Some years ... made experiments, using ... connection with a normal ... ye, and found the intra-ocular ... that eye to be 26 mm. Hg.

I am not aware ... those experiments have been repeated either in this country or abroad.

I have on two occasions used the manometer in connection with living human eyes (in situ) and in both instances the manometer indicated pressures of 12 to 20 mm. more than the readings taken at the same time by tonometers of other makes which have been accepted as correct.

In an effort to prove the veracity of the tonometers in use to-day, I have made experiments on a vast number of recently enucleated human and animal eyes, and the results have shown that the pressures indicated by the tonometers have been 12—25 mm. less than the actual manometer pressure.

I have therefore calibrated my tonometer in accordance with the actual pressures of the manometer.

The normal human eye should register, by my tonometer, within the limits of 22 and 40 mm. of Hg.

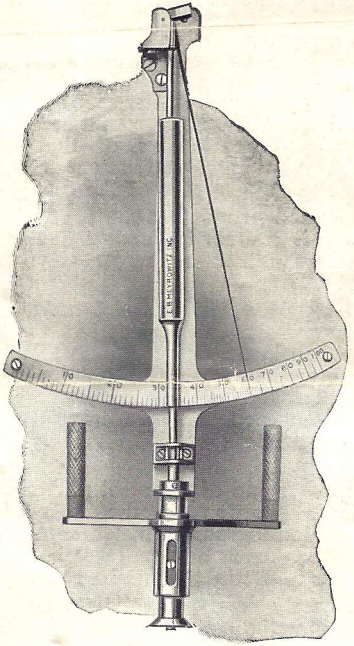
A 1% or 2% sol. of Holocain is sufficient to anaesthetise the cornea for tonometer readings.

The patient should be placed in a recumbent position and instructed to look directly upward. Raise the eyeball and carefully rest the footplate on the center of the cornea, having the instrument vertical. Depress the handpiece until it is about midway between the footplate and top of the barrel.

The indicating needle may oscillate synchronously with the heart pulsations and in that case the lower limit of the oscillations should be taken as the intra-ocular pressure.

DIRECTIONS FOR

McLEAN TONOMETER



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DESCRIPTION AND DIRECTIONS FOR THE CARE AND USE OF THE McLEAN TONOMETER.

The tonometer is an instrument devised for ascertaining the intra-ocular pressure.

DESCRIPTION: The instrument consists of a barrel with its footplate, and extending above from the upper part of the barrel is the base or frame of the instrument. A hardened and ground steel plunger passes from the center of the footplate through the barrel and actuates the steel anvil at the upper part of the instrument.

Suspended from the shaft of the anvil bearings is a steel indicating needle which indicates the intra-ocular pressure in mm of Hg.

A handpiece with two knurled fingerpieces serves as a support for the instrument when in use. To increase the delicacy of the readings, anti-friction devices have been employed wherever necessary. Ball bearings at each end of the hand piece reduce the friction of the barrel in its support.

The lower end of the steel plunger is supported in position by the ends of three hardened and ground steel bearings placed 120 degrees apart and midway between the footplate and top of the barrel.

The cavity of the barrel is about 2 mm. larger than the size of the plunger and the steel bearings at 120 degrees apart support the plunger so there is no "drag" produced by the capillary attraction of any fluid which may have remained on the cornea at time of placing the instrument for a reading.

A locking device serves to prevent the plunger from falling out, and the only weight necessary for all the readings is held friction tight on the plunger above the locking device.

Directions for Disassembling and Assembling the Instrument.

Place the instrument flat on a smooth surface with the footplate toward the right hand and the top of the instrument toward the left hand. Have the indicating needle against the guard pin beyond the 130 mm. mark.

If the locking device is "closed" open it by moving the knurled piece of the locking device away from you, or in the direction of the high numbers of the scale, so that the slot of the knurled plate coincides with the slot in the stationary part to which the knurled piece is attached.

Slide the weight up about 10 mm. on its plunger and revolve the plunger until the pin of the plunger is uppermost and in alignment with the slot of the locking device. In that position, it may be removed through the footplate with the thumb and finger of the right hand. Retain your grasp on the weight until the plunger has passed from it.

To Assemble, Reverse the Operations as Given Above.

The instrument should not be plunged into any liquids and care should be used to keep liquids from entering the barrel because of the possibility of rusting the steel ball bearings.

After each use of the instrument, the corneal surface of the footplate should be wiped with a towel which has been moistened in alcohol and placed over the tip of the finger. Care should be used, when using the instrument immediately after wiping that no alcohol remains on the footplate.

It is not necessary to disassemble the instrument except for an occasional cleaning and to more thoroughly disinfect the instrument when necessary.