RANZCO Museum Exhibit
Melbourne 2012

Sing-Pey Chow

David Kaufman

The exhibit of the 1920s consulting room shows artifacts from this era of diagnosis and treatment
as well as the outstanding contributors of the time

Ophthalmology in 1920s embraced the new era of diagnosis, enabling precise observation with the invention of -

Gullstrand slit lamp (1911)
Reflex free ophthalmoscope (1911)
Nordensen fundus camera (1927)

Allvar Gullstrand (1862 – 1930)

Swedish Ophthalmologist

Self-educated expert on focal illumination

Developed slit lamp and reflex-free ophthalmoscope in 1911

Nobel Laureate in 1911 for Dioptrics of the Eye

Gullstrand Slit Lamp

Early versions used a Nitra lamp to illuminate with the light source on a separate axis to the corneal microscope

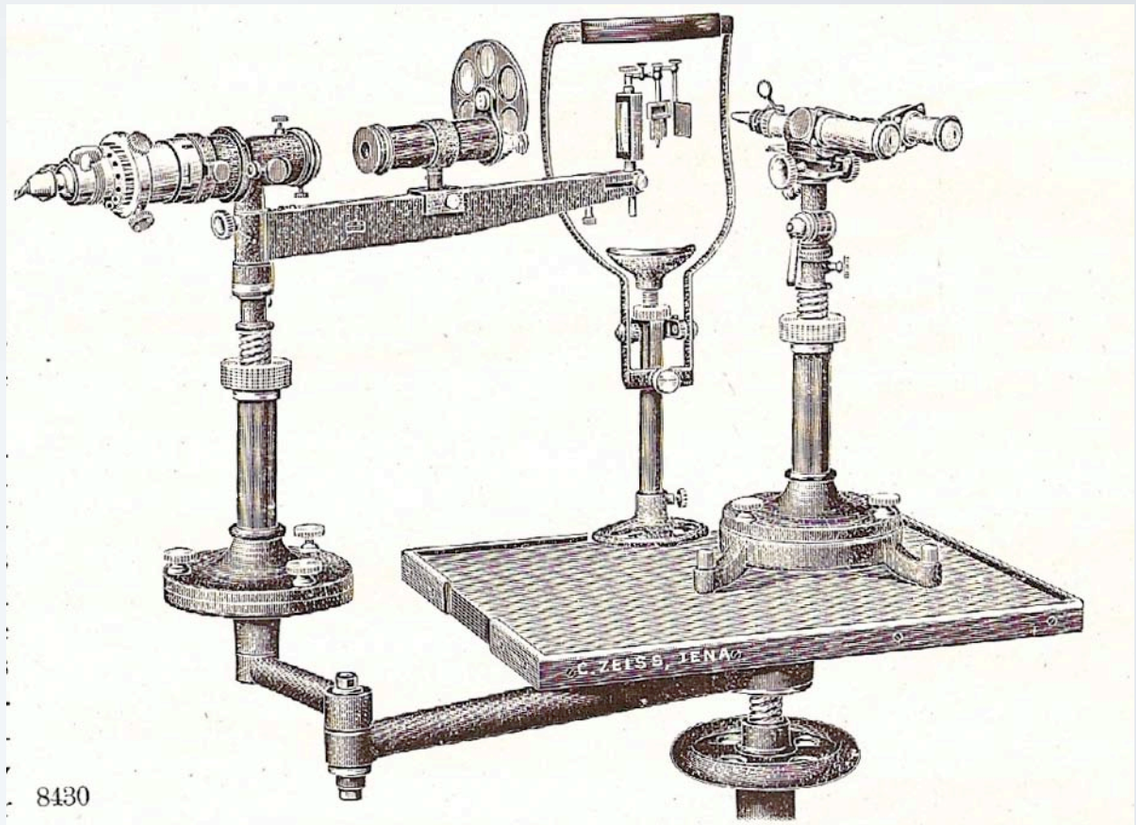

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Fig. 2. Complete set of apparatus for eye hospitals: **Slit Nitra lamp** with Koeppe diaphragm tube, polariser, revolving coloured glass wheel and non-spherical aplanatic Vogt slit lamp lens with adjustable Koeppe silvered mirror, and Koppe eye microscope with single objective, analyser and binocular attachment for ultra-microscopic and micro-polariscopic observations. Above this: A Vogt **slit arc lamp** (interchangeable with the Nitra lamp) with cooling cell, Koeppe diaphragm tube with polariser, and double revolving wheel with smoked glasses and coloured glasses, with non-spherical aplanatic Vogt slit lamp lens and adjustable Koeppe silvered mirror (about $^1/_{10}$ act. size).

Herman Snellen (1834 – 1908)

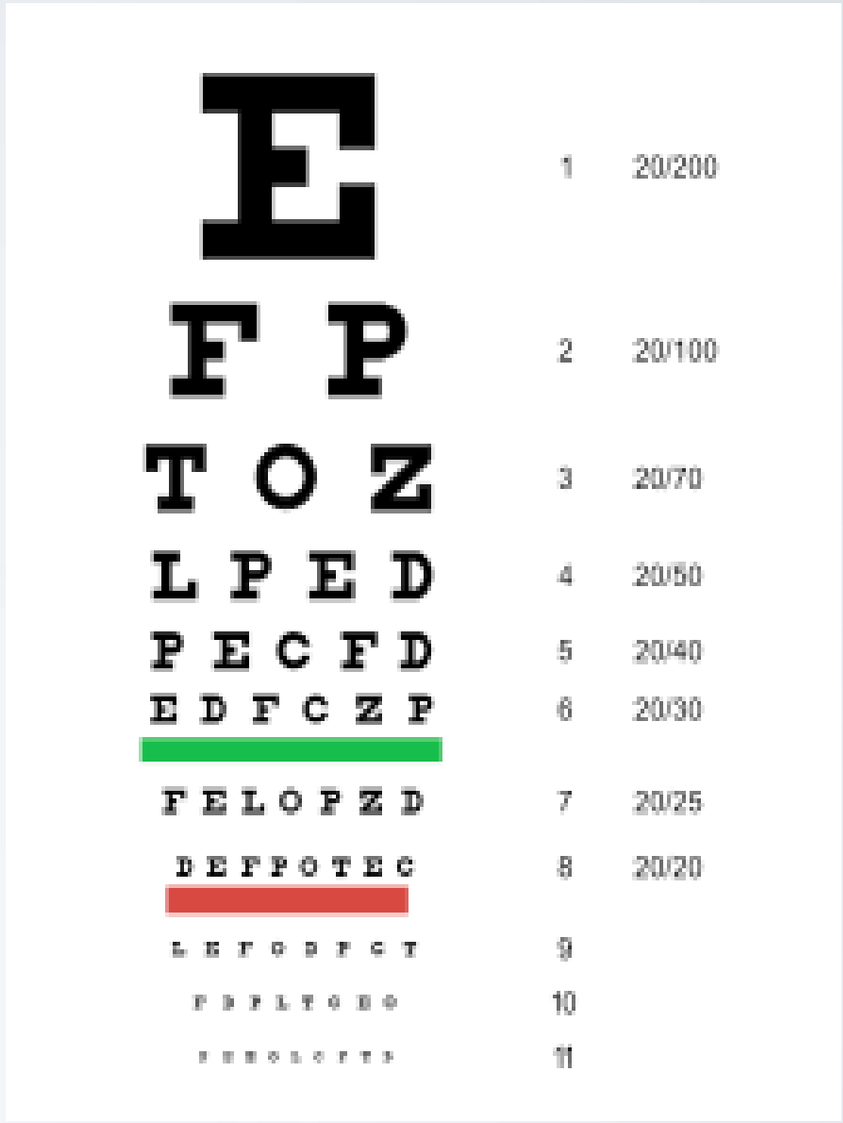
- Dutch Ophthalmologist
- Developed the Snellen optotype in 1852
  - Based on a 5x5 grid with 1-minute separation rather than standard fonts

Snellen Chart

Eleven lines of block letters (optotypes)

Thickness of the lines equals the thickness of the white spaces between lines, and the thickness of the gap in the letter “C”

Height and width of the optotype is five times the thickness of the line



Carl Zeiss (1816 – 1888)

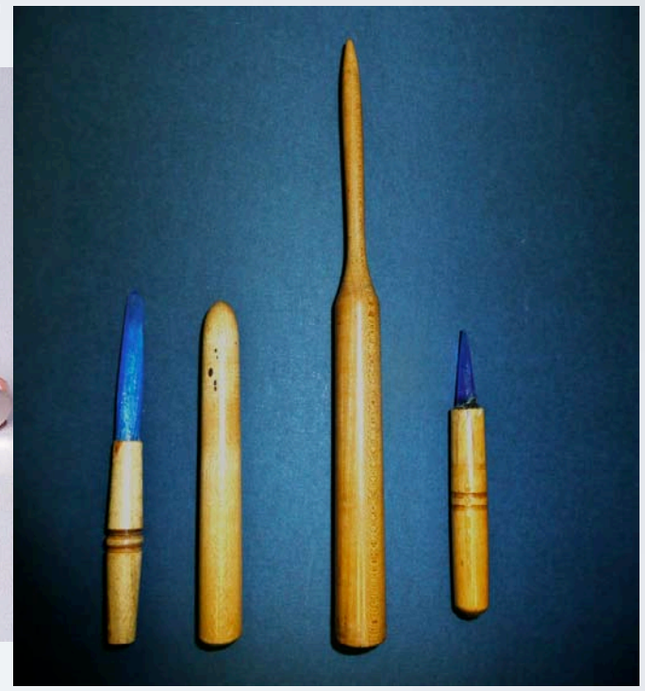
- German manufacturer of optical instruments

- Studied mathematics, physics, mineralogy and optics at University of Jena, Germany

- Partnership with physicist Ernst Abbe and glass chemist Otto Schott enabled further development of high-quality optical instruments

Trachoma in the 1920s

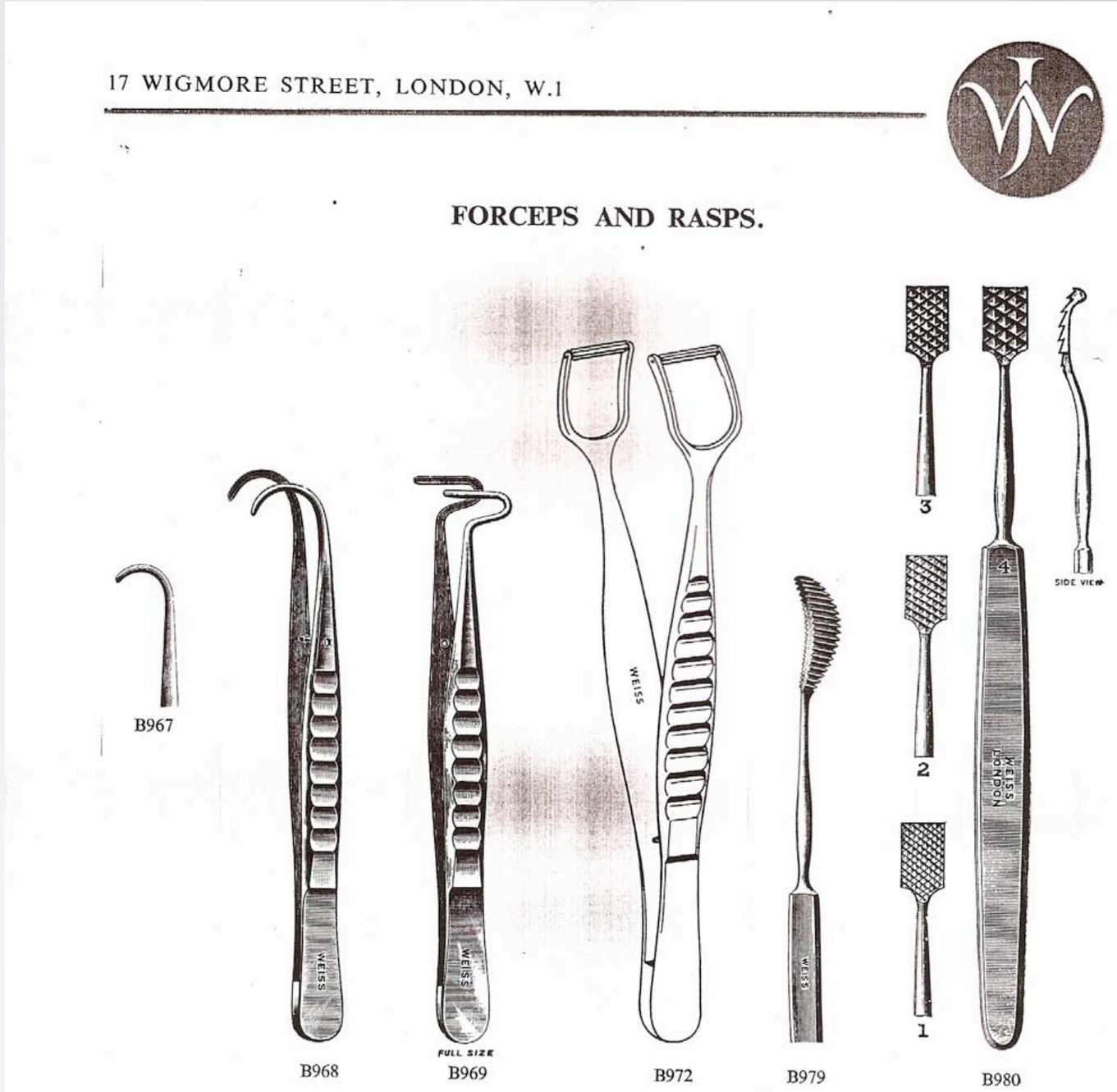
- The aetiology of trachoma awaited discovery.
- Treatments were often painful and ineffective.



- Surgery aimed to crush or excise follicles and scarring

The scourge of trachoma

"Thus Darier advocates the following under Chloroform anaethesia: Enlargement of the palpebral fissure; exposure of the entire sac by everting the lids; scarification of the conjunctiva by deep incisions parallel to the margin of the lids; scraping with a Volkmann's spoon, and brushing in with a hard brush a solution of Corrosive Sublimate; Schneller excises the fornix of the conjunctiva with the view of preventing extensive cicatricial ====...=contraction."



17 WIGMORE STREET, LONDON, W.1

FORCEPS AND RASPS.

B967 B968 B969 B972 B979 B980

FULL SIZE

B967. B968. Trachoma Forceps, 2 sizes, Graddy's .. .. *stainless steel* ..

B969. Ditto for angle of lid, Tyrrell's .. .. .. *do.* ..

B972. Ditto roller, Knapp's, *stainless steel* with Nickel Silver rollers ..

B979. Trachoma Rasp, Dohnberg's .. .. *stainless steel* ..

B980. 1-2-3-4 Trachoma Rasps, Jameson's: 4 sizes .. .. *do.* ..

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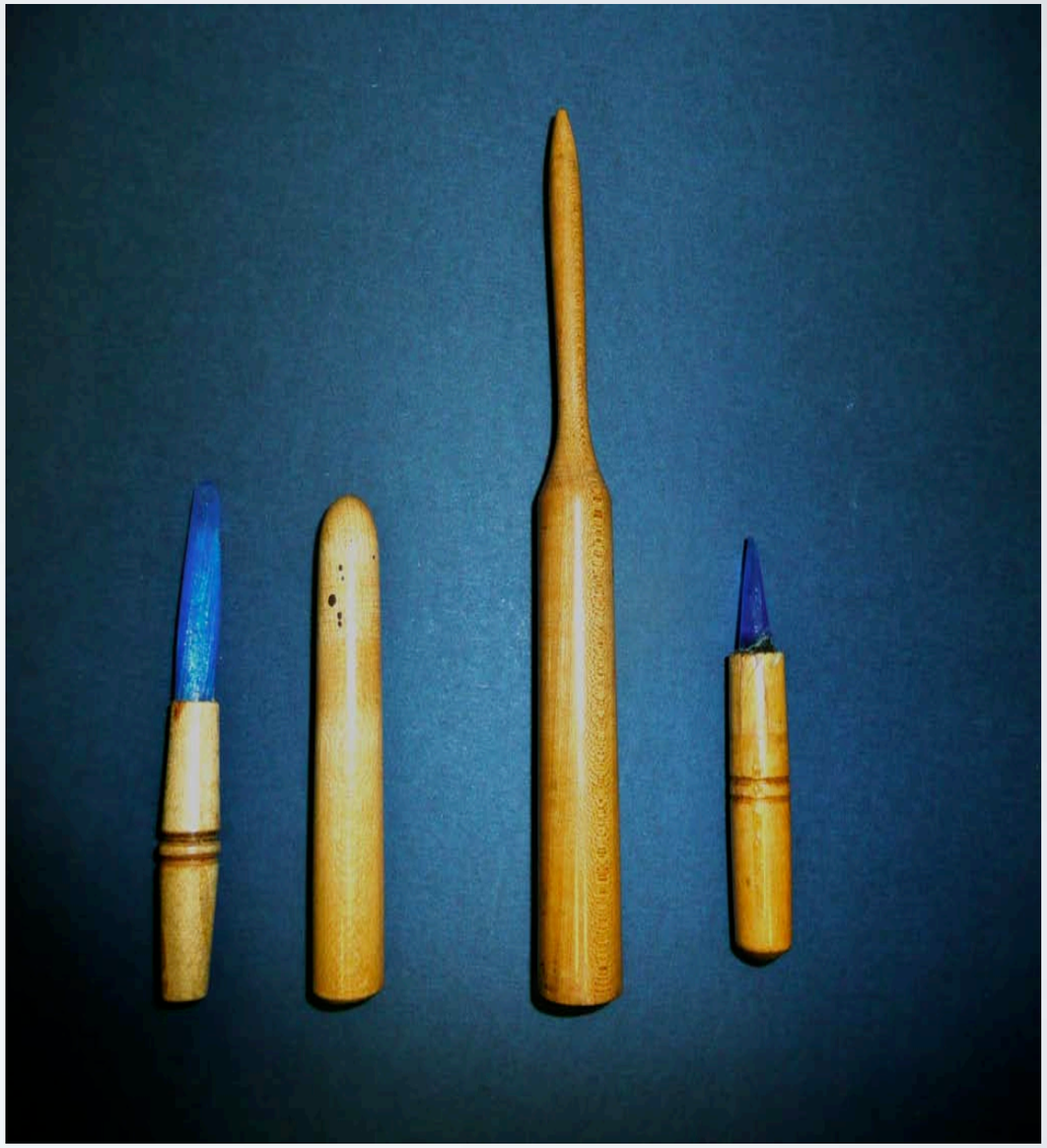
Knapps and Grady’s forceps

- used for crushing trachoma follicles

“If the follicles in the lids are large and numerous, they should be expressed under cocaine with Grady's forceps after a preliminary light scarification of the conjunctiva with a sharp knife.”

Copper sulphate

- Copper sulphate crystal was used to chemically cauterize tarsal trachoma follicles.
- Tapered end was used to evert upper lid.



Prescription for trachoma granuloma:
Boric acid , cocaine , zinc sulphate

Surgical treatments were often radical to remove the follicles

EXCISION OF THE SUPERIOR TARSUS AND CONJUNCTIVA IN THE TREATMENT OF TRACHOMA

BY

G. FREEMAN HEAL. M.D., C.M., D.O.M.S.

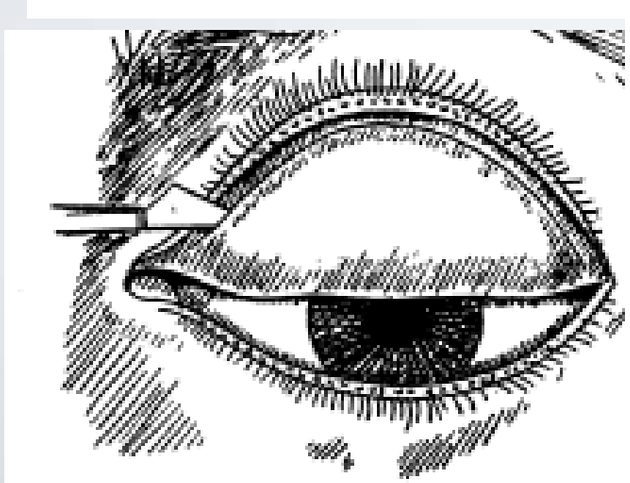


Fig. 1

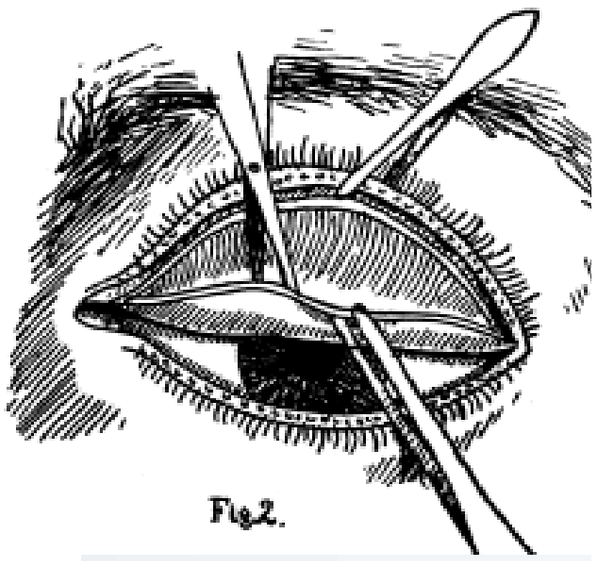


Fig. 2.

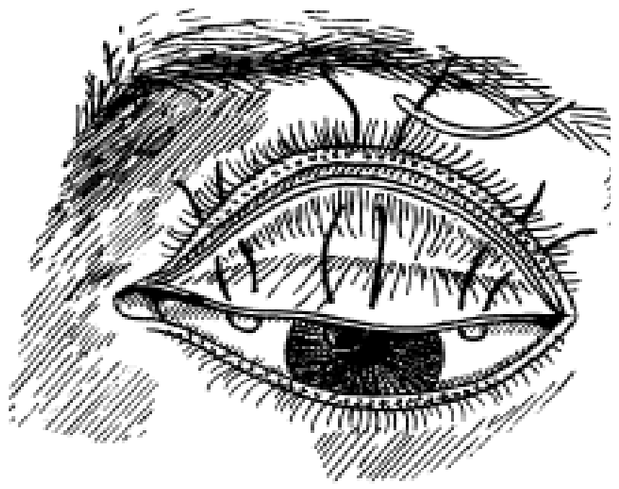


Fig. 3.

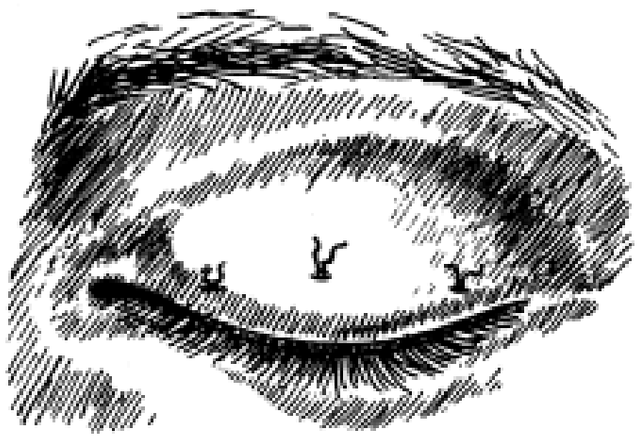
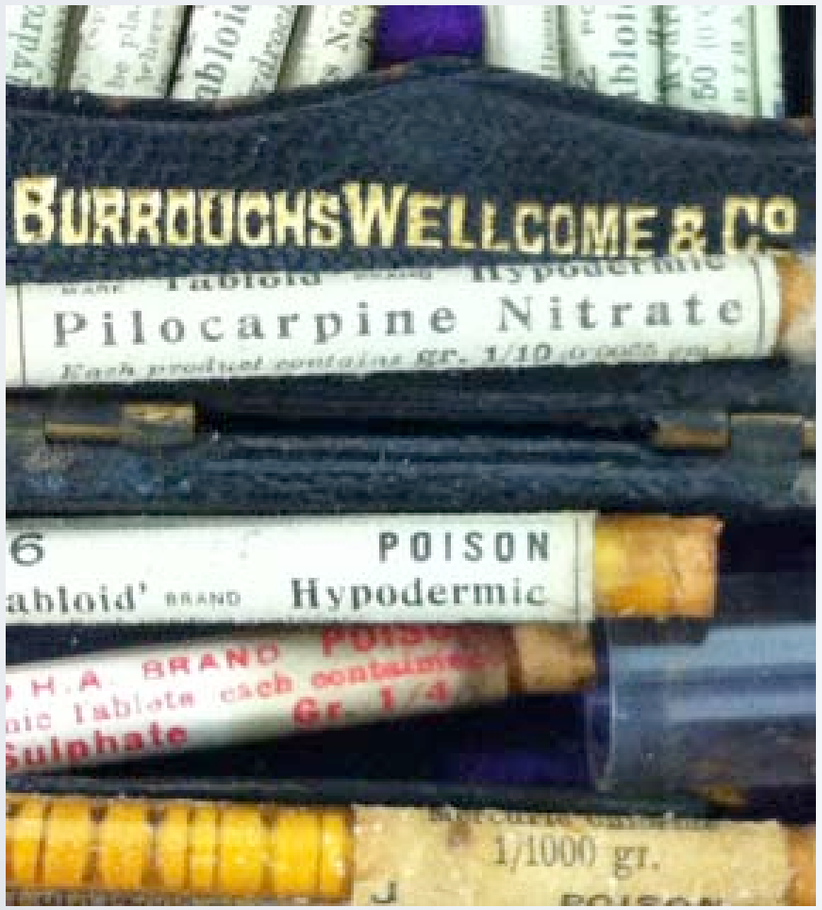


Fig. 4.

Ophthalmic medicines in the 1920s

- Pocket case dispensaries
- Drugs in tablet form with mixing beaker, glass rod and camel hair brush



Metaphen ointment

Popular for sterilising corneal ulcers in the pre-antibiotics era

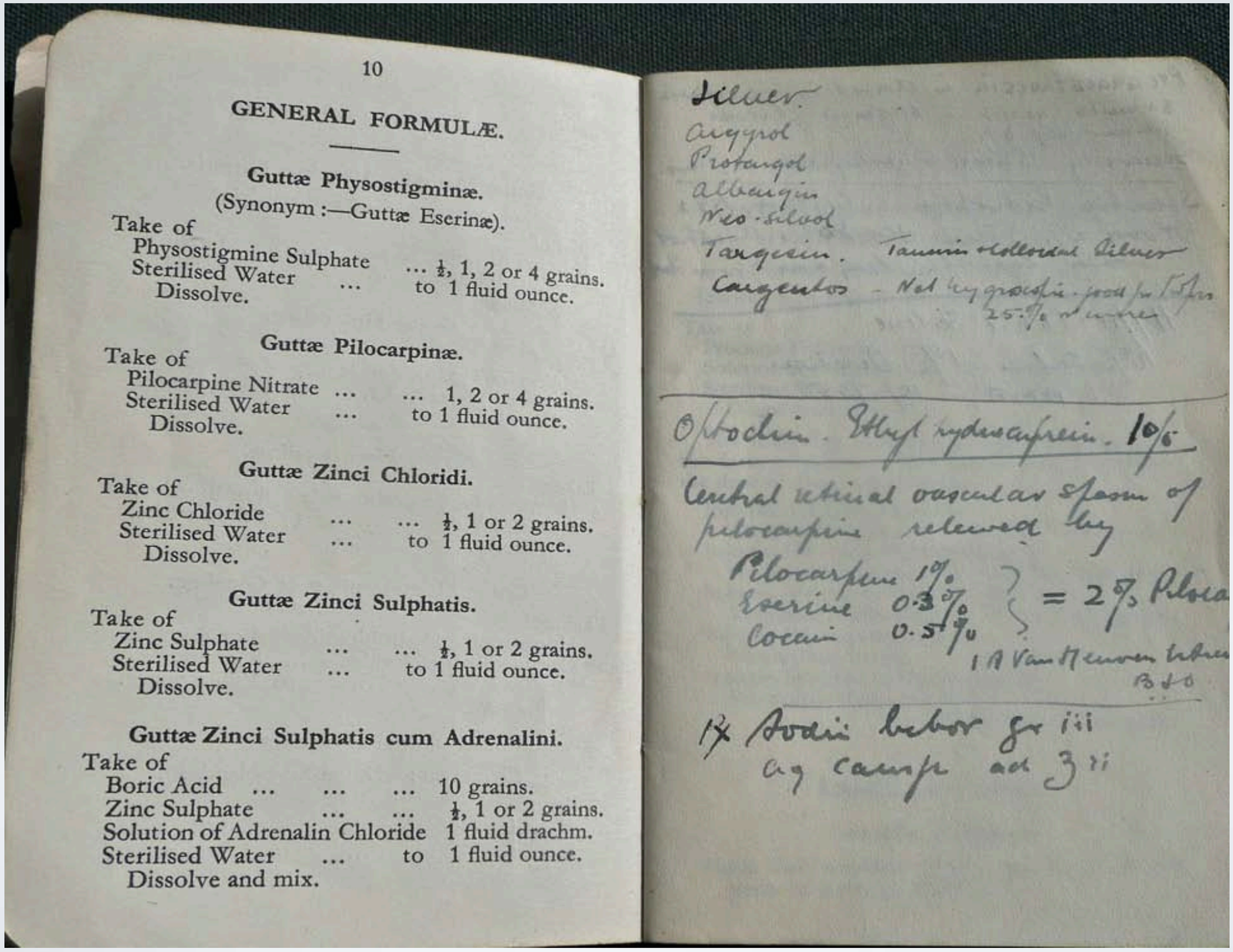
Carbolic acid

Used to cauterize corneal ulcers

•Applied with sharpened orange stick after anaesthetizing cornea with cocaine

Moorfields pharmacopeia

annotated by Dr Walter Counsell



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GENERAL FORMULÆ.

Guttæ Physostigminæ.
(Synonym :—Guttæ Eserinæ).

Take of
Physostigmine Sulphate ... ½, 1, 2 or 4 grains.
Sterilised Water ... to 1 fluid ounce.
Dissolve.

Guttæ Pilocarpinæ.

Take of
Pilocarpine Nitrate ... ... 1, 2 or 4 grains.
Sterilised Water ... to 1 fluid ounce.
Dissolve.

Guttæ Zinci Chloridi.

Take of
Zinc Chloride ... ... ½, 1 or 2 grains.
Sterilised Water ... to 1 fluid ounce.
Dissolve.

Guttæ Zinci Sulphatis.

Take of
Zinc Sulphate ... ... ½, 1 or 2 grains.
Sterilised Water ... to 1 fluid ounce.
Dissolve.

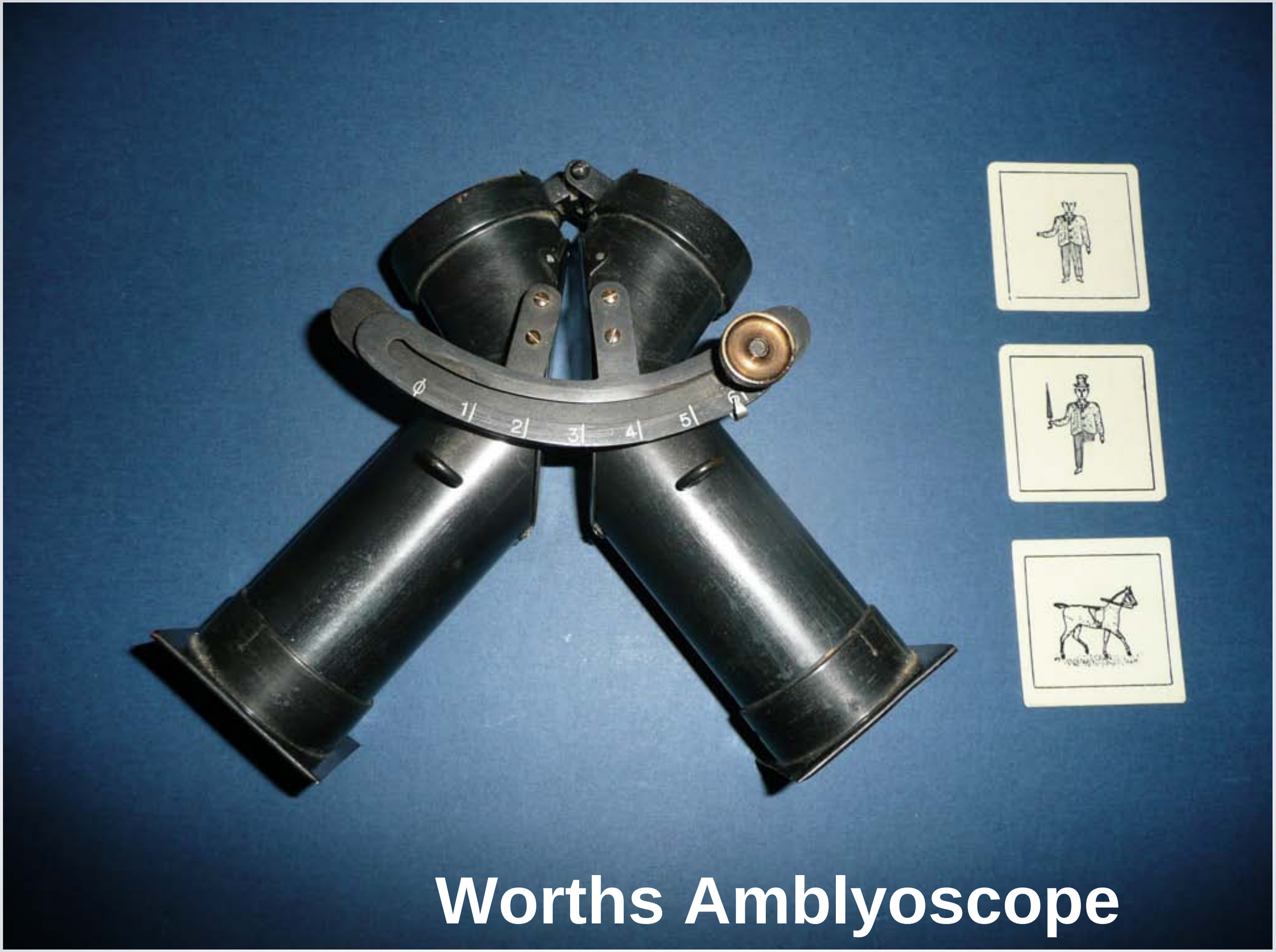
Guttæ Zinci Sulphatis cum Adrenalini.

Take of
Boric Acid ... ... 10 grains.
Zinc Sulphate ... ... ½, 1 or 2 grains.
Solution of Adrenalin Chloride 1 fluid drachm.
Sterilised Water ... to 1 fluid ounce.
Dissolve and mix.

Silver.
Argyrol
Protargol
Albargin
Neo-Silvol
Targesin. Tannin-colloidal Silver
Largentos - Not hygroscopic - good for 5% 25.% of water

Oftochin. Ethyl hydrocuprein. 1%
Central retinal vascular spasm of pilocarpine relieved by
Pilocarpine 1%
Eserine 0.3%
Cocain 0.5%
= 2% Pilo
I A Van Heuven Lehm
B.M.O.

℞ Acidi borici gr iii
Aq camph ad ℥ ii


Worths Amblyoscope

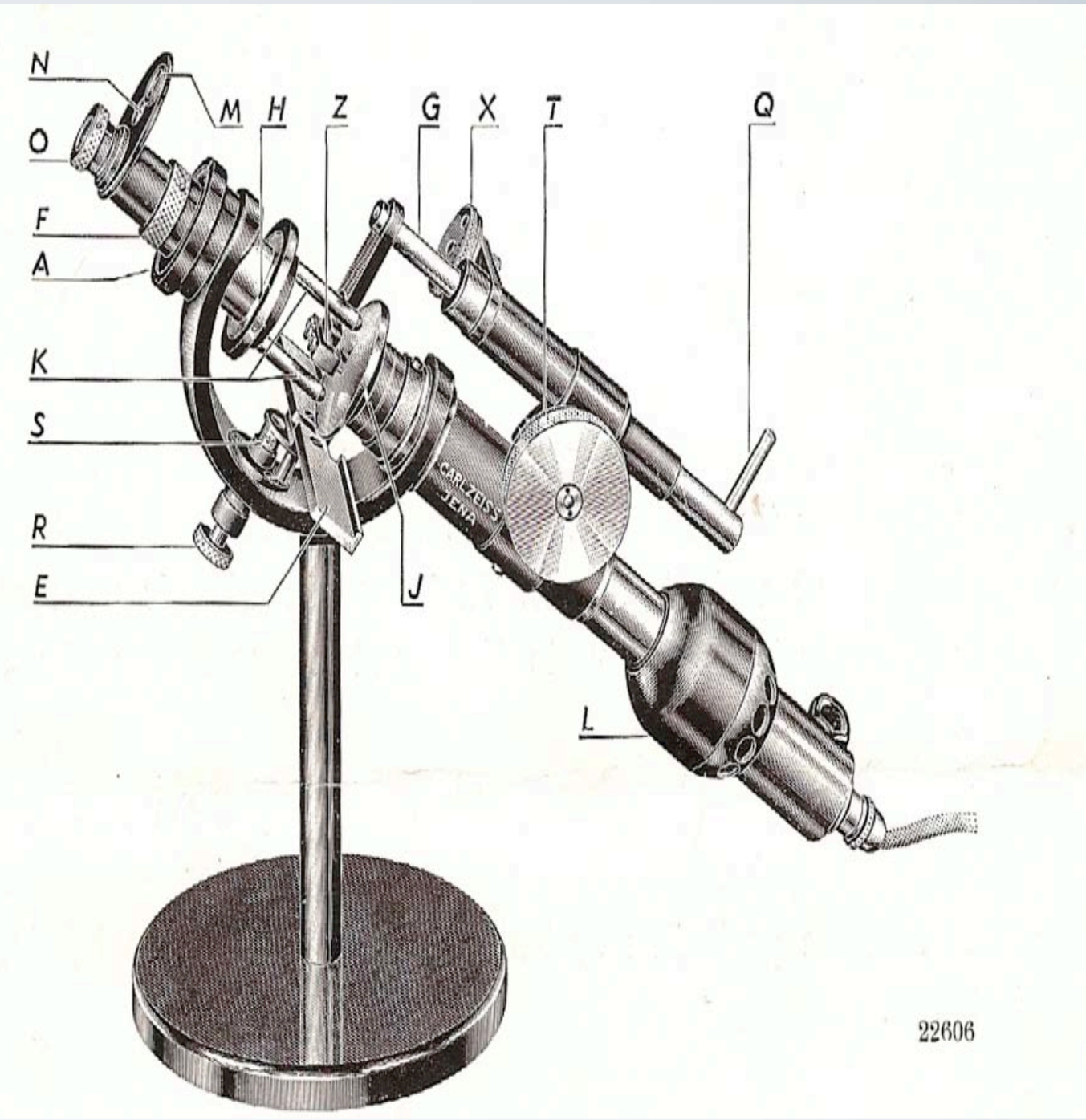

PRINCE · ALFRED · HOSPITAL
UNIVERSITY OF SYDNEY

Perpetual
Ticket of Admission to the
Practice of the Hospital,
granted to:
Darcy A. Williams
Esq. Collins.
Medical Superintendent.
No. 1457 Issue 27.9.22

Practicing certificate for Dr Darcy Williams

Royal Prince Alfred Hospital Sydney, 1922

McLean Tonometer 1919

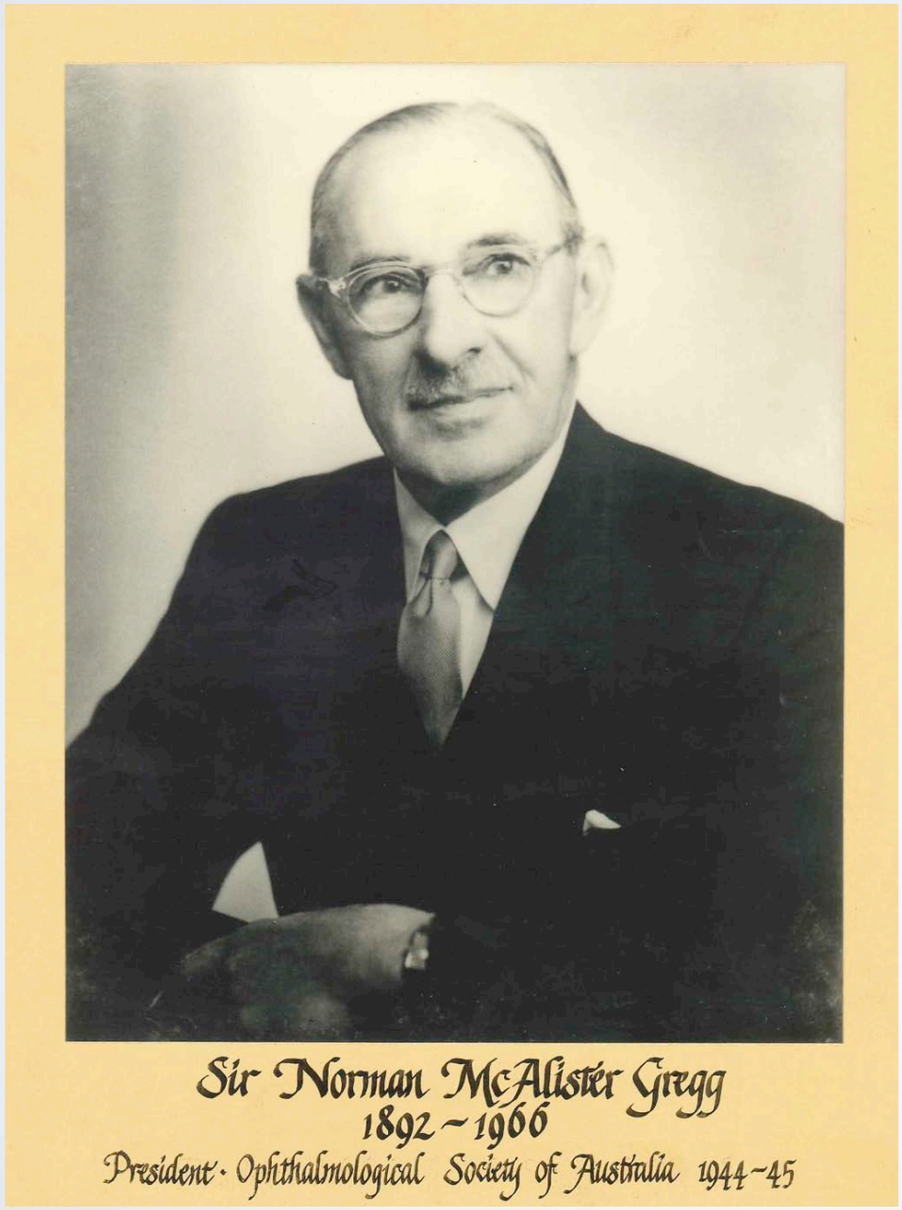


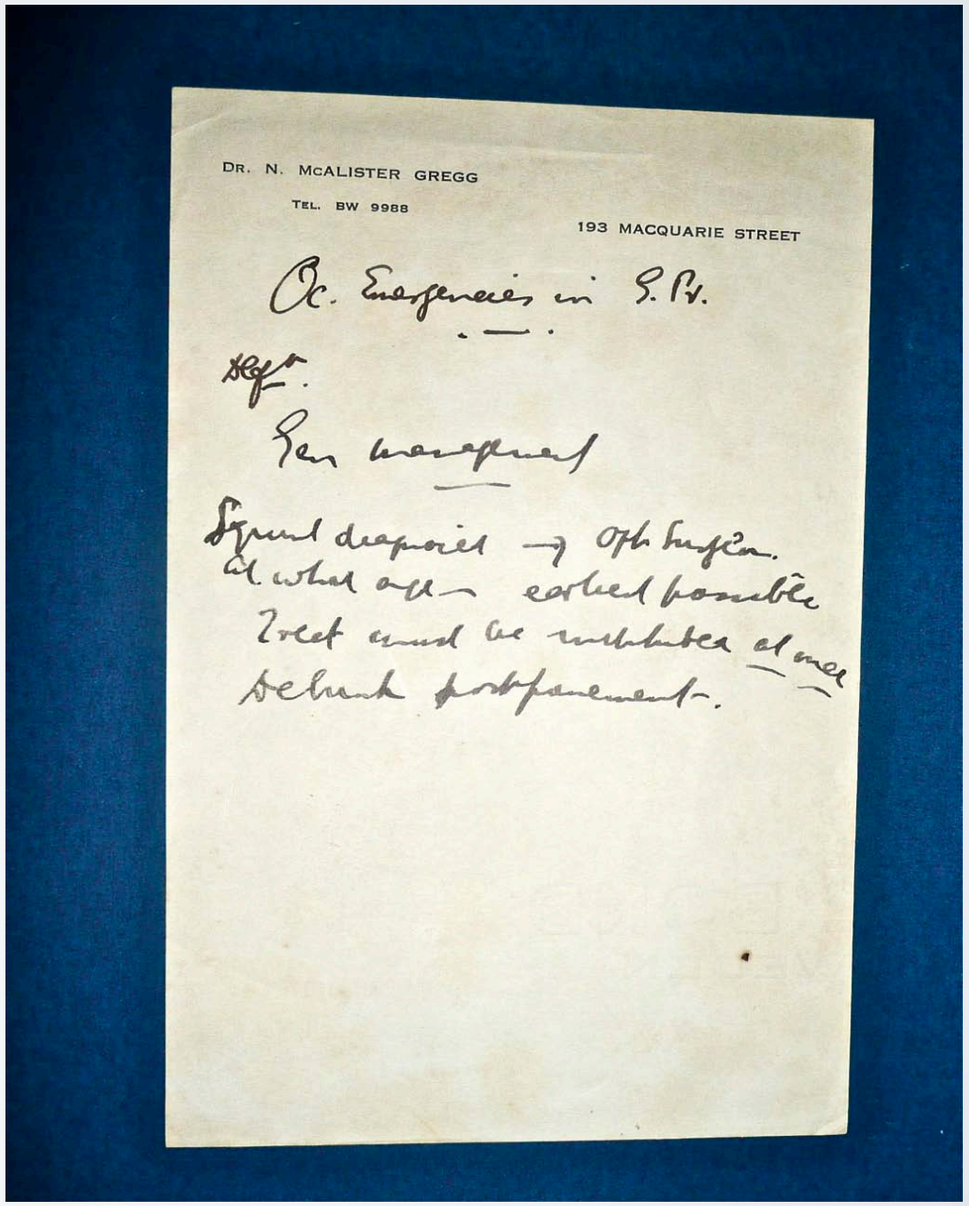
Trial set owned by Dr Archie Anderson,
prominent Melbourne ophthalmologist

Notes from Dr Norman McAlister Gregg of Sydney

- Discovered the link between maternal rubella and cataract.

- His thesis was greeted initially with skepticism but was eventually knighted for his outstanding contribution.



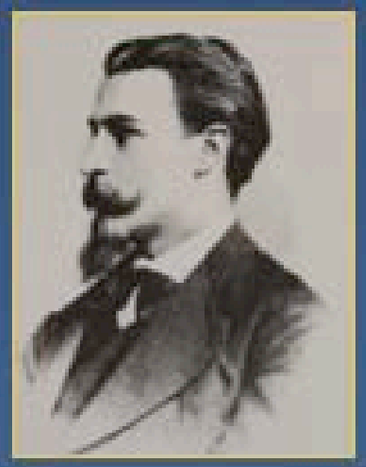


Indirect Fundoscopy

Indirect monocular fundoscopy using an ophthalmic bracket light with Hamblin globe

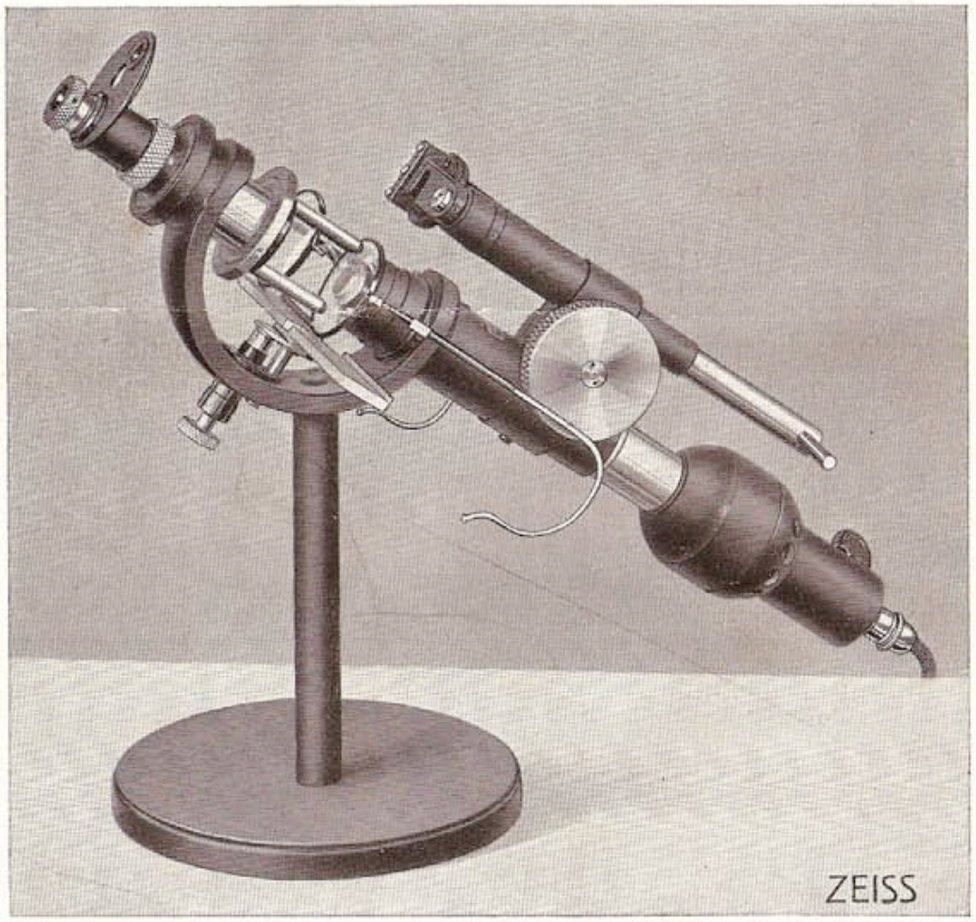
Refracting ophthalmoscopes

- Edmond Landolt developed an ophthalmoscope in 1876 for ophthalmoscopy and objective refraction.
- It included half diopter increments, a slit to determine axis of astigmatism and plane and concave mirrors.
- Removal of the mirror converted it to a small phoropter for subjective refraction.



ZEISS

SMALL
VERTEX REFRACTIONOMETER



CARL ZEISS - JENA

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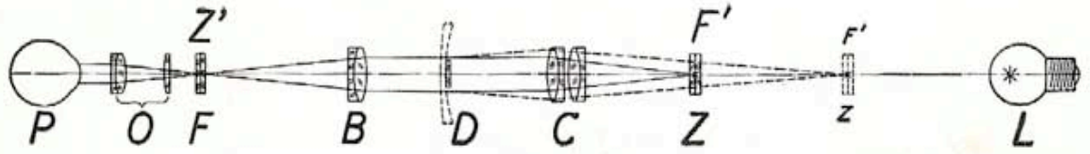

Fig. 9 13648

Section through the Vertex Refractionometer. *P* eye, *O* eyepiece, *F* cross-lines, *F'* image of cross-lines on the test object, *B* objective, *D* spectacle lens, *C* objective, *Z* test object, *Z'* image of test object in plane of cross-lines, *L* lamp bulb.

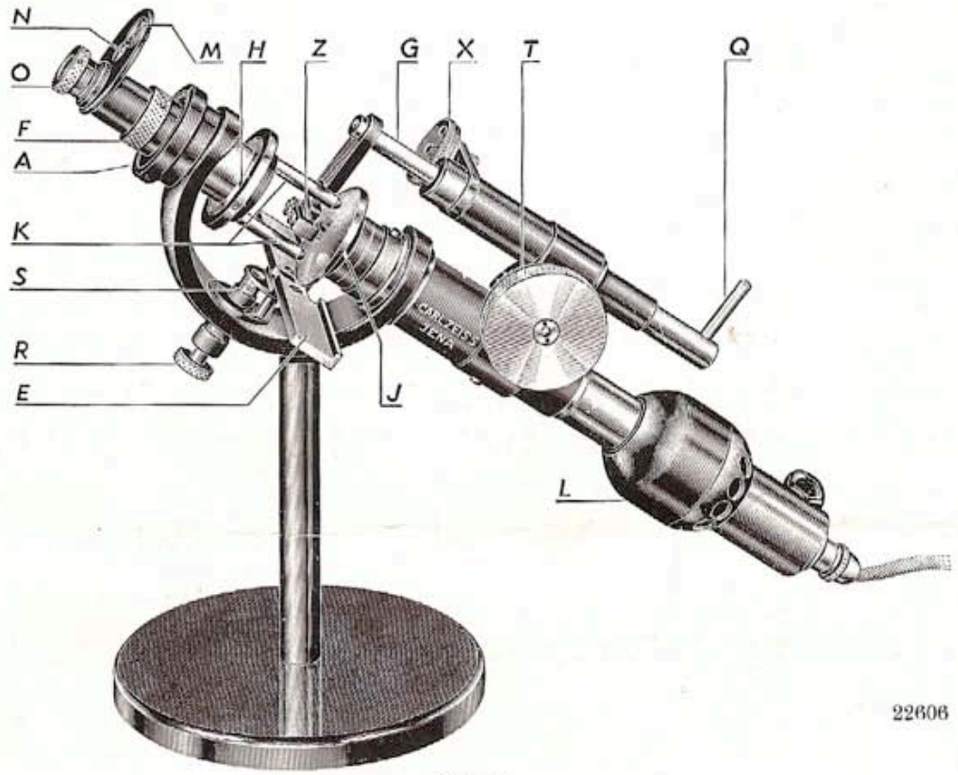

Fig. 10.

The Small Vertex Refractionometer. *O* eyepiece, *N* reading magnifier for Tabo scale and *M* for dioptre scale, *F* rotating knurled ring (cross-line focusing), *A* Tabo scale of degrees, with index, *H* disc with direction marks *K* lens holder, *J* white direction marks, *E* flat rest with adjusting screw *R* and scale *S*, *T* focusing drum with dioptre scale and index, *Z* marking device with guide rod *G*, handle *Q* and inking pad *X*, *L* lamp housing.

CARL ZEISS JENA Established 1846

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Paris, Brussels, Milan, Madrid, Shanghai etc.

Printed in Germany N. VIII. 34.