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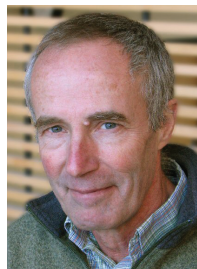


DEPARTMENT OF
SOIL SCIENCE
University of Wisconsin-Madison

NOVEMBER 2011

Message from the Department Chair

Friends of Soil Science at UW-Madison:



A Permanent Agriculture

September is, of course, a very busy time around here. Among the many tasks that circle around about now is writing and submitting proposals for the Hatch competition. Hatch funds are annual federal allocations to each state's Agricultural Experiment Station, and at UW-Madison we compete

internally for a slice--typically support for a graduate student and a small side of supply and travel money. Every proposal must include a nod to the original intent of the appropriation as described in the Hatch Act of 1887, in part:

"...to conduct original and other researches, investigations, and experiments bearing directly on and contributing to the establishment and maintenance of a permanent and effective agricultural industry of the United States..."

A grander vision could hardly be imagined: a permanent and effective agricultural industry. Days after directly quoting this wonderful passage in my proposal I ran across a just-published paper, *"The making of an agricultural classic: Farmers of forty centuries or permanent agriculture in China, Korea and Japan, 1911-2011,"* (J. Paulli, DOI 10.4236/as.2011.23024), in which we learn that "permanent" was a contentious term at the time that University of Wisconsin-Madison's F. H. King wrote the famous book referred to by the paper's title. Author Paulli explores the history of this enduring book, how it was nearly lost, and is increasingly available--16 editions in the last decade!

The phrase "permanent agriculture" figured prominently in the acrimonious disagreements between, on one side, University of Illinois professor Cyril Hopkins and King, and USDA scientists Whitney and Cameron on the other. Between 1910 and 1913 Hopkins published three books on "permanent agriculture" and King's was published (posthumously by his wife) in 1913. (On King's desk here in my office is a shoe insert made by King for her. Looking at it I'd diagnose plantar fasciitis--there is a stretch for that.) Paulli argues that Hopkins and King used "permanent" to highlight the difference of their understanding of soil fertility against the erroneous views of Whitney and Cameron. Specifically, Hopkins and King saw that soil was not an infinite source for nutrients, but rather that careful management was essential to its continued productivity.

On the 100th anniversary of King's passing it is energizing to realize that the 1887 challenge of the Hatch Act and his concern for assuring an enduring agriculture remain a profound challenge--to which no discipline is more fundamental than soil science.

Bill Bland, Chair

Pedologist Joins Faculty

Several issues ago we mentioned a paper that proposed that, "a soil science renaissance is upon us." Well, that renaissance is now in full bloom at the University of Wisconsin-Madison with the arrival of our newest faculty member, **Alfred Hartemink**.

Alfred was the lead author on the renaissance paper and is known worldwide for his vigorous promotion of improving access to soil information. He will reinvigorate our international presence, through his service as the current Secretary



General of the International Union of Soil Sciences. Alfred will join Jim Bockheim and Nick Balster in teaching soil classification and mapping in several of our courses, and lead research in the new world of digital soil mapping. We joke that a new faculty member is given a desk, a telephone (funded for one year), and a license to hunt for whatever else is needed to conduct research. We've done a bit better by Alfred, recruiting a top-flight graduate student, Dave Evans, to work with him. We welcome and challenge Alfred to become part of the terrific history of pedology, and soil science generally, here at the University of Wisconsin-Madison.



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Awards, Honors and News

Sharon Long has been promoted to professor, July 2011. In addition to her responsibility as director of the Water Microbiology, FLOW Cytometry, and Glassware/Media units of the Wisconsin State Laboratory of Hygiene, Sharon manages a research program addressing microbial source tracking. She also mentors several graduate students, teaches the course Microbiology of Waterborne Pathogens and Indicator Organisms, and is a frequent guest lecturer.

Steve Ventura received the 2011 Robert G.F. and Hazel T. Spitze Land Grant Faculty Award for Excellence in recognition of his breadth of teaching achievements, relevance of research and impact of research and service.

Birl Lowery is the 2011 recipient of the Conservation Research Award from the Soil and Water Conservation Society. The award is conferred on SWCS members whose research has led to exceptional improvements in soil conservation, water conservation and/or related natural resources research.

Carrie Laboski was awarded the 2011 CALS Pound Extension Award. The Pound Extension Award is presented annually to an outstanding integrated Extension faculty member of CALS.

Bill Hickey was selected by the department to hold the first O.N. Allen Professorship of Soil Microbiology. Gifts from the trusts of Ethel K. Allen created this permanent endowment memorializing her husband, Oscar N. Allen. The award is for a period of five years and may be used for student support, instruction/outreach, equipment and supplies purchase related to the field of soil microbiology.

This year has been one of transition for three of the longest-serving members of our community: **Sheri Speth**, **Dick Wolkowski**, and **Fred Madison**. All retired in June, and in the spirit of doing more with less, we recognized their many decades of good work with a joint reception in the Allen Centennial Gardens. All three are now back in limited capacities to help us through the period of reorganization and recruitment that follows retirement of folks as central to our department's function as these three have been. Our sincere thanks and best wishes for this wonderful next stage of their lives!

Soil Judging Team News by Nicholas Haus

Madison's soil judging team has had an eventful year, its first after a decade-long hiatus. We travelled to two competitions, faring better in California this spring than at our autumn competition in Illinois. From April 11 to 17th, six undergraduate students (**Gloria Ambrowiak**, **David Evans**, **Peter Ganzlin**, **Erin Mellenthin**, **Clay Thomas** and **Clay Vanderleest**), coach **Nick Haus**, and professor **Nick Balster** journeyed to California to compete in the North American Colleges and Teachers of Agriculture (NACTA) Judging Contest. We spent the first couple days becoming acquainted with California's unique landscape, geologic history and diverse soils. The rest of the week was spent preparing for and competing in the contest with students from eight other schools.



The contest was in the Modesto region, and our practice pits ranged in age from thousands to millions of years, and transitioned from entisols, inceptisols and alfisols. All formed from coalescing alluvial fans and stream terraces flowing from the Sierra Nevadas. Prior to European settlement, the central valley contained a vast network of poorly drained soils high in organic matter. After settlers arrived, hundreds of reservoirs were constructed by damming the rivers snow-fed from the Sierras, allowing millions of acres of extremely fertile soils to become available for agricultural use in a climate with a nearly continuous growing season. Students had the opportunity to describe soils that supported walnuts, almonds, oranges, apricots, fig trees, grain crops, and a great diversity of vegetables. Here, both students and teachers saw for the first time soils that had converted to solid rock by additions of pedogenic silica.

The most remarkable soils in the contest supported dense groves of apricots and were much older and more developed than what we had seen. These soils proved to have a "Btkqm" horizon, indicating that the subsoil had accumulated clay, lime and silica to such a degree that the soil had become cemented. If that wasn't enough, they also showed the presence of shrinking and swelling that created a feature known as slickensides. Very seldom do soils exhibit such diversity of processes. Identifying all these processes in a soil is difficult for professional soil scientists, and it is a testament to our team's skill that the Badgers accurately identified all the processes correctly. Their hard work paid off in the end and our team placed second overall, with 3 students ranking in the top 10!

This incredible and formative experience for these young soil scientists was made possible by a gift in support of soil judging activities from **Professor Emeritus Art Peterson**.



Alumni Updates

Emil Valencia submitted this information on behalf of his dad, **Illuminado G. Valencia** (MS 54; PhD 62): After a long illustrious career with the Philippine Atomic Energy Commission and serving as an advisor with the United Nations Development Programme, "Totoy" has now put himself out to pasture where he rides herd over 20 head of cattle as well as manages a number of his own agricultural farms. Emil says his dad is a proud Badger! 29 Mariano Jocson Street, Varsity Hills QC1108 Philippines; 632-426-0730

Stanley Peterson (BS 50) is now a "gentleman farmer." He retired in 1978 from a good career as a soil scientist and also a commercial pilot from 1944 until 2007. He says he couldn't ask for a better life and education at the finest College of Agriculture in the US. 5955 Spokane Ranch Rd., East Helena, MT 59635; 406-475-3156

Leslie Sherman (PhD 97), W. Alton Jones Professor of Chemistry, in the Department of Chemistry at Washington College, Chestertown, MD, has been named Director of the Environmental Studies Program at Washington College.

Ron Checkai (PhD 83) was recently recognized for his environmental research at the 2011 Scientific Achievement Awards ceremony in The Hall of Heroes, The Pentagon. Ron is Adjunct Professor, School of Environment and Natural Resources, The Ohio State University, and also Chief of Environmental Toxicology US Army Edgewood Chemical Biological Center. Ron and two colleagues under his supervision received the Technical Cooperation Program (TTCP) Achievement Award for their work on "Development of Environmental Tolerance Values for Defense Sites Contaminated with Energetic Materials." You can get in touch with Ron at Department of the Army, Research Development & Engineering Command, US Army Edgewood Chemical Biological Center (ECBC), RDCB-DRT-E E3150, 5183 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5424; 410-436-2129; Ronald.T.Checkai.Civ@mail.mil

In Memoriam

Two remarkable soil scientists with links to the department passed away in recent months: **Keith Syers** and **Wilford Gardner**.

Wilford Gardner was a professor of soil physics in the department from 1966 through 1980. Subsequently he served as Head of the Department of Soil and Water Science at the University of Arizona and then as Dean of the College of Natural Resources at the University of California, Berkeley. He was a member of the National Academy of Sciences.

Keith Syers was a post-doc with Professor M. L. Jackson, from 1968 to 1972, during which time they coauthored 21 scientific publications. He held academic and administrative positions subsequently at Newcastle and Massey Universities, and at the time of his death, Naresuan University in Thailand. The most complete description of his remarkable career that we have located is: <https://alumnion-line.massey.ac.nz/NetCommunity/SSLPage.aspx?pid=521>

Your Gifts to the Department

Your contributions to the department through the UW-Foundation give us flexibility that becomes ever more precious as state funds decrease, and as the restrictions on how all government funds may be used increase. One way that we put these contributions to work is supporting events that nurture our soil science community. The evolving landscape of society, the university, and our profession has made concerted efforts at this ever more important. Our gatherings before weekly seminars, the Badger Huddle, and this newsletter are examples--all foster the sense of purpose and institutional culture that keep the department a remarkable place to learn and work. Thank you.

Thank you to our supporters, 2/1/2011 thru 9/30/2011

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Department of Soil Science at the University of Wisconsin-Madison

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Pagliari, Paulo H. – PhD, 2011, Investigation of inorganic and organic phosphorus in animal manure and their effects on soil test phosphorus. (Laboski)

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