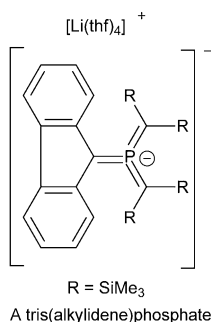
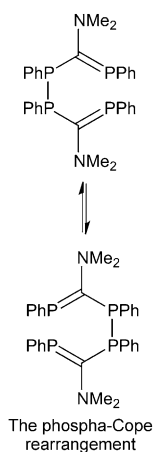
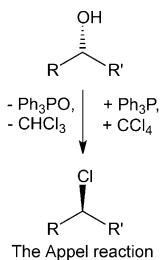




R. Appel



Rolf Appel (1921–2012)

Rolf Appel, Emeritus Professor at the Institute of Inorganic Chemistry of the University of Bonn, died on January 30, 2012, a few weeks before his 91st birthday. He was born in Hamburg-Harburg, finished school in 1939, and, according to his parent's wishes, he enrolled in medicine at the University of Halle. The experimental chemistry lectures of the future Nobel Laureate Karl Ziegler fascinated him to the extent that he decided to study chemistry. After completing his *Vordiplom* in 1941 and disruption through military service in the navy, Rolf Appel completed his chemistry studies in Halle in early 1945 with a *Diplom* thesis under G. O. Schenck on the previously unknown fumaraldehyde acid.

The end of the war brought about significant changes to his living conditions. Along with about 3000 other scientists, he was forcefully moved on the orders of the allied forces to West Germany. In Dieburg, he and a fellow chemist founded a company for the manufacture of wood varnishes and polishing waxes. Changes in the financial situation that were brought about by the currency reform prompted him to give up his fledgling company and to start his doctoral thesis. The deciding factor in his choice of Heidelberg was his laboratory course assistant in Halle, Margot Becke-Goehring. Under her supervision, he obtained his doctoral degree in 1951 with a thesis on disulfur trioxide. His *Habilitation* thesis, completed in 1955, was a discourse on the technologically important reaction of sulfur trioxide with ammonia. He then took up an academic position as full professor at the University of Bonn, where he was Director of the Institute for Inorganic Chemistry from 1966 until his retirement in 1986. The first years in Bonn were dedicated to set up the institute, which subsequently developed into a research center for molecular phosphorus chemistry. At the same time, he played a decisive role in the planning of the new institute building in Endenich, to which the institute moved in 1972.

Scientific activities were initially concentrated on the phosphane/carbon tetrachloride system, and led, in the presence of Brønsted acidic compounds, to the three-component reaction that bears Appel's name. This reaction found use in the organic laboratory as a mild dehydration agent.^[1] Further work using hexachloroethane showed that this method could be used for the synthesis of peptides at polymer resins. The synthesis of bradykinin is no doubt a highlight of this work.^[2]

At the end of the 1970s, Rolf Appel moved his research activities to organophosphorus compounds with $p\pi-p\pi$ multiple bonds, and thereby contributed significantly to a renaissance of phosphorus chemistry. A large number of novel compounds with $P=C$ bonds ("phosphacarbaoligoenes") were developed.^[3] Particular attention was given to the use of the C/P diagonal relationship, which afforded the phospho-Cope rearrangement as a highlight.^[3] Phosphorus(V) compounds with a coordination number of three should be also mentioned, such as the bis(methylene)phosphoranes or the tris(methylene)phosphate, an isosteric compound of monomeric metaphosphate.^[3] These studies on organophosphorus chemistry, which Appel stated was the happiest period of his scientific work, remain seminal.

Given his achievements, honors had to follow, such as the IMPHOS Award (1979), the Liebig Memorial Medal of the German Chemical Society (GDCh; 1986), and being named a member of the North Rhein-Westphalian Academy of Arts and Sciences (1982). Apart from university commitments, Rolf Appel also applied himself to chemistry in general. As a member of the board of trustees of the Fonds der chemischen Industrie (FCI) he spent much time for the advancement of young scientists and the chemical research and teaching at universities. As a member of the board of the GDCh, he made great contributions to chemistry in Germany.

One of Rolf Appel's biggest passions was traveling by sea, which led him and his wife Sylvia not only to the Mediterranean coast, but also to the Arctic. His sharp wit, his benevolent advice, and his friendship remain unforgotten and will be missed. Those that had the privilege to know him well, like us, will remember him as an exceptionally gifted researcher and professor.

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- [3] R. Appel in *Multiple Bonds and Low Coordination in Phosphorus Chemistry* (Eds.: M. Regitz, O.J. Scherer), Georg Thieme, Stuttgart, **1990**, pp. 157; R. Appel in *Multiple Bonds and Low Coordination in Phosphorus Chemistry* (Eds.: M. Regitz, O.J. Scherer), Georg Thieme, Stuttgart, **1990**, pp. 367.

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