CHROMATOPHOTOPTOMETER

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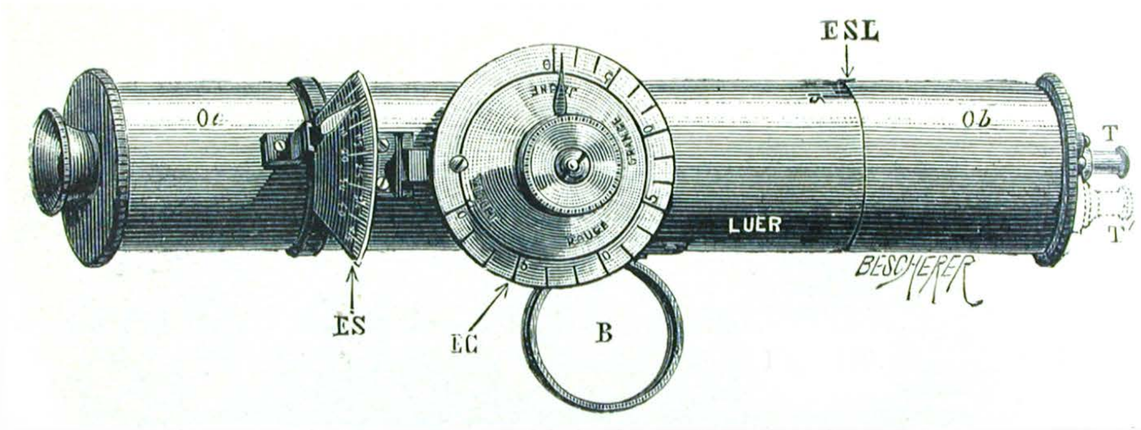
Dr Paul Chibret - 1844-1911 - Ophthalmologist & Inventor of the Chromatophotoptometer

Dr Paul Chibret, a military doctor, always had an interest in ophthalmology. During a military campaign in eastern Kabylie in August 1871, he was struck by bilateral chorioretinitis which left him virtually blind. He was sent back to Europe the following month for treatment.

On his return to France, he was cared for by leading ophthalmologists and vowed to undertake a career in ophthalmology if he was to regain his vision. In 1875, he had recovered and opened his ophthalmology consultancy in Clermont-Ferrand.

Dr Chibret was the co-founder and first President of the French Ophthalmological Society (Société Française d'Ophtalmologie, SFO) formed in 1883

His scientific work covers a wide range in ophthalmology. Among these, and arguably one of his greatest inventions, is the chromatophotoptometer. This invention allowed the detection of dyschromatopsias such as colour blindness.



Chromatophotoptometer published in a Luer catalogue, Paris

Manufactured: 1886
Maker: Giroux Paris
Inventor: Dr Paul Chibret

The chromatophotoptometer is a brass tube that contains a doubly refractive prism, a plate of quartz and two Nicol polarising prisms. This instrument places a plate of quartz, cut parallel to the axis, between two Nicol polarising prisms parallel to each other, forming an angle of 45° with the axis of the quartz. This allows the user to see the plate tinted a certain colour depending on the thickness of the quartz.

When looking through the instrument, one sees two illuminated fields, produced by the prism, each of a colour which is complementary to the selected principal colour. Rotating the prism produces a change in the degree of saturation of the fields and a switch of the complementary colours between right and left fields. This allows the vision of two circles of different colours.

It is by this process one could distinguish between individuals who confused the complementary colours and individuals who were genuinely colour blind.

Chromatophotoptometer

This process allowed the chromatophotoptometer to obtain up to 2700 colour shades, providing an accurate and effective tool used by ophthalmologists to assess for dyschromatopsias and colour blindness in patients.