Refraktions-Ophthalmoskop nach Ernst Pflüger

Provenance, Attribution & Condition Report

Object class: Swiss medical instrument, ophthalmology · Period: c. 1890 – 1905 · Format: Hand-held direct/refraction ophthalmoscope, cased set

OBJECT	Refraktions-Ophthalmoskop nach Pflüger, complete cased set
TITLE LEGEND	“Ophthalmoscop Pflüger”, gilt Fraktur, lid centre
NAMESAKE	Prof. Dr. med. Ernst Pflüger (1846 Büren a.d. Aare – 1903 Bern)
INSTITUTIONAL CONTEXT	Universitäts-Augenklinik Bern (Inselspital)
PROBABLE MAKER	Pfister & Streit, Bern (later Haag-Streit AG)
DATING	c. 1890 – 1905 (lifetime production, residual to c. 1910)
MATERIALS	Black-japanned brass, leather, silk velvet, glass optics, ivory
COMPLETENESS	Complete; all original components present
CONDITION	Good, age-appropriate patina; case with edge wear

1. Object & Title Identification

The object is a complete late-nineteenth-century Swiss ophthalmic diagnostic set, preserved in its original wallet-form leather étui. The lid carries a single line of gilt lettering in German Fraktur reading **“Ophthalmoscop Pflüger”**. Two features of this legend are immediately diagnostic for dating and attribution.

Orthography. The spelling *Ophthalmoscop* — without the final *-e* and retaining the Greek-derived *-c-* rather than the later *-k-* — belongs to nineteenth-century German medical usage. The modern form *Ophthalmoskop* displaces it in the German-language ophthalmological literature progressively from the 1900s and is essentially universal by the 1910s. The legend on this case is therefore consistent with a production date no later than the first decade of the twentieth century.

Typography. The Fraktur title block places production firmly within the German-speaking instrument-making tradition. On Swiss and German medical étuis, Fraktur title legends decline rapidly after the First World War and are essentially absent from new production after the 1930s; their use on a Swiss ophthalmic case is consistent with the period c. 1880 – c. 1910.

Taken together, the orthography and the typography converge on a most plausible production window of **c. 1890 – 1905**, with a defensible outer envelope of 1885 – 1910. This window coincides directly with the mature phase of Ernst Pflüger’s tenure as Ordinarius for Ophthalmology at the University of Bern (1879 – 1903) and the immediate years following his death, during which his eponymous instrument would have remained in active commercial production.

2. The Namesake: Ernst Pflüger (1846 – 1903)

Ernst Pflüger (1846 – 1903)
Professor of Ophthalmology, Universität Bern (Ordinarius 1879 – 1903).

Cabinet-card portrait, albumen print on lithographed mount, by the Bern photographer **A. Wicky** (imprint "A. Wicky · Berne"). Sitter's apparent age (mid-40s) places the sitting c. 1885 – 1895, within Pflüger's ordinariate. Faint cursive signature visible in the lower right of the photograph itself, consistent with the period convention of signed professional cabinet cards.

Source: Universitätsklinik für Augenheilkunde, Inselspital Bern, online history page (file flagged by the institutional publisher as "internet find"; underlying portrait long out of copyright).

Ernst Pflüger was born on 1 July 1846 in Büren an der Aare in the Canton of Bern, the son of the secondary-school teacher Johann Pflüger and Emilie Aberegg. He took his doctorate in medicine at the University of Bern in 1870 and continued his specialist training in ophthalmology with Franciscus Donders at Utrecht, in London, and with Carl Ferdinand von Arlt at the University of Vienna. From 1871 to 1876 he practised as eye and ear physician in Lucerne, returning to Bern in 1876 as Extraordinarius and successor to Henri Dor. In 1879 he was appointed Ordinarius (full professor) of ophthalmology, a chair he held until his death on 30 September 1903 in Bern.

Pflüger's scientific output runs to more than one hundred publications, with major contributions in refractive surgery (he was among the first to undertake lens extraction for high myopia), the diagnosis of colour vision (his *Tafeln zur Bestimmung der Farbenblindheit* appeared in 1880), and the development of optotypes for visual-acuity testing — including the rotating E-hook (*Pflüger'sche Haken*) still associated with his name in optometric practice. Within ophthalmic diagnostics the standard biographical reference (Historisches Lexikon der Schweiz, art. 14582, author H. M. F. Koelbing) names three instrumental contributions: an eigener Augenspiegel — explicitly a **Refraktions-Ophthalmoskop** — together with the colour-blindness plates and the visual-acuity test-types. The instrument cased and titled here is that ophthalmoscope.

Pflüger campaigned throughout his ordinariate for the construction of a purpose-built eye clinic at the Inselspital Bern; the new clinic was only realised after his death, and its inaugural Festschrift of 1910 (edited by his successor August Siegrist) remains the principal printed source for both his career and his instrumentation.

3. Description of the Set

The étui is of the classic Swiss/German hand-held-ophthalmoscope format: a wallet-form leather case with pebbled black grain and brass snap closure, lined throughout in violet silk velvet. The interior is laid out across two registers, a lower tray for the instrument and accessories and an upper lid carrying an auxiliary refraction aid. Components are as follows.

3.1 Lower tray

Refraction ophthalmoscope head. Circular black-japanned brass body carrying a rotating internal disc of correcting lenses in the Rekoss tradition. The disc presents successive spherical lenses behind the sighting aperture, allowing the examiner to neutralise both his own ametropia and the refractive error of the patient — the defining functional feature of a *refraction* ophthalmoscope as distinct from a simple mirror instrument. A small brass index lever sets the disc position; the dioptric scale is visible at the front face, with the **+3** position legible in the present examination. A short brass handle ferrule at the base accepts the detachable holding handle.

Auxiliary mirror. A separate small brass-mounted concave mirror, seated in its own velvet recess. In Pflüger's clinical practice such a mirror would have served either as an interchangeable element for the main head or — more

probably — as a dedicated skiascopy mirror for retinoscopy, a technique to which Pflüger made documented methodological contributions.

Condensing lens. A high-power biconvex glass lens of approximately 20 D, for the technique of indirect ophthalmoscopy: held between examiner and patient, it produces an inverted real image of the fundus in mid-air that is then viewed through the mirror. Standard accessory in any complete ophthalmoscope set of the period. The dark cast visible in the photographs is the violet velvet of the case interior reading through the glass; the lens itself is clear and undamaged.

Fixation pointer. A slender brass barrel with turned ivory grip and fine tip, of the form used by the examiner to direct the patient's gaze (e.g. "please follow the tip with your eye") during refraction. The combination of brass and ivory is typical of high-grade Swiss and German precision instruments of the 1880s–1900s and would not be expected on a later, twentieth-century set.

3.2 Upper lid

Astigmatism-axis indicator disc. A circular black metal disc, screw-fixed to the lid through two brass pivots and retained by a band of black elastic so that it can be lifted free of its seating and used as a hand-held reference. The engraved scale runs symmetrically 0° – 30° – 60° – **90°** – 60° – 30° – 0°, the TABO axis convention used in Central European refraction practice to denote the orientation of cylindrical correction. On a refraction ophthalmoscope set, the disc serves as a quick visual aid for recording the axis of any astigmatism identified during examination.

Circular impression in the velvet, right of disc. The roughly circular indentation visible in the lid lining opposite the indicator disc is *not* evidence of a missing component. It is the seating mark left by the condensing lens in the lower tray pressing into the lid velvet when the case is closed — a wholly normal consequence of long storage and characteristic of cased instrument sets of this construction.

4. Attribution of the Maker

No maker's mark is presently visible on the exterior of the case or on the instrument components in the documentation images. An attribution must therefore be made on circumstantial grounds; the surrounding evidence converges strongly on a single workshop.

The Universitäts-Augenklinik Bern, throughout Pflüger's tenure and that of his successor Siegrist, was supplied with its precision optical and mechanical instruments by the Bern workshop of **Pfister & Streit** — the immediate ancestor of Haag-Streit AG, formally constituted under that name in 1933. Pfister & Streit are documented as the manufacturers of, among other instruments of the period, the Eperon ophthalmoscope (Lausanne / Bern) and the 1912 keratometer that survives in published collections. A bespoke instrument designed by Pflüger and named for him on the case lid is, in this context, overwhelmingly likely to be of Pfister & Streit manufacture; any competing Swiss or German attribution would require positive evidence (a maker's stamp, an invoice, a publication reference) which is not at present available.

The attribution should therefore be recorded as: **Pfister & Streit, Bern (probable), c. 1890 – 1905**. A direct inspection of the metalwork (refraction disc rim, mirror mount, handle ferrule, and the underside of the case furniture) for a punched *P&S* or *Pfister & Streit Bern* mark is recommended; positive identification would upgrade the attribution from probable to signed.

5. Condition

Overall condition is good and consistent with light period use followed by long careful storage. The leather case shows uniform rubbing to the high points of the grain and minor surface losses along the edges of the lid and base, without structural damage; the spine hinge is sound and the snap closure functions. The gilt Fraktur title legend is clearly legible across its full length with only minor loss to individual letter strokes. The violet silk-velvet interior

lining is bright and free of mould or insect damage, with the expected compression marks at the seating points of the instrument components. Glass optics are clear; the mirrors show light age-appropriate tarnish without significant losses to the silvering. All metal surfaces retain their original japanning and brass finishes with even, uncleaned patina. The set is mechanically and optically intact and could in principle be returned to working order without restoration.

Completeness. The set is assessed as complete. All components original to the set are present and in their proper seatings. The circular velvet impression in the lid is the lens seating mark described in §3.2 and does not indicate a missing element.

6. Significance

Complete and cased eponymous instruments of named nineteenth-century Swiss academic clinicians are scarce on the market. The present set is significant on three independent counts. **Historically**, it documents one of the three principal instrumental contributions of the leading Swiss ophthalmologist of his generation, materially associated with the formative period of academic ophthalmology at the University of Bern. **Technically**, it preserves intact the working complement of a late-nineteenth-century refraction examination — refraction head with Rekoss-style disc, auxiliary mirror, condensing lens, fixation pointer and astigmatism-axis indicator — in a configuration that allows the full clinical protocol of the period to be reconstructed from the object alone. **Institutionally**, it ties directly to the Inselspital Bern and, through its probable maker Pfister & Streit, to the corporate prehistory of Haag-Streit AG, today still one of the world's principal manufacturers of ophthalmic instrumentation.

The set is recommended for collections of Swiss medical history, the history of ophthalmology, the history of the Inselspital Bern, or nineteenth-century Swiss precision optical instruments.

7. Sources & References

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Compiled and attributed by **S.D.H.** *· Internal documentation, single-object dossier. · This report represents a scholarly attribution on the basis of physical examination of the object via photographic documentation and comparison with the published biographical and instrument-historical record. Maker attribution to Pfister & Streit, Bern is given as probable and pending confirmation by a maker's mark on the metalwork.*