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**30 YEARS OF THE SPECIALIZATION
“MINERALOGY AND PETROLOGY”
AND OUTLINE OF PETROLOGICAL STUDIES
AT WROCŁAW UNIVERSITY AFTER 1945**

The academic year of 2002/2003 was the 300th anniversary of Wrocław University. In this long history, the geological sciences, including mineralogy and petrology, have played a notable part. Among the scientists connected with Wrocław University, were renowned geologists and mineralogists, starting with Karl von Raumer, the founder of the first “Mineralogical Cabinet” (1811). His successors included E.F.Glocker (who discovered 9 new minerals), M.L.Frankenheim (who introduced space frameworks in crystallography), F.Roemer (a famous geologist and academic lecturer), M.Websky (an outstanding mineralogist), and A.V.Lassaulx (inventor of the “Lassaulx lens” in the polarizing microscope; Sachanbiński & Wierzbicki 1997).

After 1945, this academic tradition was continued and Wrocław University was a notable center for mineralogy, petrology and several other disciplines of the geological sciences. The Sudetes and neighbouring Fore-Sudetic Block, with their variety of intriguing rock complexes, has long been an excellent natural laboratory for geological studies. The starting point for more recent studies were the outline publications of M.Książkiewicz, and detailed review papers by H.Teisseyre and K.Smulikowski. These authors delineated the major lines of geological and petrographic studies for the newly-organized Institute at Wrocław University. The geological studies in the Institute were coordinated by H.Teisseyre, J.Zwierzycycki and J.Oberc, whereas the Department of Mineralogy and Petrography and associated courses were organized by K.Maślankiewicz and his first assistant: M.Witkiewiczowa (Floryan 1970). New systematic geological research, following H.Teisseyre’s lead, was undertaken in the metamorphic complexes of Lower Silesia, while K.Smulikowski initiated detailed petrographic studies of large granitoid bodies. These studies required basic laboratory equipment: facilities for sample preparation, a thin section workshop and polarizing microscopes. In those difficult post-war times, the extraordinary organizing abilities of K.Maślankiewicz proved crucial. He gathered together a group of young assistants, including B.Bereś, K.Dziedzic, H.Dziedzic, E.Głowacki, Z.Śliwa and the first co-author of this text (A.M.); later, the team was joined by C.Juroszek, A.Grodzicki, J.Niśkiewicz, M.Sachanbiński and S.Lorenc. These first assistants had to teach, also to prepare teaching materials for crys-

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tallography, mineralogy and petrology. One difficult task was to transfer a large collection of minerals and rocks to a new location, and to arrange a new display. In 1955, the collection was considerably enlarged by a several hundred new specimens obtained by A.Majerowicz while attending a Soviet-led course on radioactive minerals in Kowary. The mineralogical display was then organized by M.Sachanbiński and his colleagues. By the 1970's, the Department of Mineralogy and Petrography possessed basic analytical facilities and could perform conventional mineralogical and petrographic studies (Jahn et al. 1988).

Given the political control of those times, only limited contacts with universities in other countries were possible; nevertheless, these gave the chance to keep up with new research trends and to undertake some scientific co-operation. For example, A.Majerowicz made a four month visit to Stockholm, followed by exchange two-week long geological excursions organized in 1968. These excursions, with 15 participating scientists and students on both sides, covered the most interesting geological sites in Poland and Sweden.

At that time, the University co-operated intensively with the Polish Geological Institute, in particular with regard to geological mapping projects, and with industrial companies where the university scientists applied their expertise to searching for mineral resources. Both the academic and applied research activities were frequently cited (e.g. A.Bolewski, K.Smulikowski, A.Gaweł, W.Żabiński).

In 1972, after K.Maślankiewicz's retirement, A.Majerowicz became the head of the Department of Mineralogy and Petrography. In the 1970's, the staff was enlarged by the following postgraduates: R.Kryza, A.Muszyński, C.August, J.Janeczek and, somewhat later by: J.Puziewicz, S.Koszela, P.Gunia, M.Jędrysek, A.Jasiński (the latter graduated from chemistry at Wrocław Technical University), K.Turniak, M.Awdankiewicz, and still more recently – D.Jóźefiak and W.Bartz. This enlarged team considerably extended the scope of research activities, arranged new laboratories and developed wide co-operation with other universities in Poland and abroad.

In the academic year 1973/74, a new programme for “Geology” was prepared, with three specializations: “Exploration Geology” (subsequently “Stratigraphy and Exploration Geology”), “Hydrogeology” and “Petrography” (subsequently “Mineralogy and Petrology”). The new programme was assessed and accepted by the Ministry of High Education and Techniques. The mineralogy and petrography programme was ratified without difficulty: by that time the Department was among the leading academic institutions of its type in Poland, with a long tradition, broad research activities and many international contacts. The coordinators of the new specializations were appointed: “Exploration Geology” – J.Kłapciński (later succeeded by M.Mierzejewski), “Hydrogeology” – M.Różycki (followed by J.Kryza and T.Bocheńska), and “Petrography” – A.Majerowicz (since 1995, R.Kryza). The new courses of started in the academic year 1974/1975, and the first “specialized” students graduated in 1978/79 (Gorczyca-Skała 1995).

The new specialized programme significantly influenced the development of mineralogical and petrological sciences in the Institute. The students were offered, apart from

a solid background in geology, specialized knowledge covering various branches of mineralogy and petrology, including modern analytical techniques and practical aspects of applied mineralogy. The level of teaching increased, together with progress in research and links with leading academic centres abroad were strengthened. Apart from personal contacts with many foreign scientists and individual fellowships, there was important long-term bi-lateral co-operation with Université B.Pascal (Clermont-Ferrand, France), Brno University (Czech Republic), British Geological Survey, Leicester University and Keele University (U.K.), Ruhr University in Bochum and the University of Hannover (Germany). All these activities resulted in a range of significant scientific achievements and many publications.

In 1994, "Geology" programme at the University was modified and a two-stage curriculum was introduced: stage I – three-year undergraduate studies (licence), and stage II – two-year MSc studies. The second stage remained subdivided into three specializations as before.

Petrology, combined with other branches of mineralogical and geological sciences (e.g. with structural and regional geology) is a distinctive feature of studies in "Geology" at Wrocław University. Apart from basic courses in mineralogy and petrology, the curriculum offers specialized lectures such as: "Physical chemistry of rock-forming processes", "Genesis and evolution of magma", "Volcanology", as well as interdisciplinary courses: "Petroarcheology", "Technical petrography: stone in architecture", "Gemology" and "Natural disasters". The students learn not only theory but also develop practical skills useful to applied studies, e.g. instrumental phase and chemical analysis of natural and man-made materials, and modern computer methods. The basic courses for the specialization are provided by the Department of Mineralogy and Petrology, and Mineralogical Museum and Department of Gemology; these two are supported by colleagues from other laboratories: the Department of Applied Geology (Laboratory of Isotope Geology), Department of Geology and Documentation of Mineral Deposits, and Department of Physical Geology.

In 1994, a new system of PhD studies was introduced in the Institute in: (a) hydrogeology and environmental studies, (b) mineralogy, petrology and geochemistry, and (c) hydrogeology and environmental issues. The studies were directed by J.Niškiewicz, and since 1998 – by J.Puziewicz. Within this system, 6 PhD theses have been defended and four others are in progress in the Department.

The Department of Mineralogy and Petrology comprises several laboratories. The first of these, the Laboratory of Mineral Separation, was established in 1994 (head: A.Grodzicki) and, afterwards, the Laboratory of Isotope Geology was created in 1994 (since 1998 included in the Department of Applied Geology, head: M.Jędrysek). The new labs extended the spectrum of research activities of the Department of Mineralogy and Petrography.

In 1995 the position of the head of the Department was taken by R.Kryza and in 1996 its name became the Department of Mineralogy and Petrology.

Petroarcheology has long been important in the scientific activities of the Department. Lively co-operation between the Department and archeological institutions at Polish universities and the Polish Academy of Science, and with universities abroad, dates back to the early 1950's. Under A.Majerowicz's supervision, many scientific reports and expert opinions were prepared, and these often resulted in publications (see Majerowicz 2003). In 2003, a Laboratory of Petroarcheology and Technical Petrography was formally established in the Department, following its long traditions in petroarcheological and petroarchitectonic research activities (A.Majerowicz and A.Grodzicki). The new laboratory is coordinated by P.Gunia and its activities cover, beside conventional petroarcheology, problems of the deterioration and conservation of building stones.

The Departmental laboratories are well-equipped in modern analytical facilities for sample preparation and mineral separation (e.g. rock crushers, various types of separators, polishing equipment), as well as in analytical instruments: a Siemens 5005D X-ray diffractometer, a Q-1500D Derivatograph, a Philips PW1400 X-ray fluorescence spectrometer, a Pye-Unicam SP-9-900 atomic absorption spectrometer, a Cambridge Microscan M9 electron microprobe (EDS & WDS). These facilities enable the teaching and practices of modern analytical research.

The specialization Mineralogy and Petrology, since its inception in 1973/1974, has graduated more than 200 students. Many of these chose a scientific career at Polish universities and at the Polish Academy of Science, some obtained PhD and habilitation degrees, and several others succeeded in obtaining PhD and other fellowships in well-known universities abroad (e.g. in USA, Switzerland, U.K., Germany). Many graduates found jobs in geological and environmental institutions and companies. The broad-ranging, rigorous theoretical and practical education they received at the University facilitated obtaining of work in the difficult recent employment market.

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