Plant Science Says

May, 2005

Dick Pohl Retires

Retirement looks pretty good to me after 28 years of service here at MSU. My wife, Mary, is also retiring at the same time from MSU Math Department. We never thought we'd stay in one place so long, but Bozeman and MSU have been good to us. We've seen lots of changes over the many years and have made wonderful friends.

We are eager to open a new chapter in our lives filled with the many things that we couldn't do while teaching daily. We will continue to live in our home by Cooper Park, but we look forward to travel and have just upgraded our tow vehicle so that we can put on some miles. First plans are to visit family in Boulder, CO; Boone, IA; and Portland, OR; and of course we'll enjoy summer camping, hiking and biking here in Montana. We eagerly look forward to fun travel opportunities in the fall with no worry of class conflicts.

We plan to stay very involved in our community and hope to offer our time and talents to serve various needs. We each have extensive lists of things to do, so we don't expect to become too sedentary. I always have the option to get more involved in my profession of Landscape Architecture, but at this time of my life all possibilities are open and I look forward to a life change. Thanks to all the folks, especially the students who have made my time here joyful.

Dougher Receives Teaching Award

Each year the North American Colleges and Teachers of Agriculture (NACTA) awards a certificate for meritorious teaching to candidates nominated by colleges of agriculture in the United States and Canada.

The award is competitive. Bob Gough, the Associate Dean, asked for nominations from each department in our college and those nominees were evaluated by his office. Evaluation criteria included a letter of recommendation from the department head and supporting documentation, including Alaemoni scores, etc. Two nominees rose to the top and, upon Dr. Gough's appeal to NACTA headquarters, the NACTA Secretary-Treasurer allowed him to award certificates to the two finalists. Dr. Tracy Dougher and Dr. Cathy Zabinski, (LRES) were the recipients for 2005. Their names and affiliations will be published in the September issue of the NACTA Journal. Congratulations Tracy!

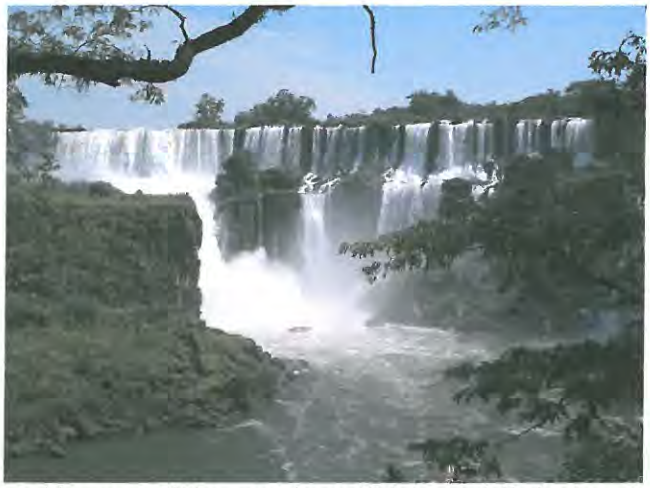
Travels to Brazil, Ireland and Costa Rica
By Gary Strobel

In late '04 I received an email from Edson in Brazil inviting me to present a series of lectures to students and faculty of the national University of Brazil in Sao Paulo State in San Carlos in the last half of Feb '05. The students and faculty wanted more information on endophytes, their biology, products and promise. Ultimately, when others learned of my trip there I was expected to present 13 lectures in five universities in southern Brazil. When I arrived I was totally impressed with the quality of the equipment, the high quality of the students and the unbelievable dedication of the faculty to endophyte biology. People in many universities there have discovered that Brazil is rich in endophytes, thus

some individual labs and even whole departments in some universities have dedicated themselves to a study of endophytes of tropical plants. I was duly impressed! I was also pleasantly surprised when most faculty and students could easily converse in English, even though the native tongue is Portuguese. I also lectured at the Agricultural University of Sao Paulo State in the city of Piracicaba called ESALQ (Escola Superior de Agricultura Luis de Queiroz) and the state university of Sao Paulo in San Carlos as well as the Federal University of Brazil in Belo Horizonte (the country's third largest city). The most surprising thing that I learned was that only a few of these investigators had ever been to Amazonia- the world's largest rainforest. Instead they were concentrating much of their work on the other region of great biodiversity in Brazil known as "Mata Atlantica." It extends along the southern Atlantic coast of Brazilian and has a truly unique flora and fauna.

I took one weekend and visited the most frequently visited national park of both Brazil and Argentina. The area known as Iguazu Falls borders on both countries

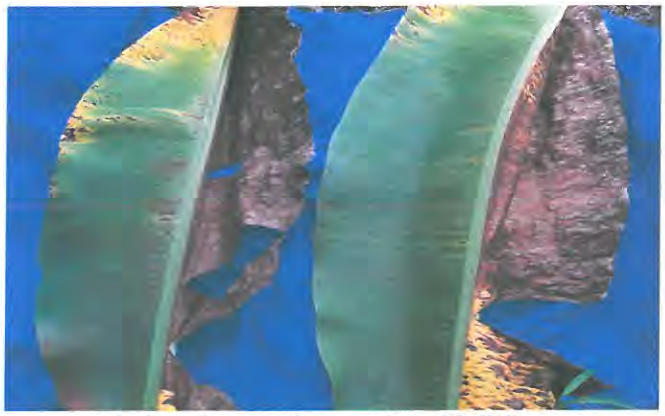
A native orchid species



and has one of the most beautiful water falls in the world. It also has some interesting endemic plant species, including many orchid species, unique monkeys and many types of parrots and tucans. I just had to take the boat ride underneath the falls- I have never been so wet! I made many professional contacts and one day I am sure that we shall see some of these people here as students, postdocs or visiting faculty.

Then, in early March, I went to serve on a panel for the Science Foundation of Ireland to serve on a panel that was deciding the fate of many research proposals. I was impressed by the fact that Ireland has the 4th best economy the world and that the government has invested the equivalent of 1 billion into the science foundation. Suzan and I then took a few days to see Ireland and I must say that the most impressive sights were the Cliffs of Moher on the west coast and the remains of the potato fields of the 1840's. It was here that the potato famine of 1844-1847 was hatched leading to the deaths of over 1 million people and the immigration of another 3 million.

By mid March I was a bit tired of travel –but on to Costa Rica for a week's holiday followed by a week with people from the Dole Fruit Co. The company is considering the use of one of our antifungal compounds for the control of Black Sigatoka disease of bananas. The



compound gives impressive results with little or no toxicity. While in Costa Rica we rode the zip lines thru the jungle and I found a tapir asleep in its hide out. Stupidly I was so curious that I crawled in the tangled fern growth and took its photo. Luckily he remained asleep. Many endemic plant samples were collected, the most impressive of which is the stained glass palm- very beautiful!

Graduates

Jeffrey Cameron received his Master's in Plant Sciences on April 11, 2005. The title of his thesis was: "Greenhouse studies of aspen and native ectomycorrhizal fungi: Mycorrhization methods and response in heavy metal contaminated soils"

Jeff plans to pursue a doctorate at Washington University in St Louis, Missouri. He will be studying

Chris Mahony received his Master's in Plant Sciences on April 5, 2005. The title of his thesis was "Effects Of Native Ectomycorrhizal Fungi On Aspen Seedlings In Greenhouse Studies: Inoculation Methods, Fertilizer Regimes, And Plant Uptake Of Selected Elements In Smelter-Impacted Soils". Chris is starting a business called Mountain West Reclamation and Native Nursery. If you think he could be of service to you, his number is 406-220-3092.

Congratulation Jeff and Chris!

Recipients of Montana Wheat and Barley Grants

The following received MWBC grants:

Luther Talbert
- Spring Wheat Breeding and Genetics

Phil Bruckner
- Winter Wheat Breeding/Genetics
- Enhanced Field Selection for Wheat Stem Sawfly Resistance

Tom Blake
- Developing Improved Barley Varieties for Montana Farmers

Jamie Sherman
- Breeding Between Market Classes of Wheat

Alan Dyer
- Reducing the Impact of Fusarium Crown Rot on Montana Wheat

Deanna Nash
- Improved Quality of Montana Hard Red and Hard White Wheats
- Dough Extensibility Test for Improved Quality of Maontana Hard Red and Hard White Wheats

Jack Riesselman
- Continuing as an Underwriter for Montana Ag Live!

Grants

Barry Jaocbsen, USDA-Western Region IPM, "Developing integrated pest management programs for soilborne potato diseases using mycofumigation, Trichoderma sp., pesticides and host resistance

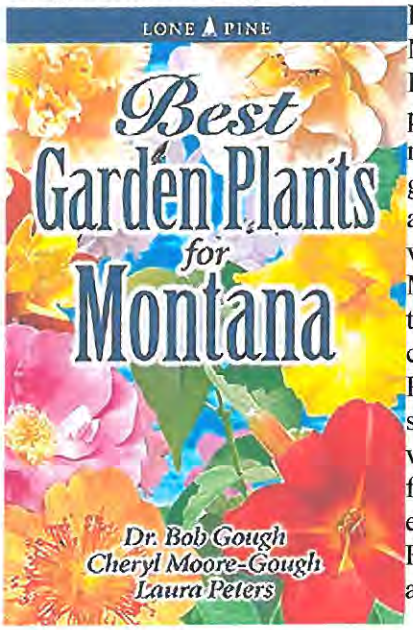
Barry Jacobsen, UC David, "Field Testing Bacillus Mycoides Isolate BMJ for Control of Anthracnose and Angular Leaf Spot of Curcurbits, Cercospora Leaf Spot of Table Beet and Botrytis Blight and Leaf Mold of Greenhouse Tomato"

Publications

Cripps, CL and LE Eddington 2005. Distribution of Mycorrhizal Types among Alpine Vascular Plant Families on the Beartooth Plateau (Rocky Mountains) in reference to Large Scale Patterns in Arctic-Alpine habitats. Arctic, Antarctic, and Alpine Research 37(2), 14 pgs.

Books Published

Gough. Moore-Gough and Peters Author Book



Bob Gough, Cheryl Moore-Gough and Laura Peters have published a much needed work on garden plants appropriate for the varied condition in Montana. It covers the following categories of plants: Perennials, trees, shrubs, herbs, roses, vines and bulbs, foliage plants and even annuals. Following are the author biographies:

Dr. Bob Gough, Interim Associate Dean of Academic Programs at Montana State University's College of Agriculture, professor of horticulture and extension horticulture specialist, has published a dozen books on gardening. A nationally popular speaker and garden writer, his columns have appeared in Montana newspapers for a decade. He has published more than 40 research articles in horticultural journals and hundreds of popular articles in publications such as Montana Magazine, Fine Gardening, National Gardening, Harrowsmith and Country Journal. His long-running radio program, Dr. Bob's Northern Gardening Tips, is heard over more than a dozen stations in Montana, Wyoming and South Dakota, and his television show by the same name is broadcast over Montana's NBC affiliate stations.

Cheryl Moore-Gough has been a Montana gardener for more than 20 years. She holds a master's degree in horticulture from Montana State University, where she is an adjunct instructor in horticulture. Cheryl formerly served as a plant disease diagnostician in Montana State University's Schutter Diagnostic Laboratory, has instructed and supervised the Montana Master Gardener

certification program, and has published in Montana Magazine.

Laura Peters is a certified Master Gardener with 12 gardening books to her credit. She has gained valuable experience in every aspect of the horticultural industry in a career that has spanned more than 16 years. Laura especially enjoys sharing her practical knowledge of organic gardening, plant varieties and gardening products with fellow gardeners.

In addition, Bob and Cheryl have begun writing a reoccurring gardening column for Montana Magazine entitled Montana Gardening Shorts. It started running in the May/June edition. This column will tell you what you should be doing when as far as yard and garden activites.

Montana Ag Live! April Schedule

May 8 Duane Johnson, NWARC Station Superintendent
May 15 Nancy Peterson, new Director of the Department of Agriculture
May 22 Gene Surber, MSU Extension Natural Resource Center
May 30 Memorial Day

Tanzanian Visitors
By Martha Sellers

y now you've probably noticed the three new smiling faces on the third floor of Ag Biosciences, but if you haven't, say hello to Anthony Mshandete, Rita Lyatuu, and Tumaini Chambua (call him Chambua).

Students at the University of Dar es Salaam, Tanzania, they are here through June as part of a developing relationship between MSU, the Thermal Biology Institute, and Serengeti Genesis—a not-for-profit U.S. organization in Tanzania that has just begun an initiative investigating the diversity of microorganisms living under extreme conditions (extremophiles) in Tanzania's soda lakes and thermal springs.

Sound familiar? It should. MSU scientists affiliated with TBI are currently at work on Yellowstone National Park's thermophiles (extremophiles at the hot end of the spectrum), and their research is what started the Serengeti Genesis collaboration and brought Anthony, Rita, and Chambua to our campus—the first of what we hope are many such visits.

Anthony is a PhD student who will be defending his thesis, "*Improved anaerobic digestion of agro-industrial waste by enhanced hydrolysis and operational design*," in late May. Anthony is married, and has written two books on mushrooms that he hopes to publish.

Rita, the first in her family to attend graduate school, is pursuing a Master's Degree in Environmental Biotechnology. Outside of school and research, she loves to travel and has decided to learn to swim while she is here.
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Chambua is also pursuing a Masters degree in Tanzania, and his field is Molecular Biology. While traveling, music, and soccer are things he enjoys, his favorite pastime is learning!

All three visitors are said to be good students, and very interested in research, but they've managed to have some fun as well. Their first weekend in Bozeman they went sledding at Bridger, and went to the Rodeo, which they quickly deemed "a crazy game."

Bob's Byte
By Bob Johnston (Irene Decker filling in)
Removing Smart Tags in Word 2003

When Microsoft Word recognizes a date, time, or other piece of information, it will underline the text in red. Hovering your cursor over the text brings up an "i" button. Clicking the button brings up a menu where you can performs tasks such as looking at a particular date in your Outlook Calendar, looking up a stock quote on a website, or adding a phone number to your Outlook Contacts.

While some may find Smart Tags useful, others may find them annoying, plus it takes extra CPU time for Microsoft Word to analyze a document for text to link up with Smart Tags. Thus, you can disable this feature if

you'd like.

1. Select "Tools" then "AutoCorrect Options".
2. When the "AutoCorrect" multi-tabbed dialog box appears, select the "Smart Tags" tab.
3. Uncheck "Label text with smart tags".
4. Uncheck "Show Smart Tag Action Buttons".
5. Click "OK" to close the dialog box.
6. Select "Tools" then "Options".
7. When the multi-tabbed dialog-box "Options" appears, click the "View" tab.
8. Uncheck "Smart tags".
9. Press "OK" to close the dialog box.

To Transplant or Not to Transplant
By Bob Gough

We can direct seed many of our vegetables but some require a longer season to mature than we Montanans often have. By transplanting these we can get the jump on the season, eke out a few extra days, and mature a good crop. But not all plants transplant equally well and some, like turnips, are not easily transplanted at all. Still, you'll find all sorts of transplants offered for sale in peat pots and plastic flats. Don't waste your time and money on some of them.

Broccoli, cauliflower, cabbage, Brussels sprouts, tomato, and lettuce are easily transplanted, rapidly regenerating a new root system to replace those damaged in the move. Because the roots regenerate faster than the top grows the plants establish quickly. Beet and Swiss chard (actually a type of beet) also regenerate roots rapidly but are usually direct-seeded to the garden.

Celery, eggplant, pepper, and green onion are slower to regenerate new roots and their tops grow relatively fast, so take care to preserve as much of the original root system as possible. Also, these plants wilt easily to be sure to use plenty of water during transplanting. Very young carrots and salsify belong to this group but again, they're usually direct-seeded.

Bean, corn, lima bean, peas, turnip, and the cucurbits (vine crops) are not easily transplanted because their tops grow much faster than their root systems can regenerate making them highly susceptible to wilting and death. There's little reason to transplant most of these. However, the vine crops, particularly the melons, can be most successfully grown in the home garden if they're transplanted. If you purchase the plants, be sure they're about 4 weeks old (about 6 inches high) and are packed in individual peat pots. Set the plants, pots and all, in the ground, making sure the lip of the pot is completely covered with soil. Do not disturb the root systems.

Enjoy your garden, but don't waste time and money buying plants that will not easily survive transplanting.

May Birthdays

Susan Kelly	8
Robyn Klein	15
Mareike Johnston	22
Aravind Jukanti	23
Tom Blake	24
Gene Ford	29
Bob Johnston	29
Deanna Nash	31

Recipe of the Month

<u>Gourmet Grilled Cheese Sandwiches</u>

1 (3 ounce) package cream cheese
3/4 cup mayonnaise
8 ounces shredded Colby-Monterey Jack cheese
3/4 teaspoon garlic salt
8 slices French bread
2 tablespoons butter

In a medium bowl, combine cream cheese, mayonnaise, shredded cheese and garlic salt. Beat until smooth. Preheat a large skillet over medium heat. Spread cheese mixture on 4 slices of bread, then top with the other 4 bread slices. Lightly butter both sides of each sandwich. Place sandwiches in skillet, and grill until golden brown on both sides, about 4 minutes per side.