

MEMORIAL OF FELIKS KREUTZ (1844—1910)

UKD 92 Kreutz F.: 549+55, 1844—1910"

Feliks (Szczęsny) Kreutz, professor of mineralogy of Lwów and Kraków University, was born in Nowy Sącz on 19th November 1844. He frequented secondary school first in Kraków and then in Lwów. In 1865 F. Kreutz initiated his university studies in the latter town. His ability was soon appreciated by head of Department of Mineralogy and Petrography professor Ferdinand Zirkel. In 1867, the Kreutz family moved to Kraków where Feliks continued his studies, being employed as junior assistant of Prof. Alois Alth (1819—1886). The latter lectured mineralogy in Kraków after prof. Victor Zepharowich (1830—1890) who in 1862 was transferred to the Karl University in Prague. When free from university duties, F. Kreutz was making field works as temporary co-worker of the State Geological Institute in Wien guided by Gvidon Stache and performing practice in the chemical laboratory lead by K. v. Hauer.

F. Kreutz got the Ph. D. degree in Kraków by presenting three petrographic theses on eruptive rocks of Krzeszowice near Kraków, on reef limestones and on volcanic rocks of Pieniny Mts. The latter studies corresponded to Alth's investigations in the Tatry and Pieniny Mts.

In March 1870, F. Kreutz gained the grade of assistant professor in the Department of Mineralogy and Petrography in Tübingen, lead by professor Quenstedt, after having presented a thesis on the results of microscope studies of lavas of Vesuvius erupted in 1868.

When prof. Zirkel has moved to Kiel, F. Kreutz was invited by the University of Lwów to the head of Department of Mineralogy and Petrography. During his stay there he carried out detailed studies on andesite-trachite rocks of the Vihorlat-Gutin Mts. in Hungary (1871) and on augite-andesites of Smrkouz Mts. in Styria (1877), the samples of which were collected by Kreutz during cooperation with the State Geological Institute in Wien. Besides, he continued examination of volcanites of the Pieniny Mts. and of Vesuvius lavas erupted in the period 1881—83 (1885). In the first study of effusive rocks from the environs of Kraków, F. Kreutz has applied chemical and mineralogical analyses and has shown that formerly Austrian petrographers have examined weathered samples of these vol-

canites. On the other hand, in the successive studies, he used exclusively microscope examinations of mineral composition and structure of rocks. As Zirkel's pupil, F. Kreutz was a master of this new method as well as one of the very few specialists in preparation of thin sections.

As regards mineralogical problems, F. Kreutz was interested first of all in polymorphism. By comparing crystallographic Z parameters (L) of two polymorphous modifications he assumed, that its increase or decrease (σ) ought to be, following the principles of mechanics, accompanied by corresponding diminishing or enlarging of the area of cross section perpendicular to Z axis (B) i.e. in the XY plane. This relation can be presented by the following mechanical equation:

$$L(1 + \sigma) + B(1 + \mu\sigma)^2 = V \quad (\text{volume})$$

where:

μ — constant

Moreover, in his opinion, volumes computed from Z parameters and from the values of average X and Y parameters should be inversely proportional to the ratios of specific weights of the two modifications under comparison (1880).

Simultaneously, he cooperated with R. Zuber in investigations of the environs of Mrażnica and Schodnica near Borysław (1881). Hence F. Kreutz's original conceptions on the formation of Carpathian oil by decomposition of ozokerite or other solid bitumina and on the genesis of Miocene salt deposits by leaching salts from emerging flysch sandstones. Moreover, F. Kreutz discussed the phenomena accompanying collapse earthquake in gypsum-bearing areas of East Galicia.

F. Kreutz was very respected and well known person actively participating in scientific and cultural life of Lwów. He was one of the founders of the Copernicus' Polish Naturalist Society, being its president for four succeeding years. Besides, he was a member of the National Mining Council where he postulated to organize systematic geological studies of the Austrian sector of partitioned Poland. F. Kreutz took care of prestige of the Lwów University.

In 1886, after the death of prof. A. Alth, he was invited to head of the Department of Mineralogy and Petrography in Kraków. Apart from didactic activity i.e. lectures and exercises in crystallography, mineralogy and petrography for chemists, naturalists and medical students, prof. F. Kreutz was very active member of Physiographic Commission of the Cracovian Academy of Sciences. The latter activity consisted in organization of museum collections and of systematic investigations of the country. Some of the samples offered to Cracovian Museum were examined by him in detail and described, as e.g. garnet-, tourmalin- and topas-bearing granites as well as graphite-bearing granite-gneisses from Volhyniã (1889, 1890) and amphibol of Tagil region in Kamchatka from rock specimens collected by B. Dybowski. Thin sections of these samples were prepared by F. Kreutz (1894). However, the main problem of his studies was that of blue colouration of rock salt and fluorite (1892) as well as their fluorescence and phosphorescence (1895). As followed from Kreutz's experiments, colourless halite crystals are taking blue tint when subjected to the action of cathode rays or of sodium vapours and if contain traces of iron compounds (1896, 1897).

His further scientific activity was, unfortunately, stopped by numerous administrative duties. Prof. F. Kreutz was soon not only appointed to dean and then to rector of the Jagellonian University but also was one of organizers of field mapping for the Geological Atlas of Galicia. This great task was carried out by a team composed of eminent Polish geologists as: W. Teisseyre, R. Zuber, E. Dunikowski, T. Wiśniowski, W. Friedberg, W. Szajnocha, St. Zaręczny, K. Wójcik etc. grouped in Physiographic Commission of the Cracovian Academy of Sciences. Due to his efforts, Uhlig's geological map of the Tatra Mts. was incorporated into this Atlas. In 1903, because of bad health, F. Kreutz resigned of his post at the University and directed all efforts to introduce his son Stefan (born in 1883) into mineralogical sciences.

Professor Feliks Kreutz died on 22nd September 1910 in Zakopane.

A. GAWEL*

LIST OF SELECTED PAPERS OF FELIKS (SZCZĘSNY) KREUTZ:

1. Plutonische Gesteine in der Umgebung von Krzeszowice. *Verhandl. der k.k. Geolog. Reichsanstalt*, 1869, 8.
2. Mikroskopische Untersuchungen der Vesuv-Laven v.J. 1868. *Stb. d. k. Akad. d. Wiss. Wien*, 1869, 59.
3. Das Vihorlat-Gutin-Trachytgebirgen (in nordöstliche Ungarn). *Jahrb. d.k.k. Geolog. Reichsanstalt* 1871, 21, 1.
4. Augit-andesite des Smrekouz-Gebirges in Süd-Steiermark. *Mineralog. Mitt.* 1877, 2.
5. Ueber die Beziehungen zwischen verschiedenen Modifikationen heteromorpher Mineralsubstanzen. *Zeitschr. f. Kristal.* 1880, 5.
6. Ueber den Ursprung des Erdoels in d. galiz. Salzformationen. *Verhandl. d.k.k. Geolog. Reichsanst.* 1881, 28, 101.
7. Ueber die Bildung und Umbildung von Erdwachs in Galizien. *Verh. d.k.k. Geol. Reichsanst.* 1881, p. 113, 182, 311.
8. Ueber Vesuvlaven von 1881 and 1883. *Tschermaks Miner. u. Petr. Mitt.* 6, 1885.
9. O granitach wołyńskich zawierających turmalin i granaty. *Rozpr. Akad. Um. w Krakowie*, 20, 1889.
10. Gnejs grafitowy z Mecherzyniec. *Anz. Ak. d. Wiss. Krakau*, 1890.
11. Amfibol z nad Tigilu w Kamczatce. *Akad. Um. Kraków*, 1894.
12. Sól kamienna i fluoryt, ich barwa, fluorescencya i fosforescencya. *Rozpr. Akad. Um. w Krakowie*, 34, 1897.
13. O zmianach w kilku minerałach i solach pod wpływem promieni katodowych lub pary sodu. *Rozpr. Akad. Um. w Krakowie*, 34, 1897.

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