

An improved student's ophthalmoscope / by A. Stanford Morton.

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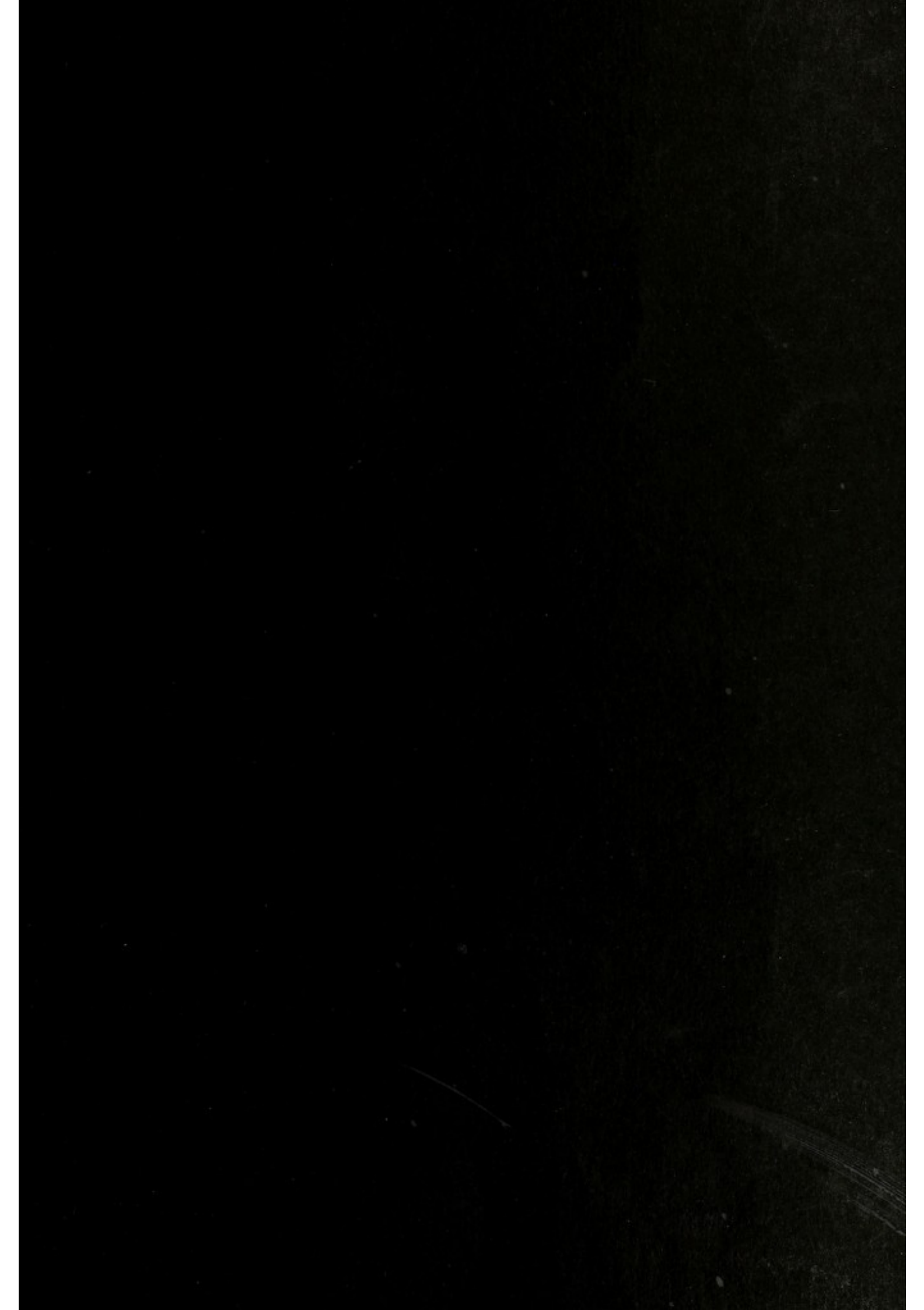
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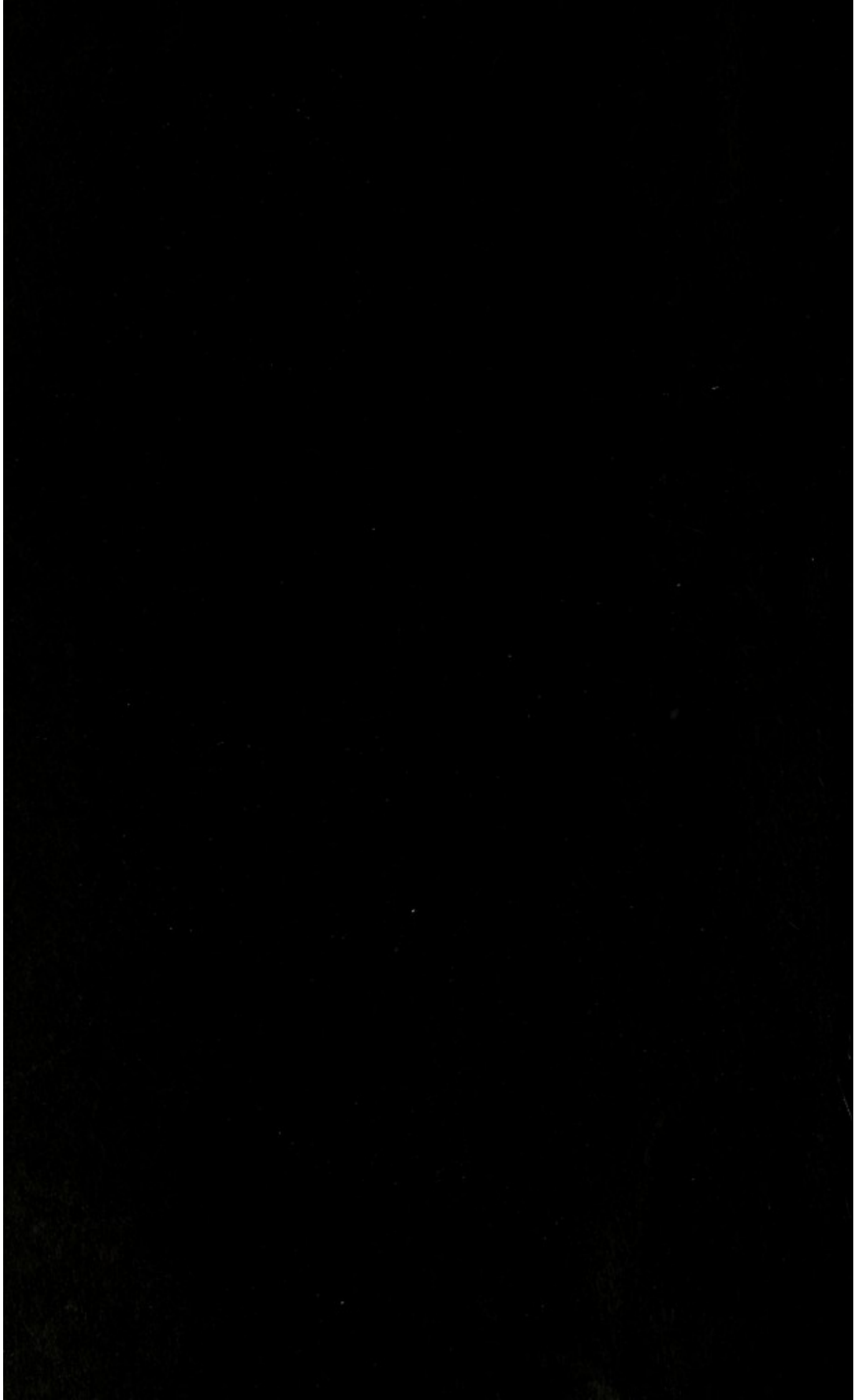
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1.



AN IMPROVED
STUDENT'S OPTHALMOSCOPE,

BY

A. STANFORD MORTON, M.B.,

*Senior Assistant-Surgeon, Royal South London Ophthalmic Hospital.
Clinical Assistant, Moorfields Ophthalmic Hospital.*

SOLE MAKERS:

PICKARD & CURRY,

195, GT. PORTLAND STREET, W.

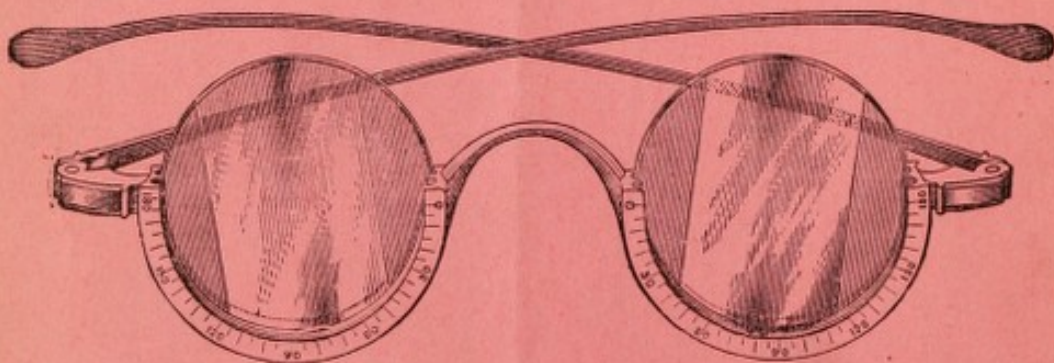




Trial Cases, containing 30 pairs each of convex and concave spherical lenses, 18 pairs each of convex and concave cylindrical lenses, 12 prisms, 12 coloured glasses, stenopæic slits, &c., 1 single and 1 double trial frame, and lens holder	8	8	0
Ditto do., mounted in rings	12	12	0
Ditto do., unmounted and containing 18 convex cylindrical and 18 concave cylindrical lenses only, but otherwise as above	7	7	0
Ditto do., mounted in rings	10	10	0
Vulcanite Hand Cases, containing 6 pairs of lenses each	0	17	0

N.B.—To obtain a complete set of lenses 6 Hand Cases are required.

TRIAL FRAMES.



Double Trial Frame to hold both spherical and cylindrical lens	1	1	0
Ditto do. do., with adjustments for width of face and height of nose	1	7	6
Single Trial Frame	0	10	6
Double Adjustable Trial Frame, as suggested by L. H. Tosswill, Esq.	1	15	0
Johnson's Automatic Double Adjustable Trial Frame, complete in case	3	10	0

TEST TYPES.

Test Type for distant vision mounted on framed board	0	4	6
Ditto ditto, two test Types (one on each side of board)	0	6	0
Astigmatic Fan mounted on framed board	0	3	6
Pray's Astigmatic Letters ditto	0	4	0
Astigmatic Clock ditto	0	12	0
Transparent Types for use with mirror in any short consulting room	0	10	6

N.B.—Unmounted Test Types are sent gratis to any duly qualified Medical practitioner

AN IMPROVED STUDENT'S OPHTHALMOSCOPE

BY

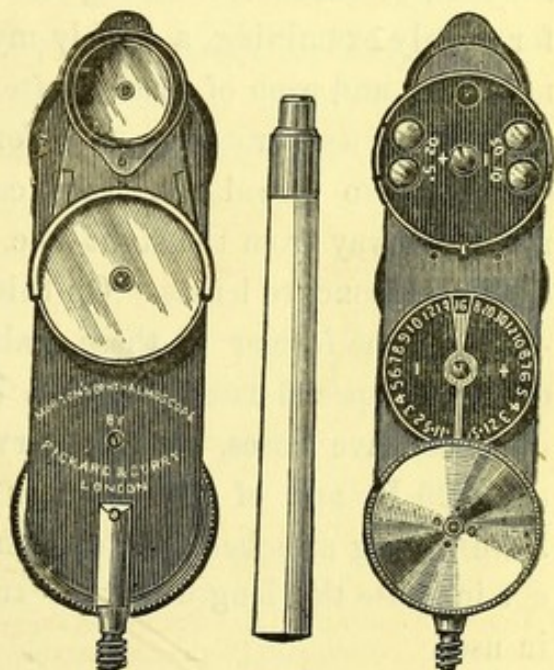
A. STANFORD MORTON, M.B.,

*Senior Assistant-Surgeon, Royal South London Ophthalmic Hospital,
Clinical Assistant, Moorfields Ophthalmic Hospital.*



THE Ophthalmoscope here described does not in any sense claim to be considered as an "invention," since it merely combines in *one* instrument the various improvements at present existing in *several* different Ophthalmoscopes. It consists essentially of 29 separate lenses, enclosed in an endless groove, and propelled by a strong driving wheel, as in the Ophthalmoscope devised by Mr. Couper, who has generously permitted this ingenious mechanism to

be here adopted. In addition to the lenses just mentioned are four others, the uses of which will be noted further on. At the same time that the driving wheel propels the lenses, it rotates a disc on which, at a certain aperture, is indicated the lens presenting at the sight hole.



On the front of the instrument is an arrangement, similar to the nosepiece of a microscope, revolving on a central pivot and carrying, as suggested by Mr. Johnson, a concave mirror at either end. One of these mirrors is 10 in. focus, for indirect examination and Retinoscopy. The other is 3 in. focus (for direct examination) and, as first used in this country by Dr. Fox, now of Philadelphia, it is fixed at an angle of 25° , but rotates around its central axis. By means of a *milled edge* the latter movement has been much facilitated in this instrument.

The *convex* lenses commence with $\cdot 5$ D and range, with intervals of a dioptré, from 1 D to 8 D : the series being terminated by 10 D and 12 D.

The *concave* lenses, commencing with $\cdot 5$ D, 1 D and 1 $\cdot 5$ D, range, with intervals of one dioptré, from 2 D to 10 D and, with intervals of two dioptries, from 10 D to 20 D : the series terminating with 30 D. This series of lenses will be found sufficient for all ordinary practical purposes.

In exceptional cases, however, other lenses are required and are provided on a special disc. Sometimes, for example, in examination of the lens, or vitreous, a strong convex lens is required ; at other times, for merely examining a highly myopic eye, a strong concave lens is necessary, and each of these is often wanted immediately before or after the O. On a separate disc, therefore, there are arranged a $+ 20$ D and a $- 50$ D, so placed that they can be instantly put in front of or removed away from the sight-hole, without rotating the whole series of convex or concave lenses. On this same disc are also a $+ \cdot 5$ D and a $- 10$ D, the former of these enabling one to estimate to within half a dioptré in special cases : and the latter, by use in conjunction with the other concave lenses, giving intervals of only one dioptré from $- 1$ D to $- 20$ D, and of two dioptries from $- 20$ D to $- 30$ D. These lenses, being attached to a disc on the outside of the instrument, do not increase the length of the "tunnel" except when they are actually in use.

The advantages claimed for this Ophthalmoscope are briefly :—

1.—A *continuous* series of *single* lenses, sufficient for all ordinary purposes.

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2.—The provision of a few separate, easily adjustable, lenses for extraordinary cases.

3.—The lens in the sight-hole is *always* indicated at the *same place* (except in the rare cases where one of the extra lenses, just mentioned, is used).

4.—The numbers of the lenses and their relative positions being fully exposed on an indicating disc, the direction in which this latter has to be rotated, to bring any particular lens to the sight-hole, is at once made manifest.

5.—There is only *one* driving-wheel.

6.—The provision of two mirrors revolving on a central pivot, so that either can be at once brought into position.

7.—The width of the instrument is only $1\frac{1}{4}$ in., while the driving-wheel, being 3 in. below the sight-hole, is unimpeded in its action by contact with the face of observer or patient.

8.—Lastly, the instrument balances well in the hand, is light and packs into a small compass.

N.B.—For those who wish, there is provision made for adapting a plane mirror to the back of the mirror of 10 in. focus, and for engraving a pupillometer on the face of the driving-wheel.

SPECTACLES.

Best quality hand-made Spectacles, accurately adjusted to the face, and fitted with spherical lenses	0	8	6
Second quality, do. do.	0	6	6
Machine made do. for Hospitals	0	2	6
(NOTE.—These cannot be accurately adjusted to the face.)			
Best quality hand-made Spectacles, accurately adjusted to the face, and fitted with spherical lenses of 4 inches focus and less	0	10	6
Best quality do. do., fitted with tinted lenses	0	10	6
Best quality do. do., fitted with tinted lenses of 4 inches focus and less	0	13	6
Best quality do. do., fitted with astigmatic or prismatic lenses	0	15	0
Best quality do. do., either surface having a focus of 4 inches or less	0	18	6
Second quality do. do. fitted with astigmatic or prismatic lenses	0	12	6
Second quality do. do., fitted with astigmatic lenses, either surface having a focus of 4 inches or less	0	15	0
Best quality do. do. fitted with astigmatic or prismatic lenses of any tint	0	18	6
Best quality cup shape Eye Preservers, any tint	0	8	6
Second quality, do. do. do.	0	6	6
Best quality do. do. do., fitted with any sight and any tint	0	15	0
Best quality do. do. do., with wire gauze sides, fitted with lenses of any tint	0	16	0
Best quality do. do. do., fitted with any sight and any tint	1	2	6
Best quality Goggles, with wire gauze cups, and fitted with plane lenses of any tint	1	16	0
Best quality do. do., fitted with lenses of any tint, either spherical, astigmatic, or prismatic	1	2	6
Horseshoe Eye Preservers, fitted with plane lenses of any tint	0	10	6
Spectacle Cases (frogmouth or tuck)	0	1	0
Velvet and silk-lined Box Case with snap	0	2	6
Best quality gold hand-made Spectacles, fitted with lenses	from	1	15
Turnpin sides to Spectacles	extra	0	2
Grooved lenses to Spectacles	extra	0	2

N.B.—Spectacles are supplied to Surgeon's prescriptions only.

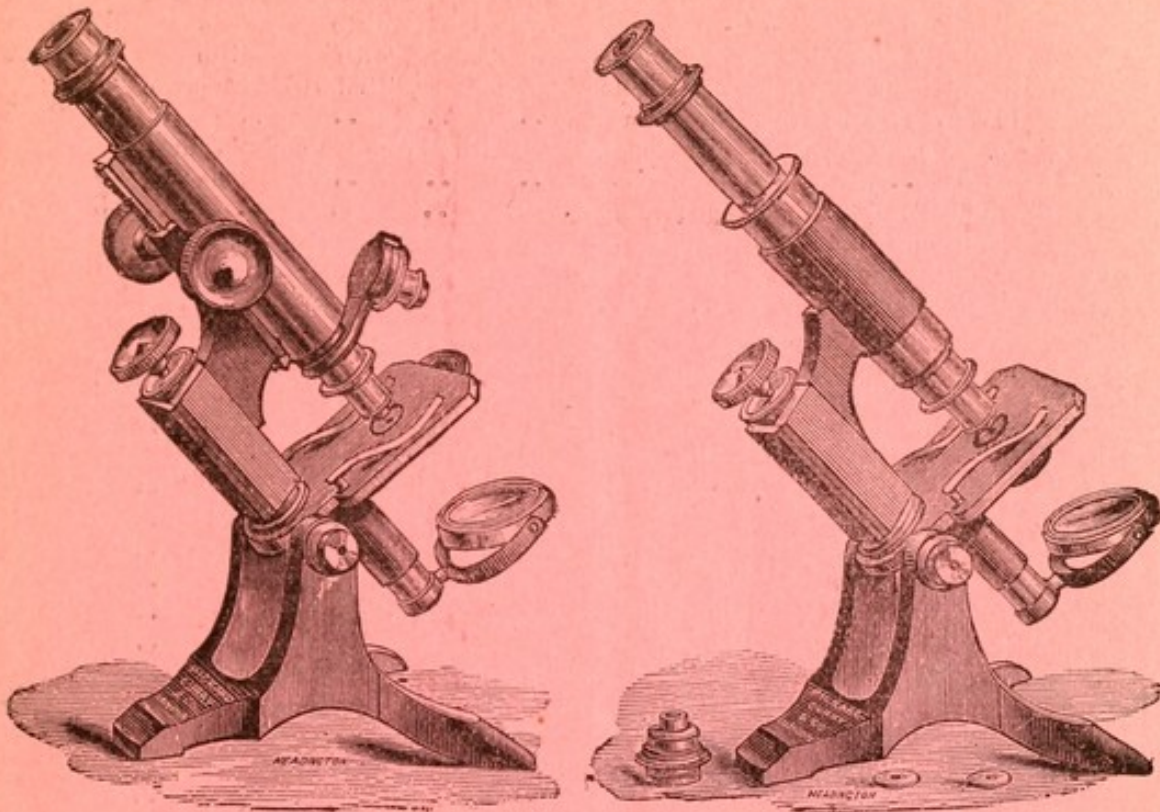
FOLDING EYE-GLASSES.

NOTE.—The following List of Prices includes fitting with spherical lenses. If tinted lenses are ordered, 2s. additional will be charged. Astigmatic or prismatic lenses are 6s. 6d. extra.

Japanese folding Eye-glasses, steel, nickel plated	0	8	6
Do. do., best quality	0	10	6
Do. do. do., strained tortoiseshell	0	8	6
Do. do. do., solid tortoiseshell	0	12	6
Do. do. do., silver	0	15	0
Do. do. do., gold	2	2	0
Strained tortoiseshell pivot folding Eye-glass	0	8	6
Solid do. do. do.	0	12	6
Gold pivot folding Eye-glasses	2	10	0
Solid tortoiseshell folding Eye-glass, with steel dumb-bridge	0	16	0
Do. do. do., with gold dumb-bridge	1	5	0
Gold dumb-bridge folding Eye-glass	3	0	0
Do. do., extra stout	4	4	0
Strained tortoiseshell folding Eye-glass, with watch spring	0	8	6
Solid do. do. do.	0	12	6
Tortoise-shell Hand Case, with silver gilt front	0	10	6
Do. do., best quality	0	18	6
Do. do., shell front	1	7	6
Do. do. do., gold mounts	2	0	9
Pearl Hand Case, silver-gilt front	1	1	0
Silver-gilt Hand Cases	from	2	2

MEDICAL MICROSCOPE.

AS PER ENGRAVING.



This instrument possesses all the good qualities of the Hartnack and the English Microscopes combined. The fine adjustment is on the Hartnack principle, and works steadily without lateral motion under the highest powers. The stage is provided with the wheel or central diaphragms at the option of the purchaser.

Price, including one Eye Piece, 1-inch and $\frac{1}{2}$ -inch (or 1-5th or 1-6th inch), in Mahogany Cabinet Case 5 0 0
 Ditto, with coarse rack motion 5 17 6

SECOND SERIES.—SMALL ANGLE OBJECTIVES.

2. Small Angle Objectives, suitable for Pathological work, and recommended for use by the medical profession, students, &c. These have been examined by some of the most eminent professors of Pathology, and reported to be unequalled for the examination of tissues, &c.

Equivalent Focus.	Angular Aperture.	Magnifying Powers with the various Eyepieces.				Price.		
		A	B	C	D	£	s.	d.
3-inches.	10°	15	20	35	50	1	0	0
2 "	12°	20	32	55	90	1	0	0
1½ "	15°	25	40	70	112	1	0	0
1 "	15°	37	60	105	170	1	0	0
$\frac{2}{3}$ "	20°	60	100	145	270	1	0	0
$\frac{1}{2}$ "	30°	95	153	265	420	1	10	0
$\frac{1}{4}$ "	85°	200	350	600	900	2	0	0
$\frac{1}{7}$ "	90°	350	550	750	1000	2	0	0
$\frac{1}{9}$ "	100°	400	700	1000	15000	3	0	0

OPHTHALMOSCOPES, &c.

Magazine Refraction Ophthalmoscope, with 72 lenses and swinging mirror	5	5	0
ditto	48	ditto	ditto
Student's Magazine	36	ditto	ditto
Refraction Ophthalmoscope, with swinging mirror, fitted with 12 concave 12 convex lenses in a Rekoss disc	..	..	..
do. do. Twin Ophthalmoscopes, fitted with 24 concave and 24 convex es	..	..	..
Student's Ophthalmoscope (see Pamphlet)	..	..	..
Purves' Refraction Ophthalmoscope	..	..	..
Oldham's Ophthalmoscope for general practitioners	..	..	from
Loring's Ophthalmoscope	..	..	..
Westminster Ophthalmoscope	..	..	..
Gower's Ophthalmoscope	..	..	..
Johnson's Ophthalmoscope	..	..	..
Brailey Ophthalmoscope	..	..	..
Dr. Parent's New Refraction Ophthalmoscope :—			
No. 1	..	..	..
No. 2	..	..	..
No. 3	..	..	..
De Wecker's Refraction Ophthalmoscope	..	..	..
De Wecker's Metrical Ophthalmoscope	..	..	..
Landholt's Ophthalmoscope	..	..	..
Mirror for Keratotomy or Retinoscopy	..	..	..
Ditto do., Dr. Brailey's form	..	..	..
Condensing lens, 2 inches diameter, 3 inches focus	..	..	..
Adams' Forehead (artist's) Ophthalmoscope with double discs	..	..	..
Adams' Single do. do.	..	..	..
Adams' Cornea Illuminator	..	..	..

OPTOMETERS, &c.

Gowan and Brailey's Optometer, for the quick determination of refraction in the ordinary way and by Keratotomy	..	..	..	11	11	0
This instrument contains 24 lenses, each 30 m/m in diameter. They correspond exactly up to +5.5 and -6d. with the lenses of the best form of Trial case. The height of the sight-hole is regulated by a readily applied screw adjustment. The chin-rest is readily moveable, and is self-fixing. This instrument very much shortens the time in which a refraction can be worked.						
Tweedy's Optometer, complete on stand	..	..	..	..	1	5
Couper's Optometer, with revolving disc, fitted with cylindrical lenses	..	..	..	..	7	7
Critchett's Chart for measuring the field of vision	..	..	..	..	0	2
Ditto do., mounted on linen	..	..	..	..	0	7
Purves' Meridian Delineator	..	..	..	..	2	2
Scheiner's Optometer	..	..	..	..	0	5
Stokes' Lens	..	..	..	..	1	5
Astigmatic Clock	..	..	..	..	0	15
Prof. Holmgren's Worsteds	..	..	..	..	0	5
Prof. Snellen's coloured transparent Types (framed) with the requisite spectacles for detecting feigned blindness in either eye	..	..	..	..	1	5
Dr. Parent's Artificial Eye for demonstrating myopia, hypermetropia, astigmatism, &c., &c.	..	..	..	..	4	4
Frost's Artificial Eye as described in Pamphlet	..	..	..	..	2	5
McHardy's Self-Registering Perimeter	..	..	..	..	8	10
Priestly Smith's Perimeter	..	..	..	..	4	4
Professor Snellen's Phakometer as modified by Professor McHardy	..	..	..	..	5	10

