

# PRACTICAL PHOTOGRAPHY

ON

## Glass and Paper.

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### PART II.

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CONTAINING

CLEAR DIRECTIONS FOR THE PRACTICE OF THE VARIOUS DRY PROCESSES  
ON GLASS AND PAPER; THE MANUFACTURE OF COLLODION, &c.;  
ENLARGING PROCESSES; PERMANENT PRINTING PROCESSES, &c. &c.

TOGETHER WITH  
VALUABLE RECIPES AND IMPORTANT FORMULÆ.

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LONDON:  
PUBLISHED BY NEGRETTI AND ZAMBRA,  
OPTICIANS AND PHOTOGRAPHIC INSTRUMENT MAKERS

Co Her



Majesty.

1, HATTON GARDEN; 59, CORNHILL; 122, REGENT STREET;  
AND 153, FLEET STREET.

1864.

# Price List

OF

## PHOTOGRAPHIC APPARATUS.

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Messrs. BLAND & CO. would mention with respect, that it is necessary that all orders be accompanied by a remittance, or order for payment in London, otherwise they cannot be forwarded. Attention to this particular will obviate delay and inconvenience. BLAND & Co. suggest that it is desirable when orders are sent from Abroad to them through an Agent, that the climate for which the Instruments are intended should be specified, in order that suitable Apparatus may be ensured, and also that the Agent be definitely instructed to procure the same from

**BLAND & CO.,**

153, FLEET STREET, LONDON.

## LENSES.

Single Achromatic Lenses, unmounted, suitable for taking views by Calotype or Collodion processes:—

No.	Diameter.	Focus.	£	s.	d.	
1.	1½ inches	4 to 6 inches	0	6	0	
2.	1½ "	6 to 7 "	0	8	0	
3.	1½ "	6 to 8 "	0	10	0	
4.	2 "	8 to 10 "	0	14	0	
5.	2½ "	8 to 10 "	0	17	0	
6.	2½ "	12 to 14 "	1	5	0	
7.	3 "	12 to 15 "	1	16	0	
8.	3½ "	12 to 16 "	2	10	0	
9.	4 "	16 to 20 "	3	10	0	
<b>Stereoscopic Lenses—</b>						
No. 10.	1½ "	4½ & 6 "	each	0	6	0

## BLAND & CO.'S ACHROMATIC LANDSCAPE LENSES.

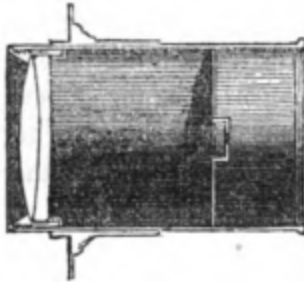


Fig. 1.

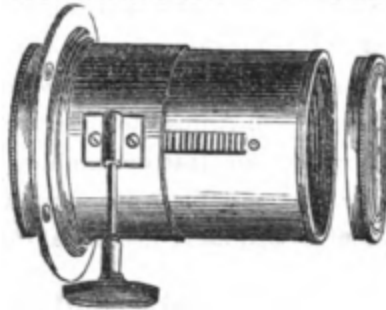


Fig. 2.

Mounted in handsome brass fronts, with rings for adaptation to Camera:—

No.	Diameter.	Simple sliding Tube (Fig. 1).			For Pictures.	Rack and Pinion (Fig. 2)			
		£	s.	d.					
1.	1½ inches	0	16	0	5 in. by 4 in. {	1	1	0	
2.	1½ "	1	1	0		1	6	0	
3.	1½ "	1	5	0		6 " by 5 " {	1	11	6
4.	2 "	1	12	0			2	2	0
5.	2½ "	1	15	0			7 " by 6 " {	2	7
6.	2½ "	2	5	0		9 " by 7 " {	2	14	6
7.	3 "	3	15	0		11 " by 9 " {	4	10	0
8.	3½ "	4	12	6		12 " by 10 " {	6	0	0
9.	4 "	6	10	0		15 " by 12 " {	7	7	0
No. 10.	1½ "	Stereoscopic sliding Tube.				Rack and Pinion.	1	1	0

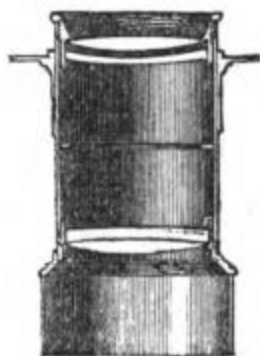


Fig. 3.  
Sectional view of Compound  
Achromatic Lens.

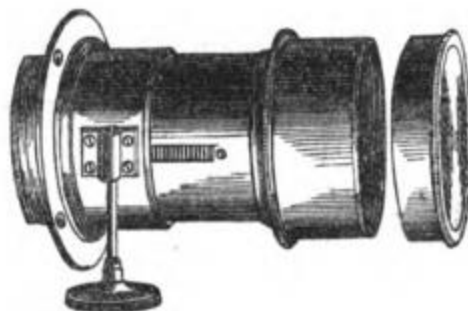


Fig. 4.

**BLAND & CO.'S**  
**COMPOUND ACHROMATIC LENSES FOR PORTRAITS,**

*Fitted with set of Waterhouse's Central Diaphragms. (Fig. 5.)*

These combinations are particularly recommended for the qualities they possess of giving a flat field, and having their optical and chemical foci coincident, producing an image on the sensitive surface in an extremely short space of time.



Waterhouse's Stops. (Fig. 5.)

Combination Achromatic Lenses, mounted in handsome brass front, with rackwork adjustment, and adapted for either portraits or views:—

	£	s.	d.
FOR PICTURES			
No. 1. $4\frac{1}{2}$ by $3\frac{3}{4}$ in. (Fig. 4.) . . .	2	15	0
2. arranged for views, 6 by 5 in. and portraits, $4\frac{1}{2}$ by $3\frac{1}{2}$ „	3	0	0
3. 5 by 4 in. . . . .	4	4	0
4. arranged for views, 7 by 6 „ and portraits, 5 by 4 „	4	10	0
5. 6 by 5 in. . . . .	5	10	0
6. arranged for views, 9 by 7 „ and portraits, 6 by 5 „	6	0	0
7. $8\frac{1}{2}$ by $6\frac{1}{2}$ in. . . . .	11	16	0
8. arranged for views, 12 by 10 and portraits, $8\frac{1}{2}$ by $6\frac{1}{2}$ „	12	12	0

The arrangement of the above lenses for views consists in the removal of one lens in the combination, and placing the other in a different position in the sliding tube, with the requisite stops or diaphragms for regulating the amount of light.

## BLAND &amp; CO.'S

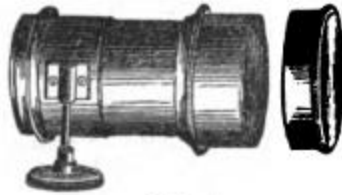
**COMPOUND ACHROMATIC PORTRAIT LENSES,**

*For Stereoscopic Portraits or Views, or for Carte de  
Visite Pictures.*

	£	s.	d.
No. 1. For Stereoscopic Portraits and Views, or Carte de Visite portraits, singly, fitted with Waterhouse's Central Stops . . . . .	2	15	0
No. 1 A. The above in pairs, with adjusting bar for caps of lenses, warranted of equal foci . . . . .	5	12	6
* * This lens is suitable for taking Carte de Visite pictures in an operating room of ordinary length, say from 12 to 14 feet.			
No. 2. Of larger size, suitable for a room 16 to 18 feet long, singly . . . . .	4	4	0
No. 2 A. The above in pairs, warranted of equal foci, and connecting bar for caps . . . . .	8	10	0

**COMPOUND ACHROMATIC LENSES FOR PORTRAITS,**

*With Rack and Pinion.*



*Fig. 6.*

	£	s.	d.
No. 1. For pictures, $4\frac{1}{2}$ by $3\frac{1}{2}$ inches ( <i>Fig. 5</i> ) . . . . .	14s.	1	1 0
2. " $6\frac{1}{2}$ by $4\frac{3}{4}$ " . . . . .	£2	2	12 6
3. " $8\frac{1}{2}$ by $6\frac{1}{2}$ " . . . . .	£5	6	0 0

BLAND & CO. supply Lenses of all the most eminent British and Foreign manufacturers at the makers' prices, the list of a few of whom are subjoined:—

## LIST OF

## ROSS'S PHOTOGRAPHIC PORTRAIT LENSES.

*The whole of these glasses give fine and correct definition, both at the centre and margin of the picture, and have their visual and chemical acting foci coincident.*

	£	s.	d.
No. 1. Portrait lens, consisting of two achromatic combinations, mounted in tubes with rack-and-pinion movement, the lenses $1\frac{3}{4}$ inch diameter, and $4\frac{1}{2}$ inches focal length from the back glass, producing pictures on plates 4 by 3 inches and under.	5	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	0	15	0
No. 2. Ditto, ditto, the lenses $2\frac{1}{2}$ inches diameter and 6 focal length, for pictures on plates 5 by 4 inches and under . . . . .	8	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	1	0	0
No. 2 A. Ditto, ditto, the lenses $2\frac{1}{2}$ inches diameter and $7\frac{1}{2}$ inches focal length, for pictures on plates 5 by 4 inches and under. This lens produces <i>larger portraits</i> than the above . . . . .	10	10	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	1	5	0
<i>☞</i> <i>Eiher of the above lenses is suitable for "Cartes de Visite" portraits.</i>			
No. 3. Ditto, ditto, the lenses $3\frac{1}{2}$ inches diameter and 10 inches focal length, for pictures on plates 6 by 5 inches and under . . . . .	16	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	1	10	0
No. 3 A. Ditto, ditto, the front lens $3\frac{1}{2}$ inches diameter, the back lens 4 inches diameter, 12 inches focal length, for pictures on plates $8\frac{1}{2}$ by $6\frac{1}{2}$ inches and under . . . . .	25	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	1	15	0

## ROSS'S LIST (CONTINUED.)

	£	s.	d.
No. 4. Ditto, ditto, the lenses $4\frac{1}{2}$ inches diameter, 15 inches focal length, for pictures on plates 10 by 8 inches and under . . . . .	36	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	2	0	0
No. 4A. Ditto, ditto, the front lens $3\frac{1}{2}$ inches diameter, the back lens 5 inches diameter, 20 inches focal length, for pictures on plates 16 by 14 inches and under . . . . .	30	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	2	5	0
A Portrait Lens, 5 inch diameter, 20 inches focal length, for pictures on plates 18 by 16 and under, with set of Waterhouse's Diaphragms in morocco case	42	10	0
A Ditto, ditto, 6 inches diameter, 24 inches focal length, for pictures on plates 22 by 18 and under, with set of Waterhouse's Diaphragms in morocco case	54	0	0
A Portrait lens producing with the whole aperture pictures of a size for Locket plates $1\frac{1}{2}$ by 1 inch, and with the diaphragm $3\frac{1}{4}$ by $2\frac{3}{4}$ inches . . . . .	6	0	0
A set of Waterhouse's Diaphragms in morocco case, for ditto . . . . .	1	0	0

## ROSS'S QUICK-ACTING "CARTES DE VISITE" LENSES.

These Lenses are constructed to give the flattest possible field consistent with good marginal definition, and have their chemical and visual foci coincident. They also reproduce the images of objects in their true perspective places.

No. 1. "Cartes de Visite" lens, consisting of two actinic combinations, $1\frac{3}{4}$ inches diameter, $4\frac{1}{2}$ inches focal length, with rack-and-pinion movement, and Waterhouse's Diaphragms. This lens requires from 13 to 14 feet between the subject and the focusing-screen of Camera . . . . .	5	15	0
No. 2. Ditto, ditto, $2\frac{1}{8}$ inches diameter, $4\frac{3}{4}$ inches focal length, with rack-and-pinion movement and Waterhouse's Diaphragms. This lens requires from 15 to 16 feet between the subject and the focussing-screen of Camera . . . . .	6	10	0

## ROSS'S LIST (CONTINUED.)

	<i>£ s. d.</i>
No. 3. Ditto, ditto, $2\frac{1}{2}$ inches diameter 6 inches focal length, with rack-and-pinion movement and Waterhouse's Diaphragms. This lens requires from 19 to 20 feet between the subject and focussing-screen of Camera . . . . .	11 10 0

The following table, shewing the greatest distance required between the subject and the focussing screen to produce figures  $2\frac{3}{4}$  inches and 3 inches with each of the Lenses (the standard being 6 feet), is given as a guide to Photographers in their selection of a lens suitable for the length of their operating rooms :

	For $2\frac{3}{4}$ in.	For 3 in.
No. 1 Lens . . . . .	14 feet . . . . .	$13\frac{1}{4}$ feet.
No. 2 Lens . . . . .	16 feet . . . . .	$14\frac{1}{4}$ feet.
No. 3 Lens . . . . .	20 feet . . . . .	$18\frac{3}{4}$ feet.

In order that the whole image may be in focus, the Camera should be placed level and midway of the subject, or thereabout; however, some little latitude may be allowed, and the Camera placed somewhat higher, when it will require tilting a little. But if the Camera be put at an elevation of about 5 feet, it must be tilted considerably, and a swing-back to the Camera will be indispensable to get the picture all in focus.

## ROSS'S PHOTOGRAPHIC LANDSCAPE LENSES.

No. 1 A. Landscape lens, consisting of one achromatic combination, mounted in tubes, with rack-and-pinion movement, the lens 2 inches in diameter and 9 inches focal length, for producing pictures 6 by 5 inches . . . . .	4 0 0
No. 1. Ditto, ditto, without rack-and-pinion movement.	3 0 0
No. 2. Ditto, ditto, $2\frac{1}{2}$ inches diameter, 12 inches focal length, for pictures $8\frac{1}{2}$ by $6\frac{1}{2}$ inches . . . . .	5 10 0
No. 2. Ditto, ditto, without rack-and-pinion movement.	4 10 0
No. 3. Ditto, ditto, 3 inches diameter, 15 inches focal length, for pictures 10 by 8 inches . . . . .	6 10 0
No. 3. Ditto, without rack-and-pinion movement . . . . .	5 10 0
No. 3 A. A ditto, ditto, $3\frac{1}{2}$ inches diameter and 18 inches focal length, for pictures 12 by 10 inches . . . . .	8 0 0
No. 3 A. A ditto, without rack-and-pinion movement . . . . .	7 0 0



## ROSS'S LIST (CONTINUED.)

	£	s.	d.
No. 4. Ditto, ditto, 4 inches diameter, 20 inches focal length, for pictures 15 by 12 inches. In consequence of the length of the Camera, this requires an universal joint handle to rack-and-pinion movement . . . . .	12	0	0
No. 4. Ditto, ditto, without rack-and-pinion movement	10	0	0
No. 5. Ditto, ditto, 5 inches diameter, 25 inches focal length, for pictures 18 by 16 inches, without rack-and-pinion movement. . . . .	14	0	0
No. 6. Ditto, ditto, 6 inches diameter, 30 inches focal length, for pictures 22 by 20 inches . . . . .	22	0	0
No. 7. Ditto, ditto, 7 inches diameter, 35 inches focal length, for pictures 24 by 22 inches . . . . .	28	0	0
No. 8. Ditto, ditto, 8 inches diameter, 40 inches focal length, for pictures 26 by 24 inches . . . . .	32	0	0

## ROSS'S STEREOGRAPHIC LENSES.

A Stereographic Double Lens for Portraits, Groups, Views, and Interiors, Diameter of front combination $1\frac{7}{8}$ inch, of back ditto $1\frac{7}{8}$ inch, $3\frac{1}{2}$ inches focal length. This lens has a rack-and-pinion movement, a set of Waterhouse's Diaphragms. and works INSTANTANEOUSLY . . . . .	4	0	0
Ditto, ditto, without rack-and-pinion . . . . .	3	8	0
An extra back combination can be supplied to the above for producing small "Cartes de Visite" pictures . . . . .	1	2	6
A Stereographic Single Lens for Views, &c., $4\frac{1}{2}$ inches focal length, 1 inch diameter . . . . .	1	8	0
Ditto, ditto, ditto, with rack-and-pinion. . . . .	2	0	0
A ditto, ditto, 6 inches focal length, $1\frac{3}{8}$ inch diameter . . . . .	1	8	0
Ditto, ditto, ditto, with rack-and-pinion . . . . .	2	0	0
A pair of ditto, ditto, of either $4\frac{1}{2}$ or 6 inches focal length, with combined rack motion and connecting bars to caps . . . . .	4	5	0

\*\* Larger and smaller Photographic combinations to order.

## ROSS'S ORTHOGRAPHIC LENSES,

*With complete set of Waterhouse's Diaphragms,*

FOR

GROUPS, LANDSCAPES, AND ARCHITECTURAL  
SUBJECTS.

*The interiors exhibited by Mr. BEDFORD, which have been so highly eulogised by the Times and other leading Journals, were taken by the Orthographic Lens, with the whole aperture, on plates of the full dimensions which this Lens is advertised to cover.*

Size of Picture.		Size of Group.		Diameter of Front Lens.	Back Focus.	PRICE.								
in.	in.	in.	in.			Rigid Setting.			Sliding Tube Adjustment.		Sliding Tube with Rack and Pinion.			
				in.	in.	£	s.	d.	£	s.	d.	£	s.	d.
6 × 5		4 × 3		$\frac{3}{16}$	8	3	15	0	4	5	6	4	17	6
$8\frac{1}{2} \times 6\frac{1}{2}$		6 × 5		$1\frac{1}{4}$	$10\frac{1}{2}$	4	12	6	5	4	6	6	0	0
10 × 8		$7\frac{1}{2} \times 5\frac{1}{2}$		$1\frac{1}{2}$	14	5	15	5	6	10	0	7	10	0
12 × 10		$8\frac{1}{2} \times 6\frac{1}{2}$		$1\frac{5}{16}$	$16\frac{1}{2}$	7	0	0	7	18	6	8	18	6*
15 × 12		10 × 8		$2\frac{1}{4}$	$19\frac{1}{2}$	8	0	0	9	5	0	10	5	0
18 × 16		12 × 10		3	26	12	12	0	* Hook's universal joint handle, for 12 × 10 and 15 × 12 lenses, price £1 0 0.					
22 × 20		15 × 12		$3\frac{5}{16}$	$31\frac{1}{2}$	17	0	0						
25 × 21		18 × 16		4	34	21	0	0						

## SUTTON'S PATENT PANORAMIC LANDSCAPE LENSES AND CAMERAS,

(Fig. 7.)

Lens Camera, with screw adjustment, plate-holder and focussing-screen, water-tight gutta-percha bath, dipper, frame for holding plates while cleaning, box for one dozen curved plates, printing press and tripod stand, in varnished pine case, for pictures on plates  $10\frac{1}{2}$  by 5 inches (see page 15) £ s. d.  
22 0 0

	£	s.	d.
Ditto, ditto, for pictures 14 by 6½ inches . . . . .	30	0	0
Ditto, ditto, " 17 by 8 " . . . . .	40	0	0
Ditto, ditto, " 20 by 10 " . . . . .	60	0	0

These Lenses include an angle of 100 degrees, or about three times the usual amount of subject,

Water-tight Porcelain Baths, in Mahogany cases, may be had for above.

### ROSS'S NEW ACTINIC TRIPLETS,

*For Architectural Subjects, Copying, and Landscapes.*

These Lenses produce undistorted images, and have the central and marginal pencils most carefully corrected.

Photographers will find these Lenses invaluable for copying maps, charts, prints, architectural and other subjects, where straightness of marginal lines is imperative.

The Combination is so constructed that GROUPS may be taken with the *whole aperture* on a plate the next size smaller than that tabulated below.

The diaphragms are arranged in a closer series than has hitherto been the case, so that the time of exposure is more under the command of the operator; thus, with each diaphragm the exposure is to be half as long again as with the diaphragm of the next larger size.

The prices quoted below are for Triplets in sliding tubes, with complete set of Waterhouse's Diaphragms. For rack-and-pinion movement to Triplets from 6 by 5 to 15 by 12, inclusive, 15s. additional will be charged; larger sizes, £1. Hook's joint handle, £1.

Size of Plates.	Back Focus.	Price.
6 by 5 and 7½ by 4½.....	7 .....	£4 0 0
8 by 4½ .....	8 .....	4 5 0
8½ by 6½ .....	10 .....	5 0 0
10 by 8 and 11 by 9 .....	12½.....	7 0 0
12 by 10 .....	15 .....	8 10 0
15 by 12 .....	18 .....	10 10 0
18 by 16 .....	22 .....	12 10 0
22 by 20 .....	28 .....	16 0 0
25 by 21 .....	30 .....	20 0 0
30 by 24 .....	34 .....	25 0 0



1. Panoramic Lens and Camera on Folding Tripod Stand.  
2. Grooved Box for one dozen Curved Plates.  
3. Holder for Plates while being cleaned.

4. Water-tight Bath, with Dipper.  
5. Printing Frame.

Fig. 7.

LIST OF  
LEREBOUR'S COMPOUND ACHROMATIC  
PORTRAIT LENSES.

	£	s.	d.
No. 1. For portraits, 3½ by 2¾ inches . . . . .	1	10	0
2.     "     4¼ by 3½     " . . . . .	2	10	0
3.     "     6½ by 4¾     " . . . . .	4	0	0
4.     "     8½ by 6½     " . . . . .	9	0	0
5.     "     8½ by 6½     " extra quick, dia- meter of lenses, 3½ inches . . . . .	15	0	0
6.     "     10 by 8 in., diameter of lenses, 4 inches . . . . .	25	0	0

LEREBOUR'S SINGLE ACHROMATIC  
VIEW LENSES,

*With Sliding Tube Adjustment.*

	£	s.	d.
No. 1. For landscapes, 5 by 4 inches . . . . .	1	5	0
2.     "     7 by 6     " . . . . .	1	15	0
3.     "     9 by 7     " . . . . .	3	10	0
4.     "     11 by 9     " . . . . .	6	0	0
5.     "     12 by 10     " . . . . .	9	0	0

LIST OF  
JAMIN'S COMPOUND ACHROMATIC LENSES,

*With Rack-and-Pinion Adjustment.*

	£	s.	d.
No. 1. For portraits, 4¼ by 3½ inches . . . . .	1	5	0
2.     "     6½ by 4¾     " . . . . .	4	4	0
3.     "     8½ by 6½     " . . . . .	7	0	0
4.     "     10 by 8, with centralizing cone and focal variations of coincidence for portrait and landscape, lenses 4 inches diameter, with 2 sets of racks and pinions	25	0	0
5.     "     14 by 12, lens 5 inches diameter . . . . .	37	10	0

## REDUCED PRICE LIST

OF THE

## NEW PHOTOGRAPHIC LENSES

FOR PORTRAITS AND VIEWS,

WITH

COINCIDENCE OF THE VISUAL AND CHEMICAL FOCI,

MANUFACTURED BY

**VOIGTLÄNDER & SON,**

VIENNA AND BRUNSWICK.

	£	s.	d.
No. A. Consists of a combination of Achromatic Lenses 1 $\frac{1}{4}$ in. and 1 $\frac{1}{2}$ in. diameter, the combined focus being, with regard to the size of the picture, the same as a simple Achromatic Lens of 6 $\frac{1}{2}$ in. focus, in brass mounting, with central stops, and rack-and-pinion adjustment, adapted for taking pictures on 4 $\frac{1}{2}$ in. plates . . . . .	7	2	6
No. B. Consists of a combination of Achromatic Lenses 2 $\frac{1}{8}$ in. and 2 $\frac{3}{8}$ in. diameter, the combined focus being 6 $\frac{1}{2}$ in., in brass mounting, with central stops, and rack-and-pinion adjustment, suited for taking pictures on 4 $\frac{1}{2}$ in. plates. This combination commands great power of light. It is a very quick acting instrument, and is particularly adapted for taking portraits of Children. . . . .	8	17	6
No. C. Consists of a combination of Achromatic Lenses 2 $\frac{3}{4}$ in. and 2 $\frac{5}{8}$ in. diameter, the combined focus being 9 $\frac{1}{2}$ in., brass mounting, with central stops, and rack-and-pinion adjustment, adapted for taking pictures up to 7 $\frac{1}{2}$ in. . . . .	12	0	0

The Lenses marked **A. B. C.** are specially constructed for taking "**Carte de Visite**" pictures, and will be found to answer better for that purpose than any hitherto in use. These Lenses will of course take portraits as well.

## VOIGTLANDERS' LIST (CONTINUED.)

	£	s.	d.
Nos. A. and B. will take perfect pictures of the "Carte de Visite" size in a glasshouse of 17 feet.			
Specimens (to be returned) will be forwarded on application.			
Any of the above Lenses may be had in sets of two, four, or six, all of exactly the same foci.			
<hr/>			
No. 1. Consists of a combination of Achromatic Lenses 1 $\frac{1}{8}$ in. and 1 $\frac{3}{8}$ in. diameter, the combined focus being 5 $\frac{3}{4}$ in., in brass mounting, with rack-and-pinion adjustment, adapted for taking pictures on $\frac{1}{8}$ in. and $\frac{1}{4}$ in. plates, or up to 4 $\frac{1}{4}$ in. by 3 $\frac{1}{4}$ in. . . . .	4	15	0
No. 1a. The above, with central stops . . . . .	5	10	0
These Lenses can be had in pairs of precisely the same focal length for taking Stereoscopic Portraits and groups of figures from life, and are the best that can be obtained for that purpose.			
No. 2. Consists of a combination of Achromatic Lenses, 2 $\frac{1}{8}$ in. and 2 $\frac{3}{8}$ in. diameter, the combined focus being 7 $\frac{1}{2}$ in., in brass mounting, with rack-and-pinion adjustment, suited for taking pictures on $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ in. plates, or up to 6 $\frac{1}{2}$ in. by 4 $\frac{3}{4}$ in. . . . .	7	7	6
No. 2a. The above, with central stops . . . . .	8	2	6
This Lens takes very beautiful "Carte de Visite" portraits, but it requires a glasshouse 21 feet long.			
No. 3. Consists of a combination of Achromatic Lenses, 3 $\frac{1}{8}$ in. and 3 $\frac{3}{8}$ in. diameter, the combined focus being 11 $\frac{1}{2}$ in., brass mounting, with rack-and-pinion adjustment, adapted for taking pictures 8 in. by 6 in. This is the most useful Lens that a photographer, whether amateur or artist, can possess . . . . .	14	0	0
No. 3a. The above, with central stops . . . . .	15	0	0
No. 4a. Consists of a combination of Achromatic Lenses, 3 $\frac{1}{8}$ in. and 3 $\frac{3}{8}$ in. diameter, the combined focus being 8 $\frac{7}{8}$ in., in brass mounting, with rack-and-pinion adjustment, and central stops, suited for pictures up to 6 $\frac{1}{2}$ in. by 4 $\frac{3}{4}$ in. This combination commands an immense power of light, and works in a third less time than Nos. 1, 2, 3 . . . . .	22	0	0

## VOIGTLÄNDER'S LIST (CONTINUED.)

	£	s.	d.
No. 5a. Consists of a combination of Achromatic Lenses of the respective diameters of $3\frac{1}{2}$ in. and $2\frac{3}{8}$ in., the combined focus being $2\frac{5}{8}$ in., in brass mounting, with rack-and-pinion adjustment, and central stops, suited for taking pictures up to $3\frac{1}{2}$ in. by $2\frac{3}{4}$ in. This short focus, combined with the large aperture, enables it to command an intensity of light four times greater than any other. It is admirably adapted for taking portraits in private rooms not generally suited for the purpose, as also portraits of children. Good pictures can be taken with it in very dull weather	22	0	0
No. 6. Consists of a combination of Achromatic Lenses of the respective diameters of $4\frac{1}{2}$ in. and $4\frac{1}{2}$ in., the combined focus being $14\frac{1}{2}$ in., in brass mounting, with central stops, suited for taking portraits and pictures from life, on plates of 12 in.	33	0	0
No. 7. Consists of a combination of Achromatic Lenses of the same diameter as No. 6, and mounted in a similar manner, but the combined focus of the Lenses being longer, viz., equal in effect to a single lens of $18\frac{1}{2}$ in., is suited for taking portraits on $13\frac{1}{2}$ in. plates	33	0	0
No. 8. Consists of a combination of Achromatic Lenses of the respective diameters of $5\frac{1}{4}$ in. and $5\frac{1}{4}$ in., mounted in brass. The combined focus is equal to a single lens of $22\frac{1}{2}$ in.; it will, therefore, take portraits on plates of 16 in. For small portraits this Lens can be used with its full aperture; but for larger ones or for groups, it is advisable to employ one or other of the stops	62	0	0
No. 9. This new combination consists of an arrangement of Achromatic Lenses of $6\frac{3}{8}$ in. and $6\frac{3}{8}$ in. diameter, the combined focus being 27 in. in brass mounting, with central stops, adapted for taking pictures on $19\frac{1}{2}$ in. plates	87	10	0

**LENSES OF THE LATEST CONSTRUCTION OF LONG FOCI.**

No. 10. Consists of a combination of Achromatic Lenses of $3\frac{1}{2}$ in. and $3\frac{3}{8}$ in. diameter, the combined focus being $14\frac{1}{2}$ in. in brass mounting, without rack and pinion, and without central stops, adapted for taking pictures on 12 in. plates	11	0	0
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## VOIGTLÄNDER'S LIST (CONTINUED.)

	£	s.	d.
No. 11. Consists of a combination of Achromatic Lenses of $4\frac{2}{8}$ in. and $4\frac{1}{4}$ in. diameter, the combined focus being $22\frac{3}{8}$ in. in brass mounting, without rack and pinion, and without central stops, adapted for taking pictures on 16 in. plates . . . . .	27	10	0
No. 12. Consists of a combination of Achromatic Lenses of $5\frac{1}{4}$ in. and $5\frac{7}{8}$ in. diameter, the combined focus being 27 in., in brass mounting, without rack and pinion, and without central stops, adapted for taking pictures on $19\frac{1}{2}$ in. plates . . . . .	50	0	0
No. 13. Consists of a combination of Achromatic Lenses of $6\frac{3}{8}$ and $6\frac{3}{8}$ in. diameter, the combined focus being 35 in., in brass mounting, without rack and pinion, and without central stops, adapted for taking pictures on $23\frac{3}{4}$ in. plates . . . . .	67	10	0

\* \* The focus given in all the above Lenses must be understood as measuring from the centre of the combination.

A separate mounting can be furnished for using the front Lens of any of the portrait combinations, for taking views and objects of still-life, though the Orthoscopic Lenses are very much better for the purpose.

The attention of Photographers is directed to the following Observations, which may serve to Guide them in the selection of Portrait Lenses:—

Voigtländer & Son's Lenses, Nos. 1 to 6 inclusive, as well as Nos. A. B. and C. have much more light, on account of their short foci, than common Lenses of the same diameters, and for this reason do not produce as large pictures. This apparent disadvantage will, however, to the greater part be remedied by the application of central stops, by which at a proportionately small loss of light, a larger picture, and greater depth is obtained.

All acquainted with the subject know, that the greatest difficulty in constructing a Lens, is to obtain a large, flat, and well-lighted picture, and it is this latter quality which the Lenses of Voigtländer and Son are known to possess to so great an extent, that is most appreciated by thoroughly practical Photographers.

To meet the wishes of those, however, who desire large pictures, Voigtländer & Son have constructed a new series of Lenses of long foci, Nos. 10, 11, 12, and 13. The foci of these Lenses being longer than the others of the same diameter, a larger picture and greater depth is obtained, certainly at some sacrifice of light, but yet these Lenses will be found to possess more light and greater sharpness of definition, than any other Lenses of the same diameter and foci.

The Lenses with long foci being much more easily constructed than the ordinary kind, are offered at a very much reduced price, to which the notice of Photographers is particularly called.

The relative power of light of Voigtländer's Lenses may be stated thus, Nos. A. C. 1, 2, 3, and 6, have the same amount of so-called normal light; Nos. B. and 4 have one-third more; No. 5, four times the amount; Nos. 7 and 8, one-third less; and Nos. 10, 11, 12, and 13, about one-half.

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THE

## ORTHOSCOPIC PHOTOGRAPHIC LENSES

FOR VIEWS, ETC.

THESE newly constructed PHOTOGRAPHIC LENSES, to which Voigtländer and Son have given the name Orthoscopic (correct showing), are especially intended for taking views, copying maps, plans, pictures, and works of art, and all other inanimate objects. With a good light and sensitive chemicals, Portraits may be taken; but this is not the purpose for which the Orthoscopic Lenses are intended.

This new combination consists, like the Portrait Lenses, of two Achromatics, but it differs from them in this particular, that both the Lenses are not Collecting Lenses, but the back or smaller one is a Dispersing Lens. The great advantages gained by this improvement over the simple Achromatic Lenses hitherto employed for taking inanimate objects, views, &c., are the larger field, the increased amount of light, better perspective in the picture, and a greater degree of sharpness of the various objects placed at different distances.

The putting together and mounting of the Lenses is similar to the portrait combinations, but without any rack and pinion. The aperture of the front Lens is never stopped, as is the case with the usual View Lenses, but left perfectly open. The small back Lens is provided with stops of four different apertures, increasing more or less the sharpness of the picture at the sacrifice of light, consequently increasing the time of exposure.

## SIZES AND PRICES OF THE ORTHOSCOPIC VIEW LENSES.

No.	Front Lens.	Focus.	Size of Picture.	Price Complete.	Price without Front Lens.
1	1 $\frac{3}{8}$ in.	11 $\frac{1}{2}$ in.	10 × 8	£ s. d. 4 5 0	£ s. d. 2 17 6
2	2 $\frac{1}{8}$ in.	15 in.	15 × 11	6 5 0	3 15 0
3	3 $\frac{1}{8}$ in.	24 in.	21 × 15	11 0 0	6 10 0
4	4 $\frac{3}{8}$ in.	32 $\frac{1}{2}$ in.	26 × 21	20 10 0	9 5 0
5	4 $\frac{1}{2}$ in.	40 in.	33 × 26	20 10 0	9 5 0
6	5 $\frac{1}{4}$ in.	50 in.	42 × 33	31 10 0	13 0 0

£ s. d.

Orthoscopic Lenses, constructed expressly for taking Stereographs, combined focus 4  $\frac{1}{2}$  in. with two Achromatics of  $\frac{3}{8}$  and  $\frac{1}{2}$  in.; mounted in such a manner that, when used in pairs for one and the same Camera and focussing screen, they may be adjusted to coincide perfectly 3 7 6

These new Lenses are made of six different sizes,—the front Lens corresponding with the front Lens of the following Portrait combinations:—No. 1, 1  $\frac{3}{8}$  in. diameter; No. 2, 2  $\frac{1}{8}$ ; No. 3, 3  $\frac{1}{8}$ ; No. 4, 4  $\frac{3}{8}$ ; No. 5, 4  $\frac{1}{2}$ ; No. 6, 5  $\frac{1}{4}$ , long focus; No. 8, 5  $\frac{1}{4}$ . The screws also agree. By this arrangement, those parties possessing either of the portrait combinations can be supplied with the brass mounting and small back Lens, only using their own front Lens, and thereby saving a very considerable cost.

**OBSERVATIONS.**

The two glasses of the back Lens are not fixed in the mounting, in order to be able to clean them when necessary; but great care must be taken to replace them in their respective positions. The double concave Lens, with its flatter side downwards, first, then the concave convex Lens, the concave side down; the ring must not be screwed down too tight.

To focus with these Lenses when there is a want of light, it should be done with the full aperture; then the focussing screen of the Camera is lifted up, and the cap with an appropriate stop, is pushed on to the mount of the back Lens.

With regard to the size of the pictures as stated in the foregoing List of Prices, it must be understood that the smaller sizes can be obtained for objects very near, for instance, when copying prints, &c., whilst for views it will be possible to get the larger sized picture.

As each Lens is examined and tested under the personal superintendence of Messrs. Voigtländer & Son, just previous to the instruments being packed for this country, the possibility of any (however slightly) imperfect Lenses being received is quite precluded.