

NIEUWLAND, Julius Arthur

Born: Hansbeke (B), 1878

Died: Washington D.C. (USA), 1936

At the age of two, J.A. Nieuwland leaves Belgium with his parents for South Bend (Indiana, USA). He studies at the University of Notre Dame and proves himself to be a scrupulous observer of nature. He is ordained priest of the Congregation of the Holy Cross and together with theology he studies chemistry and biology. In 1904 he graduates with a thesis on some reactions of acetylene. At Notre Dame he teaches biology and becomes professor of organic chemistry in 1918 till his death in 1936. His passion for botany prompts him to study the algae and he thinks up new techniques for conserving plant specimens. In 1936 he is awarded the *Gregor Mendel Medal*. His name however remains linked to the invention of neoprene and synthetic rubber. By treating acetylene with a mixture of CuCl and NH₄Cl he obtains its dimer 1-buten-3-yne (vinyl acetylene), which after a further reaction with CuCl results in the synthesis of 2-chloro-1,3-butadiene or chloroprene (H₂C=CH-CCl=CH₂) whose polymerization leads to the synthetic rubber duprene or neoprene. In 1904 he synthesizes but refuses to do further research on vinyldichloroarsine, Cl-CH=CH-AsCl₂, because of its toxicity and possible use in chemical warfare. (However, towards the end of WWI the American colonel Lee Lewis develops this substance as “Lewisite”, fortunately too late to be used as a chemical weapon). Besides becoming president of the *American Chemical Society* in 1925-1926, Nieuwland has been honored with many international awards and was a member of the main chemical societies.