Liebreich's small ophthalmoscope

Oftalmoscopio pequeño de Liebreich

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Richard Liebreich was a German ophthalmologist who obtained his doctorate degree from the University of Halle in 1853. As a student he was an assistant to Dr. Hermann von Helmholtz in 1851, and later, as a physician, he was an assistant at the Clinic of Dr. Albrecht von Graefe in Berlin^{1,2}.

Dr. Helmholtz presented his ophthalmoscope at the Berlin Medical Society in 1850. This equipment used a mirror plate reflection method (three or more) and had no lenses to correct for refractive errors in the patient or observer. A year later, Egbert Rekoss added two rotating discs to solve this problem, each with a few magnifying lenses³.

Dr. Liebreich, while working in the Clinic of Dr. Albrecht von Graefe, designed a tabletop ophthalmoscope in 1855, and in 1857 he designed a second, small, portable ophthalmoscope (Fig. 1). This was a light reflection equipment that had a 1.25-inch diameter metal mirror with a 4-mm diameter central hole, had a small handle and incorporated a clip on the back, which allowed to hold concave or convex lenses interchangeably for the correction of ametropia, five lenses in total, and it also came with two convex lenses of +13 and +18 D for indirect ophthalmoscopy¹.

Figure 1. Liebreich ophthalmoscope with all its lenses.

The Liebreich ophthalmoscope was very popular due to its ease of use, portability, and little chance of failure. It has been sold for over 80 years with some modifications (Fig. 2), but finally the use of interchangeable corrective lenses did not prosper, since they broke easily and got dirty when handling them. The use of the rotating disc with small lenses created by Rekoss

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Figure 2. Photograph of different models of the Liebreich ophthalmoscope manufactured throughout history.

prevailed over the years and is still used today in modern ophthalmoscopes.

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