



AGS Distinguished Scientist Award. Gesner Medal 2007

Jarda Dostal

Jarda's research career is now well into its fourth decade, and his publications are impressive both in terms of quantity and quality. He has published in a wide variety of prestigious journals, on the national and international scene. For much of this time, his work has focused on mineralogy, geochemistry and petrology of igneous rocks. However, a cursory look at his curriculum vitae will show that this is a gross oversimplification. He has tackled every important petrological process from mantle evolution, to magma mixing, to liquid immiscibility in rocks ranging from Archean to recent in age! His contribution to any one of these fields of research is sufficient to have merited a first-class international reputation. Taken together his contributions are truly outstanding, and for the rest of us mere mortals, humbling.

Jarda completed his undergraduate degree at Charles University in Prague in 1964, left the former Czechoslovakia during its troubled '60s and emigrated to Canada. After completing his Ph.D. on the geochemistry and petrology of Loon Lake in Ontario in 1974, Jarda became a professor at Saint Mary's University in 1975, where he has been ever since.

By the time Jarda finished his Ph.D., he already had eight publications in refereed journals, predominantly in the field of mineralogy (from amphiboles to asbestos). Many of his early papers were on uranium and rare earth geochemistry, in igneous and metamorphic rocks ranging in age from Precambrian to Recent in regions such as Sardinia, Algeria, Iran, the Canadian Shield and the Andes. Taken together, his studies on the distribution of uranium and related elements in volcanic rocks is an enormously impressive contribution, spanning much of the geologic column and in all corners of the globe (including Nova Scotia). These studies were many years ahead of the vast volume of literature that ultimately related these elements to a combination of primary and secondary processes. Once again, in his insights and research interests, Jarda demonstrated that he was well ahead of the bandwagons. Not content with the geographic limitations of continents, he also got involved in Deep Sea Drilling Projects. In the late 1970s his work around the Mediterranean expanded to include Greece, the western

Alps and the Massif Central, and other parts of northern Africa. During this time, Jarda was one of the first to point out that continental tholeiites may not fit into traditional trace element discrimination diagrams (all the rage at the time) because of their crustal contamination, principles he used to great effect in his studies on the Precambrian, Paleozoic and Mesozoic continental tholeiitic rocks in Atlantic Canada. His work on the tholeiitic basaltic rocks in Coppermine (1984) and Natkusiak (1986) basalts stimulated much discussion and further research on the petrogenesis and tectonic setting of these rocks, debates that continue to this day.

By the early to mid-1980s, Jarda had become a world authority in the various manifestations of igneous rocks, modern and ancient, and on a wide variety of petrological processes associated with their genesis. Jarda's thinking was well ahead of the pack and most of his basic conclusions are still as valid today as the day they were written (not many of us can say that!).

In the 1990s, of more than 80 publications, several stand out as landmarks. For example, his 1992 paper (with Mueller) on Archean shoshonites in the Abitibi is important because it provides clues as to whether modern environments can really provide actualistic analogues for Archean settings. His 1996 paper on the inception and demise of a pre-Pan-African ocean basin in Algeria is a very important contribution to our understanding of Neoproterozoic global-scale orogenic activity and has implications for the tectonic setting of our own Avalonian belt. In 1996 and 1998 papers on the ocean island basalts from French Polynesia, he showed how the distribution of light elements such as boron, lithium and beryllium may be used as tracers for the character of subducted components. These are first-order contributions to our understanding of subduction zone processes and, true to form, will no doubt be applied to Atlantic Canadian geology in upcoming studies. His papers on the early Mesozoic dykes of Atlantic Canada also stand out as a contribution to our understanding of the timing, setting and igneous manifestations of divorce from our Late Paleozoic neighbours.

Most recently, Jarda has focused much of his research on the terra incognita of southern Mexico, using igneous petrology and geochemistry to constrain evolution of magmas in a wide variety of settings. He has made a considerable contribution to the understanding of the one-billion-year-old Oaxacan complex, which is a portion of a Grenvillian orogen that has been dismembered by the breakup of Rodinia, Gondwana and Pangea. This is a crucial piece of work because it constrains Neoproterozoic continental reconstructions.

In addition to continued research into Neoproterozoic to Mesozoic igneous complexes in the Caledonide-Appalachian orogen, there are papers on Paleoproterozoic to Mesozoic magmatic events in Greenland, Mexican igneous complexes ranging from Paleoproterozoic to Mesozoic in age, continued research into the Archean of northern Canada, the accreted igneous complexes of western Canada, and many more.

Jarda's research has been innovative with a level of sustained excellence for over 30 years. The breadth and depth of his contributions span some of the most fundamental concepts in the fields of mineralogy, geochemistry, igneous petrology, and their relationship to tectonics.

Jarda should serve as an inspiration to the modern crop of Ph.D. students in igneous petrology. He tackled some of the most important petrological challenges of our time and consistently provided novel and plausible insights into fundamental processes responsible for them. In bringing and maintaining state-of-the-art analytical equipment to Atlantic Canada, his contributions have provided the infrastructure for many more researchers.

Jarda has been a great supporter of the geoscience community over the years, most notably as chair of the Atlantic Provinces Council on the Sciences committee on the Earth Sciences. He is a regular attendee of the annual Atlantic Universities Geological Conference, where undergraduate student research projects in Atlantic Canadian universities are presented.

Although he tends to stay in the background, late in the evening he can be found in reasonable proximity to the bar (a Czech custom, no doubt) waxing most eloquently about the complexities of igneous geochemistry. I confess to having learned most of my geochemistry on the adjacent bar-stool.

Jarda is a scientific leader. He was always well ahead of the pack throughout his career. I believe it is time to formally recognize his lifetime contribution. He is a most deserving recipient of the Gesner Medal.