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Verleihung der Paul Niggli-Medaille

Der Stiftungsrat der Paul Niggli-Stiftung hat an seiner Sitzung vom 20. Juni 2003, beschlossen, die Paul Niggli-Medaille für das Jahr 2003 an

Andreas Audétat

zu verleihen, in Anerkennung seiner international bedeutenden wissenschaftlichen Arbeiten im Gebiet der hydrothermalen Geochemie und der Lagerstättenkunde, insbesondere für seinen Beitrag an die Entwicklung der LA-ICPMS-Technik zur Untersuchung von Fluid- und Schmelzeinschlüssen und deren Anwendung auf porphyrische Kupfer-Gold-Lagerstätten und hydrothermale Zinnvererzungen in Graniten.

Mit seiner mittlerweile fast vollständig publizierten ETH-Dissertation hat Andreas Audétat eine Pionierleistung in der modernen Erforschung hydrothermaler Erzlagerstätten erbracht. Mit der Vorbereitung der allerersten Testproben sowie der Herstellung von synthetischen Flüssigkeitseinschlüssen hat er einen zentralen Beitrag an die Entwicklung der LA-ICPMS-Methode als die heute empfindlichsten Methode zur Analyse von Spurenelementen in Fluideinschlüsssen geleistet. Seine geologische Anwendung dieser neuen Technik auf die Quarz-Zinnstein-Adern des Mole Granite (Australien) wird weithin mit einem eigentlichen Durchbruch in der Untersuchung des Metalltransports durch magmatisch-hydrothermale Fluide identifiziert. Die internationale Anerkennung dieser Arbeiten wurde angeführt durch einen Leitkommentar in der Ausgabe von *Science*, in dem Andreas Audétat's erster Hauptautor-Beitrag publiziert wurde: "*Audétat et al., using a new analytical technique, resolve that uncertainty for one ore deposit and furnish a method applicable to many more... This analytical technique will allow a new level of understanding of temporal variations in hydrothermal geochemistry and of ore-depositing processes...*".
Nach Abschluss seiner Disseration arbeitete er als Postdoc in den USA und untersuchte die Prozesse der Fluid-Entmischung aus granitoiden Magmen, welche zur Vererzung von Kupferporphyren führt. In neuerer Zeit hat er sich der experimentellen Untersuchungen von Fluid- und Schmelzsystemen im tieferen Bereich von Subduktionszonen zugewandt.

Übergabe der Medaille am

1. Swiss Geoscience Meeting in Basel,
28. November 2003
durch Prof. Christoph Heinrich.
In Vertretung des Stiftungspräsidenten,
Prof. Volkmar Trommsdorff

Verdankung der Paul Niggli-Medaille

Dear friends and colleagues,

when I heard the news that the Paul Niggli Medal will be given to me, it was a total surprise. All the bigger is my pleasure about this renowned award, which represents an enormous motivation for my future and signalizes that I am on the "right path". This path, I was told by a professor during my undergraduate studies, will be a path of trial and tribulation, but as a young student I did not care too much about such warnings. However, as most of you know, he was actually right, and in view of schoolmates who had their livelihood secured long time ago, probably everyone has asked himself whether the decision to follow an academic career was right. I would like to point out that it is only thanks to your exuberant enthusiasm and in-

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spiration that I did not get discouraged by such thoughts, for which reason I do not regard this medal as my own achievement, but in fact as the accomplishment of you all.

My first thanks go to my dear parents, who have been such a good example to me and have given me so much support and encouragement during all the years. It is thanks to them that I became interested in nature and the mountains, because they took me onto all their hikes from the time I could not even walk yet. The interest for minerals, however, seems to have fallen in my lap accidentally, since none of the relatives or friends of the family dealt with them. Fortunately, after moving to a new address, a neighbor turned out to be a passionate crystal-searcher, who taught me all the secrets about his special hobby. From that moment on I spent all my free time on minerals, and there hardly passed a weekend where I was not either searching for crystals, looking through the microscope or studying a mineral book or a geological map.

Of course, there was no question that I wanted to study earth sciences. The study at ETH Zürich was tough, but at the latest after the commencement of the diploma thesis, which I was allowed to conduct under supervision of Viktor Köppel and Volker Dietrich on my home-mountain (the Calanda near Chur), my enthusiasm for science was fully wakened. I quickly became interested in fluid inclusions, which stimulated my fantasies due to their mysterious content and their negative-crystal shape. Unfortunately, nobody at the ETH was working with fluid inclusions at that time, such that I had to acquire most skills myself. This was not easy, but it had the great advantage that it forced me to work and think independently.

Towards the end of my undergraduate studies a new, dynamic and very motivated professor entered the stage of the ETH: Christoph (Stöff) Heinrich. In view of his preference for fluid inclusions and ore deposits it is not surprising that already a few days after his arrival I was standing in his door and asked him whether he would take me as a PhD student. Stöff for sure is the person who has shaped me most, and to whom in the end I owe the honor of being here today. Despite the fact that he taught me incredibly much, he gave me a lot of freedom and always the feeling of doing front-line science. Furthermore, due to his openness and warmth I just felt as happy as at home. Stöff actually was the first person to receive the Paul Niggli Medal, and it is a particular pleasure for me to step into his footprints today.

With respect to the feeling of doing front-end science, there certainly is some truth behind. However, this is mostly thanks to Detlef Günther, who worked miracles to turn a long-time known, but not yet mature technique (LA-ICP-MS) into *the* method of choice for fluid inclusion analysis. I was so lucky to be the first person to come with suitable samples, and I will never forget the spectacular moments when the first good signals appeared on the screen and we triumphantly knew that from now on it would be possible to measure half of the periodic system within a single fluid inclusion. I would like to express my deepest gratitude to him, and I am very pleased to know that the ETH recently honored his pioneering efforts with a permanent professorship.

Shortly before I finished my graduate studies Thomas Pettke took over the responsibility for the LA-ICP-MS lab in Stöff's group. In him I found another invaluable friend, who granted me the privilege of discovering nature's secrets not only on a scientific level, but also during numerous crystal-searching adventures. It simply feels great to work with him – whether in the lab or on a crystal cavity – and I always look forward to be guest in his warm-hearted family.

After the doctorate I was eager to apply my new knowledge to other magmatic-hydrothermal systems. A scholarship of the Swiss National foundation helped me to pursue a two-year postdoctoral project in the group of Bob Bodnar at Virginia Tech, USA. During these two years I learned several new techniques and gained the experience of living in another culture.

Back in Europe, I felt that it was time to expand my horizon beyond the world of ore deposits. Hans Keppler from the University of Tübingen offered me the chance to learn the business of experimental petrology from a master of the field himself. In less than two years he already has left a considerable imprint on me, and I am very happy to be in his group. A first project with the diamond anvil cell, which originally was intended for "warming up", unfortunately turned out to be exceedingly difficult, and it took my whole energy and patience not to fail on it. However, it was worth the trouble, and in the meantime I became so much attached to the people at the Institute and in whole Tübingen that I hope to stay much longer.

Last but not least I would like to express my gratitude to all the members of the Paul Niggli foundation, and to all other persons who have accompanied me during the past years.

Thank you all!

Andreas Audétat