Leonard Salomon Ornstein
1880-1941

Ornstein was born in Nijmegen on 12 November 1880 into a merchant family. He attended the HBS in Nijmegen and The Hague, and studied theoretical physics at the University of Leiden from 1898 to 1908, obtaining his doctorate under Lorentz on a dissertation on applications of Gibbs's statistical mechanics on theoretical molecular problems. After serving as an assistant to Lorentz, Ornstein became lecturer of mathematical physics at the university of Groningen in 1909. At Groningen, Ornstein continued his research on the application of Gibbs's statistical mechanics to non ideal gases.

In 1914 Ornstein succeeded Debije in the chair of mathematical physics at Utrecht. In 1920, Ornstein became acting director of the Physics Institute at the University of Utrecht, and in 1925, upon the death of Julius, he became permanent director. Between 1920 and 1940, the Physics Institute was internationally known for its measurements of the intensity of spectral lines, performed by Ornstein and his collaborators. But he also continued his previous research on statistical mechanics, Brownian motion, light quanta, the kinetic theory of solids, and the theory of magnetism. To these areas he added measurements of band spectra, the Raman Effect, proportions of isotopes in substances, and the fine structure and measurement of spark discharges.

Ornstein was also interested in practical problems. In 1926 he was a consultant on the installation of electric streetlights in The Hague, and the following years he wrote and lectured on the relationship between universities and industry. In 1935 he founded with A. J. Kluyver at Delft the cooperative Biophysics Group Utrecht-Delft. The group investigated photosynthesis in single-celled green organisms as well as bioluminescence.

Ornstein was active in Jewish affairs as well as in his profession. From 1918 to 1922, he was chairman of the Netherlands Zionist Society, and from 1939 to 1940 he served as President of the Dutch Society for Physics (Nederlandsche Natuurkundige Vereeniging). In November of 1940 he was dismissed from his chair because of his Jewish parentage and was forbidden even to set foot in his laboratory. He died on 20 May 1941.

Primary works

Poggendorff, vol. 5, 924-925; vol. 6, 1918-1919; vol. 7B, 3775-3777. For Ornstein's manuscripts, see *Sources for the History of Quantum Physics*, 72; *L.S. Ornstein. A survey of his work from 1908 to 1933. Dedicated to him by his fellow-workers and pupils* (Utrecht, 1933) contains a list of his scientific publications up to 1933; A.F. Kamp, J.W.M. la Rivière, and W. Verhoeven, eds, *Albert Jan Kluyver. His Life and Works* (Amsterdam, 1959) 548-553, publications of the Biophysical Group Utrecht-Delft from 1936 to 1940.

Secondary sources

H.A. Kramers, 'Levensbericht van L.S. Ornstein', *Jaarboek der Nederlandsche Akademie van Wetenschappen* (1940-1941) 225-231; F. Zernike, 'Ornsteins levenswerk', *Nederlandsch Tijdschrift voor Natuurkunde* 8 (1941) 253-265; R.C. Mason, 'Leonard Salomon Ornstein', *Science*, 102 (1945) 638-639; L.A.M. Giebels, *De Zionistische beweging in Nederland 1899-1941* (Assen, 1975); H.G. Heijmans, 'De ontwikkeling van het Utrechts Natuurkundig Laboratorium tot fotometrisch instituut', *Gewina* 15 (1992) 85-96; *idem*, *Wetenschap tussen universiteit en industrie. De experimentele natuurkunde in Utrecht onder W.H. Julius en L.S. Ornstein 1896-1940* (Rotterdam: Erasmus Publishing, 1994); *idem*, 'Wetenschap en industrie: L.S. Ornsteins opvattingen over toegepaste natuurkunde', *Gewina* 17 (1994) 177-190.

[A.v.H.]