Clay Minerals (2004) **39**, 363–365

KARL JASMUND (1913–2003)

Karl Jasmund died on 4th November, 2003. He was one of the German pioneers in clay science together with Carl Wilhelm Correns (1893–1980), Ulrich Hofmann (1903–1986) and Walter Noll (1907–1987).

Karl Jasmund was born in Hagenow (Mecklenburg, Germany) on 19th January, 1913. After High School, he studied chemistry, physics and mathematics, in order to become a teacher, at the University in Rostock. He passed the 'Staatsexamen' for High School teachers in 1937 before he studied mineralogy at the Universities in Rostock, Wien, Marburg and Hamburg.

During his thesis at the University in Rostock under Carl Wilhelm Correns he investigated a kaolin deposit in Rönne (Bornholm Island, Denmark). Karl Jasmund was one of the first students of Carl Wilhelm Correns. He received his PhD in 1939. His colleagues Helmut G. F. Winkler, Otto-Ernst Radczeweski and Georg Nagelschmidt also became mineralogists of international repute.

With Correns, Jasmund moved from Rostock to the Institute of Mineralogy and Petrography at the University in Göttingen, in the first instance under a DFG fellowship. With the beginning of the war, Karl Jasmund was called up and participated in the campaigns in France and Russia. The commander of his unit (and friend) was Gustav Angerheister, later a well-known professor of geophysiscs at the Ludwig-Maximilian University in Munich. It was a happy coincidence for clay science that in 1943 Correns requested Karl Jasmund for investigations said to be important in the war effort. He became an assistant at the Institute in Göttingen. The research was related to the oil industry, synthesis of diamonds and micas, and the development of fire-resistant materials for jet engines.

After the end of the war, Jasmund took over a lot of teaching and administration duties. Nevertheless he submitted the 'Habilitation' thesis on a physical-chemical theme in mineralogy. In 1952 he received the 'Venia Legendi' for mineralogy and petrography. During the following years he also taught at the Forestry Academy in Hannoversch-Münden (~30 km from Göttingen).

In 1956 Karl Jasmund was appointed as a full professor of mineralogy and petrography at the University in Cologne which at that time was housed in a rotunda of the medieval fortification buildings around the city of Cologne. Impressive from outside and narrow inside because of the thick medieval walls, the institute consisted of one room

https://doi.org/10.1180/0390363 Published online by Cambridge University Press

which was used for lecturing and scientific research. Jasmund finally succeeded in an extension into the top floor. The connection between the rooms by a small winding staircase in the form of the helix in the quartz structure was known to be dangerous to climb!

Prof. Jasmund sought a new building which was eventually finished in 1967. This institute was one of the best equipped in the Federal Republic of Germany. All aspects of mineralogy and petrology could be studied. The institute also included a division of crystallography. He also followed through on a desire to establish a collection of minerals which would be made available for public viewing. This mineralogical museum attracted many visitors. The pavements of the garden belonging to the museum were designed using different natural stones.

X-ray diffraction of clays played an important role in Jasmund's scientific research. For a long time clays had been considered to be amorphous materials. When he began studying kaolins during his thesis it became just clear that clays consisted of crystalline phyllosilicates or a mixture of them. Jasmund recognized that development in clay science could only be achieved through improvement of the methods of investigation, especially X-ray diffraction techniques. He developed a special camera ('Texturkamera') which allowed measurement of the basal reflections of the clay minerals on the basis of their texture-enhanced intensity. This camera allowed rapid investigation of clays.

The new results in clay science were published in the textbook 'Die Silicatischen Tonminerale' ('The Siliceous Clay Minerals'), first published in 1951. A second edition appeared in 1955. No further editions appeared because Jasmund preferred to use his time for teaching, other scientific work and administration. In 1993 he edited (together with Gerhard Lagaly) 'Tonminerale und Tone, Struktur, Eigenschaften, Anwendung und Einsatz in Industrie und Umwelt' ('Clay Minerals and Clays, Structure, Properties and Applications in Industry and Environment') (published by Steinkopff, Darmstadt, Germany). He was an Associate Editor for *Clay Minerals*, responsible for manuscripts from Germany and the Nordic countries, from 1976 until 1980.

Besides the development of X-ray identification of clay minerals, Jasmund studied the formation of minerals below and above the critical point of aqueous solutions. A further field of interest was the study of phase equilibria in silica-containing systems at high temperature and pressure. This field was mainly investigated in the USA. Karl Jasmund sent his co-worker, Hans Adolf Seck, to O.F. Tuttle and P.J. Wyllie at Pennsylvania State University, to get a basic knowledge of the experimental procedure and high-pressure equipment. The institute in Cologne became the first site in Germany with equipment for high-pressure syntheses. The first papers were published on amphiboles, garnets and feldspars.

Karl Jasmund also took up studies of regional importance because of the vicinity of the magmatic rocks of 'Siebengebirge, Westerwald, and Eifel'. He produced data on the genesis of magmatic minerals and described two new minerals found in the Eifel area: mayenite – $Ca_{12}Al_{14}O_{33}$ (named after the town Mayen) and brownmillerite – Ca_2AlFeO_5. A further new mineral, $Ca_{22}(SiO_4)_8O_4S_2$, was detected by G. Hentschel *et al*. in 1969 and named jasmundite (G. Hentschel, L.S. Dent Glasser and C.K. Leck (1983) Jasmundite, $Ca_{22}(SiO_4)_8O_4S_2$, a new mineral. *Neues Jahrbuch für Mineralogie, Monatshefte*, 1983, 337–342.)

Karl Jasmund was very interested in geochemistry, e.g. studies on the boron content of illites and of Pb^{2+} in K-feldspars. However, he never forgot clay minerals. Besides mineralogical aspects, he also studied the colloidal properties of these materials, the separation of clays in clay minerals, and their dehydroxylation (together with Friedemann Freund).

The alteration of stones in historical buildings is an important field of research nowadays. Jasmund himself studied the alteration processes of the stones of Cologne cathedral.

Prof. Jasmund did not change his scientific interests at short notice but followed his ideas with pronounced determination, a typical German professor. Retirement did not stop his scientific research. Using electron microscopy, he studied the properties of allophanes formed on the surfaces of minerals during alteration processes. Because of serious illness towards the end of his life, he did not manage to publish his results.

Karl Jasmund initiated the foundation of the German Clay Group which eventually was constituted in 1972 in Kiel, carrying a typical German name: Deutsche Ton- und Tonmineralgruppe (DTTG). The DTTG now also includes the clay scientists and companies from Austria and

Switzerland and is known as the 'German-Austrian-Swiss Clay Group Association'. Since 1989, the DTTG has awarded to young scientists the Karl-Jasmund Prize in order to promote interest in clay science.

Karl Jasmund became an Honorary Member of the German Soil Science Society (Deutsche Bodenkundliche Gesellschaft) in 1981. He received the Abraham-Gottlieb-Werner Medal of the German Mineralogical Society in recognition of scientific excellence during a colloquium on the occasion of his 70th birthday at the University in Cologne.

He spent his two last years in a nursing home looked after by his daughter Gunhild Winkler. His wife died a few months before him.

Karl Jasmund was a very modest, quiet and lovely man.

K. Beneke and G. Lagaly

https://doi.org/10.1180/0390363 Published online by Cambridge University Press