

TO THE ANNIVERSARY OF Doc. RNDr. IVAN KRAUS, CSc.



Doc. RNDr. Ivan Kraus, CSc., a long-year member of the Department of Mineral Raw Materials of the Faculty of Natural Sciences of the Komenský University in Bratislava, lives to be 50 in full health and actively working. He was born on May 17, 1935, in Zilina, but he grew up and graduated from secondary school in 1953 in Zvolen. He then matriculated on the Faculty of Geological and Geographical Sciences of the Komenský University in Bratislava, where he graduated from the specialisation of geology of mineral deposits.

After finishing his university studies, he became an assistant lecturer in the Department of Mineral Raw Materials, where he began to work in the field of geology of mineral deposits under the guidance of academician C a m b e l. At the beginning, as the continuation of

his diploma work, he devoted himself to the study of mineralography of siderite veins near Poproč in the SE part of the Spišsko-gemerské Rudohorie Mts.. From the beginning of the sixties, however, he began to devote himself, in his scientific as well as teaching activities, to the problems of non-ore mineral raw materials, in accordance with the need of education of geology students on the Faculty of Natural Sciences of the Komenský University.

Today, he belongs to the experienced university pedagogues. He lectures on major subjects from the geology of non-ore mineral deposits, concerning general problems of their origin and distribution on the territory of Czechoslovakia. Further he endeavours to stimulate creative abilities of students by the means of special seminars, students' scientific work and diploma works. He works as supervisor of graduate students in the specialisation of geology of non-ore mineral deposits, he is also a member of examining committees for state examinations and for defending PhD theses, in specialisations of geology of deposits and applied geophysics. As a co-author together with M. Kužvart, he has handed over for printing the first national university textbook on the geology of non-ore mineral deposits. Together with B. Čičel, he wrote also mineralogy and geology textbooks for vocational secondary schools.

The research activities of Doc. Kraus in the field of non-ore mineral raw materials are very extensive; at the same time, his interests are centred on the problems of mineralogical — genetical study of clay deposits and clay sediments in volcanic rocks and Neogene basins of the West Carpathian Mts.

One of the ranges of topics studied by Doc. Kraus concerns regional study of the most important deposits of clay raw materials. Within this topic he summarised basic knowledge of mineral composition and genesis of several depo-

sits of bentonite and of the first deposit of clays with mixed layered structure of the illite — montmorillonite type in the Central Slovakian neovolcanic rocks. Further he pursued the study of the kaolinite clays of the Poltár strata in the Lučenec basin, as well as the most important signs of Kaolinisation of various genetic types on the whole territory of the West Carpathian Mts.. On this basis he developed a genetical classification of kaoline deposits and he distinguished a separate West Carpathian Kaoline region within the Central European Kaoline province. From this conclusions follow some important facts for the clarification of the conditions of the formation of clay raw materials in this region. At the same time, it made it possible for Doc. Kraus to state the stages of hypergenous kaolinisation, what is of importance not only for the prognoses of kaoline deposits, but also for learning the general development of weathering processes in the West Carpathian Mts.

The second topic is concentrated on the precise identification of some unknown minerals and rocks especially in the neovolcanic regions (nontronite and beidellite, or clay diatomites), in the altered wall-rock zones (hydromicas of different polytype modifications) and in sedimentary complexes of Neogene basins (halloysite, gibbsite, diaspre). Here we can include also the study of the grade of structural arrangement in the minerals of the kaolinite group, which confirmed the considerable variability of kaoline and halloysite deposits of different genetic types.

Pioneering character have the works of Doc. Kraus concerning the basic aspects of the genesis of clay minerals and clay sediments in Neogene basins, namely the relationship between the mineral composition of clays and the character of the source rocks. Using modern methods of mineralogical and geochemical research, he developed for the first time in Czechoslovakia a procedure enabling the tracing of the whole history of the formation of clay sediments, starting from the weathering processes in the source areas, through the transportation of the material into sedimentation basins, to the changes in their mineral composition during diagenesis. He confirmed thereby that the mineral composition of clays in the inner basins of the Central Slovakian neovolcanites and in the East Slovakian basin is influenced mainly by weathering processes in the source regions. According to this principle, it is possible to differentiate within Neogene basins the associations of clay minerals originating in different source areas. On the same basis were confirmed changes in the mineral composition of clays with increasing depth, caused by the pressure of overlying strata in the diagenetic stage as well as by the contrasting character of the environment. The exceptional importance of the distribution of some trace elements (B, Ga) in clay sediments for the reconstruction of facies development and paleosalinity of sedimentation basins, has been confirmed too.

Equally successful are the activities of Doc. Kraus on the international field. He participates especially actively in the work of the International Correlation Programme of Kaoline Deposits (IGCP No. 23). He prepared several guides and he himself led international excursions devoted to non-ore mineral deposits of the West Carpathian Mts. during the congress of the Carpathian — Balcan Geological Association in 1972, the International Kaoline Symposium (1979) and the Conference on Clay Mineralogy and Petrology (1982). The results of his own scientific research he presented at international conferences and symposium in Exeter and Kiev (1976), Oxford (1978), Bologna (1981) and Prague (1983).

An important role in the activities of Doc. K r a u s, as a long-year research leader of the partial problem "Non-ore raw materials in the sediments and volcanic regions of the West Carpathian Mts." of the state basic research plan, play the results which he achieved in the prospection for deposits of non-ore mineral raw materials, important for the national economy. He took part in the discovery of the first economically important deposit of zeolites on the territory of Czechoslovakia (Nižný Hrabovec) as well as other zeolite occurrences in Central Slovakia. In close co-operation with the Geological Survey and mining organisations he made a contribution to the successful outcome of the prospection for ceramic clays, bentonites and perlites in the Lučenec basin and in the Central Slovakian neovolcanic region.

A rich publication activity as well as the results achieved in testing raw materials range Doc. K r a u s with our outstanding specialists in the problems of research of clay as well as some other mineral raw materials. An important circumstance is that his work and orientation brought not only a considerable contribution to science, but it also contributed to the securing of mineral raw materials for our national economy. Sometimes alone, but mostly as a co-author, Doc. K r a u s has published 52 original works, including one monography. This works bring not only new suggestions for the genesis of clay raw materials, but also information of prognostic significance, important for prospection in the West Carpathian region.

Besides his teaching, scientific and research work, Doc. K r a u s has always responsibly carried out the work connected with his several political and public functions on the Faculty of Natural Sciences of the Komenský University in Bratislava. For his engagement in public affairs, he was awarded a diploma of appreciation of an exemplary activity in education and the memorial medal of the 40th anniversary of the foundation of the Faculty of Natural Sciences of the Komenský University.

The Slovak geological public, the editorial board of the *Geologický Zborník* — *Geologica carpathica*, all of his co-workers, friends as well as recent and former students of geology on the Faculty of Natural Sciences, wish Doc. RNDr. Ivan K r a u s, CSc. good health, many successes in his work and contentment in his personal life.

Translated by K. Janáková

RNDr. Miroslav H a r m a n, CSc.