Eye Museum

The Ian McAllister Collection Display

Irrigate and soothe

Prior to the introduction of antibiotics and other definitive treatments for ocular infections, ocular irrigation and cleaning by eye baths and undines, secretions were removed using soothing solutions and mild antiseptics.

Fig 1. Hand-blown French undine. The flow was regulated by occluding the side port.

Definitive chemical measures for trachoma included copper sulphate and silver nitrate applied to the tarsal plate. Large papillae were crushed using Knapps rollers!

Elegant eye baths were used since the 16th century, initially made from silver, porcelain and hand-blown glass. The 19th century saw the use of pressed glass supplanted by plastic moulded cups. The eye dropper used in clinics was adopted for domestic use.

Ingenious methods of irrigation with boric acid solution used baths irrigated by syringes or rubber hoses from a reservoir.

After cleaning and irrigating, other soothing methods included hot spoon bathing or cold compresses.

See Barbara McKay's account of ophthalmic nursing located in the RANZCO Eye Museum 'Memories':

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The 17th century advice for treating ophthalmia was given by Dr William Buchan in his *Domestic Medicine* book, with advice and recipes for bathing and irrigating solutions. Advising against irritating or corrosive medications to "brace the eye", he advocated using lukewarm milk and water for persistent cases.

Vindication of cleansing was shown by Prof Hugh Taylor in the National Trachoma Program after a couple of handfuls of water to wash a child's face removed sticky, fly-attracting secretions to markedly reduce reinfection in trachoma.

Maklakoff: The originator of applanation tonometry

In 1885, a paper describing applanation tonometry was presented by Maklakoff, a Russian ophthalmologist who devised a simple instrument that applied a constant weight to flatten the cornea.

The apparatus consisted of a dumbbell-shaped weight with an internal ball bearing to lower the centre of gravity.

The ends were flat and dipped in Argyrol solution. The weight slid through a wire loop onto the cornea of the prone patient. The end of the dumbbell weight was dipped in Argyrol solution, and the flattened area was transferred to paper and measured using a scale, converting the area measured into ocular pressure.

The flattening varied with the constant weight, compared to Goldmann's tonometry where the area was constant and flattened with variable pressure applied.

The Maklakoff tonometer was simple and cheap, and was widely used in Eastern Europe from the late 19th century until 1950 when Goldmann's instrument became available.

Dr David Kaufman
Curator, RANZCO Eye Museum

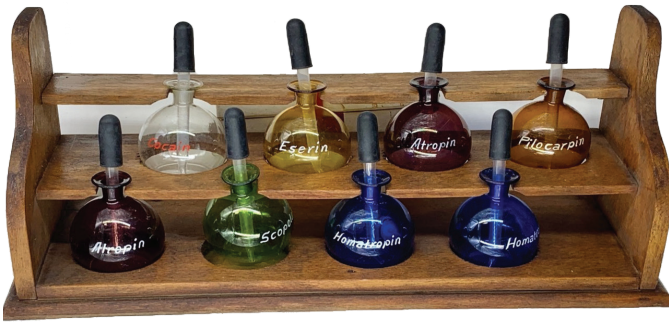

Fig 2. Dropper bottles used in clinic in 1920.

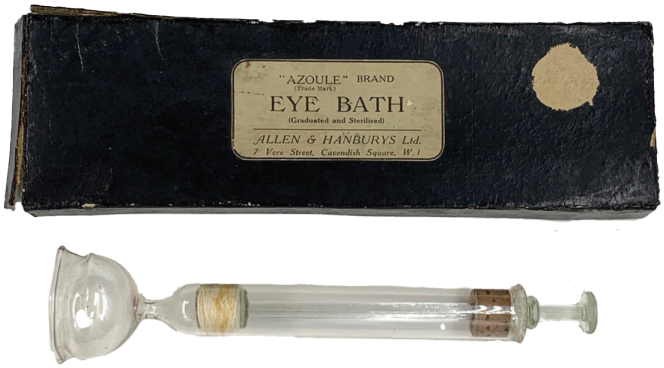

Fig 3. Eye bath with attached syringe.

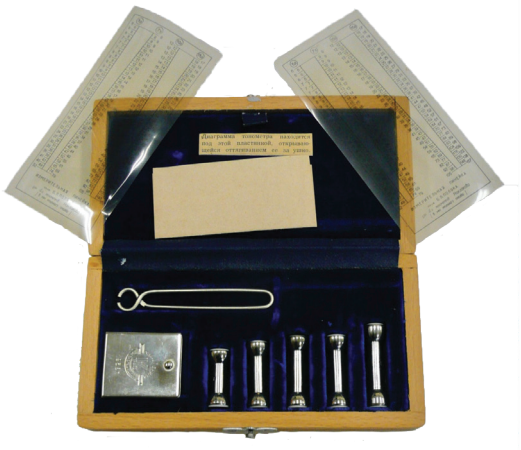

Fig 4. Tonometer with weights and measuring scales.