in. and 1-in. object glasses, in mahogany case **£8 10s.**

The following additional Apparatus may be supplied if desired.

Extra Eye-pieces C	...	...	...	...	12s. 6d.
Polariscope and Selenite	...	...	...	...	£1 5s.
Paraboloid	...	...	...	...	£1 1s.
Spot Lens	...	...	...	...	7s. 6d.
Stand Condenser	...	...	...	...	7s. 6d.
Stage Forceps	...	...	...	...	5s.
Beale's Neutral Tint Camera Lucida	...	...	...	...	7s. 6d.

The above if purchased at one time £4.

No. 7.

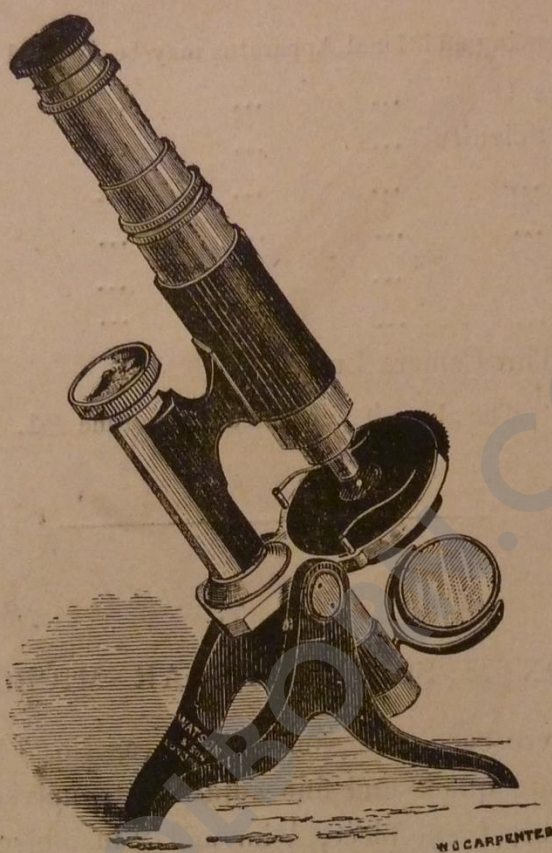
WATSON & SONS' POPULAR MICROSCOPE.

A Monocular Microscope, the same pattern as No. 5 but rather smaller in size, having quick and fine adjustments, universal sliding stage, double mirror, 1 eye-piece, $\frac{1}{2}$ -in. and 2-in. objectives, stand condenser, live cage and forceps, polarising apparatus and selenite, in mahogany cabinet £7 10s.

DISSECTING MICROSCOPE.

A very steady Form on 3 feet, with circular glass stage $4\frac{1}{2}$ -inches diameter, rackwork focussing movement, 3 powers, $\frac{1}{4}$ -in., $\frac{1}{2}$ -in., and 1-in. set of dissecting knives, needles, scissors, forceps, and mahogany case with drawer £2 5s.

* * *Special Instruments of every kind made to Drawings, or designed to meet requirements.*



No. 8.

THE MEDICAL OR COLLEGE MICROSCOPE.

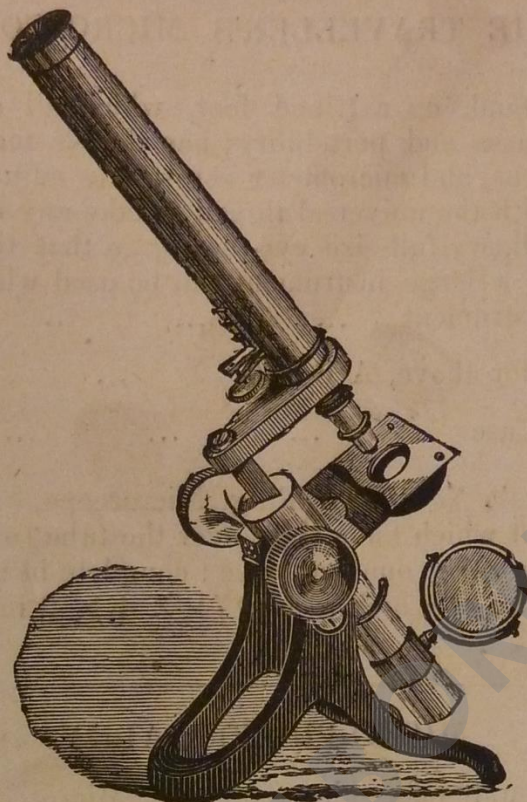
Having sliding body for coarse adjustment, very delicate screw for fine adjustment, draw tube, wheel of diaphragms, tube fitting for under-stage apparatus, plane and concave mirrors, with 1 eye-piece, first-class $\frac{1}{5}$ -in. and 1-in. objectives, stand condenser, in mahogany case £5 12s. 6d.

ACCESSORY APPARATUS

Suitable for these Instruments.

Extra Eye-piece	...	...	...	...	8s. 6d.
Achromatic Condenser	...	...	...	...	£1 5s.
Polariscope	...	...	...	...	£1 5s.
Spot Lens	...	...	...	...	7s. 6d.
Paraboloid	...	...	...	...	16s. 6d.
Camera Lucida	...	...	...	...	6s.
Stage Micrometer	...	...	...	...	5s.

The above if purchased at one time £4.



No. 9.

WATSON & SONS' EDUCATIONAL MICROSCOPE.

Has quick and fine adjustments for focussing, sliding stage, 1 eye-piece, set of 3 achromatic objectives, $\frac{1}{4}$ -in., $\frac{1}{2}$ -in., and 1-in., wheel of diaphragms, live cage, forceps, in mahogany case with large drawer underneath for objects, &c. **£3 3s.**

ADDITIONAL APPARATUS IF REQUIRED.

Extra Eye-piece	...	...	...	...	8s. 6d.
Camera Lucida	...	...	...	...	6s.
Stand Condenser	...	...	...	...	7s. 6d.
Low power Objective, 2-in.	...	...	...	...	15s.

The above if purchased at one time **£1 10s.**

THE TRAVELLER'S MICROSCOPE.

- A Monocular Stand, on a tripod foot, which all closes up together for compactness and portability; has double mirror, sliding coarse motion to focus, and micrometer screw fine adjustment, draw tube; it is fitted with the universal thread to take any objective, and also takes the ordinary full-size eye-pieces, so that the eye-glasses and powers from a large instrument can be used with it; a thoroughly well-made instrument £2 2s.
- Eye-pieces for above, A B or C 10s. 6d.
- Mahogany Case 12s. 6d.

WATSON & SONS' New Travelling Microscope, a small stand on triangular foot which folds right over the tube to pack up, has rack to focus, draw tube, one eye-piece; complete in mahogany case the outside measure of which is only $7\frac{1}{4} \times 4 \times 3$ inches ... £2 5s.

MICRO-PHOTOGRAPHY.

- A complete Apparatus for photographing Microscopic Objects, and capable of enlarging them any size up to $6\frac{1}{2}$ -inches diameter, consisting of an illuminating lamp, a camera, 1 double dark slide, with inner frame to hold plates, $4\frac{1}{4} \times 3\frac{1}{4}$, 5×4 , and $6\frac{1}{2} \times 4\frac{3}{4}$ inches, and microscope stage, with graduating diaphragm immediately behind the object and all requisite adjustments £15

WATSON AND SONS' LANTERN MICROSCOPE.

Consisting of a very powerful Lantern burning paraffin, with compound condensing lenses, 4 inches diameter, and in front a stage, as of a microscope, and beyond this a fitting to take the powers with rack adjustment to focus, and made with universal thread so that the objective from any microscope may be used with it; the image from the power is received on a right-angle prism, which throws the enlarged picture down on a sheet of paper spread on a horizontal surface to receive it below. By this means an object can be conveniently examined by several persons at once, or *can be more easily and correctly traced or drawn than with any other apparatus.* The Instruments are of good workmanship and finish. Price, complete in case £6

The Instrument is very compact, outside measurement of case being only $14\frac{1}{2}$ -in. by $5\frac{1}{2}$ -in. by $9\frac{3}{4}$ -in. The Microscope part of this is detachable, and if required an achromatic front lens can be supplied to fit in its place (price 15s. extra), when it can be used as an ordinary Magic Lantern.

MICRO-SPECTROSCOPE.

With rack motion to adjust to focus, and adjustment for width of slit, shews 2 spectra in the field of view at the same time, the small prism for the second spectrum can be removed when only one is required, the prisms are also arranged to slide from position at will, leaving the field of view open as an ordinary eye-piece, the stage for holding test tubes, &c., can be removed with its mirror from the body of the Instrument when not required, in mahogany case

£6

ACHROMATIC OBJECT GLASSES,

Of the very best construction and largest angular aperture.

Object Glass.	Angular Aperture.	Magnifying Power with the various Eye-Pieces.						PRICE.		
INCH.		A	B	C	D	E	F	£	s.	d.
4	9	10	14	28	40	52	65	1	2	6
3	12	20	27	40	52	66	84	1	15	0
2	16	30	40	60	75	100	130	1	15	0
1½	22	35	48	72	90	120	135	1	15	0
1	25	60	80	120	150	200	258	1	15	0
1	30	60	80	120	150	200	...	2	2	0
¾	35	75	100	150	190	253	325	2	5	0
½*	75	100	133	200	250	335	430	3	15	0
¼*	40	...	...	(Binocular.)		...	...	2	15	0
1/10*		170	227	350	440	580	700	3	15	0
1/16*	90	250	333	500	625	835	1050	2	10	0
1/24*	100	250	333	500	625	835	1050	3	15	0
1/32*	125	270	360	540	675	900	1135	4	4	0
1/40*	140	450	600	900	1125	1500	1890	5	5	0
1/50*	140	500	666	1000	1225	1635	2060	6	6	0

Those marked * have an adjustment for covered and uncovered objects.

Lieberkuhn's, for ½-in., 7s. 6d., 1-in., 10s., 2-in., 15s.

WATSON & SONS' Achromatic Objectives, of smaller angular apertures, giving fine definition and good working distance, recommended as thoroughly useful powers:—

		£	s.	d.			£	s.	d.
3-in.	10 deg.	1	2	0	½-in.	40 deg.	1	10	0
2 "	12 "	1	2	0	¼ "	75 "	1	17	6
1½ "	14 "	1	2	0	⅓ "	80 "	2	0	0
1 "	16 "	1	2	0	⅔ "	90 "	2	5	0
¾ "	30 "	1	15	0	1 "	100 "	3	0	0
1/2 "					1½ "	...	5	5	0
1/3 "					2 "	...			
1/5-in., Homogeneous Immersion ...									

1 2-in., of simpler construction than above, but good for many purposes ... 15s.
 2 1-in. ditto ditto ... 15s.
 3 ½-in. ditto ditto ... £1 10s.

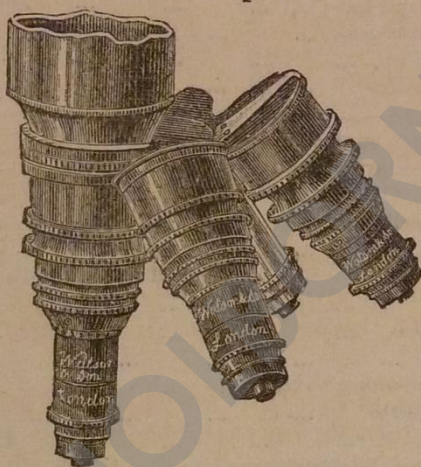
APPARATUS FOR MICROSCOPES.

- 1 Webster's Achromatic Condenser, with rack and pinion adjustment and diaphragm for dark ground and oblique illumination ... £2
- 2 Webster's Achromatic Condenser, with rackwork adjustment, fitted complete for a microscope without substage, suitable for high and low powers, with graduating diaphragm, and series of stops and apertures for dark ground and oblique illumination .. £3 15s.
- 3 Ditto ditto, fitted with polarizer ... £5 5s.
- 5 Polarising Apparatus, complete ... £1 5s.
- 6 Ditto, with larger prisms ... £1 15s.
- 7 Ditto ditto, with rotating analyzer ... £2 2s.
- 8 Very large Nicols' Prism mounted as polarizer ... £2 2s.
- 9 Eye-pieces, A. B. & C., large size, engraved ... 12s. 6d.
- 10 Ditto, D. & E. ditto ditto ... 16s. 6d.
- 10* Eye-pieces, ordinary, A. B. & C. ... 10s 6d.
- 11 Orthoscopic or large Field Eye-pieces ... £1 3s.
- 12 Double Nose-piece, of the improved angular form which holds the objective not in use quite away from the stage ... 17s. 6d.
- 13 Double Nose-piece, of the straight form ... 12s. 6d.
- 14 Rectangular Prism with fittings ... £1 10s.
- 15 Rectangular Achromatic Prism ... £2
- 16 Ditto ditto, mounted on stand with universal movements £2 10s.
- 17 Rotating Compound Selenite Stage with 3 films of selenite £2 2s.
- 18 Nachet's Prism for Oblique Illumination ... £1 1s.
- 19 Amici's ditto ditto ... £1 10s.
- 20 Reade's Diatom Prism with fittings ... £1
- 21 Nachet's Erecting Prism, to fit on eye-piece ... 18s. 6d.
- 22 Bull's-eye Stand Condensers, small size ... 5s. 6d.
- 23 Ditto with ball and socket motion, *recommended* 7s. 6d., 10s. 6d.
- 24 Large size Stand Condenser, the upright and horizontal bar pattern 16s. 6d.
- 25 Condensers, largest size, mounted various patterns 21s. to £1 10s.
- 28 Wollaston's Camera Lucida ... 15s. and 21s.
- 29 Improved form of Neutral Tint Reflector for Drawing 7s. 6d.
- 30 Paraboloid for dark ground illumination £1 2s. and £1 10s.
- 31 Spot Lens ... 7s. 6d.
- 32 Improved Spot Lens in sliding mount ... 10s.
- 34 Parabolic side silver Reflector, with ball and socket adjustments to attach to screw of objective ... £1 3s.
- 35 Ditto, to fix to stage, or limb of instrument ... £1 3s.
- 36 Live Boxes ... 5s. 6d., 7s. 6d., 10s. 6d.
- 37 Compressorium ... 15s., £1 1s., £1 10s.
- 38 Stage Forceps ... 3s. 6d., 5s. 6d., 7s. 6d., 10s. 6d.
- 39 Graduating Diaphragms ... 17s. 6d.
- 40 Centreing Nose-piece, to make any objective true with a rotating stage ... 15s.
- 40* Facility Nose-piece, to allow objectives to slide into their fitting instead of screwing, with four adapters ... £1 1s.

40	Glass Animalculæ Troughs	...	...	1s. 6d., 2s., 4s. 6d.
41	Glass Dissecting Troughs	...	...	2s. 6d.
42	Glass Stage Plates	...	...	1s. 6d.
43	Light Moderators in various forms	...	...	2s. to 6s.
44	Stage Micrometer, ruled in $\frac{1}{100}$ and $\frac{1}{1000}$	...	...	5s.
	Ditto ditto, ruled in $\frac{1}{10}$ and $\frac{1}{100}$ of millimetre	...	...	5s.
45	Eye-piece Micrometer, in brass circle to drop in eye-piece	...	...	7s. 6d.
46	Ditto ditto, with Jackson's adjusting screw	...	...	17s. 6d.
	Ditto ditto ditto, with eye-piece	...	...	£1 15s.

QUADRUPLE NOSE-PIECE.

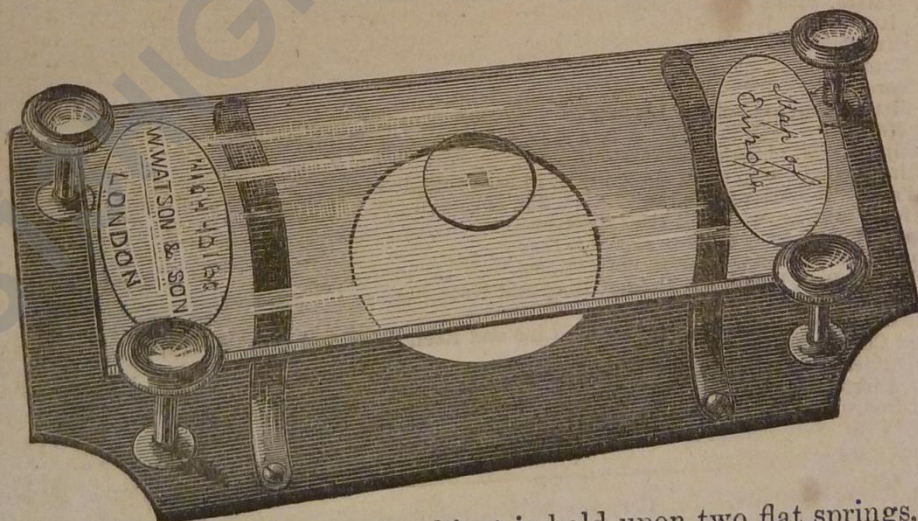
WATSON & SONS' new pattern Angular Form, exceedingly light and compact.



£2 10s.

Triple Nose-Piece, bent form, £2 2s.

WATSON & SONS' NEW SAFETY STAGE.

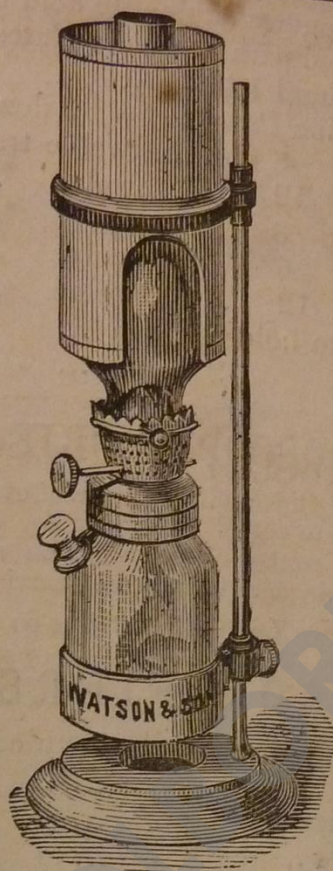


For use with high powers, the object is held upon two flat springs, and should it accidentally be touched by the objective, it at once gives way on them. The base is vulcanite; it is a very light piece of apparatus 7s. 6d.

Materials, &c., for Mounting Objects.

	£	s.	d.
Turn Table for making cement cells and finishing slides	6s. 6d. and	0	7 6
Ditto Improved Form, superior quality		0	10 6
Topping's Machine for cutting wood and other sections		0	17 6
Knife for ditto	1s. 6d. and	0	2 6
Ditto very superior make and quality for soft substances		0	7 6
Mr. Cole's pattern section Cutting Machine with punches complete		1	10 0
Ditto ditto Knife, in case		0	4 6
Cathcart's Ether Freezing Microtome complete		0	17 6
Hot Plate and Spirit Lamp for mounting		0	5 6
Smith's Spring Mounting Compress for glass covers		0	8 6
Wire Spring Clips	per dozen	0	1 6
Diamonds for writing on glass	each	0	5 0
Ditto for cutting slips and thin glass	15s. to	1	1 0
Machine for cutting thin glass circles, with diamond complete		1	10 0
Flatted Crown Glass Slips (3 in. by 1 in.)	per dozen, 4d. per gross	0	3 6
Ditto ditto smooth edges	6d. "	0	5 0
Best quality, very superior	per dozen	0	0 8
Extra thin ditto	at 1s. per dozen and	0	1 6
Best Plate Glass ditto	per dozen	0	1 0
Mahogany Slips (3 in. by 1 in.) with sunk cells or with holes through	"	0	1 0
Plate Glass Slips (3 in. by 1 in.) excavated cells	"	0	2 0
Opal ditto ditto	"	0	3 0
Plate Glass ditto sand blast cells	"	0	3 0
Round Glass Ring Cells	1s. 6d. if extra thin	0	2 0
	If fixed on slips with marine glue	0	3 6
Square Glass Ring Cells, 4s.	if on slips	0	6 0
Ebonite Rings Cells, assorted sizes	per box 100	0	1 6
Pure Tin ditto ditto	"	0	2 6
Thin Glass Covers, square, in one-ounce boxes	"	0	3 0
Ditto ditto circles ditto	"	0	4 0
Extra thin Circles	6s. and 8s. per ounce to	0	10 0
Ditto ditto for 1-25th gauged, 6d. per dozen discs; for 1-50th	per dozen	0	0 9
Broken Pieces of Thin Glass (one-ounce boxes) for experiments	per box	0	1 0
Cards for centreing slips while mounting	each	0	0 6
Buff Block for cleaning thin glass covers	"	0	1 0
Bottle with glass cap outside for balsam and varnishes (box and postage 6d.)	"	0	2 0
Round Punches for cutting holes in labels, 1s. 6d.; large sizes	"	0	2 0
Dissecting Knives, with ebony handles	"	0	1 6
Fine ditto ivory ditto	"	0	1 9
Best Dissecting Scissors, straight	"	0	2 6
Ditto ditto elbow handles, 4s.; curved blades	"	0	6 0
Fine Steel Forceps	"	0	1 6
Ditto ditto curved points, best make	"	0	2 6
Dissecting Needles, wood handle, 6d.; Ivory, 1s.; Best Needle Holders	"	0	2 6
Best Valentin's Knife, in case complete	"	0	17 6
Best Injecting Syringe, stop cock, three pipes, in case complete	"	0	12 6
Rutherford's Freezing Microtome, three sizes, 21s, 30s., and	"	1	17 6
Air Pump for mounting, with bell glass receiver	"	1	1 0
Glass Dipping Tubes, 3d.; three in morocco case	"	0	1 6
Corked Bottles for collecting insects, diatoms, &c.	per dozen	0	2 0
Single Collecting Rod, Bottle and Holder, Ring and Net	each	0	6 6
Ditto ditto	"	0	12 6
Best Jointed Rod, two Bottles, Drag Hooks, Line and Reel, Ring and Net, Spoon, and Cutting Hook		0	17 6
Pocket Magnifiers for insects, plants, diatoms, &c.	1s. each to	0	10 0
Dissecting Microscopes	21s. to	2	5 0
Dissecting Instruments in cases complete	10s. to	2	0 0
Watson and Sons' New Pocket Botanical Microscope, in case complete		1	15 0

Finest Canada Balsam. Dr. Carpenter's Gelatine Compound. Gum Damar Medium. Purest Glycerine. Caoutchouc and Shellac Cement for making Cells. Black Asphalte Varnish for finishing slides. Best Gold Size. Jeffries' Marine Glue. White Zinc Varnish. Red and Green Cement. Aniline Staining Solutions.—Blue, Eosine, Green Iodine, Saffronine, Atlas Scarlet, Sloeline (Blue Black), Vesuvine. All 1s. per Bottle. Bell's Cell Cement, 1s. 6d. Acid Aniline Green, and Borax Carmine for double staining, 1s. per Bottle. Box and Postage, 4d. each.



MICROSCOPE LAMPS.

- | | | |
|---|---|-------------|
| 1 | Microscope Lamp for paraffin, as illustrated (WATSON & SONS' pattern), very efficient, very convenient, strongly recommended | 15s. |
| 2 | Microscope Lamp on rising bar, large size with shade ... | £1 1s. |
| 3 | Most complete Microscope Lamp for paraffin, on a rising bar, to fix at any height, silvered reflector, bull's-eye condenser, tinted chimney, and porcelain shade, a new and most convenient pattern | £1 15s. |
| 4 | Small Glass Microscope Lamp for mineral oil | ... 3s. 6d. |
| | Mahogany Case for Microscope Lamp | ... 6s. 6d. |
| | Polished pine Case for Ditto | ... 5s. |

CABINETS FOR MICROSCOPE OBJECTS.

- | | | |
|---|---|-------------|
| 1 | Very neatly made Cabinet of polished pine, with glass door, lock and key, to hold 200 objects | ... £1 1s. |
| 2 | Ditto ditto, to hold 500 objects | ... £2 |
| 3 | Ditto ditto, to hold 750 objects | ... £2 10s. |
| 4 | Ditto ditto, to hold 1,000 objects | ... £3 |
| 5 | Mahogany Cabinet of superior workmanship with mouldings top and bottom, to hold 280 objects, each drawer numbered | ... £3 |
| 6 | A similar Cabinet, with an extra drawer deep enough to hold materials, &c. | ... £3 5s. |

7	Large handsome mahogany Cabinet to hold 500 objects, each drawer numbered and furnished with porcelain plates on the front	£5 10s.
8	Ditto ditto to hold 1,000	£7 10s.
9	Very neat polished Pine Case, to hold 3 doz. objects in six trays,	3s.
10	Ditto ditto 6 doz. in twelve trays ...	5s. 6d.
11	Ditto ditto 12 " twelve " ...	12s. 6d.
12	Mahogany ditto 3 " six " ...	5s. 6d.
13	" ditto 6 " twelve " ...	8s.
14	" ditto 12 " twelve " ...	£1
15	Cloth covered Cases to hold 1 dozen	9d.
16	Ditto ditto 2 dozen	1s.

MICROSCOPIC OBJECTS.

A very large collection of Objects illustrative of every branch of Microscopical Study kept always in stock to select from, and for the convenience of Country Residents any number will be sent for inspection on deposit of the amount, or a London reference. Those not kept to be returned carriage paid within one week.

Fully descriptive List sent post free on application.

MAGNIFIERS.

1	Pocket Magnifier, in folding shell or vulcanite mount, of the very best quality, 1 lens	3s. 6d.
2	Ditto ditto, 2 lenses	5s. 6d.
3	Ditto ditto, 3 "	7s. 6d.
4	Ditto ditto, 3 " with diaphragm	8s. 6d.
5	Ditto ditto, second quality in horn, 1 lens	2s.
6	Ditto ditto, " " 2 lenses	3s.
7	Ditto ditto, " " 3 "	4s.
8	Ditto ditto, 2 extra large lenses	4s. 6d.
9	Stand to hold either of the preceding for dissecting	2s.
10	Coddington Lens in German silver mount	4s. 6d.
11	Ditto ditto, improved slide adjusting cover	12s. 6d.
12	Ditto ditto, large size	17s. 6d.

WORKS ON THE MICROSCOPE.

COOKE	-	"One Thousand Objects for the Microscope"	1s.
SACHS	-	"Text Book of Botany"	£1 11s. 6d.
CARPENTER	-	"The Microscope and its Revelations"	12s. 6d.
HOGG	-	"The Microscope"	7s. 6d.
BEALE	-	"How to Work with the Microscope"	£1 1s.
WOOD	-	"Common Objects of the Microscope"	1s.
LANKESTER	-	"Half-hours with the Microscope" ...	2s. 6d.
GRIFFITH & HENFREY	-	Micro-graphic Dictionary	£2 12s. 6d.
DAVIES	-	"Mounting and Preparing Objects" ...	2s. 6d.
MARTIN	-	"Manual of Microscopic Mounting"	7s. 6d.
SUFFOLK	-	"On Microscopical Manipulation"	6s. 6d.
SLACK	-	"Marvels of Pond Life"	3s. 6d.

NEW MODEL
PORTABLE
**MICROSCOPE
STAND,**

With Swinging Mirror
and Substage.

PRICES.

MONOCULAR,

£12 10s.

BINOCULAR,

£16 10s.



The following Improvements have been introduced in this Stand:—

The fitting of the coarse adjustment is on a new principle, the slides fitting on knife edges in V-shape grooves giving a minimum of friction, so ensuring perfect steadiness and smoothness, and working without the slightest loss of time in the motions.

The fine adjustment is also a new principle, working with perfect ease and allowing not the slightest displacement in the object; also, as it acts by moving the whole of the body of the Instrument (instead of a loose nose-piece only, as in the old forms), there is no change of distance ever made between the eye-piece and object glass, so obviating the necessity of continually altering the collar correction of object glasses as the fine adjustment is used, the correction being found once for any given object, no further alteration is required. In the old principle, as is well known, the frequent alteration of the distance between the eye-piece and object glass made in using the fine motion is continually upsetting the optical adjustment, and necessitating correction by the screw-collar of objective to get best results. With the new Stand this trouble is avoided.

The Mirror and Substage both swing to illuminate above and below the Stage, but they are made to rotate on separate collars so that either may be used independently of the other, and the one not used swung aside out of the way.

The foot is folding, and when closed the Instrument is most compact, the Monocular occupying space only $12 \times 7 \times 4\frac{1}{4}$ in.

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May also be had of the following Instruments, which are manufactured,
and of which a large Stock is always on hand :—

Surveying, Engineering & Mathematical Instruments.

ASTRONOMICAL & PORTABLE TELESCOPES,
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MICROSCOPIC OBJECTS.

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