

IN MEMORY

Marian Dumicz

12 December 1929 – 26 January 1998



Marian Dumicz, the excellent and internationally valued geologist will be sorely missed by his friends and colleagues. On the 26-th of January, 1998, he was taken from us and from his students, whom he had given his knowledge and skill for over forty-five years.

Marian Dumicz was born on the 12-th of December, 1929, in Podhorce, near Lwów. In 1945, he and his family were relocated from there to Ścinawka, near Nowa Ruda in Lower Silesia. He graduated from secondary school in Kłodzko in 1949 and in that year started studying Geology in the Natural Sciences Faculty of Wrocław University. Marian completed his studies in 1953, having done his master's degree under Professor Henryk Teisseyre on the subject of the geological structure of the Jaskulin terrain in the Świebodzice depression.

His work was mainly concerned with tectonic problems, although geological mapping and regional geology were also areas he worked on. He began his individual work in the Sławniowice region of the Eastern Sudetes, drawing attention to the variable style of tectonic deformation in the Lower Devonian quartzites and Sławniowice limestones, which he gave a Precambrian age due to the confirmed sedimentary connection between these rocks and the Desna-type mica schists and paragneisses which are dominant in the Pradziad massif in Moravia.

He later became interested in the Góry Bystrzyckie and Góry Orlickie metamorphic series, presenting the

first detailed geological map of crystalline rocks outcropping over an area of around 250 km². The richness of his observations allowed him to reconstruct the geological development of that region from the Precambrian to the Cretaceous, taking into account both stratigraphic relationships and tectonometamorphic processes. He drew attention at that time to the age connection between the small-scale tectonic structures in the Góry Bystrzyckie crystalline rocks and the Kłodzko metamorphic complex, giving them a post-Silurian age. The results of these examinations were published in his Ph.D. thesis, summary of which appeared in the first volume of *Geologia Sudetica* and was honoured with the Minister's award.

The organiser of the Polish Geological Expedition to Mongolia, Edmund Rutowski, had taken note of Dumicz's outstanding achievements, particularly his inquisitiveness and excellent knowledge of various geological techniques, and proposed that he take the leadership of one of the exploration-mapping teams on the expedition. They worked in Western Mongolia for three years and the results of their work were published in over one hundred articles and monographies. Marian Dumicz was the author or co-author of thirty of these. He summarised his discoveries in his habilitation thesis paper "The tectonism of the Mongolian Altai and the Great Lake Valley in the region of Kobdo". He publicly presented the theories contained within it in 1972 in front of the Science Council of the Natural Sciences Faculty of Wrocław University.

Among the most important theories from this work was the documentation of the early Caledonian orogenic foundation of the Mongolian Altai, which had been recorded in text-books and encyclopedias as belonging to the significantly younger Variscides. Near Kobdo, as in the other areas studied by the expedition, Josenbulak and Ulan-Gom, Lower Cambrian archaeocyaths were found for the first time in strongly folded sediments and flysch-diabase-spilite formation permeated with granitoids and metamorphosed to various degrees, surrounding the old Changai massif. To the southeast of Kobdo this formation is unconformably overlain by a typical molasse sediment containing Ordovician-Silurian fauna, which was also discovered there for the first time by the expedition.

Another of Marian's more important achievements was the discovery of continental conglomerates and Vendian volcanic rocks, both formations previously unknown in Mongolia, in the outermost zone of the aforementioned Changai massif. These formations gradually pass into Cambrian marine sediments at the outer limits of the massif. These discoveries expanded the ongoing input of Polish scientists into the examination of the make-up of the Urał-Altai fold system, initiated by the pioneering explorations of Jan Czerski. The work of the expedition to Mongolia was awarded two Minister's awards.

After the materials which had been collected in Mongolia had been fully worked on, Marian Dumicz returned to his studies of the Sudetes. He concentrated on tectonism, with an aim to clarifying the style, sequence and age of the deformations of the crystalline series of the Orlica-Śnieżnik dome. To do this work he used methods of detailed mesostructural analysis, and showed that, contrary to the previously held opinion, crystalline schistosity is, as a rule, formed obliquely with regard to earlier stratification surfaces. The discovery influenced and changed the way large tectonic unit geometry was looked at and changed the previously held view of the structural evolution of the Sudetes. This also encouraged Professor Tadeusz Gunia to begin palaeontological studies of metamorphic rocks in which, along with traces of sedimentary structures, relicts of Precambrian and Palaeozoic fauna were discovered. They were found in the paragneisses of Wyszków and the quartzites of Goszów.

Another subject of interest of Marian Dumicz was the tectonism of the Mid-Cretaceous glass-sands of the Tomaszów trough and the Zechstein copper-bearing shales of the Polkowice region. In both cases he presented the development of disjunctive processes on the basis of mesostructural analysis. In the Tomaszów trough, a part of fractures was brought about displacements parallel to the Teisseyre-Tornquist line, which cuts obliquely the European continent. In the region of Polkowice, the processes left their mark in the form of subhorizontal and antithetic displacements of limestones and Zechstein salts at the top of the black copper-bearing schists.

In the seventies, Marian Dumicz concentrated on the Śnieżnik metamorphic complex, which has a geological structure reminiscent of that of the Góry Bystrzyckie and Góry Orlickie complexes. This stage of his investigations was summed up in the fourteenth volume of *Geologia Sudetica*, in which he attempted to explain the tectogenesis of the epi- and mesozonally metamorphosed series of Ziemia Klodzka. He described the sedimentary structures preserved as relicts in the Stronie series, and differentiated two developmental subcycles in the metamorphosed mesozonal structures of that region. The first was an early Variscan subcycle with two stages of deformation, namely tectogenetic D₁ and orogenetic D₂, and the second was a late Variscan subcycle, also with two stages, D₃ and D₄. He demonstrated synchronous development of microcline blastesis with F₂ folding under vertical compression. He also observed that most of the folds mapped in the Śnieżnik region are synforms and antiforms, formed during the D₄ event.

In the eighties he mostly worked on the classification of the structural position of the polymetamorphic rocks of the Złoty Stok-Skrzynka tectonic zone and on the discovery of the history of the high-pressure eclogites derived from the root zones of the Śnieżnik metamorphic complex. He suggested that the mesostructures in rocks of its southern part and the Złoty Stok-Skrzynka tectonic zone, despite their similar morphology and sequence, belong to two different subcycles of the development of the Ziemia Klodzka tectogen. He found two fine-grained variants of the Gierałtów gneisses of different ages along-side the

augen Śnieżnik gneiss. They were related to different subcycles of that tectogen's development. He also demonstrated the possibility of the existence of a connection between the Ramzów thrust's development and the appearance of the Złoty Stok-Skrzynka tectonic zone. He suggested that what can be observed there is a westward migrating wave of tectonic deformation beginning with the Bretonian phase and ending with the Sudetian phase. It brought about the subductive movement of the Eastern Sudetes rock series under the Western Sudetes rock series along the length of the Ramzowa thrust.

In his final years Dumicz continued to study the development of the gneiss series in the Śnieżnik metamorphic complex, describing within them numerous occurrences of strain partitioning into alternating zones of flexure and shear deformation. He obtained that with more developed tectonometamorphic processes in shear zones, synkinematic recrystallization overwhelmed the rocks giving rise to a new lamination S₃ characteristic of the rejuvenated variety of Gierałtów gneisses. The older variety of these rocks contains a metamorphic lamination S₁. The younger variety is characterised by presence of the S₃ lamination compatible with the S₃ gneissosity developed in the fine-augen Śnieżnik gneisses. He also recognized two varieties of the Śnieżnik gneisses of which the older corresponds with both variants of the Gierałtów gneisses, however, the younger one having recorded only D₃ deformation must have originated from a porphyritic granite.

During the same period, Marian Dumicz investigated the position of eclogites in the geological evolution of the Śnieżnik metamorphic complex. Mesostructural analysis backed up by mapping of the geological units of that region were his methods. He suggested that these high-pressure rocks appeared amidst the Gierałtów gneisses no later than during the third stage of deformation D₃ and that they were genetically related to granulites. Using petrotectonic methods he undertook an attempt to locate garnet and omphacite blastesis in time with regard to F₂ folding and S₃ formation of gneissosity in the granulite series. The results of these examinations, done together with Dr. Czesław Juroszek, indicated that these minerals were post-tectonic with regard to F₂ and pre-tectonic with regard to S₃.

The last publication by Marian Dumicz appears posthumously in this, the thirty-first volume of *Geologia Sudetica*. It is a comparison of the tectonic structures of the Góry Orlickie metamorphic complex across the Polish-Czech frontier. Due to the international nature of the investigation, he set up contacts with the geologists of the Jeseník Department of the Czech Geological Survey and the scientists of the Mineralogy and Petrography Department of the T. G. Masaryk University in Brno. In both places he gave lectures. Besides he organised the field conference "The sequence of the Śnieżnik massif rock series in the light of geological mapping, structural analysis and radiometric examination".

The scientific work of Marian Dumicz is both rich and original, with a great deal of meaning not only in the Sudetes but also from the point of view of the Variscides of central Europe. In recognition of this impressive body of

work, he received a title of Professor in 1977.

The senate of Brno University honoured him with the University Silver Medal. He was also decorated with the Gold Cross of Merit and the Chevalier Cross of the Order of the Polonia Resituta.

His sudden death cut his active life off too early. We said goodbye to Marian in the cemetery in Božków where he rests in peace in his beloved Ziemia Kłodzka, which inspired him in his long active career.

Jerzy Don