

ERNST JULIUS COHEN
1869-1945

Cohen was born on 7 March 1869. His father, Jacob Cohen, was a German chemist who later became a Dutch citizen. Ernst Cohen attended an HBS, studied Greek and Latin, and from 1888 to 1892 studied chemistry at Amsterdam with J.H. van 't Hoff. In 1890, his studies in Amsterdam were interrupted for two months because of a visit to Paris, where he worked in the laboratory of Henri Moissan. He also worked for three months at a state laboratory for agriculture in Breda. In 1893 Cohen took his degree with a dissertation *Het bepalen van overgangspunten langs electrischen weg en de electromotorische kracht bij scheikundige omzetting* (On the electrical method of determining transition points and the electromotive force of chemical reactions).

Cohen was assistant to Van 't Hoff before he became *privat-dozent* in 1896. In that year he published a new edition and translation of Van 't Hoff's magnum opus, *Studien zur chemischen Dynamik*. In 1901 he became professor extraordinarius of physical chemistry at the University of Amsterdam, but the next year he moved to Utrecht to become the new professor of physical and inorganic chemistry and director of the new chemical laboratory, the Van 't Hoff laboratory (inaugurated with a lecture bij Van 't Hoff in May 1904). As he had already done in Amsterdam, in Utrecht Cohen and his collaborators concentrated on the phenomenon of allotropy and physical isomerism, starting from research (in collaboration with C. van Eyk) on the allotropy of tin (they discovered that the so-called tin pest has to do with the fact that tin has two allotropes, white tin and gray tin, with very different properties). Cohen and his students also studied a large number of other substances and clearly distinguished between enantiotropy (with a transition point between two stable modifications) and monotropy (with only one modification that is stable, whereas the other is meta-stable). Other topics of research in his laboratory were the electrochemistry of the galvanic cells and piezochemistry. A survey of this work was published in 1919 as *Piezochemie kondenzierter Systeme* (with the collaboration of his student W. Schut). In 1926-1927 he gave the George Fisher Baker non-residential lectures at Cornell University, which he afterwards published as *Physicochemical metamorphosis and some problems in piezochemistry* (1928).

Cohen was well-respected among his colleagues. In 1903 he was

chosen as the first president of the new Dutch Chemical Association. In 1913 he was elected as a member of the Royal Academy of Arts and Sciences and in 1919 he was the first president of the new Union Internationale de la chimie pure et appliquée. In that capacity, he was active in trying to normalize the international scientific relations that had been disturbed during and immediately after the First World War.

Cohen also was a chemist with a wide range of interests. More than most of his colleagues he was interested in the history of chemistry. In 1907 he published a book on the history of laughing gas and in 1912 a biography of Van 't Hoff. After a visit to the United States in 1926, he published *Indrukken uit het land van Benjamin Franklin* (Impressions of the Land of Benjamin Franklin). He also wrote two textbooks for medical students.

In 1939 Cohen retired as professor at Utrecht. During the Nazi occupation of the Netherlands, being a Jew, he was arrested and sent to (probably) Bergen-Belsen. There he died on 16 May 1945.

Primary works

Poggendorff, vol. 4, 262-263; vol. 5, 230-232; vol. 6, 460-461; vol. 7B, 861-863. 'Physikalisch-chemische Studien am Zinn', *Zeitschrift für physikalische Chemie* 30 (1899) 601-622 (with C. van Eyk) (continued in later volumes); *Das Lachgas. Eine chemisch-kulturhistorische Studie* (Leipzig, 1907); 'Zinn' in R. Abegg, *Handbuch der anorganischen Chemie*, III, Part 2 (Leipzig, 1909) 531-610; *Henricus van 't Hoff. Sein Leben und Wirken* (Leipzig, 1912); 'Herman Boerhaave und seine Bedeutung für die Chemie', *Janus* 23 (1918) 223-290; *Piezochemie kondensierter Systeme* (Leipzig, 1919); 'The influence of pressure on chemical transformations', in: *Contemporary developments in chemistry* (New York, 1927), with W. Schut; *Piezo-chemical metamorphosis and some problems in piezochemistry* (New York, 1928); *Uit het land van Benjamin Franklin* (Zutphen: Thieme, 1928); 'Wat leeren ons de archieven omtrent Gerrit Jan Mulder', *Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, afdeling natuurkunde* 19, no. 2 (1948) 1-73. An almost complete survey of Cohen's publications is to be found in: *Chemisch weekblad* 15 (1918) 1452-1470, 24 (1927) 489-492, 36 (1939) 519-522, 41 (1945) 128-129.

Secondary sources

H.R. Kruyt, in: *Chemisch weekblad* 41 (1945) 126-129; F.G. Donnan, in: *Obituary Notices of Fellows of the Royal Society of London* 5 (1948) 667-687; C.A. Browne, 'Dr. Ernst Cohen as historian of science', *Journal of Chemical Education* 25 (1948) 302-307; A.L.T. Moesveld, 'The scientific work of Ernst Cohen', *ibid.*, 308-314; H.R. Kruyt, in: *Jaarboek van de Koninklijke Nederlandse Akademie van Wetenschappen* (1949-1950) 265-274.

H.A.M. Snelders, in: *BWN*, vol. 1, 114-115; *idem*, in: *DSB*, vol. 3, 333-334 (with incorrect data concerning Cohen's death).

[K.v.B.]