V03458 Pendulum clock
1899
h 165, w 51, d 26
Signed on dial 'N° 178 Strasser & Rohde Glashütte i Sachs.'
On pendulum 'D.R.P. 60059 RIEFLER MÜNCHEN N° 150'
By Strasser & Rohde, Glashütte

Hendrik Gerard van Sande Bakhuyzen, director of the Leiden Observatory, bought this regulator in 1899. The clock was used in the new astrophotography building next to the main observatory building. Only after a revision at the factory of *Strasser & Rohde* did it work properly. In 1905 Van de Sande Bakhuyzen adapted the clock for relative gravity measurements. From 1924 the timekeeper functioned as a master clock for the electrical clocks in the observatory. It was therefore fitted with electrical connections and set to sidereal time.

The clock is still in its original case. The silvered dial has a central minute hand (0-55, divided in 60 parts). It has a subsidiary dial above the centre for the seconds (0-50, divided in 60 parts) and one below for the hours (0-23).

The movement is weight-driven with an escapement after a design of Strasser with a steel anchor and a brass escape wheel. The anchor has adjustable double steel pallets with jewelled impulse faces. Both the anchor and escape wheel run in jewelled holes. Maintaining power is of the Harrison double-ratchet type. Duration is eight days.

Impulse is transferred to the pendulum through an elastic device that acts on the suspension through two auxiliary springs. The pendulum is by Sigmund Riefler (the *Riefler* H) and hangs from a spring suspension. It has a steel hollow tube ⅔ filled with mercury. When the temperature rises the steel rod expands, as does the mercury, but in the opposite direction. The tube is closed in order to prevent evaporation of the mercury. This construction also compensates abrupt temperature changes better than a glass jar. The brass bob can be adjusted by a central ring nut. Fine adjustment is carried out by a number of small compensating discs under the bob. Further fine control is possible by placing small metal pieces in the funnel-shaped ring halfway along the pendulum rod.

Riefler, Sigmund
Sigmund Riefler (1847-1912) was born in Maria Rain, Allgäu, the son of the clockmaker Clemens Riefler. After being taught by his father, Riefler took courses in mathematics, geodesy and mechanical engineering at a polytechnic, and later physics and astronomy at the university of Munich. He then worked as a surveyor for six years, but when his father dies in 1876, he joined his two brothers Adolf and Theodor to continue the Clemens Riefler firm in Maria Rain. Sigmund became the inventor of the three. Apart from designing drawing instruments (which are still being sold), Riefler's fame came from his precision clocks. In 1878 the firm moves to Munich and in around 1900 Riefler made the best known regulators in the world, winning many prices with his products. The firm still exists in Nesselwang, where it settled in 1911, and is still run by the Riefler family.

Rohde, Gustav
Gustav Rohde (1849-1930) came from Greiffenberg/Uckermark and became clockmaker in Prenzlau. He moved to Glashütte where he became the partner of Ludwig Strasser, with whom he erected the clockmaking firm *Strasser & Rohde.* In 1918 the firm was first taken over by the

clockmaker salesman Kreis. After Kreis's death, a former employee of Löbner in Berlin, Weiss went on with the business, which ceased in 1958.

Strasser, Ludwig
Ludwig Strasser (1853-1917) came from Würzburg where he learned the trade from Sebastian Geist, one of the first electrical clockmakers. The famous clockmaker Moritz Grossmann invited him to Glashütte in 1871, also teaching him the theoretical side of clockworks. Strasser then worked with turret clockmaker Zachariä in Leipzig. Back in Glashütte Strasser was helped by Grossmann and started in 1875 the firm *Strasser & Rohde,* a precision instrument factory with his partner Gustav Rohde. Strasser invented a new type of escapement, which he never patented however. Strasser also worked as a teacher at the famous Glashütte Watchmaking School. In 1918 the firm was first taken over by the clockmaker salesman Kreis. After Kreis's death, a former employee of Löbner in Berlin, Weiss went on with the business, which ceased in 1958.

Hans Hooijmaijers, July 2005