Albert Jan Kluyver
1888-1956

Kluyver was born on 3 June 1888 in Breda, the son of an engineer who later became professor of mathematics at Delft. Kluyver, Jr, attended the HBS in Leiden, after which he studied chemical technology at the Delft Technical College from 1905 to 1910. In 1910 he became assistant to G. van Iterson, Jr., in the latter's Laboratory of Microscopical Anatomy (later Technical Botany). In 1914 Kluyver received his doctoral degree in technical science on a dissertation on biochemical sugar determinations (*Biochemische suikerbepalingen*). In 1916 Kluyver married Helena Johanna Lutsenburg Maas with whom he had two sons and three daughters. From 1916 to 1919 he lived in the Dutch East Indies, where he advised on the improvement and encouragement of native industries. And in 1919 he studied the copra fibre and yarn industries in Southern India and Sri Lanka to see whether they could be implemented on Java.

In 1921 Kluyver was appointed professor of general and applied microbiology at the Technical College of Delft, the successor of M.W. Beijerinck who later applauded the appointment. In his inaugural address of 18 January 1922, *Microbiologie en industrie* (Eng. trans. in Kamp, *Kluyver*, see below), he stressed the possibility that through a systematic study of microbial metabolism industrial techniques could be developed for the production of many substances. This rested upon his belief that the metabolisms of all organisms were, in the end, made up of a few general processes. In 1922 Kluyver had obtained a large part of the yeast collection of the Centraal Bureau voor Schimmelcultures which he used in his studies. He also set up a collection of bacteria which led him to study their morphology and classification. As early as 1930 he came to the conclusion that the most promising research lay in comparative biochemistry. He therefore set up a research programme that would link theoretical and applied microbiology and started cooperative ventures with the Dutch Yeast and Methylated Spirits Factory at Delft.

During the 1930s Kluyver's advice on scientific matters was sought more and more. Initially he accepted an advisory function with the Nederlandsch Vezel Instituut (Dutch Fibre Institute). Later he became a member of the board of trustees of the TNO (Toegepast Natuurwetenschappelijk Onderzoek; Central Organization for Applied Natural Scientific Research), on which Van Iterson and H.R.

Kruyt were among the leaders. In 1935, with the Utrecht professor of physics L.S. Ornstein, Kluyver founded the Biophysical Group Utrecht-Delft which was supported by the Rockefeller Foundation. Next to his scientific duties Kluyver was also socially active: he served as a member of the city sanitary commission and was trustee of one of the local secondary schools.

A member of the Royal Academy of Arts and Sciences since 1926, Kluyver served as its president from 1947 to 1954. In this capacity he presided over a government advisory commission on the application of atomic energy in the Netherlands, the possibility of which he had indicated already in his inaugural address of 1922. It led to the establishment of the nuclear Reactor Centrum Nederland in Petten. Later Kluyver advised the authorities on the dangers to life connected with the detonation of atomic weapons.

The recipient of many honours, doctorates honoris causa, gold medals, and memberships of national and international scientific academies, Kluyver died on 14 May 1956.

Primary works

Bibliography in Kamp, *Kluyver* (see below). Incomplete bibliography in Smit, *DSB* (see below).
Kluyver Archive in the Technical University at Delft.

Secondary literature

A.F. Kamp, J.W.M. la Rivière and W. Verhoeven, *Albert Jan Kluyver. His life and work* (Amsterdam/New York: North-Holland Publishing Company, 1959), with a bibliography, a list of literature, of dissertations, of honours bestowed on him, and commemorative texts, as well as an In memoriam; O. Amsterdamska, 'Beneficent Microbes: the Delft school of Microbiology and its Industrial Connections', in: P. Bos and B. Theunissen, eds, *Beijerinck and the Delft School of microbiology* (Delft: Delft University Press, 1995) 193-214.
J. van der Toorn, in: *BWN*, vol. 2, 305-307; P. Smit, in: *DSB*, vol. 7, 405-407.

[L.C.P.]