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(b. Zweibrücken, Germany, 24 October 1821; d. Munich, Germany, 13 August 1896)

astronomy, mathematics,

Seidel was the son of Justus Christian Felix Seidel, a post office official, and Julie Reinhold. Because of his father's work he began school in Nördlingen, continued in Nuremberg, and finished in Hof. After passing the graduation examination in the fall of 1839 he took private lessons from L. C. Schnürlein, a teacher of mathematics at the Hof Gymnasium who had studied under Gauss. In the spring of 1840, Seidel entered Berlin University, where he attended the lectures of Dirichlet and Encke, for whom he subsequently carried out calculations at the astronomical observatory. In the fall of 1842 he moved to Königsberg, where he studied with Bessel, Jacobi, and F. E. Neumann. When Jacobi left Königsberg because of his health in the fall of 1843, Seidel, on Bessel's recommendation, moved to Munich and obtained the doctorate with the dissertation "Über die beste Form der Spiegel in Teleskopen" in January 1846. Six months later he qualified as a *Privatdozent* on the basis of his "Untersuchungen über die konvergenz und Divergenz der Kettenbrüche."

These two works treat two fields investigated by Seidel throughout his life, dioptrics and mathematical analysis. He also produced works in probability theory and photometry, the latter stimulated by his collaboration with Steinheil. In his mathematical investigations he depended on Dirichlet but filled important gaps left by his teacher—for instance, introducing the concept of nonuniform convergence.

Seidel's photometric measurements of fixed stars and planets were the first true measurements of this kind. The precise evaluation of his observations by methods of probability theory, considering atmospheric extinction, are worthy of special mention. At Steinheil's suggestion Seidel derived trigonometric formulas for points lateral to the axis of an optical system; they soon became important for astronomical photography and led to the production of improved telescopes.

Besides the application of probability theory to astronomy, Seidel investigated the relation between the frequency of certain disease and climatic conditions at Munich. His pioneer work in several fields was acknowledged by Bavaria. In 1847 he became assistant professor, in 1855 full professor, and later royal privy counselor; he also received a number of medals, one of them connected with nobility. Seidel was a member of the Bavarian Academy of Sciences (1851) and corresponding member of the Berlin and Göttingen academies, as well as a member of the Commission for the European Measurement of a Degree and of a group observing a transit of Venus.

Seidel suffered from eye problems and was obliged to retire early. A bachelor, he was cared for by his unmarried sister Lucie until 1889, and later by the widow of a clergyman named Langhans.

Seidel's lectures covered mathematics, including probability theory and the method of least squares, astronomy, and dioptrics. He never accepted Riemannian geometry.

BIBLIOGRAPHY

I. Original Works. Seidel's earlier works include "Über die Bestimmung der Brechungs- und Zer-streuungs-Verhältnisses verschiedener Medien", in *Abhandlungen der Bayerischen Akademie der Wissenschaften*, Math.-phys. H1..5 (1848), 253–268, written with K. A. Steinheil: "Note über eine Eigenschaft der Reihen, welche discontinuierliche Functionen darstellen," *ibid.*, 381–393; "Untersuchungen" über die gegenseitigen Helligkeiten der Fixsterne erster Grösse, und über die Extinction des Lichtes in der Atmosphäre," *ibid.*, 6 no. 3, (1852), 539–660; "Zur Theorie der Fernrohr-Objective," in *Astronomische Nachrichten*, 35 (1852), 301–316; "Zur Dioptrik," *ibid.*, 37 (1853), 105–120; "Bemerkungen über den Zusammenhang zwischen dem Bildungsgesetze eines Kettenbruches und der Art des Fortgangs seiner Näherungsbrüche," in *Abhandlungen der Bayerischeh Akademie der Wissenschaften*, Math.-phys. K1., 7 (1855), 559–602; "Entwicklung der Glieder 3.ter Ordnung, welche den Weg eines ausserhalb der Ebene der Axe gelegenen Lichtstrahles durch ein System brechender Medien bestimmen," in *Astronomische Nachrichten*, 43 (1856), 289–332; "Über den Einfluss der Theorie der Fehler, mit welchen die durch optische Instrumente gesehenen Bilder behaftet sind, und über die mathematischen Bedingungen ihrer Aushebung," in *Abhandlungen der naturwissenschaftlich-technischen Commission der Bayerischen Akademie der Wissenschaften*, 1 (1857), 227–267; and "Untersuchungen über die Lichtstärke der Planeten vergleichen mit den Sternen, und über die relative Weisse ihrer Oberfläche," in *Monumenta saecularum der Bayexischen Akademie der Wissenschaften* (1859), 1–102.

Among his later writings are “Resultate photometrischer Messungen an 208 der vorzüglichsten Fixsterne.” in *Abhandlungen der Bayerischen Akademie der Wissenschaften*, Math.-phys. Kl., **9** (1863), 419–607; Über eine Anwendung der Wahrscheinlichkeitsrechnung, bezüglich auf die Schwankungen in den Durchsichtigkeitsverhältnissen der Luft,” in *Sitzungsberichte der Bayerischen Akademie der Wissenschaften zu München* (1863), pt. 2. 320–350; “Trigonometrische Formeln für den allgemeinsten Fall der Brechung des Lichtes an centrirten sphärischen Flächen,” *ibid.* (1866), pt. 2. 263–284; “Über ein Verfahren, die Gleichungen, auf welche die Methode der kleinsten Quadrate führt, sowie lineäre Gleichungen überhaupt,” in *Abhandlungen der Bayerischen Akademie der Wissenschaften*, Math.-phys. Kl., **11**, no.3 (1874), 81–108; and “Über eine einfache Entstehungsweise der Bernoulli’ schen Zahlen,” in *Sitzungsberichte der Bayerischen Akademie der Bayerischen Akademie der Wissenschaften*, Math.-phys, Kl., n.s. 7 (1877), 157–187.

II. Secondary Literature. See F. Lindemann. *Gedächtnisrede auf L. P. von Seidel* (Munich, 1898).

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