

2004 MEDALS & AWARDS

O.E. MEINZER AWARD

Presented to Ghislain de Marsily



Ghislain de Marsily
University of Paris VI

Citation by Mark Person

This year's O.E. Meinzer Award is presented to Ghislain de Marsily of Paris VI University. Of note, de Marsily is the first Frenchman to receive this prestigious award. I think it is fair to say that it would be a challenge to find a hydrologist over the age of 30 who hasn't heard of the name "Ghislain de Marsily". This is easy to understand given the prominent role he has played in the hydrologic community during the past three decades. He has written four books and authored over 100 journal articles. He has sat on numerous advisory boards including the Swedish Nuclear Inspectorate, the WIPP Project for Sandia National Laboratory, the Nuclear Waste Program of the European Commission, The Commission of Environmental Management Technology of the US National Academy of Science, US National Academy Committee on Disposition of High-Level Waste and Spent Fuel, NEA-IAEA review team for Yucca Mountain Site Recommendation Performance Assessment. I could continue and so far I've only listed his committee work outside of France. Marsily has received many prestigious awards. He is a fellow of the American Geophysical Union and received that society's Horton Award for Hydrology, in 1995. He received the Körber Award, presented by the Foundation for the Advancement of European Science in 1992. In 1994, he received an honorary doctorate from the University of Québec. In 1999 he was appointed as a foreign associate to the US National Academy of Engineering. He is a member of the

International Water Academy, Oslo and joined the French Academy of Engineering in 2000. Again, the list goes on.

Marsily, a classically trained Civil Engineer, received his Ph.D. in 1968 from the University of Paris. He began his career working as a drilling and grouting contractor in the Sahara and in France. In 1967 he began a research and teaching career at the Paris School of Mines. During the next 20 years, de Marsily built an internationally recognized program in hydrogeology. In the 1990's, it was the place to go for young American hydrogeologists wishing to receive their European finishing. As a postdoc at the School of Mines in 1990, I noted that the program included about a half dozen research scientists and dozens of graduate students. The School of Mines was constantly being visited by prominent faculty from North America. What was remarkable to me about the hydrogeology program at Fontainebleau, in addition to the four course meals served at lunch, was the spirit of cooperation and congeniality. It is clear that this atmosphere was created by de Marsily's personal example. In perhaps one of the most difficult decisions of his professional career, de Marsily left the Paris School of Mines in 1989 to become the Director of the Laboratory for Applied Geology, University of Paris VI.

The Meinzer award, which was established in 1965, recognizes significant contributions to the advancement of hydrogeology. Marsily is recognized for two publications which helped to prominently establish the field of stochastic hydrology in the 1980s. First is de Marsily's seminal paper published in *Water Resources Research* with Matheron entitled, "Is transport in porous media always diffusive? A counter example". This study elegantly demonstrated that for horizontal flow in stratified aquifers, hydrodynamic dispersion grows with scale and the conventional advection-dispersion equation is not strictly applicable. Marsily is also cited for his textbook "Quantitative Hydrogeology" first published in English in 1986. This book was among the first to introduce a generation of hydrogeologist to geostatistics in general and kriging in particular.

I conclude on personal note. Apart from his many awards, what I find truly remarkable about Ghislain de Marsily is his dry wit, humility, and self sacrifice. I'll never forget the story which Alfonso Rivera, then a doctoral student at the School of Mines (and now the chief hydrologist for Natural Resources Canada), related to me about how de Marsily was known to meet with students

well after midnight on his numerous trips to Fontainebleau. Ghislain, this Meinzer award is both richly deserved and long-overdue. Please join me in congratulating the Professor Ghislain de Marsily, the 2004 O. E. Meinzer Award recipient.

Response by Ghislain de Marsily

Thank you, Mark, for these kind words. I am very honoured by the Geological Society of America, and by all the friends and colleagues who have contributed to make me the recipient of the Meinzer award. Apart from the pleasure I had when learning that my 1980 paper on dispersion with Georges Matheron and my 1986 text book are considered to have contributed to our discipline, my belief is that the true reason for this award is the large number of colleagues that, over the years, I have been lucky enough to meet, to appreciate, and to develop a friendship with... To all of them, to all of you, let me say "thank-you".

Mark mentioned the introduction of geostatistics as a contribution by my text book. Let me say that geostatistics is due to Georges Matheron, I only presented a small aspect of it as applicable to hydrogeology. Matheron is also co-author of the 1980 paper. It therefore seems to me that this Meinzer Award is in fact directed to Georges Matheron, who sadly passed away some four years ago. It is a greater honour for me to somehow stand in for Georges Matheron today before you, as it is in fact his great influence on earth sciences, including on hydrogeology, which is recognized here today. Few of you may have met him, he was an extraordinary person, a remarkable scientist, a man of honour.

In one of the latest talk that Matheron gave, he mentioned towards the end the following maxime: "The owl of Minerva spreads its wings only with the falling of the dusk". I later discovered that this is in fact a citation from Hegel, written in 1821, in *The Philosophy of Right*. Minerva, or Athena in Greece, daughter of Jupiter, was the goddess of Wisdom and Arts. Minerva's bird, the owl, is thus, I believe, the symbol of wisdom. The falling of dusk is the end of the day, the end of the story, the end of life. When Hegel wrote this, he was 51, and he died 10 years later. When Matheron quoted this, he was about 61, and he passed away a few years later. But what do we understand from spreading its wings? One interpretation could be that the owl flies away, that, at the dusk of life, wisdom goes away, and only ignorance and apathy are left. I am afraid that this may be the correct interpretation, and I am all the more afraid as

2004 MEDALS & AWARDS

I have now many more years behind me than both Hegel and Matheron before they left... !

But there may be another one, which is hidden in the words “only” — let me recall the sentence — “The owl of Minerva spreads its wings only with the falling of the dusk”. The meaning can then be quite different — wisdom can only develop, or rather can only reach far enough to grasp the full picture (the spreading of the wings) at the end of the day! If this is true, then it will make many of us in this audience happy, our bald heads, our grey hair are only here to show how wise we are, how widely spread are our wings of wisdom... !

But let me come back to the Meinzer award: the two contributions that Mark mentioned date from 1980 and 1981 (French text book, but published in 1986 in English, thanks to the translation made by Gunilla, my wife). If these contributions were the mark of wisdom, I think this would clearly point out which interpretation of the maxim is correct, as far as I am concerned, whether I like it or not.

But let me suggest a third interpretation, which, in fact, I would favour: many of us in this audience are or were teachers, as both Hegel and Matheron were. They tried as hard as they could to help their students, to develop in them this wisdom that makes scientific contributions, that makes our science progress. Let me suggest that the “spreading of the wings” is the starting of the flight of these many former students, now actively working, publishing the papers, making the contributions, that, 25 years from now, when they too see the falling of the dusk, will earn them a Meinzer Award.

Let me thank you again for this Award, and conclude that it is in fact dedicated to these many students which I was lucky enough to be able to help, and who are now here, among us, starting to spread their wings.