A decorative border with a repeating floral and leaf pattern in a dark color, framing the central text and logo.

Catalogue of
Photographic
Lenses



The Voigtländer & Son
Optical Company
137 West Twenty-third Street, New York

CATALOGUE
OF
Photographic Objectives

COLLINEARS

HELIARS

APOCHROMATS

DYNARS

TELEPHOTOS and

EURYSCOPES



THE VOIGTLAENDER & SON
OPTICAL COMPANY

137 West Twenty-third Street, New York

HISTORICAL RECORD
OF
VOIGTLAENDER & SOHN, A. G.
OPTICAL INSTRUMENT MAKERS.

This firm was founded in 1756 at Vienna.

1839—construction of the VOIGTLAENDER PORTRAIT LENS based on PETZVAL'S calculations.

1877—construction of the first EURYSCOPE LENS.

1886—complete reconstruction of EURYSCOPES and PORTRAIT LENSES to utilize the NEW JENA GLASS.

1894—construction of the first COLLINEAR LENS.

1900—construction of the first APOCHROMAT LENS.

1903—construction of the first HELIAR LENS.

1904—construction of the first DYNAR LENS.

TERMS

Purchasers not having an account with us, will please send a remittance for the amount of their purchase with their orders. Credit accounts will be opened upon receipt of satisfactory references.

Goods can also be sent C. O. D. upon receipt of one-fifth of the total amount of the order.

We guarantee that all lenses sent out by us will accomplish what we claim in this catalogue. To enable our customers to convince themselves of this fact, we send our instruments out on ten days' trial and approval. If upon examination goods are not wanted and are returned to us in good condition, charges paid, we will return the full amount of the purchase money.

Our goods are supplied direct or can be obtained of any dealer, and may be ordered through dealers for trial as well.

VOIGTLAENDER'S COLLINEARS
GENERAL PROPERTIES

Collinear Lenses are a new type of anastigmatic doublets consisting of two symmetrical anastigmatic halves. Each of these halves is made up of three glasses, the contiguous surfaces of which are permanently cemented together.

The *New Jena Glass* is used in the construction of *Collinear Lenses*. The outside glasses of the combinations are of a durable, hard quality, not affected by the atmosphere. The lenses have no air spaces which might introduce false reflections. The sharpness of definition of the image produced with the *Collinear Lenses* is remarkable for detail and precision, and is the same on the edges of the plate as in the center. The covering power and the flatness of field are unexcelled.

Collinear Lenses are achromatic, rectilinear and free from distortion. They are free from astigmatism, which means that they produce an image of such sharpness and clearness as cannot be produced by the very best rapid symmetrical or rapid rectilinear lenses.

The speed of *Collinear Lenses*, especially the series II, is of a very high order. The lenses of series II are the most rapid symmetrical anastigmats; they work with an aperture of F 5.6 and are suitable for focal plane shutter work. The series III working with an aperture of F 6.8 is also a very rapid lens and is a true universal lens, to be highly recommended for all general work.

In all *Collinear Lenses* the rear combination can be used alone as a landscape lens or telephoto of double the focal length of the complete instrument.

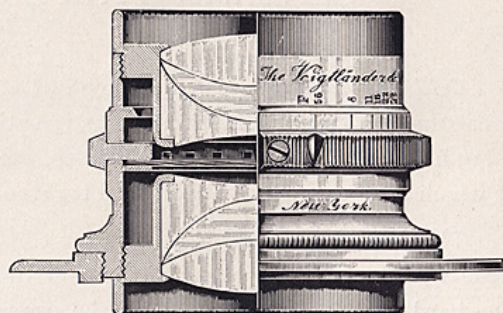
The elements of *Collinear Lenses* are sufficiently far apart to admit of the insertion of the latest between-the-lens shutters as, Iris Diaphragm, Sector, Automatic and Volute.

VOIGTLAENDER'S COLLINEARS

Series II Extra Rapid

F 5.6
FOR SMALL SIZES

F 6.3
FOR LARGE SIZES



For Hand Camera Work

For hand cameras the small sizes up to No. 6 are exceedingly valuable. When one considers that the ordinary rapid rectilinear or symmetrical hand camera lens has an opening of only F 8 or F 9, and that the Collinear at F 5.6 admits just twice as much light, its enormous advantage for rapid work—athletes, animals in motion, etc., for exposures on a gray day or in weak light—will be easily understood. Equally important for this class of work are the superior optical properties of Collinear II—its sharpness of definition, its flat field, its brilliancy, its depth of focus. Note also the increased covering capacity and the increased angle of view with smaller diaphragms.

This series is recommended for use both with focal plane shutters, and between-lens shutters. For price of the latter see page 13.

For Studio Work

The large sizes meet all the demands of the studio for large portraits and groups. High speed, brilliant illumination, excellent covering power and depth of field for groups are the desired qualities for such work.

No. 7 is a splendid lens for cabinet work, 8 x 10 heads, 10 x 12 or even 11 x 14 groups.

Nos. 9 and 10 are choice lenses for 14 x 17 to 18 x 22 heads and groups.

Note the low prices of the large sizes compared with other makes.

PRICE LIST AND SPECIFICATIONS

Voigtlaender's Collinears, Series II, Extra Rapid

No.	Equivalent Focus	Free Diameter of Glasses	Sizes of Plates Sharply Covered			Price with Iris Diaphragm
			F 5.6	F 8	F 32	
	inches	inches	inches	inches	inches	
0	2 $\frac{1}{8}$	$\frac{7}{16}$	1 $\frac{1}{2}$ x 1 $\frac{1}{2}$	1 $\frac{3}{4}$ x 1 $\frac{3}{4}$	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	\$22.50
00	2 $\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{3}{4}$ x 2 $\frac{1}{2}$	2 x 3	2 $\frac{1}{2}$ x 3 $\frac{1}{2}$	27.50
1	3 $\frac{1}{2}$	$\frac{11}{16}$	3 $\frac{1}{4}$ x 3 $\frac{1}{4}$	3 x 4	3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	35.00
2	4 $\frac{3}{8}$	$\frac{7}{8}$	3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	4 $\frac{1}{4}$ x 6 $\frac{1}{2}$	5 x 7	40.00*
3	5 $\frac{1}{8}$	1 $\frac{1}{16}$	4 $\frac{1}{4}$ x 6 $\frac{1}{2}$	5 x 7	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	45.00*
4	7 $\frac{1}{8}$	1 $\frac{1}{2}$	5 x 7	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	8 x 10	60.00*
			F 6.3			
5	9 $\frac{1}{8}$	1 $\frac{9}{16}$	6 x 8	7 x 9	9 x 11	77.50*
6	11 $\frac{1}{8}$	1 $\frac{7}{8}$	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	8 x 10	10 x 12	105.00*
7	14 $\frac{1}{2}$	2 $\frac{1}{4}$	8 x 10	10 x 12	12 x 15	140.00
8	17	2 $\frac{2}{3}$	11 x 14	12 x 15	16 x 20	187.50
9	20	3 $\frac{3}{16}$	12 x 15	14 x 17	20 x 24	235.00
10	23 $\frac{5}{8}$	3 $\frac{5}{8}$	14 x 17	18 x 22	22 x 28	325.00

* These sizes are furnished without barrel and iris diaphragm for hand cameras at special prices (see page 13).

The back combination of Series II can be used separate, forming an anastigmatic lens with largest aperture of about F 11.3 and with double the focal length of the complete lens.

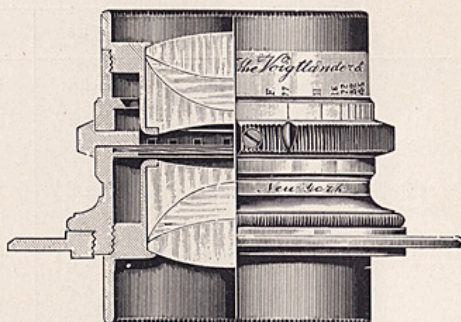
VOIGTLAENDER'S COLLINEARS

Series III

Rapid

F 6.8
FOR SMALL SIZES

F 7.7
FOR LARGE SIZES



Collinear III is the best "all around" lens—the best lens for a large variety of work. For speedy work alone Series II, having a large opening, would be better adapted, but when one and the same lens is wanted for everything—groups and instantaneous work, requiring speed; interiors, requiring wide angle; landscapes, requiring depth; architectural, copying and enlarging, requiring sharp definition and a flat field—then Collinear III is the best to choose.

The speed is by no means small; it is sufficient for exposures up to $\frac{1}{150}$ of a second, with the most rapid between-lens shutters. When small stops are used Collinear III covers a larger plate and a larger angle and in this manner it is used most successfully as a rapid wide angle lens for interiors, flashlights, etc.

The single combinations can be used alone as a well corrected telephoto lens of twice the focus.

The smaller sizes are ideal lenses for hand cameras and pocket cameras (Kodaks, Wenos, Anscos, Premos, Centuries, etc.); they are offered especially adapted for this purpose on page 14 of this catalogue.

The middle and larger sizes are exceedingly popular with professionals for view work and large groups.

The sizes Nos. 8—11 are also excellent for half tone engraving—possessing rapidity and sharp definition.

PRICE LIST AND SPECIFICATIONS

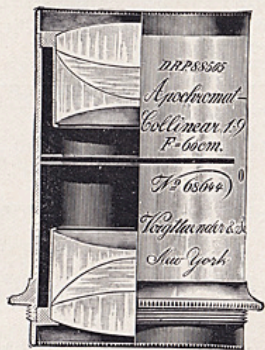
Voigtlaender's Collinears Series III, Rapid

No.	Equivalent Focus	Free Diameter of Glasses	Sizes of Plates Sharply Covered			Price with Iris Diaphragm
			F 6.8	F 16	F 32	
	inches	inches	inches	inches	inches	
1	$3\frac{1}{2}$	$\frac{1}{2}$	$3\frac{1}{4} \times 3\frac{1}{4}$	$3\frac{1}{4} \times 4\frac{1}{4}$	4x5	\$27.50
2	$4\frac{3}{4}$	$\frac{11}{16}$	$3\frac{1}{4} \times 4\frac{1}{4}$	$4\frac{1}{4} \times 6\frac{1}{2}$	5x7	32.50*
3	$5\frac{7}{8}$	$\frac{7}{8}$	$4\frac{1}{4} \times 6\frac{1}{2}$	5x7	$6\frac{1}{2} \times 8\frac{1}{2}$	40.00*
3a	7	1	5x7	6x8	7x9	50.00*
			F 7.7			
4	$7\frac{7}{8}$	$1\frac{1}{8}$	6x8	7x9	8x10	55.00*
5	$9\frac{7}{8}$	$1\frac{7}{16}$	7x9	8x10	11x14	72.50*
6	$11\frac{7}{8}$	$1\frac{9}{16}$	8x10	11x14	12x15	100.00*
7	$14\frac{1}{2}$	$1\frac{7}{8}$	11x14	14x17	16x18	130.00
8	17	$2\frac{1}{4}$	14x17	16x18	18x22	165.00
9	20	$2\frac{5}{8}$	16x18	18x22	22x27	210.00
10	$23\frac{5}{8}$	$3\frac{3}{16}$	18x22	20x24	25x30	300.00
11	$31\frac{1}{2}$	$4\frac{3}{32}$	20x24	25x30	30x35	525.00

* These sizes are furnished without barrel and iris diaphragm for hand cameras at special prices (see page 14).

The back combination of Series III can be used separate, forming an anastigmatic lens with largest aperture of about F 16 and with double the focal length of the complete lens.

VOIGTLAENDER'S APOCHROMAT COLLINEAR



Working Aperture, F 9

For Three Color and Process Work

The extraordinary demands which modern reproduction methods and in particular the three color process make upon photographic lenses with regard to their chromatic correction, have led us to introduce this entirely new modification of the Collinear type, a construction in which special attention has been paid to the correction of the red, blue and green rays.

In the reproduction of colored originals by the three color process it is customary to photograph the subject successively through a red, a blue and a green screen, and to prepare from these negatives, three plates, the impressions from which, made one over the other by a mechanical printing process, will reproduce the correct coloring of the original. In order that the three impressions may coincide (or register) they must be absolutely uniform in size, which can only be the case if the focal distance for the red, blue and green rays is absolutely identical, and the color correction absolutely correct.

By the use of three special qualities of glass the problem is most accurately solved in the *Apochromat Collinear*. In this lens the three images, the red, blue and the green, and in fact the images of any other color, lie in exactly the same focal plane and are of exactly the same size. The green, blue and red plates will coincide with such accuracy that there will be no vestige of overlapping, no color fringe, no lack of sharpness.

The *Apochromat Collinear* is the only lens of this kind constructed with special reference to these requirements and conditions.

But the Apochromat is also valuable for half tone and line work, inasmuch as the absence of the secondary spectrum (color fringes) produces negatives of the most beautiful contrast and exquisite sharpness and permits of the constant use of the full speed of the lens.

The lenses are regularly furnished with Waterhouse diaphragms. Special diaphragms for half tone will be made to order when wanted.



Broad Street, Philadelphia

ON A RAINY DAY, WITH COLLINEAR II No. 4



PRESIDENT ROOSEVELT AND HIS FAMILY.

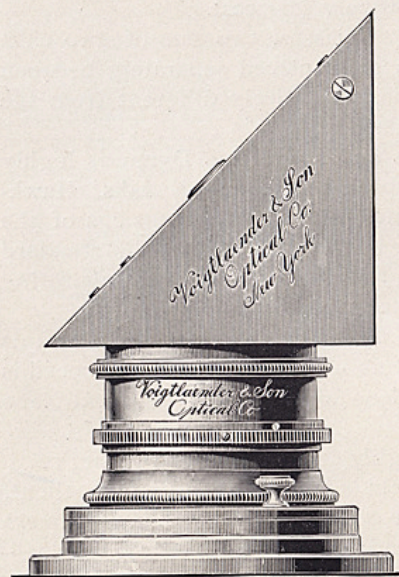
Copyright
Pach Bros. 1903

With Collinear Lens Series III.

Voigtlaender's Achromat Collinear

PRICE LIST AND SPECIFICATIONS

Focus	Free Diameter of Glass	Size of Plate Covered		Price
		F 9-11	F 16-64	
inches	inches	inches	inches	
12	1 $\frac{1}{2}$	8x10	10x12	\$112.50
17	1 $\frac{3}{8}$	10x12	14x17	181.25
20	2 $\frac{3}{8}$	12x16	16x20	253.75
24	2 $\frac{1}{2}$	16x20	20x24	326.25
31 $\frac{1}{2}$	3 $\frac{1}{8}$	20x24	24x28	543.75



VOIGTLAENDER'S PRISMS

These prisms are made of colorless glass, free from flaws or waves which might deflect the rays of light and produce an incorrect image. They can be fitted to any high grade lens but are made with special reference to the Collinears and Achromats. They serve to reverse the image as regards right and left.

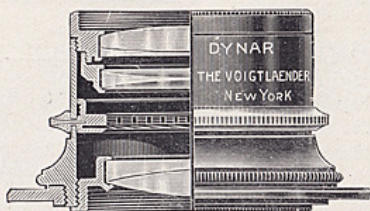
PRICE LIST

No.	Length of Short Side	Suitable for Lenses Collinear III Achromat		Price, including fitting to lens
			focus	
3	1 $\frac{1}{2}$	No. 5		\$32.00
4	2 $\frac{1}{8}$	No. 6	12 in.	50.00
5	2 $\frac{3}{8}$	No. 7	17 in.	60.00
6	3 $\frac{1}{8}$	No. 8	20 in.	80.00
7	3 $\frac{1}{2}$	No. 9	24 in.	120.00
8	4 $\frac{1}{8}$	No. 10	31 $\frac{1}{2}$ in.	220.00

NOTE:—When using a lens with a prism it is advisable to choose a lens one size larger than ordinarily required, as the prism narrows the angle of the lens.

VOIGTLAENDER'S DYNAR

F 6



The Dynar is an entirely new lens, of recent construction, the advantages and attractive features of which are its compactness and lightness, its speed, its careful anastigmatic

correction and its comparatively low cost.

The Dynar consists of five glasses, two sets of two each firmly cemented and the fifth glass placed separately between the two sets. This construction is entirely different from the symmetrical form of the Collinear.

Owing to its compactness and speed the Dynar is highly recommended for hand and pocket cameras—Kodaks, Hawk-eyes, Centuries, Anscos, Premos, etc. The dimensions of the lens mounts are such that they will fit directly into the standard sizes of modern shutters and full particulars regarding fitting to shutters and hand cameras are given on page 14.

The speed of the Dynar is F 6, which means that at this aperture it is $1\frac{1}{2}$ times as rapid as lenses at F 8. This speed is sufficient for all between-the-lens shutters and for focal-plane shutters.

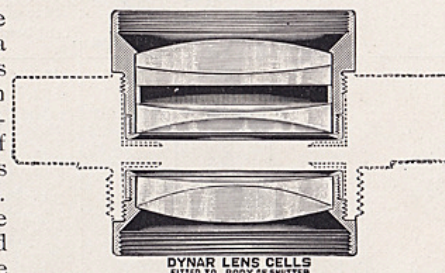
The Dynar lens is thoroughly corrected—achromatic, rectilinear and anastigmatic; the field is flat, the definition excellent.

The Dynar was primarily constructed to be a hand camera lens. It will however be found to cover a wide field besides—indoor and outdoor work, views, groups, mechanical work, etc.

No.	Equivalent Focus	Free Diameter of Glasses	Size of Plate F 6	Price of Cells only without barrel	Price of Lens complete
2	inches 4 $\frac{1}{4}$	inches $\frac{1}{2}$	inches 3 $\frac{1}{4}$ x4 $\frac{1}{4}$	\$22.00	\$27.00
3	5 $\frac{1}{2}$	1	4x5	25.00	30.00
4	7	1 $\frac{1}{4}$	5x7	30.00	35.00
5	10	1 $\frac{3}{4}$	6 $\frac{1}{2}$ x8 $\frac{1}{2}$	47.50	53.50
6	12	2 $\frac{1}{2}$	8x10	65.00	72.00

COLLINEAR AND DYNAR LENSES FOR HAND CAMERAS

When lenses are to be used in combination with a between-lens shutter, as is almost always the case in hand cameras, the intermediate tube or body of the lens is not wanted, as the shutter takes its place. The cells in which the glasses are set are inserted directly in the body of the shutter and the latter is attached to the camera. When the cells are purchased without the barrel a reduction in the price is made.



Below we give a complete list of Collinear and Dynar hand camera lenses, the necessary specifications for determining which lenses can be fitted to purchaser's camera and whether a purchaser possessing a shutter can have the Collinear or Dynar lenses fitted to his shutter or whether he will have to purchase a new shutter.

HAND CAMERA COLLINEARS, SERIES II SPECIFICATIONS

No.	Size of Picture	Height of Lens above front board	Diameter of Lens cell	Size of front board	Focal Length	Takes R & W Auto. shutter	Takes Volute shutter
2	inches 3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	inches $\frac{1}{2}$	inches 1 $\frac{1}{8}$	inches 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	inches 4 $\frac{1}{2}$	inches 4 x 5	No. 1
3	4 x 5	1 $\frac{3}{16}$	1 $\frac{1}{8}$	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	5 $\frac{1}{8}$	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	No. 2
4	5 x 7	1 $\frac{1}{2}$	2	3 x 3	7 $\frac{1}{8}$	8 x 10	No. 2
5	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	1 $\frac{9}{16}$	2 $\frac{1}{8}$	3 x 3	9 $\frac{1}{8}$	8 x 10	No. 2
6	8 x 10	1 $\frac{7}{8}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$ x 3 $\frac{1}{2}$	11 $\frac{1}{8}$	8 x 10	No. 3

PRICE LIST

No.	Price of complete lens	Price of cells only	Price of cells and Auto. shutter	Price of cells and Volute shutter
2	\$40.00	\$36.00	\$46.00	\$54.00
3	45.00	40.50	52.50	60.50
4	60.00	54.00	68.00	74.00
5	77.50	69.75	83.75	89.75
6	105.00	94.50	108.50	116.25

HAND CAMERA COLLINEARS, SERIES III

SPECIFICATIONS

No.	Size of Picture	Height of Lens above front board	Diameter of Lens cell	Size of front board	Focal Length	Takes R & W Auto. shutter	Takes Volute shutter
2	inches 3½ x 4¼	inches ¼	inches 1⅛	inches 1¼ x 1¾	inches 4¾	inches 4 x 5	No. 1
3	4 x 5	1⅓	1⅛	2 x 2	5⅓	4 x 5	No. 1
3a	5 x 7	1¼	1½	2⅓ x 2⅓	7	6½ x 8½	No. 1
4	5 x 7	1⅓	1⅞	2⅓ x 2⅓	7⅓	6½ x 8½	No. 1
5	6½ x 8½	1⅓	1⅞	2⅓ x 2⅓	9⅓	6½ x 8½	No. 2
6	8 x 10	1⅞	2⅛	3 x 3	11⅓	8 x 10	No. 2

PRICE LIST

No.	Price of complete lens	Price of cells only	Cost of lens and Auto. shutter	Cost of lens and Volute shutter
2	\$32.50	\$29.25	\$36.25	\$47.25
3	40.00	36.00	43.00	54.00
3a	50.00	45.00	57.00	63.00
4	55.00	49.50	61.50	67.50
5	72.50	65.25	79.25	85.25
6	100.00	90.00	104.00	110.00

HAND CAMERA DYNAR

SPECIFICATIONS

No.	Size of Picture	Height of Lens above front board	Diameter of Lens cell	Size of front board	Focal Length	Takes R & W Auto. shutter	Takes Volute shutter
2	inches 3½ x 4¼	inches ¼	inches 1¼	inches 1¼ x 1¾	inches 4¾	inches 4 x 5	No. 1
3	4 x 5	⅓	1⅞	2½ x 2½	5⅓	4 x 5	No. 1
4	5 x 7	1⅞	1⅓	2½ x 2½	7	6½ x 8½	No. 2
5	6½ x 8½	1¼	2⅓	3 x 3	10	8 x 10	No. 2
6	8 x 10	1½	2½	3 x 3	12	8 x 10	No. 3

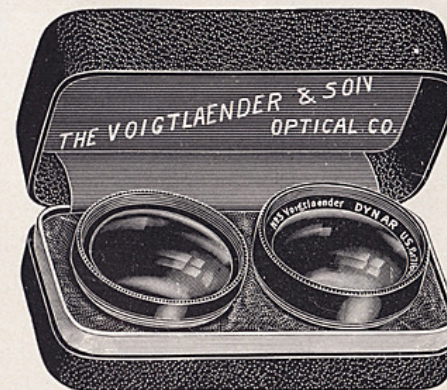
PRICE LIST

No.	Price of complete lens	Price of cells only	Cells fitted to Auto. shutter	Cells fitted to Volute shutter
2	\$27.00	\$22.00	\$30.00	\$40.00
3	30.00	25.00	33.00	43.00
4	35.00	30.00	42.00	50.00
5	53.50	47.50	61.50	67.50
6	72.00	65.00	79.00	87.00

Collinear and Dynar Lens Cells

for

Folding Pocket Kodaks, Etc.



The Kodak sizes of these lenses are now mounted in such a form that they can be screwed without any fitting into Auto. or Volute shutters, and also into the Kodak Auto. shutter of the No. 3a folding pocket Kodak size.

Any one can send for a set of these cells, and without any assistance remove his original Kodak cells and replace them with the high grade Collinear or Dynar cells. If the cells are bought mounted in a shutter, it is equally simple to substitute them in place of the Kodak lens and shutter. It is a matter of a few minutes.

For Folding Pocket Kodak No. 3.

Collinear III, No. 2, with Auto. shutter \$36.25

Dynar No. 2, with Auto. shutter 29.00

For Volute shutter add \$11.00

For Folding Pocket Kodak No. 3a.

Collinear III, No. 3, cells fitting Kodak shutter . . . \$36.00

Dynar No. 3, cells fitting Kodak shutter 25.00

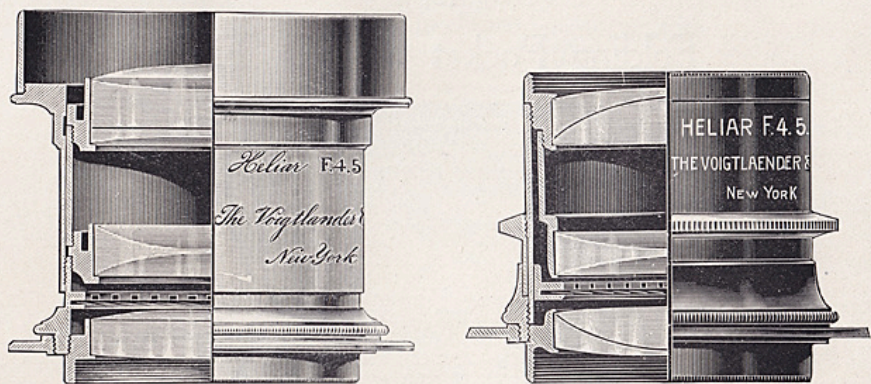
For Auto. shutter add \$7.00; For Volute add \$18.00

Included in the above prices are a plush-lined case, a focusing scale and diaphragm scale.

Orthochromatic Ray Screens.

For the above, each . . . \$1.50; set of 3 in case . . . \$4.50

VOIGTLAENDERS' HELIAR



SUITABLE FOR

Portraiture—Heads, Busts, Full Lengths, Groups—High-speed
Instantaneous with Focal Plane Shutter, Enlarging
Projection and Telephoto Work

OPTICAL PROPERTIES. The HELIAR lens is a carefully corrected high speed anastigmat lens with a medium angle of view. The difficult problem of obtaining high speed without sacrificing optical perfection is solved in this lens. The HELIAR has a perfectly flat field and very sharp definition; it possesses great brilliancy of image, on account of the entire absence of so-called "coma." "Coma" produces gray, flat images, while HELIAR images sparkle. The combination of all these qualities explains the wide range of usefulness of the HELIAR lens.

CONSTRUCTION. The HELIAR consists of five glasses comparatively thin so as to transmit a maximum amount of light, a single glass being placed between two sets of two glasses securely cemented together. The body of the lens is largely made of aluminum so as to reduce its weight. The iris diaphragm is placed between middle and rear lens.

There are two styles of mountings, as illustrated: the hand camera mount used for sizes 1 to 4, and the portrait mount used for sizes 5 to 9.

PORTRAITURE. The usual trouble experienced with a portrait lens is that with full opening it will cut only heads and busts but no full length figures and no groups. For these it has not the necessary flat field; it requires stopping down and this means loss of speed. The HELIAR lens does not require stopping down, except where more than usual depth is needed. This fact together with its brilliancy makes it the most up-to-date and popular portrait and group lens.

FOR HIGH SPEED INSTANTANEOUS WORK with the focal plane shutter the HELIAR is unsurpassed. Correctly timed pictures in $\frac{1}{500}$ to $\frac{1}{1000}$ of a second in good light, showing full details in the shadows are easily obtained. The focal plane shutter must be used with the HELIAR lens to do it justice in instantaneous work at full opening; between-the-lens shutters have not sufficient opening and cannot be fitted to the HELIAR.

THE HELIAR can be attached to the Graflex, Reflex and other high speed cameras, but it cannot be fitted to hand cameras not supplied with a focal plane shutter.

TELEPHOTO WORK requires a quick and accurate positive lens. The HELIAR lens used as a positive and in combination with a Voigtlaender telephoto attachment is undoubtedly the quickest telephoto construction hitherto offered.

For enlarging and projecting the speed of the HELIAR lens and its sharpness of definition are highly desirable qualities.

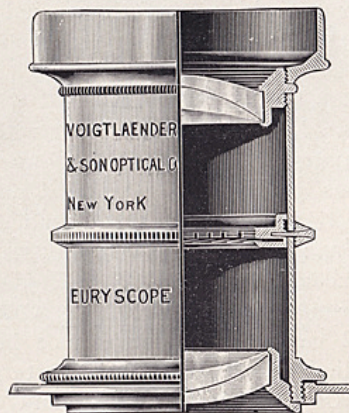
PRICE LIST

No.	Equivalent focus	Working Aperture of Lens	Size of Plate covered at F 4.5	Price
	inches	inches	inches	
1	4 $\frac{1}{2}$	1 $\frac{1}{16}$	2 $\frac{1}{2}$ x3 $\frac{1}{2}$	\$39.00
2	6 $\frac{1}{4}$	1 $\frac{1}{8}$	3 $\frac{1}{2}$ x4 $\frac{1}{2}$	48.00
3	7	1 $\frac{3}{16}$	4x5	57.00
4	9 $\frac{1}{2}$	2 $\frac{1}{8}$	5x7	90.00
5	11 $\frac{1}{4}$	2 $\frac{3}{8}$	6 $\frac{1}{2}$ x8 $\frac{1}{2}$	129.00
6	14	3 $\frac{1}{8}$	7x9 $\frac{1}{2}$	168.00
7	16 $\frac{1}{2}$	3 $\frac{5}{8}$	8 $\frac{1}{2}$ x10 $\frac{1}{2}$	219.00
8	19	4 $\frac{3}{8}$	10x12	264.00
9	24	5 $\frac{1}{8}$	11x14	350.00

The sizes of plates given are very conscientiously indicated. While a slightly larger plate can be covered with full opening, as an 8x10 with a No. 6 lens, it should be pointed out that stopping down does not materially increase the covering power. A stop of less than F 16 is not recommended, as it reduces the field.

VOIGTLAENDER'S PORTRAIT EURYSCOPES

Series III



F 4.5

For Heads and Busts in the Studio

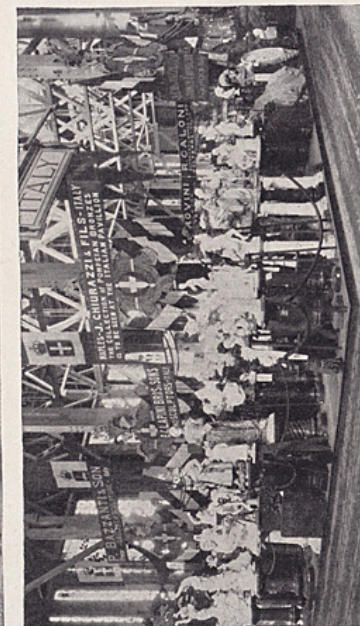
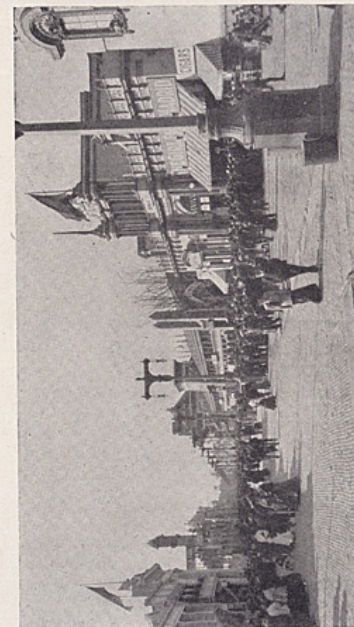
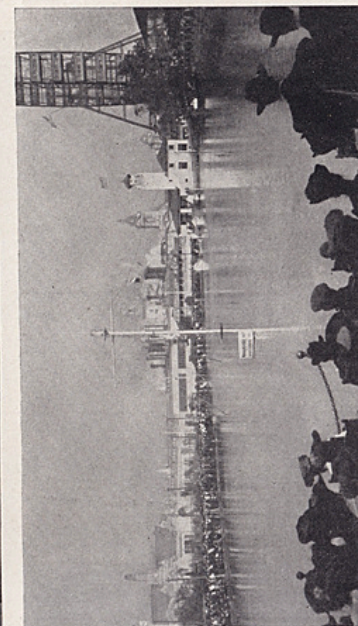
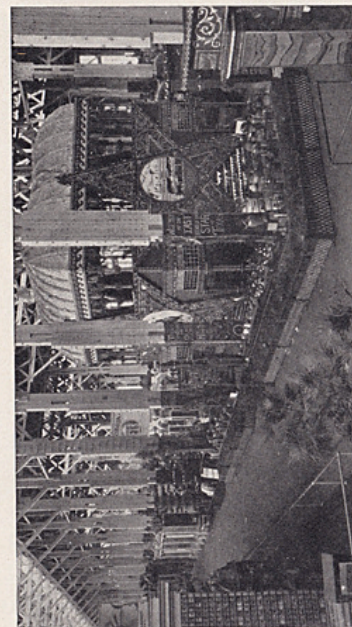
Portrait Euryscopes have been favorably known for their excellence amongst photographers in all parts of the globe for more than 30 years. Recently they have been improved by slightly modifying the calculations to conform to the peculiarities of the New Jena Glass. The most suitable grades of the latter are now used for the manufacture of the Euryscopes.

The Portrait Euryscope, Series III, is distinguished for rapidity under the skylight and for artistic softness. It is a lens intended for heads and busts, and the range of its sizes runs from carte de visite up to 8 x 10. The glasses are 4 in number, arranged in symmetric sets of two; they are large to correspond with the large aperture, F 4.5. The angle, as is natural in portrait lenses, is about 40 per cent.

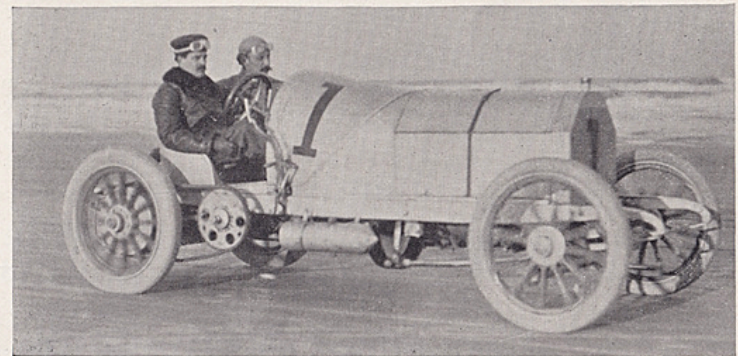
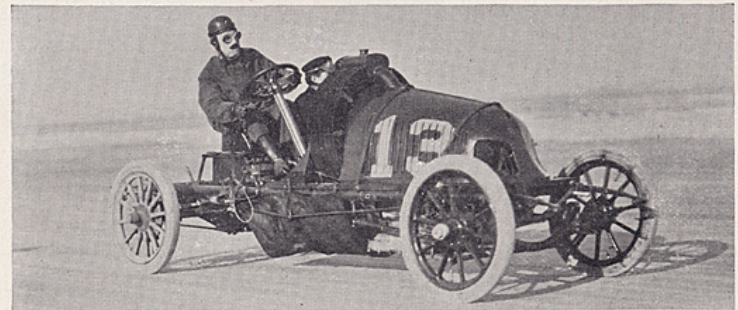
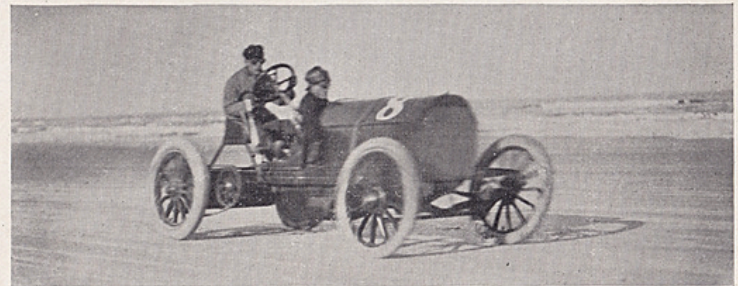
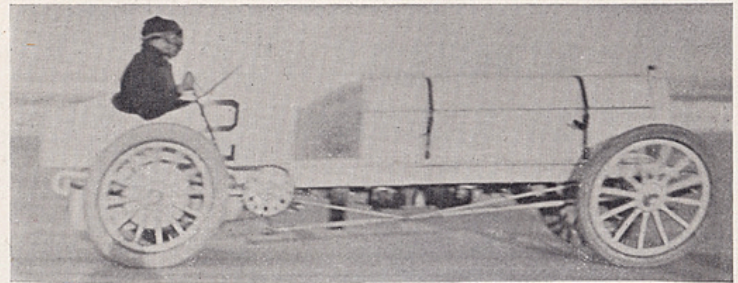
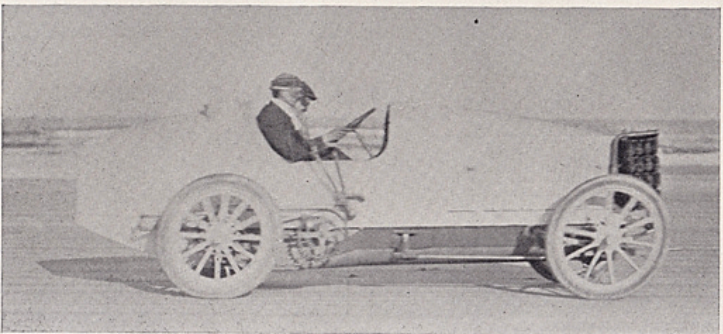
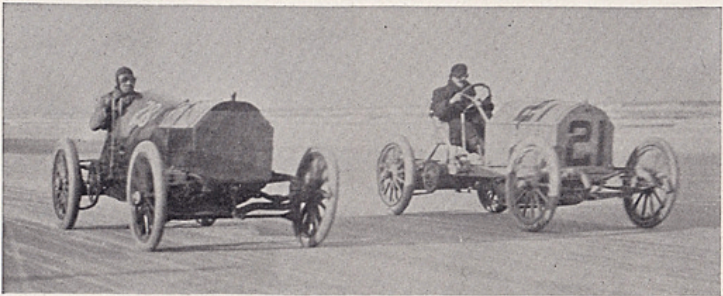
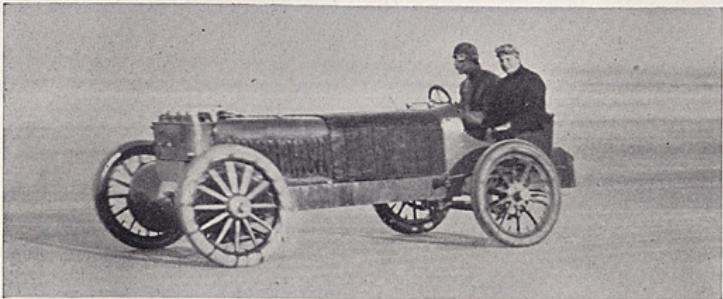
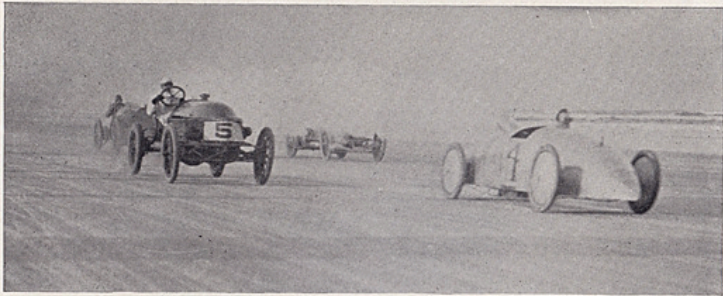
Portrait Euryscopes are now furnished altogether with iris diaphragms.

PRICE LIST

No.	Equivalent Focus	Aperture	Size of Head or Figure	Price
	inches	inches	inches	
2	8	1½	3¼x4¼	\$42.00
3	8½	2¼	4x5	52.50
4	11¼	2½	5x8	72.00
5	14	3¼	6½x8½	90.00
6	16¼	3½	8x10	120.00



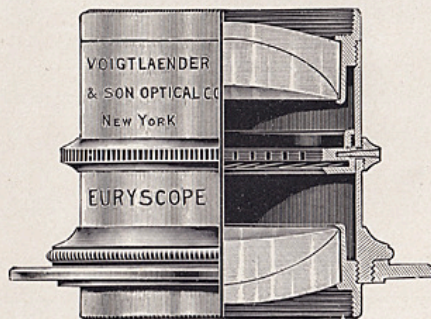
Views at the St. Louis Exposition



MADE WITH THE HELIAR LENS

Owing to the excessive speed of the motor cars (the uppermost running a mile in $34\frac{1}{2}$ sec.) the pictures show some motion, despite an exposure of the $\frac{1}{1000}$ of a second. Note the full illumination obtained with the lens at this short exposure.

VOIGTLAENDER'S EXTRA RAPID EURYSCOPE



FOR PORTRAITS AND GROUPS.

This is by far the most popular of the various series of Euryscopes and is to be found in nearly every studio of any importance. There are many features about it to make it a desirable lens and despite the many new styles of lenses which we have introduced it is still a wonderful favorite.

It is a lens of medium speed; the aperture is F 6. But it possesses a comparatively flat field with an angle of about 55 degrees and can therefore be used not only for heads and busts but also for groups. Those who look for that general sharpness which is the result of depth, frequently prefer this lens on account of its depth to the more rapid Series III Portrait Euryscope or Heliar. This preference is usually most shown in selecting a group lens for which purpose the Series IV Euryscope is especially liked.

The construction is a symmetrical one; the lenses are of Jena Glass and the iris diaphragm is furnished throughout.

PRICE LIST

No.	Equivalent Focus	Full opening of Lens	Size of Plate F 6	Price
	inches	inches	inches	
2	10	1 $\frac{1}{4}$	5x7	\$48.00
3	11 $\frac{1}{2}$	2 $\frac{1}{4}$	6 $\frac{1}{2}$ x8 $\frac{1}{2}$	57.00
4	14	2 $\frac{1}{2}$	8x10	72.00
5	17	3 $\frac{1}{5}$	11x14	100.00
6	21	3 $\frac{1}{2}$	14x17	135.00



A PORTRAIT.

Made with a Heliar No. 5.

Table of Distances and Sizes for Operating
in the Studio

NAME OF LENS	FOCUS OF LENS INCHES	STANDING FIGURE OF MAN. (5 feet 8 inches taken as average Height)									
		4 inches	6 inches	8 inches	10 inches	12 inches					
Collinear II, 4.....	8-in.	144	9	99	9	76	9	62	9	53	9
Portrait Euryscope III, 2 Portrait Euryscope III, 3		9-in.	162	10	111	10	86	10	70	10	60
Heliar No. 4.....	10-in.		180	10	123	11	95	11	78	12	67
Collinear II, 5..... Euryscope IV, No. 2.....		11-in.	198	12	135	12	104	12	86	13	73
Portrait Euryscope III, 4 Euryscope IV, No. 3.....	12-in.		216	13	148	13	114	13	94	14	80
Heliar No. 5..... Collinear II, 6..... Collinear III, 6.....		14-in.	257	16	172	15	133	15	109	16	93
Portrait Euryscope III, 5 Euryscope IV, No. 4.....	16-in.		288	16	197	17	152	18	125	18	106
Heliar No. 6..... Collinear II, 7..... Collinear III, 7.....		17-in.	306	17	209	18	162	18	132	20	114
Portrait Euryscope III, 6 Heliar No. 7.....	20-in.		360	21	247	22	199	22	156	23	133
Collinear II, 8..... Collinear III, 8..... Euryscope IV, No. 5.....		21-in.	390	16	276	17	218	18	183	18	153
Collinear II, 9..... Collinear III, 9.....	23-in.		414	23	283	25	218	25	180	28	154
Heliar No. 8..... Euryscope IV, 6..... Collinear II, 10..... Collinear III, 10.....		32-in.	576	34	395	35	394	36	304	37	250

NAME OF LENS	FOCUS OF LENS INCHES	HEADS.					
		2 inches		4 inches		6 inches	
Portrait Euryscope III, 3....	9-in.	60	8
Collinear II, 5.....	10-in.	70	9	58	15
Collinear III, 5.....		11-in.	77	10	64	16	..
Portrait Euryscope III, 4....	12-in.		84	11	70	18	..
Collinear II, 6.....		14-in.	92	13	78	20	68
Collinear III, 6.....	15-in.		105	13	96	24	75
Portrait Euryscope III, 5....		16-in.	112	14	96	24	82
Collinear II, 7.....							
Collinear III, 7.....							
Portrait Euryscope III, 6....							

USE OF TABLES:—Find the name of the lens you are using, select the size of figure or head you wish to make, as 4 in., 6 inches, etc. Under each size of figure or head are 2 columns. The first designates distance of object from lens, the second from lens to ground glass. All distances are in inches.

VOIGTLAENDER'S NEW TELEPHOTO LENSES

A telephoto lens consists of a negative element composed of three glasses and a tube by which the latter is attached to the positive lenses in connection with which it is to be used. The positive element receives the light rays and converges them so that they would form a picture, the negative intervenes and again diverges them so as to lengthen the original focus and enlarge the scale of the picture. It is evident that all the defects due to the positive element will be strongly magnified by the negative, and likewise that a special construction of the negative element is required to give perfect enlargement.

High-grade lenses, such as Collinear II and III, Heliars and Dynars, are recommended as positive elements. The negative element is a perfectly corrected combination, free from astigmatism.

We stock four telephoto attachments to fit our Collinear lenses Nos. 1—4, both of Series II, F 5.6 and Series III, F 7.7. Larger sizes, also sizes for Heliar, Dynar, or high grade lenses of other makers are made to order. The attachment consists of an inside tube holding the negative lens and sliding by means of rack and pinion motion within an outer tube, to the front of which is fitted the positive element.

A scale is supplied to indicate the degree of magnification.

Advantages of the Telephoto Lens

A telephoto attachment used in connection with a high-grade photographic lens possesses numerous advantages.

It takes the place of a set of long focus lenses and requires a much smaller extension of bellows than the latter would.

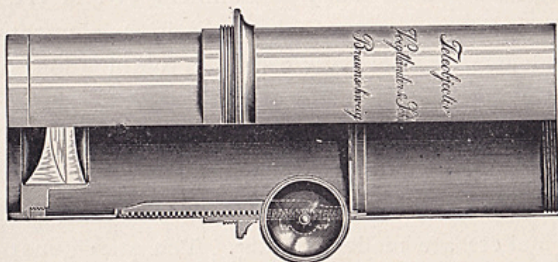
In landscape, architectural, geological or surveying work, the telephoto attachment makes distant objects appear near at hand, so that they may be photographed in detailed enlargement.

The telephoto attachment enables every student of live game and birds to photograph them in their characteristic attitudes from a distance.

Attention should be called to the fact that the length of exposure increases considerably with the magnification. Using the same stop, a linear magnification of three times requires nine times the exposure, a linear magnification of four times, sixteen times the exposure, etc.

The tables given on another page shows how many inches distant the ground glass must be from the lens flange to obtain a certain number of linear magnifications of the image produced by the positive lens alone.

The lenses, both the positive and negative must be kept perfectly clean and the apparatus must be kept rigid, as the least bit of dirt or vibration will be equally magnified.



PRICE LIST.

The cost of complete Telephoto Lenses may be found by adding the cost of Positive Lens selected to that of the Telephoto Attachment.

Suitable Positive Lenses						Telephoto	
Collinear Series II			Collinear Series III			No.	Price
No.	Focus in inches	Price	No.	Focus in inches	Price		
1	3½	\$35.00	1	3½	\$27.50	1	\$30.00
2	4¾	40.00	2	4¾	32.50	2	35.00
3	5⅞	45.00	3	5⅞	40.00	3	35.00
			3a	7	50.00	4	40.00
4	7⅞	60.00	4	7⅞	55.00		

DETAILS OF COMBINATIONS.

COMBINATIONS	Distance between Flange and Ground Glass.	Resulting Focal Length.	Magnification compared with photograph taken without the negative lens.	Size of plate covered
	inches	inches	times	inches
Attachment No. 1, with Collinear, 3½ in. focus, Series II. or Series III.	5½	17½	5	3¼ x 4¼
	8½	23	7½	4¼ x 6½
	11½	35	10	6½ x 8½
Attachment No. 2, with Collinear, 4¾ in. focus, Series II. or Series III.	5¼	23¼	5	3¼ x 4¼
	8½	35½	7½	4¼ x 6½
	11½	47½	10	6½ x 8½
Attachment No. 3, with Collinear, 5⅞ in. focus, Series II. or Series III.	14¼	57	12	8x10
	7	23½	4	3¼ x 4¼
	8	29⅞	5	4x5
Attachment No. 4, with Collinear, Series III. 7 in. focus.	13¾	44	7½	6½ x 8½
	19	58	10	8x10
	11½	35	5	4¼ x 6½
Attachment No. 4, with Collinear, 7⅞ in. focus, Series II. or Series III.	17	49	7	6½ x 8½
	25	70	10	8x10
	9	30½	4	4x5
Attachment No. 4, with Collinear, 7⅞ in. focus, Series II. or Series III.	11	39	5	5x7
	13½	47	6	7x9
	16½	55	7	8x10
	18¾	63	8	9x11
	29	94	12	10x12

DETAILS OF THE LARGER SIZES ON APPLICATION.

TESTIMONIALS

ANGELS CAMP, CAL., FEB. 25, 1905.

THE VOIGTLAENDER & SON OPT. CO.,
137 West 23rd St., New York City, N. Y.

GENTLEMEN:—

The second No. 6 Heliar came to-day and I screwed it on to my camera and made four negatives of babies this afternoon for the first trial; I did not notice any difference in the working of the two Heliar lenses. I consider either one Superior to any portrait lens I have ever used and I have used nearly every make. The No. 6 Heliar is just the size for Cabinets and Paris Panel work, and the largest portion of work done all over this country is of the cabinet size.

Many thanks for your kindness in sending me another lens to choose from.

Yours truly,

J. W. TRIPP.

EUGENE, ORE., JUNE 15, 1904.

THE VOIGTLAENDER & SON OPTICAL CO.,
NEW YORK.

GENTLEMEN:—

Your Collinear is faultless, and I can recommend it as the most perfect lens for all around work that I have ever used.

Very truly yours,

ALLEN A. SIMMONS.

BRADFORD, PA., DEC. 11, 1902.

THE VOIGTLAENDER & SON OPTICAL CO.,
137 W. 23rd St., N. Y. City.

GENTLEMEN:—

I feel that it will not be out of place to say something in commendation of the "Collinear lens" which was received from you a year or so ago.

It has far surpassed my anticipation in the quality of work it has done in bird photography. Have had fewer failures in this line than ever before and I find that enlarging five or even eight diameters does not lessen the sharpness, detail and brilliancy to any extent. I shall heartily recommend your lenses to photographers of Natural History.

Very truly yours,

GEO. C. EMBODY.