

IN MEMORY

Helena Dziedzic

February 22, 1925 – December 31, 2007



On the last day of 2007, Docent Dr. Helena Dziedzic passed away. She worked in both academia and industry and was an important figure in Polish geology, specializing in petrology, mineralogy and related disciplines.

Helena Dziedzic was born on 22 February, 1925, in Chorzów, into a Silesian family with Polish traditions. Her parents had taken part in the Silesian Uprisings in 1919–1921.

After finishing secondary school in Chorzów, she spent nearly two further years in the municipality. In October 1947, Helena enrolled at the Faculty of Natural Sciences of the University of Wrocław, there to graduate in geology in March 1952. She was quickly recognized as a talented A-grade student, and, well before her graduation, was employed in 1950 as a deputy assistant by Professor Kazimierz Maślankiewicz.

From 1950, Helena was engaged not only in teaching younger students and research but also in the restoration of the university, which had been heavily damaged (like the whole city of Wrocław) during World War II. A lot of organizational – and physical – work was required to rebuild the facilities, the labs and the rooms for both students and staff. Helena was deeply involved in these ‘pioneering’ activities under the new Polish administration. Academically at this time, understanding the geology of Lower Silesia and the Sudetes Mountains required fresh thinking from Polish geologists. It was necessary to learn and review the earlier German studies and to decide what was to be adopted, rejected or changed. New ideas and research projects were often developed directly in the field during numerous outcrop-to-outcrop visits. Talented geologists like Helena rose to the challenges posed by the need to reinterpret the geology. As did her husband – a very close friend of ours and a fellow geologist – Professor Kazimierz Dziedzic. Kazimierz was always full of energy and possessed a never-ending enthusiasm. Kazimierz and Helena married in March 1952 and had a daughter Katarzyna, who became a pediatricist.

During the 1950s, and using previous German work as well as reconnaissance trips, Professors Henryk Teisseyre (a geologist) and Kazimierz Smulikowski (a petrologist) – both of whom taught us – decided that our first research targets in the Sudetes would be the volcanic and plutonic rocks associated with the granitic massifs. The initial aim was to assess their petrographic variants, origin and geological positions. Helena Dziedzic’s very first research experience, as part of this team, was to study the Permian volcanic rocks from the Intra-Sudetic Basin. She was able to show, for the first time, that the melaphyres of the region had undergone spilitization and other metasomatic transformations.

Of the many granitoid plutons in the Sudetes – the Karkonosze, Jawornik, Strzelin, Strzegom–Sobótka, or Kłodzko–Złoty Stok massifs – it was the Niemcza granitoids that Helena studied in detail and that proved fruitful for her. Syenites, monzonites, and granodiorites all form the Niemcza massif and all received a very meticulous description and analysis. Initially, she analysed the K-feldspars and undertook structural work. The study brought a number of scientific papers and was crowned with a PhD thesis devoted to the ‘syenites’ of the Niemcza Zone. In 1962, she defended it in public and was awarded the Doctor’s degree. All of Helena’s papers were founded on detailed microscopic observations and of chemical analyses performed by Helena herself. They currently stand as benchmarks of modern Sudetic geology.

Helena had by now attained a high level of petrographic skill. Together with Professor Józef Oberc, she wrote the widely disseminated university script ‘Macroscopic determination of rocks’, which went to four editions between 1958 and 1980. This script was well known to successive generations of geology students in Wrocław and other Polish universities, and is still in use. Her students invariably recall that her lectures and practicals were always superbly prepared. And as a supervisor, she would generously share her knowledge with students preparing for the magister degree (MSc).

In February 1962, Helena Dziedzic left Wrocław University and moved to the Polish Academy of Sciences where she joined the then Department of Old Structures led by Professor Henryk Teisseyre in Wrocław. The department soon changed its name to the Department of Geology of the Sudetes, as this better matched the research interests of its staff who were engaged in sedimentological, petrologic and tectonic projects dealing with various regions of the Sudetes and Lower Silesia. Helena Dziedzic was, in fact, connected with the department since its foundation in 1956 through contracts and part-time jobs while she was still teaching at the university. In 1973, Dziedzic became the department’s head.

In the early 1970s, Helena turned her attention to rock deformation, and, in so doing, initiated petrotectonic studies in Poland. Lattice preferred orientations of quartz, calcite and micas were measured by her in the crystalline rocks of the Niemcza Zone and from the adjacent eastern margin of the Góry Sowie Massif and the Strzelin region. For the first time in Poland, Helena Dziejdzic's detailed studies of the orientation of quartz c-axis patterns and of micas in fold limbs allowed for a distinction to be made between the pre-folding and post-folding fabrics, as well as being able to discriminate between several fold sets. This work resulted in a new description of the structural sequence of the area. But Helena did not only focus on the petrology and structural evolution of the Niemcza Zone granitoids and crystalline schists. She also investigated their age. Based on fossilized pollen retrieved from low-grade metamudstones, Helena and Professor Teresa Górecka were able to determine a Carboniferous age of these rocks.

In the 1980s, Helena continued to work in the Fore-Sudetic Block. It was Helena Dziejdzic who proved that the boundary between the West and East Sudetes does not coincide with the proposed northerly extension of the Ramzová Thrust to the Fore-Sudetic Block and so cannot be located at the belt of K-rich felsic rocks, which had erroneously been interpreted as a Devonian mylonitic orthogneiss set in mica schists. She proved that these rocks were metarhyolites with metabentonite intercalations and that there were sulfide concentrations and signs of submarine weathering. In high-grade clinopyroxene-bearing amphibolites and hornblende granulites – once dolerite veins set in the Góry Sowie gneisses, especially in the vicinity of Bielawa – she recognized low-pressure and high-temperature metamorphism at the amphibolite to granulite facies transition. This could be connected with the emplacement of the I-type Variscan granitoid magmas. These granitoids also caused metamorphism of the Niemcza Zone (meta)greywackes and (meta)pelites, resulting in characteristic

low-pressure minerals, such as syntectonic andalusite and cordierite. Helena also studied in detail the P-T evolution and deformation of metagabbros from the Braszowice-Brzeźnica Massif, which is a part of the Sudetic Ophiolite. Combined with the N- to E-MORB composition of protoliths of the amphibolite and granulite, similar to those of the ophiolite gabbroic members that crystallized at a pressure of 10–4 kbar (33–13 km depth), Helena's work resulted in a geotectonic model of a moderately extended rift zone and an interpretation of the region that assumed a common tectonometamorphic history. Her last paper was coauthored by Kazimierz Dziejdzic and was published in 2000 in *Geologia Sudetica*. It summarized their view and offered a coherent model of Devonian ensialic rifting and mantle diapirism under the Sudetes which controlled the generation and evolution of the basaltic magmas, mostly via assimilation and fractional crystallization processes that involved parental melts and lower continental crustal materials.

Docent Dr. Helena Dziejdzic headed the Department of Geology of the Sudetes until 1994, retiring in 1995. She guided many younger staff members who worked with her in the Fore-Sudetic Block. Four of them were awarded a Doctor's degree under her supervision, and two have recently become university professors in their own right.

Helena Dziejdzic will long remain in our memory as a scholar and as a friend whom we will sorely miss. She was always superbly elegant, impeccably dressed and never seemed to have a hair out of place. Nevertheless, one thing did manage to intrude on this otherwise spotless picture – cigarettes. Helena loved to smoke cigarettes with her cups of coffee during work, and cigarettes formed a standard accompaniment to her many long discussions on geology and matters of life in general.

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