Geosciences Department (1962-2009). 1962/2009

Geology day 1

University Communications

News Releases

UNIVERSITY OF WISCONSIN MADISON

FOR IMMEDIATE RELEASE
9/20/01

CONTACT: Basil Tikoff, (608) 262-4678, basil@geology.wisc.edu

NOTE TO REPORTERS: Students are in the Black Hills now through Sept. 23. They go to Duluth Oct. 6-7, and will be in the field in Dane County Oct. 20-21.

STUDENTS LEARN GEOLOGY THE ROCK-HARD WAY

MADISON - University of Wisconsin-Madison undergraduates are learning what it's like to be geologists this fall through hands-on activities much like the everyday work of professional geologists.

Geology 202, Introduction to Geologic Structures, available for the second time this semester, offers field trips to the Black Hills in South Dakota, Duluth, Minn., and several areas in Dane County and Madison.

"We thought what a better way to get students to know what it's like to be a geologist than to go out and do what geologists do," says Basil Tikoff, an assistant professor in geology and geophysics who will be instructing the course.

Students learn how to use surveying equipment, measure distances with lasers, make topographic maps and use software for visualizing and analyzing collected data.

Tikoff says this practical experience will aid students in landing summer jobs in which they can further develop their skills in geology and will also enhance their understanding of the academic aspects of geology.

"We're trying to provide a context in which students can learn the rest of the geology curriculum," he says. "It will make the rest of the curriculum easier to learn if we are successful in teaching [this course]."

The creation of this course stems from student interest, Tikoff says. When asked what they would do to change the curriculum, graduating geology students said they wanted to experience the actual work of geologists earlier in their academic careers.

The field trips are funded by the Teaching Enhancement Grant program in the Office of the Provost, the College of Letters and Science, and the Department of Geology and Geophysics. Students cover the costs of lodging and food.

The geology students will be in the Black Hills from Sept. 19-23, in Duluth Oct. 6-7 and in Dane County Oct. 20-21. The class will conduct other labs throughout Madison during the semester.

# # #
-- Nicholas Hawkins, (608) 262-3571
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Geology dept

University Communications

News Releases

UNIVERSITY OF WISCONSIN MADISON

FOR IMMEDIATE RELEASE
6/5/01
CONTACT: Lou Maher, (608) 262-9595, maher@geology.wisc.edu

NOTE TO WEB EDITORS: You can link to the full collection of digitized slides:
http://www.geology.wisc.edu/~maher/air.html

NOTE TO PHOTO EDITORS: For downloadable high-resolution samples of Maher's photography, visit:
http://www.news.wisc.edu/newsphotos/maher.html

GEOLOGIST PUTS CAREER'S WORTH OF IMAGES ON WEB FOR EDUCATORS

MADISON -- A University of Wisconsin-Madison Geology Department Web site features a new educational tool that results from geology professor Lou Maher's skills in flying and photographing -- often at the same time.

While on a sabbatical last fall, Maher digitized more than 300 slides of geologic formations and placed them on the department's Web site. The slides include aerial photos of Midwest glacial features, floods, tornadoes, Arches National Monument, the Colorado River, Craters of the Moon National Park, Yellowstone National Park, and more. And Maher was at the controls of the plane used to make each photograph.

"It's nice to have a picture looking down on geological features to sort of set the stage," says Maher. "You certainly see it in a different way when you fly over it."

Maher's interest in flying dates back before his interest in geology. He became fascinated with planes as a child during World War II, and he began to learn how to fly when he was 15 years old. He came to UW-Madison in 1962 after receiving his doctorate and began to integrate his hobby and academic field shortly thereafter.

In 1966, Maher noticed that class sizes were increasing and more focus was being placed on television presentations and small groups. But copyrights on repeated use of film and limited multimedia material in the field of geology made it difficult to teach this way.

"I knew we would be hard pressed to get enough free pictures of the geology we wanted to see," Maher says.

So, during the spring break of that year, Maher and then graduate student Charles Mansfield flew west to photograph areas of Wyoming and the Black Hills in a light plane that the Geology Department kept at Morey Airport in Middleton.

The professor and the student braved foul weather and fuel concerns, returning in eight days to Madison with 36 rolls of 35mm film and extensive footage on a 16mm camera. Maher still uses many of the photographs and much of the footage in teaching today.

"Looking back, it might have been fun ... but at the end of every day we were just beat," he says.

Since then, Maher has made many other trips in rented light planes, some by himself, and has taken many more aerial photographs. When taking a photograph on a solo trip, Maher must release the controls and lean out the door. The plane "stays steady" because this is built into its design.

"Still, it took a lot of practice and pain in the early trips," he says.

Maher currently works on photographing more areas and glacial formations in Wisconsin, such as eskers and drumlins, during varying times of year.

"The landscape can look entirely different depending on the season you shoot in," he says.

Maher says he is happy with the educational impact of his addition to the department Web site. An educator may easily browse the many slides and select what can best be used in a presentation. "For a geologist, it's just wonderful," Maher says.

Many teaching assistants already have used the Web site to teach discussion sections in geology classes. Maher's colleagues around the world also have used the site. It caught national attention in the April 6 issue of Science, and he has received many letters of appreciation.

"I've been really touched by that," he says. "I've found that colleagues other places have been so

helpful. I'm simply trying to make something I've used all my career readily available."
# # #
-- Nicholas Hawkins, (608) 262-3571
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To find out more

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- Union Theater Box Office: 262-2201
- Film Hotline: 262-6333
- ConcertLine: 263-9485
- Elvehjem Museum of Art: 263-2246
- TITU: http://www.wisc.edu/union/

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Bookmark this site for regular campus news updates from the Office of News and Public Affairs.
- http://www.news.wisc.edu/wisweek

Weekly news by e-mail

Sign up for a weekly digest of campus news, with links to more information.
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Wisconsin Week
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LEADERSHIP

Finalists named for diversity position

Three finalists have been named for the position of assistant vice chancellor for workforce equity and diversity:

Luis A. Piñero, interim assistant vice chancellor/director of the Equity and Diversity Resource Center. Piñero joined the EDRC in 1982, when it was known as the Office of Affirmative Action and Compliance.

Andrea L. Turner, executive director for the University of Minnesota Board of Regents. Turner was previously employed as a special assistant to the chancellor and also as executive director of multicultural affairs at UW-Stevens Point.

Vicki C. Washington, director of Equal Opportunity and Diversity Programs and assistant to the chancellor, University of Wisconsin-Extension. Washington held several affirmative action-related positions in the public and private sector in North Carolina before joining UW-Extension.

The assistant vice chancellor for workforce equity and diversity promotes increased employee diversity throughout the university; oversees the Equity and Diversity Resource Center; and ensures campus compliance with affirmative action/equal employment opportunity regulations.

The opening was created when Greg Vincent accepted a position last summer as vice provost for campus diversity at Louisiana State University.

University officials expect to fill the position in late January or early February.

LEARNING

IES starts student exchange

New study-abroad opportunities are in the works for next fall, when the Institute for Environmental Studies will offer its first trans-Atlantic exchange program.

The U.S. Department of Education has awarded IES a three-year, $179,598 grant to promote student exchanges in comparative ecosystem studies between three American universities and three in Europe.

The European institutions are the University of Bayreuth, Germany; the Autonomous University of Barcelona, Spain; and the Technical University of Lisbon, Portugal. The other two American schools are the University of Missouri-Columbia and San Diego State University.

Enhancing interdisciplinary education in sustainable ecosystems management is the primary goal of the exchange program. Among other things, it will help students learn to work across agency and organizational lines, bridge academic disciplines and bring cultural sensitivity to their career endeavors in environmental fields.

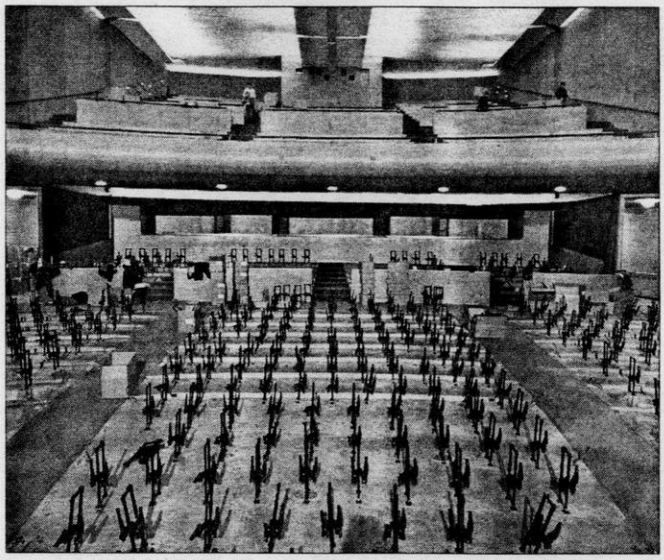
Why Files launches course online


Banfield

A new university online science course in geology is based on the content of the popular Why Files Web site, http://whyfiles.news.wisc.edu. The new course, Geology 115, The Science Behind the News — The Universe Around Us, will be taught for the first time next semester.

Intended for non-science majors, the course is the brainchild of Jill Banfield, a professor of geology and geophysics and the recent recipient of a prestigious MacArthur fellowship or "genius award." Banfield says mining the content of The Why Files — a site that has sought to demystify for popular audiences everything from cloning to earthquakes — would provide a natural matrix for an online science course.

"It's important that people are introduced to science and that content is accessible to the average person," Banfield says. "The Why Files does make science accessible in a very friendly way."



Take our seats, please
Workers began reinstalling Wisconsin Union Theater seats in the first complete renovation of seating since the theater opened in 1939. The 1,300 chairs were removed last month and taken to a Michigan company for restoration. Workers will be working feverishly to reinstall the seats before the first performance scheduled later this month. The original color of the seats, called Titian, will be maintained to preserve historical accuracy.
Photo: Jeff Miller

OUTREACH

Anti-smoking effort reaches out statewide

A five-part plan, including a toll-free stop-smoking helpline and a program to prevent smoking among adolescent girls, will send $2 million in state tobacco settlement money to communities around Wisconsin, Medical School officials say.

The school's Center for Tobacco Research and Intervention (CTRI), a national leader in research efforts to help people stop smoking, received $2 million in the recently passed state budget for tobacco-control efforts. The funds are part of the settlement negotiated with major tobacco companies, which were sued by Wisconsin and many other states.

The five-part plan includes an annual statewide survey tracking tobacco use in Wisconsin; a statewide partnership with the Wisconsin Women's Health Foundation to help prevent smoking among young women; a statewide educational and outreach program that includes Milwaukee, Green Bay, Rhinelander, La Crosse and Madison; a "mini-grant" program that will support local research efforts in smoking cessation and prevention; and a toll-free helpline offering counseling to smokers trying to quit.

Adds Director Michael Fiore: "CTRI will work collaboratively with the Wisconsin Department of Health and Family Services, the new state Tobacco Control Board and other entities committed to these efforts."

RESEARCH

NASA satellite technology to be developed here

Building on a tradition that dates back 35 years to the first geostationary weather satellite, UW-Madison's Space Science and Engineering Center (SSEC) has been selected to help NASA develop a new generation of satellite technology that promises to greatly improve weather forecasting and the monitoring of atmospheric pollutants.

NASA selected SSEC as a key partner to help design and build an instrument known as GIFTS (Geostationary Imaging Fourier Transform Spectrometer).

SSEC will receive $10 million over five years from NASA to design and calibrate GIFTS and to write the software codes that will make the instrument's data useful to forecasters and scientists. Based in part on technology developed at UW-Madison, GIFTS will be a part of NASA's Earth Observing Mission 3 and will be launched into orbit sometime in 2003.

GIFTS, according to SSEC Interim Director Hank Revercomb, will be capable of dissecting the atmosphere in a far more detailed way than current geostationary weather satellites by looking at the weather across a wide swath of the spectrum of energy that the Earth radiates into space. GIFTS also will permit forecasters to greatly hone the accuracy of three-day weather predictions and extend the duration of forecasts up to five days.

COMMUNITY

Y2K OK: No problems reported

Campus facilities and utility systems did not experience any known Y2K problems, the Physical Plant reports.

Thirty Physical Plant employees and staff members worked overnight Dec. 31 monitoring various campus systems, building equipment, power

SHORTCUTS

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LEARNING

Student inventors prepare for Brainstorm competition

Inspired student inventors are making final adjustments to their entries for the 2000 "Brainstorm: Schoofs Prize for Creativity" sponsored by the College of Engineering.

Now in its sixth year and open to all undergraduates, the contest awards cash prizes to those whose ideas are judged most creative, novel, innovative, patentable and likely to succeed in the marketplace.

Winners will be announced on Edison Day, Friday, Feb. 11. Edison Day is the College of Engineering's annual celebration of Thomas Edison's birthday. Students will present their work in 1610 Engineering Hall. Projects will be on display in the Engineering Hall lobby through the day.

RESEARCH

Older husband caregivers face significant changes

A recent study of the caregiving role among older husbands has found that husbands who transition into caregiving are less happy, more depressed and more inclined to think that their marriage is in trouble than married men who do not transition into this role.

The study, based on data from the National Survey of Families and Households, was done by Betty J. Kramer, assistant professor of social work at UW-Madison, and James David Lambert of Edgewood College in Madison. The study was published in the December 1999 issue of The Gerontologist.

The study found that husbands who entered the caregiving role showed evidence of potentially detrimental changes in their marital relationship. They showed a decline in marital happiness and a feeling that their marriage was in trouble. "We do not know how many later-life marriages end in divorce as a result of illness," but, Kramer and Lambert suggest, more attention must be given to potential implications of these findings for later-life families. While not surprising, the findings do suggest that men caregivers are vulnerable and that caregiving does not come easily to older men.

MILESTONES

Business in Forbes top 10

The School of Business ranked ninth in a national survey of business schools that provide the best bang for the buck.

Forbes magazine ranked 25 national business schools and 25 regional business schools according to the return on investment students can expect from attending those schools.

The overall winner? Harvard. Its grads gained the most from going back to school, notwithstanding that their costs — tuition and pre-enrollment salaries — were the highest. Madison ranked in the top 10 among regional business schools.

To calculate the worth of a university master's of business administration degree, Forbes compared the salary gains it generated to the cost of getting the degree.

Forbes' ranking differs from the usual business-school ratings, which compare schools based on salary offers of recent graduates but take no account of the fact that schools vary widely in how much their students were making before they enrolled, as well as five years out of school.

Yale executive to head clinical trials office

The Office of Clinical Trials at the Medical School has hired a new director.

Tesheia Johnson, who had been clinical trials administrator for several departments at the Yale University School of Medicine, was selected by a search committee of UW physicians and administrators. She began work in Madison Jan. 19.

A graduate of the University of South Carolina, Johnson also has an MBA and a master's of health sciences from Quinnipiac College in Connecticut. At Yale, she most recently served as administrator for clinical trials in surgery and pediatrics. Earlier, she was responsible for overseeing the Yale Child Health Research Center, where she coordinated the efforts of more than 70 scientists and oversaw day-to-day operations of the school's then-new basic-research facility. Johnson also has hospital administrative experience.

OCT, established in 1989, helps UW Medical School faculty obtain, manage and conduct privately funded clinical research. One of the oldest clinical trials offices in the country, it provides budget preparation and negotiation, streamlines the execution of contracts, helps prepare and file regulatory documents and submissions to the Institutional Review Board, and develops communications for people who agree to take part as subjects in research

Business center plans anniversary celebration

UW-Extension's Small Business Development Center, which provides counseling and management education for small-business owners, has completed 20 years of service to Wisconsin's entrepreneurs.

The SBDC will mark its anniversary with a celebration at the Pyle Center on Wednesday, Feb. 9. Wisconsin Secretary of Commerce Brenda Blanchard will be the featured speaker.

"Statewide, we have provided one-on-one counseling and have delivered relevant educational programs for nearly 280,000 entrepreneurs in the last two decades," says Erica Kauten, SBDC state director. "Our network is the largest provider of entrepreneurial services in Wisconsin. Independent studies show that this translates into entrepreneurial success, job creation and community vitality throughout the state."

Survey unit to close

Because operations by the UW-Extension Wisconsin Survey Research Lab in Madison cost more than its customers pay, will cease operations when current contracts are completed, possibly by June 30.

The extension' s agency had one of the nation' s first computer-assisted telephone interviewing systems. The agency has an annual budget of $2.5 million without state funding. It was financed by public-opinion surveys and other research for governments and companies.

The agency is not connected to the UW Survey Center, which will continue operating as usual.

ON CAMPUS

'Snowflake Bentley' author to speak Feb. 4 on campus

Before the snow melts, it is being celebrated by campus libraries with a public lecture and discussion titled "Let it Snow! Let it Snow! Let it Snow!"

The talk features Jacqueline Briggs Martin, author of the award-winning children's book "Snowflake Bentley." Martin will give a reading at 124 Memorial Library at 4 p.m. Friday, Feb. 4.

Martin's book, which was illustrated by Mary Azarian, won the 1999 Caldecott Medal for the year's most distinguished picture book. The book chronicles the life of Wilson A. Bentley, a Vermont dairy farmer who was the first person to photograph snow crystals in the late 1800s.

The following campus libraries are hosting related exhibits: Geology and Geophysics, Kohler Art, Middleton Health Sciences, Memorial, Schwerdtfeger Space Science and Engineering, and Wendt Engineering. Each exhibit includes works by Bentley, which were acquired as lantern slides in the early 1900s by a UW physics professor named, ironically, Benjamin Snow.

The lecture is sponsored by the General Library System and the School of Education Cooperative Children's Book Center. Martin also will give a talk at Canterbury Booksellers, 315 W. Gorham St., at 11 a.m. Saturday, Feb. 5.

Lecture looks at art and social morals

Can art be immoral? That's the question Noel Carroll will pose in a Friends of the UW-Madison Libraries lecture at 4:30 p.m. Wednesday, Feb. 9. Carroll, the Monroe C. Beardsley Professor in the Philosophy of the Arts, gives the inaugural talk in the Friends spring lecture series.

The lecture, titled "Can Art be Immoral? The Paradox of Oscar Wilde," will be accompanied by readings by D. Scott Glasser from Oscar Wilde's "The Picture of Dorian Gray." Glasser is artistic director of the Madison Repertory Theater and is directing the Rep's upcoming production of "Gross Indecency: The Three Trials of Oscar Wilde."

The lecture and readings will be in the Department of Special Collections, 976 Memorial Library.

WUD seeks officers for 2000-01 academic year

Faculty and staff may wish to recommend students willing to serve as Wisconsin Union Directorate officers. The jobs of president and two vice-presidents are open for the next academic year at WUD, the student-run program council.

Eleven WUD committees consist of hundreds of student volunteers who create, manage and promote more than 800 events and activities each year, including film, art, music, Alternative Breaks, Hoofers, the Distinguished Lecture Series, and others.

Applications, available in 507 Memorial Union, are due Monday, Feb. 7. Officers receive a stipend equivalent to two semesters of in-state undergraduate tuition spread out via monthly payments over the academic year, according to Linda Stitt, WUD program director.

UPDATE

SECC campaign passes goal

It was a banner year for the State, University and UWHC Employees Combined Campaign of Dane County. It surpassed its $2.2 million goal for 1999, thanks to the generosity of more than 11,500 "partners in giving."

As of Jan. 19, contributions to the annual charity fund-raising campaign totaled $2,258,399, the largest amount

Advances gives a glimpse of the many significant research projects at the university. Tell us about your discoveries by e-mailing: wisweek@news.wisc.edu.

Tracks in iron help map microbial world

Reading the narrow bands of iron found in some sedimentary rocks, university scientists may have found a way to assess microbial populations across time and space, opening a window to the early history of life on Earth and possibly other planets.

Writing in the journal Science, a team of scientists led by geochemist **Brian L. Beard** describes a geochemical signature in iron as indicative of life. If the technique is confirmed and refined, it could be used to trace the distribution of Earth's microorganisms in the distant past, and it could help resolve disputes about the existence of past life on other planets such as Mars.

Iron is vital to plant, animal and microbial life. Nearly all organisms ingest it in the course of daily life. If scientists can devise a method to distinguish between iron that has been processed by a living organism and iron that has not been metabolized, they will have a way to measure the distribution of microbes on Earth billions of years ago. Because iron is common on the moon, planets and other objects in space, the technique could be used to detect signs of past life beyond our own planet.

Study: Policies interfere with pain management

Good pain control is an essential component of medical care for people with serious illnesses, but state policies can stand in the way of pain relief, according to a study by the Pain and Policy Studies Group at the Comprehensive Cancer Center.

Says **David Joranson**, group director: "State policies aimed at preventing drug abuse often fail to recognize that these drugs are also necessary for medical purposes. Ironically, some new state laws that were meant to improve patients' access to pain management may actually make them harder to get."

Although there are many treatments for pain, pain experts agree that opioid drugs (like morphine) are the most effective treatment for severe pain, which may accompany many illnesses, including cancer. The study is the first phase of a major pain and public policy research project funded by the Robert Wood Johnson Foundation, Princeton, N.J. To get the report, "Achieving Balance in State Pain Policy," contact the Pain and Policy Studies Group, 1900 University Ave., Madison, WI 53705; phone: 263-7662; fax: 263-0259; e-mail: ppsg@macc.wisc.edu.

Breast cancer study compares drug therapies

University researchers are seeking postmenopausal women interested in participating in a national study designed to find more effective ways to prevent breast cancer.

The study, which is expected to enroll 22,000 women across the nation, will seek to determine whether the osteoporosis-prevention drug raloxifene (trade name: Evista) is as effective in reducing the chance of developing breast cancer as tamoxifen (trade name: Nolvadex) has proven to be in a prior study.

"Women at an increased risk of developing breast cancer need options for preventing this disease that present a minimum of side effects," says **James Stewart**, medical oncologist at the Comprehensive Cancer Center. "We already know that tamoxifen is beneficial for this purpose, but perhaps there is something even better."

More information: 262-5223.

Microwave imaging may yield better breast-cancer detection

Brian Mattmiller

A radar technology used to detect anti-personnel land mines may find a promising application in the campaign for early detection of breast cancer.

Susan Hagness, an assistant professor of electrical and computer engineering at the university, is researching the use of microwave radar imaging for breast cancer detection, as a complement to the standard use of X-ray mammography.

The widespread availability of X-ray mammography has been a life-saving success story, providing an inexpensive and simple approach to early detection. Despite progress, the technology still produces a relatively high number of false-negative and false-positive diagnoses, Hagness says.

Hagness is researching whether images from microwaves — the same microwaves used to communicate with digital cellular phones, only at lower power — will offer the sensitivity to solve those problems.

"Early detection is the key to survival, so we always want to do a better job of identifying tumors as soon as possible," Hagness says.

Hagness received a boost this month with a $207,000 grant from the Whitaker Foundation, a non-profit organization dedicated to engineering research that improves medical care. She also started a research partnership with Frederick Kelcz, associate professor of medicine and an expert on breast-cancer detection.

Although clinical trials are down the road, the team is conducting microwave measurements on breast tissue excised during biopsies at UW Hospital and Clinics. They also are creating computer simulations that test microwave sensor designs in realistic environments.

The work seeks to answer two key questions, Hagness says. First, can microwave imaging detect extremely small tumors, only a few millimeters in size, to improve early detection? And second, can it differentiate between a malignant and a benign tumor, thus eliminating the trauma of unnecessary biopsies for women?

According to Kelcz, mammograms are known to miss a significant number of breast cancers, especially in younger women. False positives are even more widespread. Of the women who follow up with biopsies of an abnormality, about 70 percent of them do not have cancer.

Microwaves are a non-ionizing form of electromagnetic waves that interact with tissue according to water content. In Hagness' research, low-power microwaves are used like sonar to bounce a signal off the tissue. Since tumors have a higher water content compared to normal tissue, they will back-scatter the microwaves and produce an echo. The measurements of those echoes enable Hagness to develop a 3-D image of the tumor.

Sub-surface radar imaging has a number of applications to help reveal the invisible. In addition to land-mine detection, they can be used to identify weaknesses in bridge structures, detect the thickness of glaciers or identify archaeological sites.

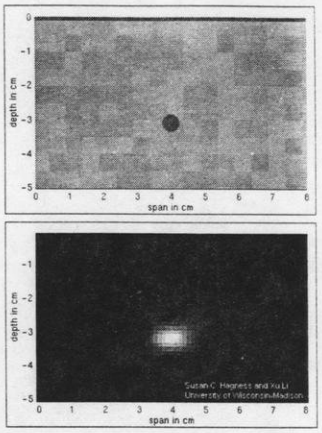
To date, Hagness is getting some promising images in her computer simulations of the microwave sensor. The ongoing research will help them learn how to distinguish cancerous tumors from harmless ones.

"We want to highlight those differences and determine the classic signatures to the microwave echoes," she says. "This could help us narrow down biopsy cases."

Kelcz says finding alternative approaches is important because early detection saves lives. He notes that when cancers are detected less than a centimeter in size, there is a 95-percent survival rate. But at 2-3 centimeters, the cancer often moves into lymph nodes and survival rates begin to decline.

"We need technologies with the sensitivity to pick up abnormalities early enough to make a clinical difference," he says.

Hagness adds that microwave devices are inexpensive enough to make them widely accessible in health care. Microwave imaging also carries no danger of radiation exposure and would not require breast compression.■



Microwave radar imaging may prove useful for breast-cancer detection, as a complement to the standard use of X-ray mammography. The images show a computer-simulated breast tumor (top) and the corresponding microwave image (bottom) of the tumor. The ongoing research will help researchers learn how to more effectively distinguish cancerous tumors from harmless ones. Courtesy: Susan Hagness

Campaign 'issue ads' don't pay off, study finds

Jeff Iseminger

The big spenders on campaign issue ads in the 1998 Wisconsin elections got very little payoff, says a political science professor who has just published his analysis of statewide spending.

Television "issue ads" are political messages that refer to candidates for public office but do not explicitly advocate support or opposition.

Kenneth Mayer found that the two biggest-spending issue advocacy groups were the Wisconsin Manufacturers and Commerce, a statewide business lobby, and Americans for Job Security, a Washington, D.C., group financed by insurers and paper corporations, among others. WMC spent $335,714, and AJS spent $134,512.

WMC invested in ads supporting Republican candidates in four state contests: 9th Senate District (Sheboygan), Paul Nus (R) vs. James Baumgart (D); 15th Senate District (Janesville-Beloit), William Sodemann (R) vs. Judy Robson (D); 27th Senate District (Middleton-Fitchburg-Verona), Nancy Mistele (R) vs. Jon Erpenbach (D); and 74th Assembly District (Ashland and far northern Wisconsin), Tom Duffy (R) vs. Gary Sherman (D). AJS concentrated on the 9th and 27th districts, also supporting the Republican candidates.

A PDF version of the full report can be downloaded at: http://www.polisci.wisc.edu/~kmayer

As it turned out, the Democratic candidates won in all four contests.

"If recent experience is any guide, issue advocacy appears to be a remarkably ineffective way to influence elections," says Mayer. "When you combine the results of the 1996 and 1998 elections in Wisconsin, issue ads produced what their sponsors would consider preferred outcomes in only four of 19 campaigns."

Many campaign finance reform groups want issue ads subjected to the same regulations as any other electioneering. Those would include contribution limits, disclosure, and a ban on corporate and labor union money. Lawmakers are considering several bills that would make it harder for groups to use issue ads in campaigns.

Such restrictions on issue ads would present legal problems, Mayer says. The federal courts have consistently rejected laws that redefine what counts as campaign speech subject to regulation.

But Mayer has an idea he believes would stand a good chance of surviving possible litigation. He proposes that any group must disclose its fund-raising and spending activities if it does the following:

- Broadcasts a radio or television ad referring to a clearly identified candidate for public office.
- Runs the ad within four weeks of a primary or general election.
- Spends more than $5,000 on any ads directed at one candidate.

"This rule does not restrict the content or amount of speech, but instead provides voters with information through a minimally intrusive and narrowly crafted regulation," says Mayer. "The goal of reform should not be to decide what messages voters should hear, but to give them the information they need to assess what they hear." ■

Geology

Sesquicentennial snapshot

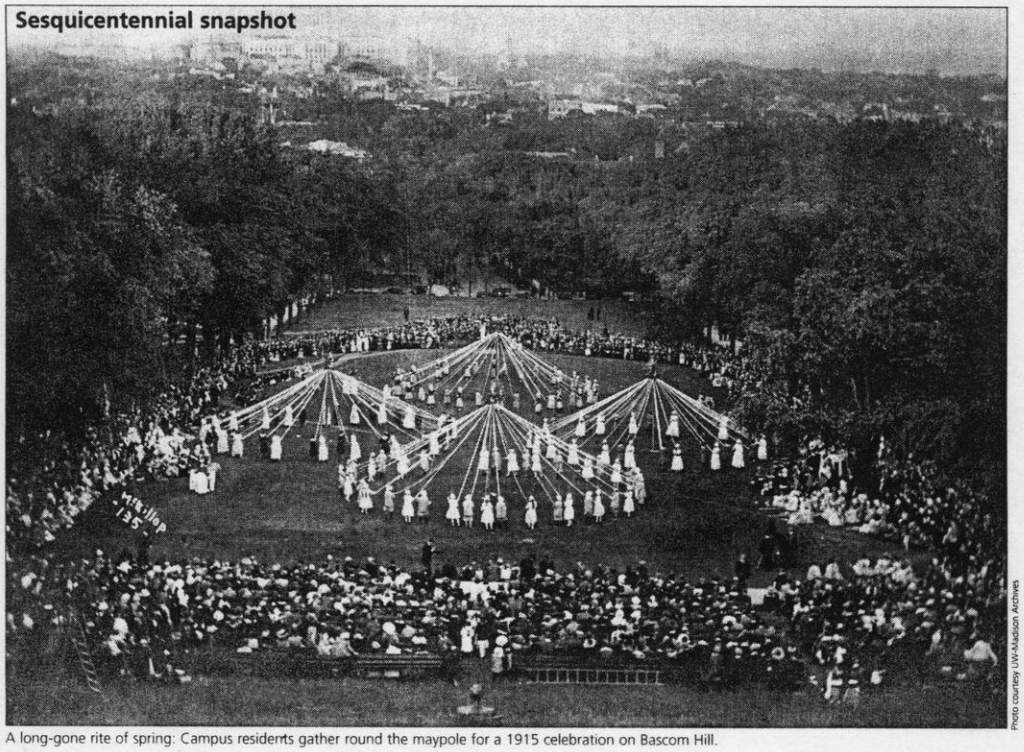


Photo courtesy UW-Madison Archives

A long-gone rite of spring: Campus residents gather round the maypole for a 1915 celebration on Bascom Hill.

Van Hise monolith gains national historic status

Terry Devitt

Tucked away in the Baraboo River Valley gorge is the rock that made Wisconsin famous.

First used more than a century ago by University of Wisconsin geologist Charles R. Van Hise to teach some of the principles of geology, the solitary outcrop of Baraboo quartzite is for scientists the single most famous geological feature in the garden of stony wonders that is the Baraboo Hills.

A mecca of geology, like much of the region, the rock was used by Van Hise to show his disciples the hidden secrets of the structure and history of the Earth. And his students and generations of textbook writers carried its lessons worldwide.

The monolith nestled near the roadside on a curvy portion of State Highway 136 has long been a window to what the world was like more than a billion years ago. And now, the famous rock is about to gain historic merit. On May 9, Van Hise Rock will become the 24th site in Wisconsin to be designated a national historic landmark, the highest honor bestowed by the National Park Service.

The educational value of the 1.7-billion-year-old rock, still visited by legions of students from all over the Midwest, lies in the story it tells about the geology of the Baraboo region and the insights it provides into the underlying processes that shape the Earth, according to Robert Dott, professor emeritus of geology.

The Baraboo Hills, says Dott, reflect a remarkable geologic history that encompasses almost half of the estimated four-billion-year age of the planet. Van Hise Rock, Dott explains, covers much of that history in one neat package.

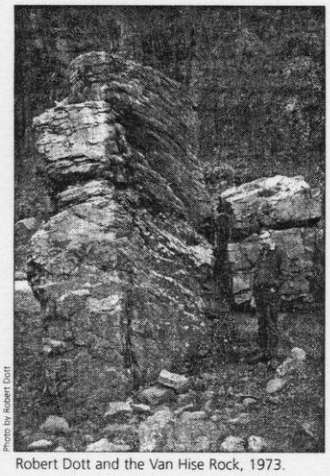


Photo by Robert Dott

Robert Dott and the Van Hise Rock, 1973.

The rock reveals features of a now-buried fold in the Earth's crust that tells a story of mountain building that occurred in the region an estimated 1.6 billion years ago. Van Hise, using the the Baraboo Hills as a classroom, made Wisconsin internationally famous as a center of geological research and education. ■

The dedication of Van Hise Rock will be Sunday, May 9, at 1:30 p.m. in Abelman Gorge, one mile north of Rock Springs on Highway 136.

Sesquicentennial Events

Public events and exhibits

April

30 Friday

SESQUICENTENNIAL LECTURE
"Trends in Imaging for the 21st Century." Elizabeth V. Patton, Kodak. Sponsored by Chemistry, Chemical Engineering, and Materials Science. 1361 Chemistry Bldg., 3:30 p.m.

May

3 Monday

INTERNATIONAL CONVOCATION
Events for international alumni and others. May 3-7.

June

16 Wednesday

LAMPMAN MEMORIAL LECTURE
"A Financial Policy in Lampman's Tradition: The Community Reinvestment Act." Edward Gramlich, University of Michigan. 1100 Grainger Hall, 4 p.m.

August

21-22 Saturday-Sunday

CAMPUS OPEN HOUSE

October

15 Friday

SCHOOL OF NURSING 75TH ANNIVERSARY GALA CELEBRATION
Details developing. Monona Terrace.

Exhibits

ENGINEERING PHOTO EXHIBIT
"Engineering Time." Scenes from the college's rich history; 23 images span 1881-1998. East wall, 1610 Engineering Hall. Exhibit runs through the year.

HUMAN ECOLOGY STUDENT EXHIBIT
Exhibits from landscape architecture, interior design, and textile and apparel design. Through May 13.

FLASHBACK

HISTORICAL HIGHLIGHT
At a time when African-American artists were barred from performing in many venues, Memorial Union's theater welcomed them. The famous contralto **Marian Anderson**, for instance, capped the theater's opening season in 1939, not long after she was refused the use of the D.A.R. Constitution Hall in Washington, D.C. Among other black artists sponsored by the Union were **Paul Robeson**, **Harry Belafonte**, **Louis Armstrong**, **Duke Ellington** and **Ella Fitzgerald**.

PEOPLE FROM OUR PAST
In the 1930s, **Frederick Mohs** pioneered a form of surgery that helped rid patients of external tumors such as lip and skin cancers. The technique, known as Mohs Micrographic Surgery, relied on extremely precise dissections of tumors instead of the gross removal of tumor masses. Mohs' method, still in widespread use, has treated thousands of patients' cancers while sparing undamaged tissue.

FACULTY MEMORIES
There are three teachers I distinctly remember, above and beyond my very positive memories of my educational experience at UW-Madison as a whole: The first is professor **Steve Nadler**, who taught the Philosophy 101 class I took in 1989. I was a BS student, disgusted to find I would be forced to take a humanities class. I tried to get into those I thought the least "touchy-feely" first: economics, sociology, geography. As an entering student, I found them all booked solid by the time I was allowed to register. I kept working my way down my preference list, until near the bottom I got into Philosophy 101. Needless to say, I entered as a skeptic: doubting the class would be any good, angry I was being forced to take it. I said as much in the first recitation section. My transformation was nearly magical, in that by the end of the term I was a firm advocate of the policy of making nerds like myself take humanities courses. I took an emphasis (minors not being allowed in ChE) in Philosophy and still 'think hard' to this day, even though I am, indeed, a scientist.
The second is **Tim Allen**. I audited two of Allen's botany classes, just because they were so damn good. [Well, OK, he also got me intrigued about systems science.] I was a chemical engineer and had always disliked biology. His classes were the ultimate in edutainment. Simply incredible.
John Wright taught my Chemistry 110 class. He also taught me what teaching should be like, what it meant to be a mentor, and how to explain something from an angle the audience wants to understand. There's no one story I can tell to justify this strong assertion, but all-around I've never had a better teacher than Professor Wright, and I doubt I ever will. Have you ever felt empowered to understand, rather than simply taught? It's magical. He did it.
— **Robert Rossi**, BS '92

TO GET INVOLVED
The Wisconsin Alumni Association is working with UW-Madison Archives to collect campus memorabilia of historical interest and value. If you have something of interest, please contact WAA, 650 North Lake St., Madison, WI 53706-1476; phone 262-2551; e-mail waa@badger.alumni.wisc.edu.

Geology

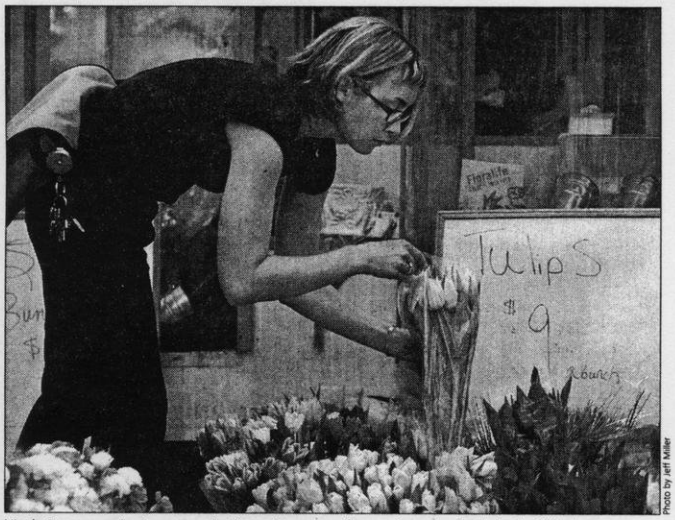


Photo by Jeff Miller

Nicole Rogers, senior in communication arts, peruses flowers from the Petals in the Wind cart on Library Mall. Only a few centuries ago, the bulbs that produce these colorful flowers were luxuries that only the rich could afford. At the height of the brief, speculative "tulip mania" in 1636-37, rare tulip bulbs could fetch the equivalent of the price of an Amsterdam townhouse, or about 60-80 times the annual wage of a manual worker of the era. Today you can persuade a campus-area vendor to part with a top-line tulip with less money than it takes to plug a parking meter for the morning.

has been very busy," Prisekina says. "I've had to cover a number of areas."

Law librarians will visit FESU as well during the first two years of the partnership to help the university further develop its law library. In addition, three FESU faculty members will participate in the Law School's summer program in U.S. Law and Legal Institutions, held in Madison.

Changes considered in release of student disciplinary records

A university committee is considering possible changes to university rules governing the release of student disciplinary records.

The Student Policies and Non-Academic Program Committee held a public hearing on the matter last week. The group is seeking student, faculty and staff views on limited release of some student records to parents and release of information on campus violent crimes and some sexual offenses. After receiving comments, the group will make a recommendation to the chancellor.

The review results from recent action by Congress that amends the Family Educational Rights and Privacy Act of 1974, a federal law that restricts the release of student educational records. Two amendments permit, but do not require, institutions to release student records that previously have been confidential:

- The university would have the option of making public the final results of student disciplinary proceedings when the institution has concluded that a student violated its rules and his/her conduct would constitute a "crime of violence" or a "nonforcible sex offense."
- The university also would have the option of disclosing to parents or legal guardians any student violation of federal, state, or local law or institutional rules governing the use or possession of alcohol or controlled substances if the student is under 21 and the possession constitutes a disciplinary violation.

The committee, chaired by Hardin Coleman, an associate professor in the School of Education, so far has met with housing and health staff who generally support keeping current confidentiality rules. Notifying parents of student disciplinary action conflicts with the campus's fundamental philosophy of treating students as adults, some staff say.

Campus community members can also register their views in writing. Comments should be directed to: The Student Policies and Non-Academic Program Committee, c/o Dean of Students Office, attn: Assistant Dean Janice Sheppard, 75 Bascom Hall; or e-mailed to: conduct@mail.bascom.wisc.edu.

Tech training program for students launched

The Division of Information Technology plans to train up to 85 undergraduates in a unique program this summer.

The Summer Student Technical Training Program is part of a System-wide effort designed to prepare more than 800 students to fill a shortage of technical helpers on UW campuses.

SSTT includes two weeks of paid, intensive training and will assist students in finding part-time tech employment when their training is completed. Participants will be trained in desktop installation of software and installation of modems, monitors and printers; basic client-server concepts and networking; and advanced network concepts. Information: 262-0596.

ON CAMPUS

Climate change symposium warms up geology celebration

Global warming and sustainable development, two of the most pressing environmental issues of our day, will be the topic of a public symposium Saturday, May 8, as the Department of Geology and Geophysics celebrates 150 years of Wisconsin earth science.

The symposium, to be held in AB20 Weeks Hall, will feature three authorities on issues of climate change and sustainable development: Richard Alley, a Penn State professor of geosciences and a leading climate change detective whose work deciphering ice cores from the Antarctic and Greenland has rewritten our understanding of rapid climate change; John Wise, a charter member of the Environmental Protection Agency and director of the agency's Office of Strategic Planning in San Francisco; and George Nicolaides, vice president of the BP-Amoco Oil Technology Group and a director of technology resources for the company's world-wide refining system.

The climate symposium begins at 2 p.m. In the morning, five current and emeritus UW-Madison geology and geophysics faculty will discuss their work beginning at 8:30 a.m. The morning symposium will span a range of topics from new developments in geomicrobiology and seismic sensing of deep-earth structures to historic contributions made by Wisconsin geology faculty and glaciology in Patagonia.

Madison to host black grad student meeting

The university will host the 12th Annual Black Graduate Student Conference March 29-April 2 next year.

From 400 to 600 African-American students — undergraduate, graduate and postdoctoral — are expected to attend, representing a variety of disciplines and universities nationwide. The conference will include a career fair, graduate school recruiting fair, paper presentations and professional development seminars.

The theme will be "Facing the Challenge: Black Leadership 2000 and Beyond." Sponsors are the Black Graduate and Professional Student Organization, the Graduate School, and the Equity and Diversity Resource Center.

NOTABLE

Mathematician elected to NAS

The National Academy of Sciences has elected mathematics professor Richard A. Askey to membership in the prestigious organization.

Sixty U.S. scientists and 15 foreign associates were elected to membership Tuesday, April 27, during the business session of the 136th annual meeting of the academy, a private organization of scientists established by congressional act of incorporation in 1863. Election to membership is considered one of the highest honors that can be accorded a U.S. scientist or engineer.

Askey is the Gabor Szego Professor of Mathematics. His areas of interest include harmonic analysis and special function. He is also known as an inspiring teacher and an ardent proponent of mathematics education, as well as a student of the history of mathematics.

Askey joined the UW-Madison faculty in 1963. He has written more than 150 papers and several books. Askey's honors include fellowships in the American Association for the Advancement of Science and the American Academy of Arts and Sciences. He also is an honorary member of the Indian Academy of Sciences.

Economy triples Vilas Trust funds

Due to the healthy economy and a one-time capital gains increase, Vilas Trust money available for spending in 1999-2000 will be about three times larger than usual.

Annual income from the trust – established in the will of UW alumnus William F. Vilas – usually totals $7 million each year. But the one-time infusion in the trust from its investment gains has made possible this year's plan to spend just over $20 million.

Under the rules of the trust, money not spent this year, would be returned to the endowment and could not be spent.

"This extra income allows us to expand some of the ongoing fellowship, scholarship and research support programs specified in the trust," says John Torphy, vice chancellor for administration. "It also provides us with some one-time, private-sector support, which we will use to match funding that we hope to receive in the state budget."

"I want to make clear that none of this one-time funding replaces state monies, and it's only available for one year," Torphy adds.

Vilas, a former U.S. senator and presidential cabinet member, died in 1908 and bequeathed his estate to the university.

The UW System Board of Regents is expected to act on the plan at a May 6-7 meeting.

As permitted by the trust, the university plans to allocate $11.45 million to help pay for the $52 million Engineering Centers project. Another $1 million will be used to provide promised private-sector support consistent with the Madison Initiative that is part of the state budget plan. Of that $1 million, $750,000 will be used to create 10 Vilas young investigator awards for newly hired assistant professors. Another $247,175 will fund the creation of 12 additional Vilas Associates, which target untenured faculty and those conducting interdisciplinary research.

Other one-time spending includes $2.55 million to create 170 research investigator awards for graduate students and $1.275 million to create 4,250 scholarships for undergraduates eligible for need-based financial aid related to the Madison Initiative. ■

NEWS MAKERS

CAN A VIRUS MAKE YOU FAT?
Although the idea sounds more like the premise of a B-movie than scientific theory, two campus scientists believe they've found a virus that causes some people to get fat, reports the Ottawa Citizen (Sunday, April 18).

Nikhil Dhurandhar and Richard Atkinson say that when they injected a virus known as AD36 into mice and chickens, the animals' body fat increased. Then the scientists decided to test for the presence of antibodies to the virus in humans. Of 154 people tested, about 15 per cent of those who were obese had the antibodies. None of the lean people did.

However, the findings don't necessarily prove that the virus caused obesity in the test group: Obese people may simply be more susceptible to such a virus. Still, in recent years, researchers have been surprised to find that viruses can be linked to so many diseases that had been thought to have other origins. For example, viruses are now implicated in several types of cancer, hardening of the arteries, and even mental disorders such as depression. In addition, five viruses besides AD36 have already been shown to cause obesity in animals. The good news is that the same methods that produce flu shots each year could ultimately be used to make an anti-obesity injection.

STEM CELLS STILL EXCITE
Researcher James Thomson's advances in embryonic stem cell research continue to reverberate throughout science, ethics and politics, says the Star Tribune of Minneapolis (Sunday, April 11).

Thomson now has held a culture of cells in an embryonic state for more than a year by dividing them and nurturing them in a carefully concocted culture. If, as Thomson expects, they prove to be immortal, a small collection of the cells could be multiplied to commercial-scale production. And a few cells also could serve as the beginnings of any part of a person's body, a potential boon for research on aging.

The cells also are expected to shed light on abnormal growth and thus help prevent and treat birth defects and cancer. And they could speed up the development of drugs while cutting down on the numbers of animal studies and human clinical trials.

"There is almost no realm of medicine that might not be touched by [Thomson's] innovation," says Harold Varmus, director of the National Institutes of Health.

SMART SCALPELS
New surgical instruments developed on campus give new meaning to the term "cutting edge," says Business Week (Monday, April 19). Engineering assistant professor Amit Lal has devised a way to carve tiny blades from silicon using microlithography, the technique that etches computer chips. Lal figures that the knives, which can be 10 times sharper than metal tools, will quickly find use in delicate procedures, such as neurosurgery or cataract surgery.

Moreover, because the blades are made of silicon, they can be equipped with computer circuits — for example, built-in sensors that detect whether the tissue being cut is healthy or diseased, and relay this to the surgeon.

Becton Dickinson & Co., a medical-supply company in Franklin Lakes, N.J., hopes to use the technology to make painless needles for syringes. Thanks to their ultrasonic action, such needles would require almost no pressure to puncture the skin — banishing the "ouch" from injections.

RESEARCH DIGEST

DRYWALL: GOOD FERTILIZER?
One day those unused scraps of clean wallboard from construction sites and remodeling projects may be crushed and spread on agricultural fields.

Crushed wallboard is very similar to commercial gypsum fertilizer, a soil conditioner and fertilizer that supplies calcium and sulfur to soils. Using drywall as fertilizer would help divert some of the estimated 2 million to 3 million tons of gypsum wallboard scraps that are put into U.S. landfills each year.

"In a three-year study, we found that applying crushed wallboard has neither strong positive nor negative agronomic effects on alfalfa production," says Richard Wolkowski, a soil scientist in the College of Agricultural and Life Sciences. "Gypsum wallboard is primarily calcium and sulfur with much smaller amounts of other elements such as magnesium. A few Wisconsin crops such as potato may respond to the calcium in gypsum fertilizer. But it is the sulfur in gypsum that is more often beneficial to crops and gypsum is one of the more economical sources of sulfur.

Working at the college's research stations at Arlington, Lancaster, Spooner and Ashland, Wolkowski studied how application rates and methods affected alfalfa yield, stand density, soil test, and forage nutrient content.

HERBAL STUDY UNDER WAY
Bruce Barrett, a Department of Family Medicine researcher, is conducting a study to determine whether the herbal supplement echinacea is an effective treatment for reducing the duration or severity of the common cold or flu.

Acute upper respiratory infection is the most common acute illness in the country. "Unfortunately, there are no good treatments," Barrett says. "Decongestants, cough suppressants and analgesics offer little benefit and antibiotics just plain don't work. However, European studies looking at echinacea show promising results."

For the research, Barrett needs 160 registered students, 18 years or older, who are not pregnant, do not have an autoimmune disease and are just beginning to have cold symptoms.

Participants will take either echinacea or placebo tablets. Students will be given $40 for their participation. To participate in the study, call 220-4042. Information: Rob Maberry, 265-9041, or email: rmaberry@fammed.wisc.edu.

GEOLOGY HOLDS OPEN HOUSE
Mars talks, dinosaur masks and flying reptiles will be part of the show Sunday, April 18, during the Geology Museum open house in Weeks Hall, 1215 Dayton St.

The free, family-oriented event, which will run from 1–5 p.m., will feature six special programs in addition to its standing exhibits. Throughout the afternoon, Plan B Design Studio of Hazel Green, Wis., will lead a dinosaur mask-making workshop with children.

At 1:10 p.m., James Graham of the physiology department will give the talk "Mars – Past, Present and Future," in the L.R. Laudon Lecture Hall. Another talk, "Life on Mars?" will be given at 2:45 p.m. in the same hall by geology scientist William Barker.

At 2:15 p.m. and 4 p.m., the museum will invite children to sort through a "Free Rock Pile." Kids should bring an empty bag and rain gear if needed.

At 3:30 p.m., the museum will unveil its newest display, a model of the flying reptile Pteranodon. UW-Madison geology student Christopher Ott crafted the balsawood skeleton.

Limited parking is available in Lot 54 adjacent to the museum. Information: 262-2399.

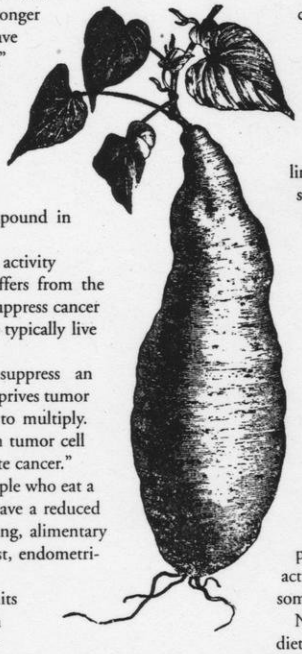
Plants: Good for you, bad for tumors

Isoprenoids may shunt human cancer cells to a natural death

George Gallepp

Campus researchers report that small concentrations of two compounds from plants we eat suppress the growth of three kinds of human cancer cells in the laboratory.

"Our studies showed that cancer cells were more sensitive to these compounds than normal cells and that the two compounds had a stronger effect when combined than we would have expected from the action of either alone," says Charles Elson, a nutritional scientist in the College of Agricultural and Life Sciences. "Our findings strengthen the idea that a diet rich in plants is beneficial because of the large array of plant compounds rather than the singular action of one kind of plant or one compound in plants."



Elson suggests that the anticarcinogenic activity of these and similar plant compounds differs from the mechanism of other agents that block or suppress cancer cell growth. Unless controlled, cancer cells typically live and divide indefinitely.

"The two compounds we studied suppress an enzyme," Elson says. "We think that this deprives tumor cells of chemical intermediates they need to multiply. The two compounds even work on human tumor cell lines that have mutations known to promote cancer."

Studies consistently have shown that people who eat a diet high in fruits, vegetables and grains have a reduced risk of many types of cancer, including lung, alimentary tract, liver, pancreas, bladder, kidney, breast, endometrium, cervix and prostate.

What is it about these foods that limits cancer? In a quest reminiscent of the search for vitamins begun in the last century, scientists are trying to identify the beneficial compounds in the fruits, vegetables and grains we eat that control tumor growth.

Research initially focused on compounds such as vitamin A, vitamin E and folic acid. But clinical trials with them have been inconclusive at best, Elson says. Other scientists have been examining non-nutritive compounds in plants. Elson has been studying compounds he calls isoprenoids, which contribute to plants' distinctive flavors and fragrances, among other things.

Elson began working with isoprenoids because some can reduce cholesterol levels in animals. However, he noticed that the isoprenoids slowed tumor growth.

To screen isoprenoids for those with anticarcinogenic activity, Elson tests them against a cell line developed from an extremely aggressive form of mouse melanoma. He has identified many isoprenoids that can slow the growth of this cell line. The tricky part has been finding isoprenoids that suppress cancer growth at the low concentrations that might occur in diets.

One such isoprenoid is gamma-tocotrienol, a compound found in cereal grains; it has a chemical structure related to vitamin E. In the current paper in the Journal of Nutrition, Elson and graduate student Huanbiao Mo found that gamma-tocotrienol slowed the growth of cell lines from human leukemia and breast cancer. They also tested beta-ionone — an isoprenoid found widely in fruits and vegetables — and showed that it also suppressed the growth of cell lines for human leukemia and breast cancer, as well as human colon cancer.

The nutritional scientist does not anticipate that his research will lead to a single critical isoprenoid or vegetable that people can eat to protect themselves from cancer. "These compounds act as a group to inhibit cancer growth," he says, "with some enhancing the effectiveness of others."

Nor does Elson believe in an exclusively vegetarian diet. "I don't think that it's the presence of meat in diets that leads to health problems, but the lack of enough fruits, grains and vegetables. The people who eat a lot of animal products are often the same individuals who don't eat enough fruits and vegetables," he says. ■

So you've lost that loving feeling?

Experts seeks answers to emotional questions

Dian Land

How do anxiety and depression impact brain pathways over time? Which brain changes result from cocaine abuse? How might emotions influence learning? How do difficult experiences early in life lead to depression later? What role does maternal care and touch play in emotional development and learning ability? What's the newest technology available to understand brain regions involved in regulating emotion?


Ned Kalin

About 300 scientists and students interested in answers to these questions will gather in Madison, April 23-24, for the fifth annual Wisconsin Symposium on Emotion, an international forum on the latest basic and clinical research dealing with emotion.

The theme of this year's symposium is "Affect and Plasticity: Neural Mechanisms Underlying Emotional Change," says Ned Kalin, director of the HealthEmotions Research Institute, which is sponsoring the symposium.

"A variety of influences — stress, prolonged emotional states, and some drugs and medications — can produce fundamental changes in brain chemicals and circuits over time. These are potentially very important phenomena that can result in long-term changes in brain function that may affect an individual's mental and physical health," Kalin says. "Understanding how this neuroplasticity occurs can provide important insights into potential ways to prevent and treat some of the negative effects of emotions."

Steven Hyman, director of the National Institute of Mental Health, will launch the symposium with a public talk, Thursday, April 22, at 4 p.m. at the State Historical Society. He will speak on "The Worrisome Question of Whether There's a Worry Gene, and Other Investigations of Genes and Behavior."

Seven leading scientists will describe the most current research on emotional change.

Presenters include Mary Carlson, Harvard University School of Public Health; Dennis Charney, Yale University School of Medicine; Jonathan Cohen, Princeton University; Mark George, Medical University of South Carolina; Michael Meaney, McGill University; Charles Nemeroff, Emory University School of Medicine; and Terry Robinson, University of Michigan.

The symposium encourages broad student participation from across the U.S. and Canada, says Kalin, who is also chair of the Medical School psychiatry department. The institute pays travel expenses for 87 of the most highly qualified undergraduate, graduate, medical and post-graduate students interested in studying emotions.

UW-Madison graduate students enrolled in psychology seminar 711 eagerly anticipate the symposium. All semester they've been immersed in journal articles by scientists who will be presenting at the meeting. The students will lead discussion sessions following each expert's talk and will be ready to ask their own well-prepared questions. They'll also write reviews of the research presented, which will be compiled in a volume to be published after the symposium.

The fifth annual Wisconsin Symposium on Emotion will be held April 23-24 at Monona Terrace Convention Center. The theme of this year's symposium is "Affect and Plasticity: Neural Mechanisms Underlying Emotional Change."

The Wisconsin Symposium on Emotion was first conceptualized five years ago by Richard Davidson, Vilas and William James Professor of Psychology and Psychiatry, as a means to highlight research of UW faculty studying various aspects of emotion. With the support of the HealthEmotions Research Institute, the symposium has grown to become one of the most important scientific gatherings concentrating on the study of emotion. ■

Geology

Community

Demand increasing for pharmacy graduates

America's burgeoning elderly population, which is using sophisticated drug therapies in record quantities, has helped make highly educated pharmacists one of the hottest commodities in health care, School of Pharmacy researchers say.

Pharmacy schools are responding by re-engineering themselves and their graduates, but demand is outpacing supply and there's no quick cure in sight, according to David Mott, a UW-Madison assistant professor of pharmacy studying workforce and policy issues.

"There is a concern that there are not enough pharmacists to fill traditional roles such as staffing pharmacies and dispensing patient prescriptions," he says. The rising demand may, however, be just the right medicine for people preparing to launch or change careers, Mott says. Pharmacy students are spending longer than ever — at least six years — in school, but upon graduation they are finding a healthy job outlook, above-average salaries, and a larger role in drug therapy decision-making and patient counseling, he says.

Several concurrent developments have boosted the demand for pharmacists:

- A growing population of older Americans who require more drug therapy.
- A sharp rise in the number and complexity of therapeutic drugs.
- Expansion of services requiring pharmacists' knowledge and skills.
- More health professionals approved to prescribe drugs including some advanced practice nurses, physician's assistants and optometrists.

To prepare pharmacists for expanded roles as "drug therapy managers," most of the nation's 79 pharmacy schools — including Wisconsin — now offer an advanced degree or "PharmD" degree requiring one or two additional years of education, Mott says.

The extra training better prepares graduates for direct patient contact, consultation with other health care providers, and work within the managed care setting ■

UW gets two-year probation for self-reported NCAA violations

The National Collegiate Athletic Association (NCAA) has placed UW-Madison on a two-year probation because of self-reported inadvertent NCAA violations.

That action was announced last week by the NCAA for infractions involving the administration and control of athletically related income and supplemental pay from sources outside the university. In addition to being placed on probation, UW-Madison must develop a comprehensive athletics compliance education program.

"We are gratified," said Chancellor David Ward, "that NCAA found that virtually all of the expenditures we reported would be considered proper" had the requisite prior written approval been obtained, that no competitive advantage was gained and that none of the funds accrued to the benefit of enrolled or prospective student-athletes.

"We will readily comply with their penalties; indeed, we already have developed procedures to ensure that such violations will not occur again."

During a teleconference announcing the penalties, the chair of the NCAA Division I Infractions Committee, David Swank, said he considered the penalties "quite light." That was in part because UW-Madison self-reported the violations, he said, and because "most of the expenditures would have been completely legal had permission been requested" ■

Graduate programs ranked by national magazine

The university received several high rankings in the 1999 rating of graduate programs released Friday, March 19, by U.S. News & World Report.

In library science UW-Madison ranked 8th, placing high in several specialties: 4th in services for children and youth, 5th in school library media and 8th in archives and preservation.

The School of Education ranked 9th, placing 2nd in curriculum/instruction, 2nd in administration/supervision, 2nd in educational psychology, 2nd in secondary teacher, 3rd in social/philosophical foundations, 4th in counseling/personnel services, 4th in elementary teacher, 7th in special education, 7th in vocational/technical and 10th in higher education administration.

The College of Engineering placed 12th, with these specialty ratings: 4th in nuclear, 5th in chemical and 8th in industrial/manufacturing.

UW-Madison's Medical School finished 18th among schools teaching primary care and ranked 10th in the specialty of family medicine.

The Law School placed 29th, and the Business School was 36th.

In doctoral programs in the sciences, UW-Madison ranked:

- 9th in computer science with specialty ratings of 3rd in databases, 6th in hardware and 7th in software.
- 10th in chemistry, including 5th in analytical, 7th in physical, 9th in inorganic, 9th in bio-organic/biophysical and 10th in organic.
- 12th in biological sciences, including 3rd in microbiology, 10th in biochemistry/molecular and 10th in genetics.
- 14th in mathematics, with specialty ratings of 2nd in logic, 3rd in mathematical statistics and 8th in algebra.
- 17th in geology, including 3rd in hydrogeology and 6th in sedimentology/stratigraphy.
- 18th in physics.

"These national rankings can be helpful in some ways," says John Torphy, vice chancellor for administration at UW-Madison, "but students should pick the programs that fit their needs the best, not necessarily the ones that rank highest." ■

Program seeks more Milwaukee students of color

The university is stepping up recruitment of students of color in the state's largest city – with assistance from their school district and potential future employers.

A new university initiative — the Pre-College Enrollment Opportunity Program for Learning Excellence, or PEOPLE — will enroll 100 Milwaukee ninth graders beginning this summer. Through classes held in Milwaukee and time spent on the UW-Madison campus, the program will acquaint the students with and prepare them for admission to Wisconsin's flagship university.

PEOPLE is recruiting African-American, American Indian, Asian American, Hispanic/Latino and low-income students. Those who complete the program and enroll at UW-Madison will receive full scholarships, if successful fund-raising objectives are met. UW-Madison is partnering with Milwaukee public schools and the Milwaukee business community to create the program.

"The PEOPLE program is a comprehensive and creative partnership to increase the number of students prepared to go to college and be successful," says Chancellor David Ward. "We must work hard together to help provide opportunity to young people in Milwaukee, and we are committed for the long haul."

Program costs are $200,000 for the first year – half of which Milwaukee businesses are being asked to contribute. The university and the state will pick up the other half.

By 2002, PEOPLE will provide pre-college training for 400 Milwaukee high school students of color and scholarships for up to 450 undergraduates each year. The pre-college program alone will cost $2.2 million.

Students who complete the program and go on to graduate from UW-Madison will be prepared to fill management and technical positions with Milwaukee businesses, enter graduate school or assume leadership positions with Milwaukee social, economic and community organizations.

Milwaukee was the logical location to start the program, Ward says, because of its sizable minority population and UW-Madison's modest success in enrolling its students of color. Eventually, Ward hopes to replicate the program in other Wisconsin cities.

The PEOPLE program follows a long line of UW-Madison diversity efforts. The Madison Plan in 1988 included programs aimed at improving student access and graduation. The Madison Commitment in 1993 updated the Madison Plan by emphasizing broader application and accountability in campus diversity programs. In 1995, the university adopted nine priorities for the future, one of which was "maximizing human resources." This priority is designed to strengthen the campus through greater inclusion of viewpoints, backgrounds and gender and ethnic differences.

On Thursday, April 15, the university will finalize its next 10-year diversity blueprint as part of Plan 2008, the UW System Board of Regents' initiative to increase the number of students, faculty and staff of color on all UW System campuses. ■

U.S. Supreme Court plans to decide student fee case

The future of UW-Madison's student fee system now rests with the nation's top court.

The U.S. Supreme Court agreed Monday, March 29, to decide whether the mandatory fees violate students' free-speech rights. Their decision will affect student fee systems at all public universities.

"It's a close legal question that the Supreme Court needs to decide," says Assistant Attorney General Susan Ullman, who will argue the case for the UW System.

Three UW law students sued the university in 1996, objecting to the use of student fees to finance campus groups they disagree with on ideological, political or religious grounds. After a federal judge ruled in their favor and the 7th U.S. Circuit Court of Appeals upheld the decision, the Board of Regents in October asked the Supreme Court to hear the case.

The university and its student government leaders say that student groups supported by the fees are a necessary part of the education experience and are constitutional because they support free speech for students.

The case will be watched closely on other campuses where students have lodged similar objections to using fees to fund certain groups. At UW-Madison, student fees are collected along with tuition for a wide variety of activities. Health services and the Wisconsin Union, for example, are supported through student fees, as are a range of student organizations.

The Supreme Court will take up the case in October when it begins its new term. ■

NEWS MAKERS

UW LIBRARIES HIGHLIGHTED

The **Library Technology Group** of the General Library System is featured in the current issue of Library HI Tech with a study about the UW-Madison Electronic Library.

Charles Dean edited the study titled, "Shaping the Electronic Library —The UW-Madison Approach." Articles by members of the LTG and GLS staff detail developments in digital libraries from UW-Madison's experience. Other contributors include **Ken Frazier, Nolan Pope, Peter Gorman, Sue Dentinger, Jeanne Boston, Hugh Phillips, Steven Daggett, Mitch Lundquist, Mark McLung, Curran Riley, Craig Allan** and **David Waugh**.

PESTICIDE HARM REPORTED

Children exposed to pesticides in the womb or at an early age may suffer permanent brain defects that could change their lives by altering their behavior and their ability to do everything from drawing a picture to catching a ball, according to new research.

Widely used pest-killing chemicals, in amounts routinely found in the environment in farm areas, seem to be capable of skewing thyroid hormones, which control how the brain of a fetus or young child develops, according to a published study. Scientists say the study and other recent research support an emerging theory that pesticides may exact a toll on the intelligence, motor skills and personalities of infants, toddlers and preschoolers.

"Data suggest that we may be raising a generation of children with learning disabilities and hyper-aggression," **Wayne Porter**, a UW-Madison professor of zoology and environmental toxicology, told the Los Angeles Times (March 15).

Porter's study shows that a common mix of chemicals altered the thyroid hormones of young mice. It also suppressed their immune systems.

FIGHTING BUGS, NATURALLY

A humbling chapter in crop science is the one now being written as pesticide companies try to mimic nature. The bug-fighting business is coming full circle to the strategies of the early 1900s when entomologists searched for natural predators to help control crop pests, **David Bowen**, a scientist at UW-Madison, tells the Star Tribune of Minneapolis (March 17).

For example, genes from Photorhabdus luminescens, a bacterium Bowen and his colleagues are studying, could be used to guard crops against borers and beetles. The Wisconsin Alumni Research Foundation has obtained patents on discoveries so far, and the scientists are working with companies to translate their findings into products for field and home.

ROTC NEGOTIATION DETAILED

University Wire (March 24) highlighted recent negotiations between UW-Madison administrators and the Associated Students of Madison's Equal Rights Initiative. The groups agreed to fight against an alleged ROTC anti-gay discrimination policy.

The student group suggested ways to ensure that gay students receive scholarship money and leadership training similar to what the ROTC provides. Provost **John Wiley**, who called the meeting, says he was impressed with how much work went into the report. "[The meeting] was really to congratulate them on a good job and say that we agree with them and want to work with them," Wiley explains.

Geology

FOR IMMEDIATE RELEASE 4/30/99

FAMOUS VAN HISE MONOLITH GAINS NATIONAL HISTORIC STATUS

Tucked away in the Baraboo River Valley gorge is the rock that made Wisconsin famous.

First used more than a century ago by University of Wisconsin geologist Charles R. Van Hise to teach some of the principles of geology, the solitary outcrop of Baraboo quartzite is for scientists the single most famous geological feature in the garden of stony wonders that is the Baraboo Hills.

A mecca of geology, like much of the region, the rock was used by Van Hise to demonstrate to his disciples the hidden secrets of the structure and history of the Earth. And his students and generations of textbook writers carried its lessons worldwide.

Today, the monolith nestled near the roadside on a curvy portion of Highway 136 is named after the famous scientist. And in addition to its status as a window to what the world was like more than a billion years ago, the rock is about to be recognized more broadly for its historic merit.

On Sunday, May 9, Van Hise Rock will become the 24th site in Wisconsin to be designated a national historic landmark, the highest honor bestowed by the National Park Service. The dedication will be at 1:30 p.m. in Abelman Gorge, one mile north of Rock Springs on Highway 136. The public event is co-sponsored by the Wisconsin Department of Transportation, the town of Excelsior, the Rock Springs Public Library History Committee, the UW-Madison geology department and the State Historical Society.

The educational value of the 1.7 billion-year-old rock, still visited by legions of students from all over the Midwest, lies in the story it tells about the geology of the Baraboo region and the insights it provides into the underlying process that shape the Earth, according to Robert Dott, professor emeritus of geology.

The Baraboo Hills, says Dott, reflect a remarkable geologic history that encompasses almost half of the estimated 4 billion year age of the planet. Van Hise Rock, Dott explains, covers much of that history in one neat package.

"The Van Hise Rock is just a small part of the northern range of the Baraboo Hills, but what makes it so interesting and famous is that it shows within it small features of the Baraboo syncline," a now-buried fold in the Earth's crust that tells a story of mountain building that occurred in the region an estimated 1.6 billion years ago.

The ability to discern subsurface characteristics by reading the clues in the Van Hise Rock was a technique worked out in part by Van Hise and colleagues more than a century ago as part of a massive federal effort to learn about the geology of the economically important, mineral rich Lake Superior region.

"Van Hise became particularly interested in how these rocks become deformed" and how their structure changed over eons," says Dott.

The work of Van Hise early in the century, using the quartzite rock and the Baraboo Hills as a classroom, made Wisconsin internationally famous as a center of geological research and education, and firmly established the basic principles of structural geology.
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-- Terry Devitt (608) 262-8282, trdevitt@facstaff.wisc.edu

Geology

FOR IMMEDIATE RELEASE 4/30/99
CONTACT: Karen Mullins (608) 262-8960, geodept@geology.wisc.edu

CORRECTION: CLIMATE CHANGE SYMPOSIUM WILL BE FRIDAY, MAY 7

MADISON - The date given in a previous announcement for the University of Wisconsin-Madison geology department's global warming and sustainable development and faculty symposia was incorrect. The correct date for both events, to be held in Room AB 20 Weeks Hall, is Friday, May 7.

The schedule of events for the faculty symposium is as follows:

8:30 a.m., Introductory Remarks.

9 a.m., Professor Emeritus Robert Dott, "UW Geology Crosses the Atlantic."

9:35 a.m., Professor Nik Christensen, "Seismic Anisotropy: Mantle Structural Geology."

10:30 a.m., Professor Basil Tikoff, "Lithosphere Folding During the Laramide Orogeny."

11:40 a.m., Professor Brad Singer, "Towards a Radiogeneic and Cosmogenic Surface Exposure Chronology of of Pleistocene Glaciation in Patagonia"

The afternoon climate symposium begins at 2 p.m. and is free and open to the public. It will feature opening remarks by Letters and Science Dean Phillip R. Certain, and three prominent authorities on issues of climate change and sustainable development: John Wise, a charter member of the Environmental Protection Agency and director of the agency's Office of Strategic Planning in San Francisco; George Nicolaides, vice president of the BP-Amoco's Oil Technology Group and a director of technology resources for the company's world-wide refining system; and Richard Alley, a Penn State professor of geosciences and a leading climate change detective whose work deciphering ice cores from the Antarctic and Greenland has rewritten our understanding of rapid climate change.

The symposia are being held in recognition of 150 years of geological science at UW-Madison.
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-- Terry Devitt (608) 262-8282, trdevitt@facstaff.wisc.edu

Geology

THE WISCONSIN WEEK WIRE - April 28, 1999
for UW-Madison faculty and staff
(issue on Web at http://www.news.wisc.edu/wire/i042899/)

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Selected stories from this issue of Wisconsin Week ...

FRONT PAGE
- o Pre-tax payment provision to offset parking fee hike
- o Campus libraries plan electronic catalog upgrade
- o Tenure clock up for vote
- o Abe to get cleaning

PROFILE: Jack Kloppenburg
- o Professor shares food for thought on our dining habits

FEATURES
- o 150 Years: Van Hise monolith gains national historic status
- o Taste testers sample food service fare

RESEARCH
- o UW zoologist finds rare saola in a roadside zoo
- o Researchers plot plan to reduce state highway headaches
- o Alternative publisher to fund e-journals
- o Research digest

AWARDS
- o Honorary degree recipients announced
- o Hilldale recipient creates artistic spectacles
- o L&S students reap national honors
- o Awards wrap-up

CAMPUS NEWS
- o Campus readies for more construction
- o Littlefield to retire as School of Nursing dean
- o Three finalists named for engineering dean post
- o Law school partners with Russian university
- o Changes considered in release of student records
- o Economy triples Vilas Trust funds
- o Newsmakers

ON CAMPUS
- o TAA celebrates 30 years of activism
- o 'Naked Gun' filmmaker Jim Abrahams to speak
- o Madison to host black grad student meeting
- o Events calendar: http://calendar.news.wisc.edu

(issue on Web at http://www.news.wisc.edu/wire/i042899/)
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Front Page

PRE-TAX PAYMENT PROVISION TO OFFSET PARKING FEE HIKE
Most faculty and staff who drive to work will pay an extra $15 to $60 next year to park on campus, but those increases will be offset by a new pre-tax deduction program for parking fees.
(Full story in Wisconsin Week, page 1)
http://www.news.wisc.edu/wire/i042899/parking.html

CAMPUS LIBRARIES PLAN ELECTRONIC CATALOG UPGRADE
A new electronic catalog is coming soon to libraries here and on other UW System campuses–overdue and just in the nick of time.
(Wisconsin Week, page 1)
http://www.news.wisc.edu/wire/i042899/voyager.html

TENURE CLOCK UP FOR VOTE
The Faculty Senate is scheduled to vote Monday, May 3 on a proposal to grant departments more flexibility in determining the time that new assistant professors can take to earn tenure.
(Wisconsin Week, page 1)
http://www.news.wisc.edu/wire/i042899/tenure.html

ABE TO GET CLEANING
As part of the sesquicentennial, the university has contracted to have the bronze statue of Abraham Lincoln on the top of Bascom Hill restored to its original appearance–a dark brown-green.
(Wisconsin Week, page 1)
http://www.news.wisc.edu/wire/i042899/abe.html

Profile: Jack Kloppenburg

PROFESSOR SHARES FOOD FOR THOUGHT ON OUR DINING HABITS
In the midst of midterms, while most professors fed students exams, Jack Kloppenburg simply fed them. That's because food is the pièce de résistance of education à la Kloppenburg.
(Wisconsin Week, page 4)
http://www.news.wisc.edu/wire/i042899/eat.html

Features

150 YEARS:
VAN HISE MONOLITH GAINS NATIONAL HISTORIC STATUS
Tucked away in the Baraboo River Valley gorge is the rock that made Wisconsin famous. First used more than a century ago by University of Wisconsin geologist Charles R. Van Hise to teach some of the principles of geology, the rock is slated to become the 24th site in Wisconsin to be designated a national historic landmark.
(Wisconsin Week, page 5)
http://www.news.wisc.edu/wire/i042899/vanhise.html

TASTE TESTERS SAMPLE FOOD SERVICE FARE
For students, it's an opportunity to taste what could be on their table in the morning or the next night. For University Housing Food Service, it's a chance to explore the taste buds of the bulk of their customers: undergraduates. It is simply food testing, held every few weeks by the recipe developers in University Housing Food Service.
(Wisconsin Week, page 10)
http://www.news.wisc.edu/wire/i042899/taste.html

Research

UW ZOOLOGIST FINDS RARE SAOLA IN A ROADSIDE ZOO
If there's a common wisdom to field biology, it is to expect the unexpected. And the last thing primatologist Nancy Ruggeri expected to encounter was the saola–a spindle-horned animal that is possibly the last of the world's large mammals to be discovered.
(Wisconsin Week, page 6)
http://www.news.wisc.edu/wire/i042899/saola.html

RESEARCHERS PLOT PLAN TO REDUCE STATE HIGHWAY HEADACHES
As the season of jackhammers and dust descends on state highways, it might be reassuring to know that a statewide research effort could ultimately reduce road-maintenance headaches. That's just one goal of the new Wisconsin Highway Research Program, which brings together a diverse group of experts to set a strategic course for state highways.
(Wisconsin Week, page 6)
http://www.news.wisc.edu/wire/i042899/hwy.html

ALTERNATIVE PUBLISHER TO FUND E-JOURNALS
Ratcheting up its David-and-Goliath battle with publishing behemoths, the Scholarly Publishing and Academic Resources Coalition (SPARC) has announced it will offer $500,000 for the creation of new electronic journals.
(Wisconsin Week, page 10)
http://www.news.wisc.edu/wire/i042899/sparc.html

RESEARCH DIGEST
Study finds surprises in teen peer influences; book profiles black experience in Wisconsin; and new uses for manure.
(Wisconsin Week, page 6)
http://www.news.wisc.edu/wire/i042899/rd.html

Awards

HONORARY DEGREE RECIPIENTS ANNOUNCED
Distinguished achievers with Wisconsin and global ties will be awarded honorary degrees during commencement ceremonies in May.
(Wisconsin Week, page 14)
http://www.news.wisc.edu/wire/i042899/hd.html

HILLDALE RECIPIENT CREATES ARTISTIC SPECTACLES
1999 Hilldale Undergraduate Research Award winner Richard Nelipovich wants people to think of their glasses as "jewelry for the face." The UW-Madison senior in the School of Art is designing eyeglass frames that are innovative, distinctive and at times wildly impractical.
(Wisconsin Week, page 8)
http://www.news.wisc.edu/wire/i042899/specs.html

L&S STUDENTS REAP NATIONAL HONORS
Five undergraduates in the College of Letters and Science have earned prestigious national awards.
(Wisconsin Week, page 3)
http://www.news.wisc.edu/wire/i042899/lshonors.html

AWARDS WRAP-UP
o Distinguished Alumni Awards
o Hilldale Undergraduate Research Awards
o University Bookstore Awards
o Graduate School Excellence in Teaching
o National Academy of Sciences
o School of Education Awards
o Polygon Teaching Awards
o Regents Staff Award
Access stories about all these awards from the following web page: http://www.news.wisc.edu/wire/i042899/awards.html

Campus News

CAMPUS READIES FOR MORE CONSTRUCTION

This issue of Wisconsin Week includes a summary of campus construction projects already under way or planned to begin yet this year. Please see page 16 of the print edition for a detailed map and chart outlining the construction activity.

LITTLEFIELD TO RETIRE AS SCHOOL OF NURSING DEAN

A national search soon will begin for a successor to Vivian Littlefield, one of the university's longest-serving administrators, who will retire Dec. 31 after 16 years as dean of the School of Nursing.
(Wisconsin Week, page 2)
http://www.news.wisc.edu/wire/i042899/vlit.html

THREE FINALISTS NAMED FOR ENGINEERING DEAN POST

A search committee has recommended to Chancellor David Ward three finalists for dean of the College of Engineering: Eduardo D. Glandt, interim dean of the University of Pennsylvania School of Engineering and Applied Science; Julio M. Ottino, chair of the department of chemical engineering at Northwestern University; and Paul S. Peercy, president of SEMI/SEMA TECH, an Austin, Texas-based technical consortium for the U.S. semiconductor industry.
(Wisconsin Week, page 2)
http://www.news.wisc.edu/wire/i042899/engrdean.html

LAW SCHOOL PARTNERS WITH RUSSIAN UNIVERSITY

The UW Law School is partnering with a Russian university to strengthen international legal education.
(Wisconsin Week, page 3)
http://www.news.wisc.edu/wire/i042899/fesu.html

CHANGES CONSIDERED IN RELEASE OF STUDENT RECORDS

A university committee is considering possible changes to university rules governing the release of student disciplinary records.
(Wisconsin Week, page 2)
http://www.news.wisc.edu/wire/i042899/records.html

ECONOMY TRIPLES VILAS TRUST FUNDS

Due to the healthy economy and a one-time capital gains increase, Vilas Trust money available for spending in 1999-2000 will be about three times larger than usual.
(Wisconsin Week, page 2)
http://www.news.wisc.edu/wire/i042899/vilas.html

NEWSMAKERS

Nikhil Dhurandhar and Richard Atkinson discuss their research on a virus that they believe causes some people to get fat; researcher James Thomson's advances in embryonic stem cell research continue to reverberate throughout science, ethics and politics; and Amit Lal's silicon cutting tools usher in the potential for painless needles and 'smart' scalpels.

(Wisconsin Week, page 3)

http://www.news.wisc.edu/wire/nm.html

On Campus

(Events calendar: http://calendar.news.wisc.edu)

TAA CELEBRATES 30 YEARS OF ACTIVISM

The oldest graduate student union in the nation celebrates three decades of existence starting Thursday, April 29, with four days of events planned to highlight its storied history.

(Wisconsin Week, page 11)

http://www.news.wisc.edu/wire/i042899/taa.html

'NAKED GUN' FILMMAKER JIM ABRAHAMS TO SPEAK

Jim Abrahams, whose comic vision has inspired such cinema landmarks as "Airplane!" and the "Naked Gun" movies and more, will reveal "The 15 Rules of Comedy" in a free public lecture on campus Sunday, May 2.

(Wisconsin Week, page 11)

http://www.news.wisc.edu/wire/i042899/abrahams.html

MADISON TO HOST BLACK GRAD STUDENT MEETING

The university will host the 12th Annual Black Graduate Student Conference March 29-April 2 next year.

(Wisconsin Week, page 3)

http://www.news.wisc.edu/wire/i042899/bgsc.html

Geological & Natural History

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NEWS

UNIVERSITY OF WISCONSIN–MADISON

Phone: 608/262–3571
Fax: 608/262–2331

News & Information Service
19 Bascom Hall • 500 Lincoln Drive
Madison, Wisconsin 53706–1380

FOR IMMEDIATE RELEASE 5/12/93

CONTACT: Alexander Zaporozec, (608) 262-3385

UW SCIENTIST HEADS JOINT U.S.-RUSSIAN CONFERENCE

MADISON — Alexander Zaporozec of the University of Wisconsin-Madison's Wisconsin Geological and Natural History Survey is co-president of the Second USA/CIS Joint Conference on Environmental Hydrology and Hydrogeology. The conference will be held May 15-21 in Arlington, Va. The first meeting took place in St. Petersburg, Fla. in 1990.

More than 200 environmental scientists and researchers from industry, federal and state agencies, and academic institutions in both countries will convene around such issues as: effects of agricultural practices on surface and ground water, surface and ground water protection, global climate variations and the hydrologic cycle, river and lake reclamation and rehabilitation, and hazardous waste and industrial contamination.

Zaporozec says that the conference will afford American hydrologists direct and positive contact with their counterparts in the former Soviet Union, as well as introduce a potentially vast market to U.S. products and services.

Conference hosts include the Russian Academy of Sciences, the American Institute of Hydrology, and the U.S. Geological Survey in cooperation with the Wisconsin Geological and Natural History Survey, the American Geological Institute, the American Society of Civil Engineers, the American Water Resources Association, the Geological Society of America, and the International Association of Hydrogeologists.

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— Barbara Wolff, (608) 262-8292

Geology

EMBARGOED FOR A.M. RELEASE MARCH 19
CONTACT: John Torphy, (608) 263-2509

U.S. NEWS RANKS GRADUATE PROGRAMS AT UW-MADISON

MADISON - The University of Wisconsin-Madison received several high rankings in the 1999 rating of graduate programs released today (March 19) by U.S. News & World Report.

In library science UW-Madison ranked 8th, placing high in several specialties: 4th in services for children and youth, 5th in school library media and 8th in archives and preservation.

The UW-Madison School of Education ranked 9th, placing 2nd in curriculum/instruction, 2nd in administration/supervision, 2nd in educational psychology, 2nd in secondary teacher, 3rd in social/philosophical foundations, 4th in counseling/personnel services, 4th in elementary teacher, 7th in special education, 7th in vocational/technical and 10th in higher education administration.

The College of Engineering placed 12th, with these specialty ratings: 4th in nuclear, 5th in chemical and 8th industrial/manufacturing.

UW-Madison's Medical School finished 18th among schools teaching primary care and ranked 10th in the specialty of family medicine.

The Law School placed 29th, and the Business School was 36th.

In doctoral programs in the sciences, UW-Madison ranked:

* 9th in computer science with specialty ratings of 3rd in databases, 6th in hardware and 7th in software.

• 10th in chemistry, including 5th in analytical, 7th in physical, 9th in inorganic, 9th in bio-organic/biophysical and 10th in organic.

* 12th in biological sciences, including 3rd in microbiology, 10th in biochemistry/molecular and 10th in genetics.

* 14th in mathematics, with specialty ratings of 2nd in logic, 3rd in mathematical statistics and 8th in algebra.

* 17th in geology, including 3rd in hydrogeology and 6th in sedimentology/stratigraphy.

* 18th in physics.

"These national rankings can be helpful in some ways," says John Torphy, vice chancellor for administration at UW-Madison, "but students should pick the programs that fit their needs the best, not necessarily the ones that rank highest."

# # #

- Jeff Iseminger, (608) 262-8287

Geology

FOR IMMEDIATE RELEASE 12/7/98

TEN ONE-OF-A-KIND HOLIDAY GIFTS FROM UW-MADISON

MADISON - Fearful of the mall this holiday season? Weary from trekking across acres of parking lot? Having a hard time running that elusive, all-important gift to earth?

Come down to campus and relax. Here, in no particular order, are 10 gift ideas from UW-Madison that can make holiday shopping easier and less aggravating. All are unique to the University and sales benefit campus academic, outreach and social programs.

* A night in the Memorial Union: For as little as $51 a night, you can reserve a room with a view of Lake Mendota and the Union Terrace. The Union has half-a-dozen guest rooms ranging in price from $51 to $68, all with lake views. (Prices are a bit higher for non-members.) Make your reservations early. Rooms are hard or impossible to come by on football weekends and during commencement. To book a room, call (608) 265-3000.

* A cast replica of a T. rex tooth: Take home a pointed reminder of the top carnosaur of the Cretaceous. A plaster cast that is an exact copy of a 6-inch T. rex tooth unearthed during a UW-Madison Geology Museum expedition to the badlands of eastern Montana. Cost: A bargain at $12. Available only at the UW-Madison Geology Museum, Room A120 Weeks Hall, 1215 W. Dayton St.

* Landscape Plants of the Upper Midwest on CD ROM: Plan your landscaping with this CD from the UW-Madison department of horticulture. Features 1,800 quality color photographs of more than 600 species of plants displaying flowers, fruit, fall color and other ornamental features. Cost: $20.95. Call Karen Denk at (608) 262-1490 to reserve a copy for the gardener in the family. Or mail a check or money order, payable to the Department of Horticulture, to 1575 Linden Drive, Madison, WI 53706.

* John Steuart Curry Exhibit Catalog: The Elvehjem Museum's 1998 exhibit of the work of UW-Madison's first artist in residence is cataloged. Available in softcover for $32 from the Elvehjem's Museum Shop, in the museum at 800 University Ave.

* Say it with cheese: What better way to show affection or perpetuate a stereotype than by a gift of cheese? From Babcock Hall and the Food Science Club, choose from an assortment of gift boxes with more species of cheese than you can shake a sausage at. Prices range from $11 to $40. Available at the Babcock Dairy Store, 1605 Linden Drive, or by calling (608) 262-3045.

* Concert tickets: The UW-Madison 150th Anniversary Concert, Feb. 7, from 1 p.m. to 3 p.m., will be a feast of music featuring the School of Music's symphony orchestra, jazz ensemble, choral union, concert choir and UW-Madison marching band. Cost: Adults $5, students $3, age 12 and under $2. Tickets go on sale Wednesday (Dec. 9) at the Kohl Center and all Ticket Master locations. Proceeds benefit the UW-Madison Sesquicentennial Undergraduate Scholarship Fund.

* Nostalgia: Available vicariously through a set of 12 note cards featuring

the art deco prints of artist Charles R. Overman. The artwork, used in the 1932 Badger Yearbook, features scenes from University of Wisconsin campus life of 65 years ago. Available at University Bookstore. Cost: $29.95. Proceeds benefit the Wisconsin Alumni Association and are used in support of UW-Madison sesquicentennial activities.

* Millions of books: For the book lover, a membership in the Friends of the Libraries is a way to support the continuing excellence of a great research library system. Benefits include Friends lectures, Friends magazine, invitations to special library events and a membership card that allows access and borrowing privileges. Cost: $15 for students, $25 for individual memberships and $30 for families. For membership details, call (608) 262-2566, or stop in Room 976 of the Memorial Library, 728 State St.

* The gift of research: For a few dollars, you can support research into the diseases and afflictions faced by our companion animals, also known as pets. For a donation of $5 per card, the UW-Madison School of Veterinary Medicine Companion Animal Fund will hand sign and mail a card in your name to the animal lover on your list. Hurry, the deadline for ordering cards is Dec. 14. Send a list of intended card recipients along with their complete addresses, and an indication of how you wish the cards to be signed to: Companion Animal Fund, 2015 Linden Drive West, Madison, WI 53706. Checks should be made payable to the UW Foundation.

* For the weather weenie in your life: You'll never have to go to the trouble of hoisting the old weather balloon again if you're packing the AERI, the Atmospheric Emitted Radiance Interferometer. Made only at UW-Madison's Space Science and Engineering Center, the AERI is a portable, computer-sized device that can provide a handy profile of atmospheric temperature, trace gases such as ozone and carbon dioxide, and water vapor. Perfect for airport managers and professional weather forecasters. Cost: $250,000. Scientist not included.

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-- Terry Devitt (608) 262-8282, trdevitt@facstaff.wisc.edu

Geology

FOR IMMEDIATE RELEASE 12/7/98
NOT-FOR-PROFIT PLACES TO SHOP ON CAMPUS

Here are some good places to go browsing for holiday gifts on the University of Wisconsin-Madison campus:

The Museum Shop and Holiday Store
Elvehjem Museum of Art
800 University Ave.
Hours: 9 a.m. to 5 p.m. Monday-Friday, 11 a.m. to 5 p.m. Saturday-Sunday

The UW Geology Museum
Room A120 Weeks Hall
1215 W. Dayton St.
Hours: 8:30 a.m. to 4:30 p.m. Monday-Friday; 9 a.m. to 1 p.m. Saturday

Babcock Hall Dairy Store
1605 Linden Drive
Hours: 9:30 a.m. to 5:30 p.m. Monday-Friday; 10 a.m. to 1:30 p.m. Saturday

Space Place
1605 S. Park St.
Call (608) 262-4779 for information on open hours

The Arboretum Gift Shop
The McKay Center
1207 Seminole Highway
Hours: 9:30 a.m. to 4 p.m. Monday-Friday, 12:30 to 4 p.m. Saturday-Sunday

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Geology

FOR IMMEDIATE RELEASE 3/30/98

NOTED VOLCANOLOGIST STAN WILLIAMS TO LECTURE

MADISON - Stanley Williams, whose brush with death in 1993 on the flank of a Colombian volcano and whose studies of an erupting Mount St. Helens have made him a celebrity among volcanologists, will deliver a free public lecture at the University of Wisconsin-Madison later this month.

A professor of geology at Arizona State University, Williams is a graduate of Beloit College and is internationally known for his research on active volcanoes. In 1993, while working on Galeras Volcano in Colombia, Williams was seriously injured by a volcanic eruption in that took the lives of six of his fellow scientists. Now, after 16 operations and two-years of physical therapy, Williams has returned to the work of scientifically documenting and recording volcanic events.

The public lecture, "Life and Death on Erupting Volcanoes," will be given at 10 a.m. Saturday, April 18, in Room AB20 of Weeks Hall, 1215 W. Dayton St.

The lecture is free, but because seating is limited, admission will be by ticket only. Tickets will be limited to four per request and can be obtained by sending a stamped, self-addressed envelope to Weeks Volcano Lecture, UW Geology and Geophysics, 1215 W. Dayton St., Madison, WI 53706.
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- Terry Devitt (608) 262-8282, trdevitt@facstaff.wisc.edu

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For questions or comments about UW-Madison's email news release system, please send an email to: UW-news@facstaff.wisc.edu

For more UW-Madison news, please visit the Office of News and Public Affairs Web site: http://www.wisc.edu/news/

Office of News and Public Affairs
University of Wisconsin-Madison
28 Bascom Hall
500 Lincoln Drive
Madison, WI 53706

Email: UW-news@facstaff.wisc.edu
Phone: (608) 262-3571
Fax: (608) 262-2331

Geology

BRIEFS

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The Friends of the UW-Madison
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s expect that more than 10,000
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semiannual book sale; the four
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ill include posture evaluations

Campus

Photo by Jeff Miller

Under the Cretacous sea
Two visitors to the UW-Madison Geology Museum were among the first to get a close look at a slab of sea floor from the Cretaceous era, estimated to be 100 million years old. On Feb. 4, the museum unveiled the 4-by-7-foot slab of fossil-laden limestone, which originated from the remnant seafloor in Texas. The piece was donated by Madison Block and Stone, and the exhibit was made possible by a grant from Laura L. Linden of Madison.

Final count reveals a new record for SECC donations

The State, University and UWHC Employees Combined Campaign of Dane County (SECC) topped its $1.9 million goal for 1997, raising a record $1,957,090 for the eight umbrella organizations and more than 300 charitable agencies included in the campaign.

Nearly 4,600 university and UW Hospital and Clinics employees contributed $915,778 to the annual fund-raising effort, which represents a 4.8 percent increase over the dollars raised in 1996. At the same time, the number of university employees donating to the campaign dropped by 148.

"Even though the participation was slightly lower, the 1997 SECC was a very successful one," says LaMarr Billups, university chair of the campaign.

"We exceeded our goal for dollars and the average amount pledged by individuals went up," says Billups.

Billups says many community needs would go unmet without the help of SECC donors and volunteers.

The scores of SECC volunteers will be honored at the annual campaign celebration on Feb. 25. Campaign volunteers will receive invitations soon.

Those volunteers who have not yet filled out a volunteer form for the campaign are asked to e-mail Doni Zintz at dzintz @ ccmail.uwsa.edu. ■

Smoking complaints heat up on campus buildings

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Wisconsin Week
February 11, 1998

Geology & Geophysics, Dept of

Information Technology

Jeff Miller

Rocks for computer jocks

Banfield's course turns geologists into Web surfers

Steve Schumacher

For the first time next semester, UW-Madison will offer a credit course that can essentially be taken on-line.

Geology and Geophysics 306, Gems and Precious Stones, http://geology.wisc.edu/gems, is open to students with junior standing for physical science credit.

The first time it is offered, says geology and geophysics Professor Jill Banfield, students will be required to attend lectures to discuss supplementary material and participate in various "hands-on" exercises.

In future years, they will be able to take the course completely on-line —without going to class — for one credit (or two, with a term paper) or to earn three credits, attend class, write the paper and take the on-line course.

One of the first of its kind in the nation, the course was developed by Banfield with support from the Division of Information Technology. It can be accessed using Netscape, a World Wide Web browser program (available through the campus computer network) or from any computer connected to the Internet. In fact, says Banfield, anyone with access to the World Wide Web can tap into the course, which opens up the possibility of offering it via correspondence anywhere in the world.

Students who don't have their own computers can gain access by using one of the hundreds of computers located in the university's many InfoLabs.

Currently, students register for the course through the regular registration process.

The course is designed to take advantage of the user-friendly quality of Netscape, Banfield says. For example, the menu page links to outlines for all the lectures. Within each lecture, highlighted key ideas and words provide links to hundreds of full-color images, diagrams, movies and other sites on campus and around the world. Clicking on the highlighted words opens this rich lode of material that expands on concepts presented in lectures.

The course also contains click-on arrows that link students to a glossary of terms, a quick-reference mineral guide that Banfield refers to as "supplementary reference book," and a keyword index. The index is similar to a textbook index, Banfield says, but it has the added advantage of being able to link the student directly to the desired information within a lecture.

In fact, the content and organization of material is intended to eliminate the need for a textbook, she says.

The course also includes on-line testing. There are four multiple-choice self-tests that students can take any time (and receive a score), just to let them know how they are doing. Whenever they select an incorrect answer, the program takes them directly into the lecture notes to explain the correct answer. Actual exams also are included on-line.

"This is a prototype course for the campus," says Banfield. "It really brings a tremendous body of knowledge together at one site — our site here at the university."

For more information, contact geology and geophysics, 262-8960, or Banfield (262-0915, e-mail jill@geology.wisc.edu).

DIAL

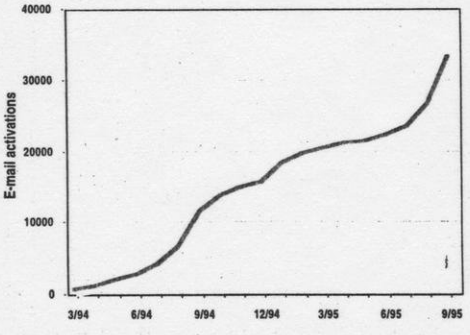
from page 1

connections are made. The total number of dial customers is more than 12,000, and the peak periods are between 5 p.m. and midnight.

Just how great is the demand for WiscWorld?

- The busiest mail day on record was Wednesday, Sept. 13, when 72,267 e-mail messages were processed by the DoIT mail server.
- In September, the dial pool averaged 18,000-19,000 successful calls per day.
- In the first three weeks of this semester, there were 20 percent more e-mail/dial-in activations than during the same period last year and more than the entire spring '95 semester.
- This semester more than 8.3 million e-mail messages will be sent, more than twice as many as last fall.
- From Sept. 1-14, 23,729 users checked mail, roughly the number of people with active accounts.
- Average number of dial-in users per month: 11,900
- Average length of a dial-in session: 18 minutes
- Average number of dial-in sessions per month: 336,727 (from August 1995)

In 1994-95 the modem pool handled more than 4 million calls.



By September, more than 32,000 UW e-mail accounts had been activated.

CONNECTIONS

Digital Nolen

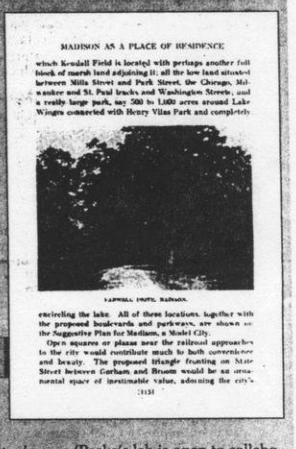
Deep in the catacombs of Memorial Library sits a small black object, a device that will neither blow up the Western world nor give us entrance to another galaxy, but will transform the preservation and use of aging documents.

In fact, the transformation has already begun. That black object is a Kodak DCS 420 digital camera purchased by the General Library System (GLS) earlier this year. It registers images on a chip instead of film, images that can be downloaded directly from the camera to a disk drive or other form of electronic storage.

The camera is part of the GLS collection preservation microimaging lab. The lab director is Sandy Paske, who is assisted by Steven Dast.

"We're setting up for the new wave of technology that will improve library access for the user," says Paske.

One example: In a project suggested by GLS Director Ken Frazier, the digital camera was used to copy a 1911 book by city planner John Nolen, *Madison: A Model City*. Only a few copies still exist in GLS, and several of them have maps and diagrams missing. The result? Access has had to be restricted.


MADISON AS A PLACE OF RESIDENCE

which Kendall Field is located with perhaps another full block of marsh land adjoining it; all the low land situated between Mills Street and Park Street, the Chicago, Milwaukee and St. Paul tracks and Washington Street, and a really large park, say 500 to 1,000 acres around Lake Wingra connected with Henry Vilas Park and completely

encircling the lake. All of these locations, together with the proposed boulevards and parkways, are shown on the Suggestive Plan for Madison, a Model City.

Open squares or plazas near the railroad approaches to the city would contribute much to both convenience and beauty. The proposed triangle fronting on Main Street between Gorham and Broom would be an ornamental space of inestimable value, adorning the city's

A digitized page from Nolen's 1911 book.

But no more. Simply surf the World Wide Web (http://www.library.wisc.edu/etext/ModelCity/ModelCity.html), and there's the Nolen book in all its cartographic and diagrammatic glory.

It's also available in CD form available through the microimaging lab for purchase or checkout. "The CD form retains the book as an artifact," says Paske. "You can see the pages and format of the original book."

But what about good-old microfilm? "The question of what kinds of materials are more suitable for microfilming or for digitizing is still being debated," says Lou Pitschmann, associate GLS director for collection development and preservation.

But a few things are clear. Microfilm color is not stable over time, so it's black-and-white or nothing. That means color legends on old maps are hard to decipher, for example. "And microfilm doesn't do well with halftone photos in newspapers," says Dast.

Then there's the matter of searching speed, and on that score, digitizing is warp-speed faster than microfilm. You can do a key-word search in a digitized document and zip right to the spot, compared to plodding, page by page, through microfilm.

And what about photocopying? "Almost everything we work with in preservation is brittle," says Pitschmann. "There are some books that would be destroyed if they went to the copier one more time."

The digital camera doesn't stress materials as photocopying does because the spine doesn't have to be splayed as wide. For that reason the microimaging lab is now digitizing old musical scores from Mills Library for kinder, gentler copying in the future.

"We also are digitizing large prints from the Elvehjem Museum," says Paske. "That way the prints don't have to come in contact with a glass surface."

(Paske's lab is open to collaborating with other programs on campus; call her at 262-2332.)

In short, digitizing is good for the user and good for the preserver. And it helps you think big, says Pitschmann: "For instance, you could digitize John Nolen's papers, now in different locations across the U.S., and create a virtual collection."

So that small black object in Memorial Library may let us slip into another galaxy after all: virtual information that can make the real seem earthbound.

—Jeff Iseminger

Kodak partnership

UW-Madison and Eastman Kodak Company have announced a partnership testing a mix of Kodak's computer imaging equipment and programs.

The partnership involves projects from across the university:

- University Publications will create a digital version of the undergraduate viewbook and related materials, increasing the university's presence on the Internet and opening new avenues of communication with potential students. It will also

see DIGITAL, page 9

1•8•4•8

NEWS

Geology + Geophysics, Dept. of

UNIVERSITY OF WISCONSIN–MADISON

Phone: 608/262–3571
Fax: 608/262–2331

News & Information Service
19 Bascom Hall • 500 Lincoln Drive
Madison, Wisconsin 53706–1380

FOR IMMEDIATE RELEASE 6/28/93

CONTACT: Carol Strmiska, (608) 262-1122

CONFERENCE PARTICIPANTS 'ROCK ON'

MADISON — The University of Wisconsin-Madison is host to 400 registrants for the 34th U.S. Symposium on Rock Mechanics, through June 30 at the Wisconsin Center. Fifty percent of the presentations are by conferees from more than 20 foreign countries, including Germany, Norway, Italy, Australia, England, China, Taiwan and Singapore.

The conference them is, "Rock Mechanics in the 1990s," and includes sessions on tunneling, geophysical properties of rocks, hydraulic fracturing for enhanced oil recover, building stones, and the Yucca Mountain Project for high-level nuclear waste disposal. A special banquet dinner speech on the preservation of the great pyramids of Egypt will be given by C. Tanimoto of Kyoto University.

The conference is sponsored by the U.S. National Committee for Rock Mechanics. The local organizing committee is chaired by Bezalel C. Haimson, chair of the UW-Madison Geological Engineering Program.

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Taking the Earth's pulse

Meyer was at home around the world

WI.Week 1/24/90

By Terry Devitt

It was just a small obituary, tucked away in the back pages of the paper with the dozen other death notices of the day.

In the abbreviated way of all newspapers, the obituary told the story of Hans Michael Meyer, 31, a young man whose life reached from Madison to the ends of the world.

As an instrumentation specialist for UW-Madison's department of geology and geophysics, Meyer traveled the world—usually with tons of equipment in tow—to take the pulse of the earth.

From the Peruvian rain forests to the Russian steppes, Meyer helped probe the secrets of the earth to learn about earthquakes and volcanoes, and to see, literally, how the earth is put together.

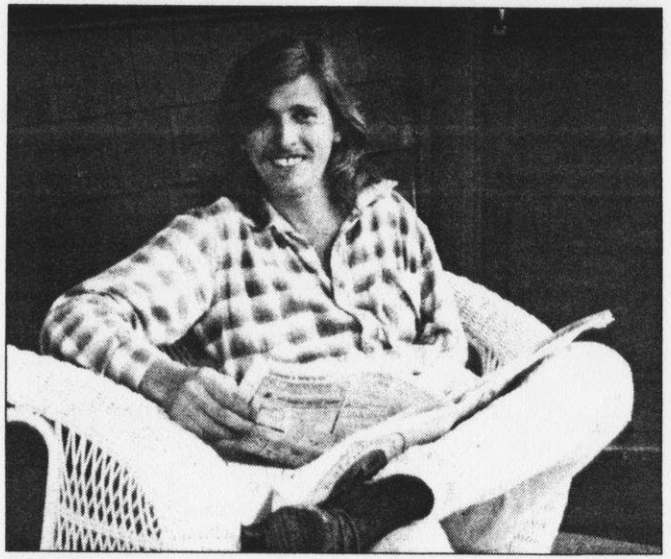
It was a job, said his father, Robert, a UW-Madison professor of geophysics, that entailed many things. And Hans, who was as good with a wrench or a computer as he was with people, was the perfect fit.

"He was invaluable because he'd been in on expeditions ever since he was a kid," Robert Meyer said. "He had a marvelous ability to make things work, whether it was an automobile or a seismograph."

To make field experiments work, you also need to enlist the help of the local farmer, rancher, tribal chief or dictator, Robert said. Hans, he said, was at his best "sipping tea in a dung hut or, if necessary, drinking blood with a Masai. Not everybody does that very well."

With a disabled arm, the artifact of an encounter with a car 17 years ago, Hans immersed himself in the very physical job of field geophysics.

On his own, he buried seismographs, repaired broken research vehicles, and performed the countless mechanical and electronic tasks needed to keep very delicate machines operating in harsh environments.



Hans Meyer

'(Hans) had a marvelous ability to make things work, whether it was an automobile or a seismograph.'

—Robert Meyer

"He was one of the best there was," said Paul Silver, a staff scientist with the Carnegie Institution of Washington. "For most people, this kind of work requires two arms and a little bit of luck. He absolutely amazed me."

In 1988, Hans and his father parked their seismographs—devices able to detect and record vibrations from deep within the earth—near a Soviet test site to take the West's first close-up look at a Russian underground nuclear blast.

From his recordings in the Soviet Union, Hans was able to show that the seismic waves from the nuclear blasts were amplified in some places by the features of the earth.

This finding was important because the amplification could result in the overestimation of bomb size, a circumstance best avoided in a world where superpower relations sometimes depend on the numbers recorded by a machine.

Hans' work took him to Peru where he recorded earthquakes east of the Andes and to Sicily where he measured the rumblings of volcanic Mount Etna.

He liked to travel alone, said Robert Meyer, not because he liked to be alone, but because it was the best way to make new friends.

"This was the way he liked to live. He knew his way around and the people who knew him would seek him out as a traveling companion, whether it be to Zurich or Athens or Istanbul."

Hans played as hard as he worked, his father added: "Sport to him was going over a waterfall in a canoe. He was a good swimmer and on canoe trips he always took it upon himself to see that everyone got dunked."

The last chapter in Hans Meyer's life was written Oct. 9. That night, on a dark, rainy road in Kenya's Rift Valley, the truck he was riding in slipped in the mud and rolled, killing him and injuring the driver and another passenger.

He was in Africa doing what he did best: working alone, talking to the locals, tramping the countryside, paving the way for a field study of the Great Rift Valley.

It was a big job. Fourteen seismographs, each worth about $30,000, needed to be deployed across the African landscape, and proper placement and security were essential.

"It can take a day to find a place to put one of these machines," said Bill Unger, a UW-Madison geologist who worked with Hans.

"It isn't cookbook by any means," said Unger. "You have to have a sense of the land. You need places that don't have a lot of seismic noise from roads, railroads or hydroelectric dams. That's what he was looking for when he was killed."

Although intense and a perfectionist, Hans was also habitually late.

"He just always made planes by the skin of his teeth," said Robert Meyer. "He used to kid that he would be late for his own funeral and he was."

The service at Madison's Unitarian Meeting House was packed and people from as far away as Australia were there.

But it was held before Hans Meyer got home.

Memorial Fund

A fund has been established to reflect Hans Meyer's conviction that the role of professionals who support field research in the earth sciences be better recognized.

Contributions can be sent to the Hans Meyer Fund, c/o Bill Unger, Department of Geology and Geophysics, 1215 W. Dayton St., Madison, WI 53706.

The fund will be administered through the UW-Madison, the Carnegie Institution of Washington, or the American Geophysical Union.

UNIVERSITY OF WISCONSIN—MADISON

Department of Geology and Geophysics

Lewis G. Weeks Hall
1215 W. Dayton Street
Madison, Wisconsin 53706

Museum Office: 608 262-2399
Tour Information: 608 262-1412

January 1988

Geology & Geophysics Dept

Annual Report for 1987

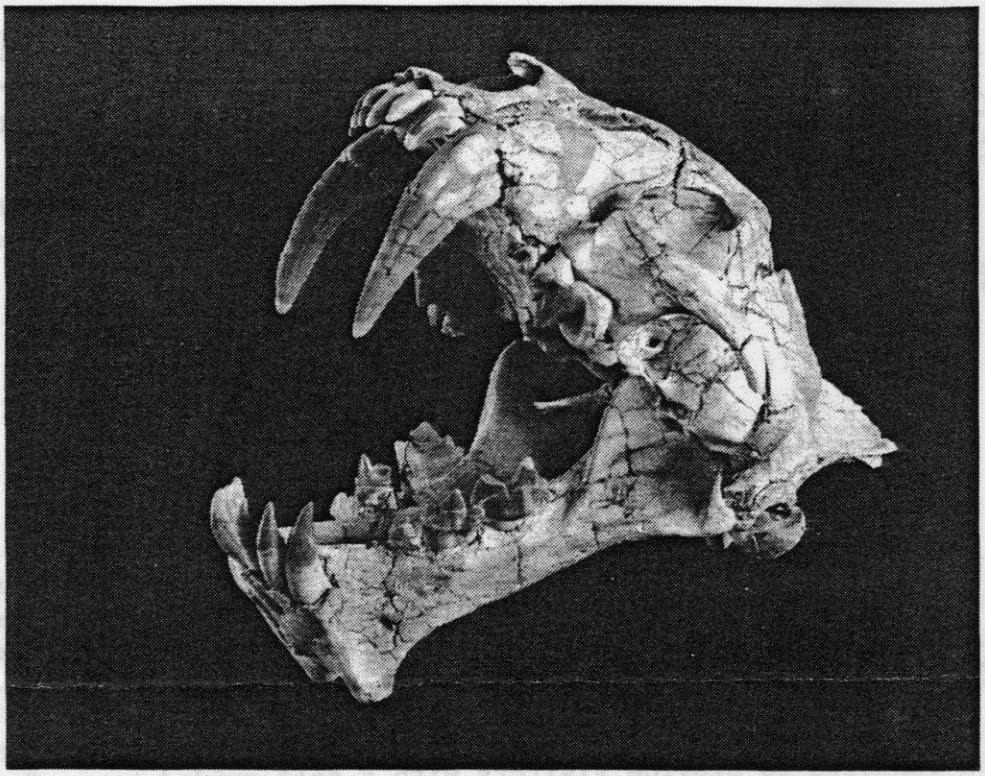
1987 has been a very successful year for the museum, as over 10,000 visitors came to see our growing displays of minerals, rocks, fossils, the globe, and the cave. Our educational program provided 228 guided tours, compared to 148 in 1986.

One of the museum's major projects was a complete redesign of the mineral exhibits to provide visitors with a self-guided tour of the displays. The new design was planned and set up by Emily CoBabe, assisted by several volunteers.

The walk-through model of a Wisconsin limestone cave is nearing completion, with sound effects that will make the cave seem even more realistic. This project is being supported by the Friends of the Geology Museum. A new exhibit on the groundwater resources of Wisconsin will soon be constructed with funding obtained by Mary Anderson, Professor of hydrogeology with the Department of Geology & Geophysics, from the Knapp Bequest, the U.W. - Madison Natural History Museum Council, and corporate support from Levine-Fricke, Hydro-Search, Inc., RMT, Inc., and Warzyn Engineering. The exhibit will feature displays describing the source of Madison's drinking water and pollution problems caused by human activities.

The Field Museum of Natural History in Chicago contributed on extended loan a 320-lb iron meteorite found at the meteorite crater near Holbrook, Arizona. The Friends of the Geology Museum provided a 40 x 30-inch color print of the famous crater to complement the exhibit (see picture).

The 320-lb Meteorite



The Saber-Toothed Cat Skull

In 1982, Goldie Jurisch of Rapid City, South Dakota, donated a partially preserved saber-toothed cat skeleton discovered by her late husband Clarence in the Badlands of South Dakota many years ago. Thanks to the skill and patience of Joseph Skulan, most of the bones have now been freed from the rock matrix, and the skull with its impressive saber teeth has been completely restored (see picture). We anticipate that the skeleton will be ready for display at the Open House in April, 1988.

The exhibit of algal stromatolites was expanded with a spectacular specimen from the Precambrian conglomerates of Upper Michigan, donated by Daniel Viegut, Madison, and a 48 x 30-inch color print of modern-day stromatolites at Sharks Bay, Australia, contributed by the Friends of the Geology Museum.

An extensive fossil collection was received from Rober Reyer of Madison. Gerald Gunderson of Middleton contributed a large number of fossils from the Cambrian deposits of Wisconsin, that Nigel Hughes, a graduate student at the University of Bristol, England will use for a thesis on trilobites. Errol D. Sehnke of Superior donated several excellent specimens of bauxite and associated minerals from various parts of the world. The Field Museum of Natural History transferred to our collections some 3,000 micromount mineral specimens from the renowned George L. English collection. Some of the tiny samples are being used here in a research project. Our collection of historic geologic instruments was augmented by the donation of two antique seismographs from the Wisconsin State Department of Transportation.

Our outreach activities included the museum's annual Open House, which was co-sponsored by the Friends of the Geology Museum and attracted about 1,000 visitors of all ages. Lectures on caves and meteorites and the ever-popular "Free Rock Pile for the Kids" highlighted the event. Many of the attractive rock specimens for the rock pile were generously contributed by Burnie's Rock Shop, Madison. In the fall, the museum hosted members of the Bascom Hill Society, the honorary society of U.W. - Madison's most generous contributors, as part of their annual meeting. The museum also participated in mineral shows in Monroe and Madison with exhibits and slide programs.

Naturally, the museum still has plenty of room for improvement. Among the more pressing needs is funding for the reconstruction of the dinosaur skeleton excavated by the Director with several teams of students and volunteers in the summers of 1983-1985. We are being assisted in our fundraising efforts by Jon Helminiak of the U.W. Foundation and the Friends of the Geology Museum. An article featuring the expeditions appeared in the spring edition of the College of Letters and Science's "L & S Magazine."

The gradually-widening scope of the museum, the growth of the collections, and the increase in programs and activities are hampered by the lack of an assistant position for the museum. We hope that a resolution of this pressing need can soon be found.

On the whole, the museum had another outstanding year. Much of the success must be attributed to the generous efforts of many volunteers who offered a helping hand when needed; a sincere thank you to all of these wonderful people.

THE SUPPORTING CAST

The Geology Museum is grateful to the following individuals for their support:

Emily CoBabe*, student aide, museum educator and tour coordinator;
Patrick Druckenmiller, student aide, assists in the museum's daily operation and the cave project;
Jon Christians*, part-time aide who took care of the museum in early summer;
Kathy Verhage, tour coordinator;
Joseph Skulan, Michelle David, volunteers, fossil preparators;
Lou Goodman, Mike Barden, Robert Pody, volunteers, in the process of completing the cave;
Beth Cook, artist, assisted with the cave project, currently helping with the design of the hydrogeology exhibit;
Martha Snyder, volunteer, works on improving the gemstone display;
Susan Smith, a department artist, produced display posters;
Dee Kruger, a department program assistant, edited museum publications;
The Tour Guides: Betsy Atkins, Amy Cheng, Emily CoBabe*, Eric Dott*, Peter DuBois*, Sarah Fowell*, Amy Haak, Kevin Kunkel, Rita Leary, Maureen Muldoon*, Paul McAleavy, Susan Smith, Martha Snyder, Gail Steinhart, Kathy Verhage;
and the Friends of the Geology Museum, Anne Bandow, President.

It was their support that made this past year so rewarding. Thank you very much!

Dr. Klaus W. Westphal
Director

*no longer with the museum

UNIVERSITY OF WISCONSIN—MADISON

Department of Geology and Geophysics

Program of Study

The department provides the opportunity for advanced study leading to the degrees of Master of Arts, Master of Science, and Doctor of Philosophy. Broad research interests and numerous fields of specialization among the members of the staff make formal course work and research opportunities available in all the major fields of the science. The graduate student is urged to acquire a strong foundation in geology or geophysics and in the supporting sciences before specializing. The course offerings in the department and in related departments within which integrated majors and minors may be taken permit considerable latitude in the direction of specialization. Field experience is emphasized as an integral part of the training. Opportunities exist to assist in the teaching and research programs and other scholarly activities of the department. It is expected that the candidate for an advanced degree will make original contributions and will complete a dissertation suitable for publication. Students are prepared for teaching and research in academic positions, for research work in state and federal surveys, and for research, development, and exploration in industry.

Research Facilities

Extensive laboratory, computer, and library facilities are available for advanced research in all important branches of the science. Departmental equipment and facilities include, for example, an electron microprobe, a scanning electron microscope, two mass spectrometers, and other specialized equipment. All laboratories are housed together in a new building, Lewis G. Weeks Hall. Close liaison with other departments on campus permits sharing of additional items of equipment. Research projects vary greatly in kind and are scattered geographically all over the world.

Financial Aid

Financial assistance for most graduate students is available through teaching and research assistantships, departmental and University fellowships, industrial fellowships, and governmental fellowships. Various private, University, and governmental loans are also available. Job opportunities exist for students and spouses.

Lewis G. Weeks Hall for Geological Sciences

(OVER)

Cost of Study Tuition and fees per academic year for those taking full residence credits in 1987-88 were $2486 for residents of Wisconsin and $7373 for nonresidents. Tuition is reduced with many awards. Tuition and fees may be raised in subsequent years.

Cost of Living Single students can expect to pay $1772 per academic year for dormitory rooms (no meal plan), and $190-$230 per person for shared apartments. The above amounts are based on 1987-88 rates.

Student Body Over 43,000 students are enrolled on the Madison campus, of whom about 9,200 are graduate students. The department has approximately 100 undergraduate majors (juniors and seniors) and 85-90 graduate students. They come from all parts of the United States and several foreign countries.

The Community Madison is the state capital and a major cultural center. The city with its adjoining suburbs extending into rolling farms and forests aggregates some 200,000 inhabitants. The attractive large campus occupies a series of wooded hills overlooking Lake Mendota, the largest of Madison's five lakes. Winter and summer recreation and sports are traditionally part of Wisconsin's vacationland. Swimming, boating, hiking, camping, skating, and skiing are part of campus life.

The University The character of the Madison campus today can be traced to progressive traditions, which have developed over the years—the close bond between faculty and students, the flexible policies and programs that respond to changing needs, the democratic environment, and the informal and friendly spirit. There is a strong tradition of academic freedom.

Applying The deadline for completed applications, including three letters of recommendation and GRE scores on all parts of the exam, is January 15. Applicants must have a bachelor's degree; an undergraduate major in geology or other sciences, such as physics, mathematics, chemistry, or biology; and an undergraduate grade point average of at least 3.00 (on a 4.00 basis).

Correspondence and information

Professor Charles W. Byers, Chairman
Department of Geology and Geophysics
University of Wisconsin
Weeks Hall, 1215 W. Dayton Street
Madison, Wisconsin 53706
Telephone: (608) 262-8960

THE FACULTY

M. P. Anderson, Ph.D., Stanford University. Hydrogeology.
J. M. Bahr, Ph.D., Stanford University. Hydrogeochemistry.
S. W. Bailey, Ph.D., Cambridge University. X-ray crystallography and structural mineralogy.
C. R. Bentley, Ph.D., Columbia University. Geophysics and glaciology, especially of polar regions.
C. J. Bowser, Ph.D., University of California. Geochemistry, marine chemistry and chemical sedimentology.
P. E. Brown, Ph.D., University of Michigan. Economic geology.
C. W. Byers, Ph.D., Yale University. Stratigraphy and paleoecology.
E. N. Cameron, Emeritus, Ph.D., Columbia University. Economic geology and ore microscopy.
D. L. Clark, Ph.D., University of Iowa. Micropaleontology and paleoceanography.
C. S. Clay, Ph.D., University of Wisconsin. Marine geophysics and wave propagation.
C. Craddock, Ph.D., Columbia University. Structural geology, tectonics.
R. H. Dott, Jr., Ph.D., Columbia University. Sedimentology and historical geology.
G. H. Dury, Emeritus, Ph.D., D. Sc., University of London. Geomorphology, paleoclimatology.
R. C. Emmons, Emeritus, Ph.D., University of Wisconsin. Petrology and optical crystallography.
R. M. Gates, Ph.D., University of Wisconsin. Mineralogy and igneous and metamorphic petrology.
D. H. Geary, Ph.D., Harvard University. Paleobiology, evolutionary theory.
E. D. Glover, Ph.D., University of Wisconsin. Carbonate diagenesis, Microbeam Analysis Laboratory.
S. Hammer, Emeritus, Ph.D., University of Minnesota. Exploration geophysics and physics of the earth.
C. M. Johnson, Ph.D., Stanford University. Igneous petrology and isotope geochemistry.
L. R. Laudon, Emeritus, Ph.D., University of Iowa. Stratigraphy and paleontology.
L. J. Maher, Ph.D., University of Minnesota. Palynology and Pleistocene geology.
L. G. Medaris, Jr., Ph.D., University of California. Igneous and metamorphic petrology, Precambrian geology.
R. P. Meyer, Ph.D., University of Wisconsin. Geophysics, seismology, and oceanography.
D. M. Mickelson, Chairman, Ph.D., Ohio State University. Pleistocene geology and geomorphology.
M. G. Mudrey, Jr., Ph.D., University of Minnesota. Regional geology of Lake Superior region; Antarctic.
M. E. Ostrom, Ph.D., University of Illinois. Stratigraphy. State Geologist.
L. C. Pray, Ph.D., California Institute of Technology. Carbonate sedimentology and stratigraphy.
J. S. Steinhart, Ph.D., University of Wisconsin. Geophysics; science and government.
J. W. Valley, Ph.D., University of Michigan. Metamorphic petrology and stable isotope geochemistry.
H. F. Wang, Ph.D., Massachusetts Institute of Technology. Geophysical properties of minerals and rocks.
K. Westphal, Ph.D., University of Tubingen. Invertebrate paleontology. Director, Geology Museum.

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 7/29/86

CONTACT: David Mickelson (608) 262-7863

GEOLOGY STUDENTS STUDY GLACIERS CLOSE UP

By PETER ANNIN
University News Service

MADISON--A group of University of Wisconsin-Madison geology students traded their book bags and textbooks for hiking boots and sleeping bags this summer to take a class on glaciation. The equipment came in handy; the classroom was Glacier Bay National Park in Alaska.

The students, who returned from Alaska June 20, spent 10 days encamped on the rugged, rocky terrain near Burroughs Glacier, where they studied "what happens along the edge of a retreating glacier," according to expedition leader and UW-Madison geology department Chairman David Mickelson.

Ten graduate students and two members of the Wisconsin State Geological Survey accompanied Mickelson on the trip, which was designed to provide an opportunity for students studying Ice Age features of the Midwest to observe glaciation firsthand. Mickelson said students then will be able to use the information they have gathered about modern glaciers to interpret glacial deposits in this area.

That's just what some of the students who went on the trip are doing.

"We all go around Wisconsin and look at different glacial deposits, and just to be at a glacier and to see how the (more recent) deposits look was great," said 25-year-old geology graduate student Maureen Muldoon. "I had never been to a glacier before, and it's hard to look at local glacial

-more-

deposits and figure out what they are without ever having been to a glacier."

Muldoon's research project during the field trip was a study of the variations in bird species at different stages of deglaciation and at different stages of forest development.

Fellow geology student Janet Battista said the Burroughs Glacier area "is one of the few places where you can see what happens just as glaciers are leaving. You can see what kinds of deposits are laid down, what kinds of landscape is being created and what kinds of flora and fauna are developing."

Battista, 42, studied plant life in different stages of deglaciation as well as plant pollen deposits in lake sediments. The idea was to compare the fairly recent deposits in Alaska with their ancient counterparts in Wisconsin.

But beyond her research, Battista said the trip itself was a priceless experience. "I was fascinated by the area. It's an area that I never would have been able to get to without this trip."

Battista said getting into and out of the park was particularly enjoyable.

"The plane ride in was spectacular," she said. "We had a very nice view of a number of glaciers that we wouldn't have seen otherwise. On the boat ride out, we saw a lot of marine life like whales, porpoises and puffins."

Another project involved the study of the formation of eskers -- long horizontal ridges of surface deposits left behind by the glacier. Still another focused on the formation of soils at the foot of the melting ice.

The section of the national park where the group spent most of its time is an area of rapid glacial retreat, Mickelson said. The ice formation near the students' work site has retreated 50 miles since the late 1800s.

"If we had been where we were camped (about an hour's walk from the foot of the glacier) in 1900, there would have been 2,500 feet of ice above us," he said.

Burroughs Glacier, 10 miles long and a mile wide, is one of about 10 smaller ice masses remaining after the rapid melting of the last 100 years.

Graduate student Janet Heiny, 29, who spent two months in Glacier Bay National Park in 1981 while completing her master's degree, said she was amazed at the changes in the park's ice masses since her last trip. "The two glaciers I worked on before were completely different this time," she said.

Heiny, who spent most of her 1981 trip around Riggs and McBride glaciers, estimated that those ice masses had retreated more than a quarter mile in the past five years.

The students would have been hard-pressed to find a better deal through any travel agency: total expenses for the trip came to about $350 plus tuition.

The main reason the trip was so inexpensive, Mickelson said, was that the geology department paid for the students' round-trip plane tickets to Juneau with money from a special geology department fund made up of private donations from industry. The fund is used to help defray the costs for such important aspects of a student's work as field trips and special courses.

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-- Peter Annin (608) 262-2650

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone 608/262-3571

Release: Immediately 5/18/84

CONTACT: Louis J. Maher (608) 262-9595

ATLANTIC-RICHFIELD FOUNDATION HONORS FOUR UW-MADISON FACULTY MEMBERS

MADISON--The Atlantic-Richfield Foundation has awarded $25,000 to the University of Wisconsin-Madison department of geology and geophysics in recognition of the work of four young faculty members.

The national awards, for Mary P. Anderson, Charles W. Byers, David M. Mickelson and Herbert F. Wang, are presented annually to junior faculty members in the geological sciences. The prizes "recognize younger staff members who combine excellence in teaching, research and public service," said the chairman of the UW-Madison department, Louis J. Maher Jr.

Maher said the award includes a $5,000 stipend for each faculty member that can be used for salary supplements, equipment, summer stipends or travel.

"These awards are very important to the department, especially in a pay-freeze year," he said.

Atlantic-Richfield Foundation started the award program in 1981 to address a disparity between the pay of geologists and geophysicists in academia compared to industry. "The company wants to make academic careers more attractive so that dedicated young professors can remain in teaching to produce future generations of scientists and engineers," said Maher.

This was the third consecutive year the company selected UW-Madison faculty members for awards.

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-- Linda Weimer (608) 262-6843

uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 4/8/82 rlm

CONTACT: Klaus W. Westphal (608) 262-2399

GEOLOGY MUSEUM OPEN HOUSE SET FOR APRIL 17

MADISON--The University of Wisconsin-Madison department of geology and geophysics will hold a public open house for its new geology museum, from 1-4 p.m. on Saturday, April 17.

The museum is located in Lewis G. Weeks Hall, 1215 W. Dayton St. It features a six-foot diameter globe and a two-and-one-half story stained glass window.

The open house will include two movies: "The Night of the Sun," a film about Wisconsin's Ice Age Reserve (1:15 and 2:45 p.m.); and "In the Beginning," a movie about the Grand Canyon and formation of the earth's crust (2 and 3:30 p.m.).

Museum staff members will be on hand to answer questions. There will be refreshments and a free rock pile for youngsters. Limited parking will be available at the UW-Madison heating plant (upper gate at Charter St.).

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Add one--news briefs

8/19/81

Geology 9/1

BUFFET PLANNED FOR HISPANIC-AMERICAN STUDENTS

A buffet dinner and reception for new Hispanic-American students will be held Wednesday (Aug. 26) from 7 to 9 p.m. in the Memorial Union.

Continuing Mexican-American and Puerto Rican students also are invited to the get-acquainted session, sponsored by the UW-Madison Office of New Student Services.

New students will be introduced to staff members and counselors who can assist them in registration. Further information is available from Patricia Villarreal, Latino services specialist, at (608) 263-3324.

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LATIN AMERICAN PUBLICATION APPOINTS JOURNALIST

Professor John T. McNelly, 134 Larkin St., of the UW-Madison School of Journalism and Mass Communication, has been named North American member of the International Editorial Board of Chasqui, a Latin American communication journal. It is published by the International Center for Advanced Studies in Communication for Latin America (CIESPAL), Quito, Ecuador.

- o -

CONTACT: Dave Michelson (608) 262-7863

GEOLOGY DEPARTMENT TO OFFER EVENING COURSE ON NATIONAL PARKS

An evening course on the geology of the national parks will be offered by the UW-Madison geology department this fall, the department announced.

Slides will be used to illustrate the lectures, which will be held Mondays from 7 to 10 p.m. in Room AB20, Weeks Hall. Persons wishing to take the course for no credit may register at the first session, Aug. 31. The fee is $54, but those persons over 62 can take the course at no charge if enrollments are not filled.

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uw news

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: 608/262-3571

Geology Geophysics

Release: Immediately 5/15/81 rtb

CONTACT: L. Gordon Medaris (608) 262-2708

SYMPOSIUM TO MARK GEOLOGY CENTENNIAL AND WEEKS HALL DEDICATION

MADISON--The University of Wisconsin-Madison's geology and geophysics department will host an international symposium Monday-Thursday (May 18-21) to formally mark the centennial of geological study at the University and the dedication of Lewis G. Weeks Hall, 1215 W. Dayton St., home of the department.

The symposium, which will feature 60 presentations, will focus on the Proterozoic period, considered one of the most critical in the evolution of the earth. The period, lasting from approximately 2,500 million years ago to 600 million years ago, has drawn increasing attention among geologists in recent years because it was during the Proterozoic, many say, that the earth was changing into its present state. The UW-Madison geology and geophysics department has been active in exploration of the Proterozoic geology of the Lake Superior region.

The department plans to publish two volumes from the symposium, including one on Proterozoic geology of the Lake Superior region.

The centennial celebration and building dedication will take place Monday from 3-5 p.m. in Room 20AB Weeks Hall. Speakers will be department faculty members David L. Clark, introduction; S.W. Bailey, history of geology at Wisconsin; Eugene N. Cameron, non-fuel mineral supplies for the rest of the 20th century, and John S. Steinhart, energy resource prospects for the 1980s.

A banquet will follow at 7 p.m. in Tripp Commons at the Memorial Union. The keynote address -- "Geology in the 1980s -- What are the Questions?" -- will be delivered by Dr. J.C. Maxwell, professor of geology at the University of Texas.

Weeks Hall was completed in 1980 at a total cost of $5.6 million, more than $3 million of which was contributed by the late geologist Lewis G. Weeks, a 1917 graduate of the department.

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From The University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 8/11/77 sg

CONTACT: Prof. Campbell Craddock (608) 262-1317
(Week of Aug. 22 - Tim Hushen, Wis. Center 263-3636)

ANTARCTIC GEOLOGISTS GATHER IN WISCONSIN

MADISON--A group of antarctic geologists from distant nations of the world will study the unique glacial and Precambrian geology of the Lake Superior area next week (Aug. 16-21) before taking part in an international symposium on antarctic geology at the University of Wisconsin-Madison.

"Our objective is to acquaint foreign geologists with the complex geological history of the Lake Superior region," said UW-Madison geology professor Campbell Craddock, who will lead the field trip. Participants will come from Australia, Belgium, East Germany, France, Japan, New Zealand, South Africa, the Soviet Union and the United States.

Iron deposits left in the Lake Superior area during the Precambrian Era are considered unique in the world. To see them, the scientists will visit the Republic iron mine and the Old Arcadian and White Pine copper mines.

The geologists plan a second one-day trip to the Baraboo area after the conference. They will see the classical Precambrian and Paleozoic geology of the Baraboo range.

On Aug. 22, the three dozen touring geologists will be in Madison where 250 participants will take part in the symposium at the Wisconsin Center, hosted by the National Academy of Sciences and organized by its Polar Research Board.

UW-Madison has been a major contributor to polar research for many years. Many geographic features of the antarctic region are named for UW faculty members and University geologists and graduate students have a long tradition of on-the-spot studies in Antarctica.

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N O T E

From: University of Wisconsin-Madison/University News Service
19 Bascom Hall, Madison, Wisconsin 53706 Telephone (608) 262-3571

EDITORS:

Sources for UW NEWS release, "ANTARCTIC GEOLOGISTS GATHER IN WISCONSIN" mailed 8/11/77, would like two names added as field trip co-leaders.

This can be done by inserting in Paragraph 2 after "...who will lead the field trip" this addition: "along with Michael G. Mudrey Jr. and William W. Montgomery."

Sources also advise the trip to Lake Superior region will include visits to campuses of Michigan Technological University at Houghton and the University of Minnesota - Duluth.

Jack Newman
Editor-in-Chief
August 12, 1977

uw
news

From The University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 4/18/77 sb
19

GEOLOGY STUDENTS HEAD FOR UTAH SUMMMR CAMP

MADISON--Geology students at the University of Wisconsin-Madison join students and faculty from the Universities of Iowa and Minnesota yearly for a summer camp in Utah.

Some 25 UW seniors and graduate students spend six weeks learning by seeing and doing. They are housed at a ski lodge near Park City, Utah.

R. H. Dott Jr., chairman of the geology and geophysics department, said UW-Madison joined the program four years ago.

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feature story

From the University of Wisconsin-Madison / News Service, Bascom Hall, 500 Lincoln Drive, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 3/31/77 sb

CONTACT: Meredith E. Ostrom (608) 262-1705
David M. Mickelson (608) 262-8763

GEOLOGISTS SCOUT WISCONSIN ROCKS FOR NEW SUMMER COURSE

MADISON--"Pet" rocks in Wisconsin will audition for a new geology course being planned for the University of Wisconsin System.

Four geologists from UW campuses will be scouring the Wisconsin countryside for perfect rock outcrops to include in the three-week course in 1978. Their major obstacle won't be finding the rocks but deciding which ones to include.

One of the geologists, Meredith E. Ostrom, state geologist and professor of geology at UW-Madison and UW-Extension, has at least 40 places he'd like to visit in the first week. That may be as many stops as the class would make in the entire course.

Wisconsin is fortunate in having many different rock formations in close proximity, the geologists explain. Some of the oldest rocks in North America dating back over three billion years to the Precambrian era can be examined near Wausau, and farther north near Hurley and Ashland. The Baraboo bluffs were formed during the middle Precambrian.

Another area of interest is the kettle moraine region in eastern Wisconsin with its glacial features formed about 15,000 years ago. This area is contrasted by the southwestern part of the state which was missed by the glacial advances. The deep valleys and steep slopes of the driftless area, as it is called, show what much of the upper Midwest looked like before the glaciers came.

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Add one--geology

This is the first geology course designed for the entire UW System. Students from any UW campus will be able to register for the course which will be given during the three-week Intersession in June, 1978. Three base camps will be used for the class. Each year faculty positions for the course will rotate from campus to campus.

Soils, conservation, landforms, and other elements of the Wisconsin landscape will be studied. Related topics such as mining and erosion problems also will be discussed. The course will be designed for anyone who wants to discover what's under his feet, says Ostrom.

The leader of the field course is Prof. Gene L. LaBerge, UW-Oshkosh. Profs. Paul Myers, UW-Eau Claire, David M. Mickelson, UW-Madison, and Ostrom complete the team. The course is funded by a UW System undergraduate teaching improvement grant.

Much of the groundwork this summer will be writing a guidebook and developing relations with local land owners.

These rocks are priceless learning tools to geologists but few land owners treasure them. On the contrary, says Mickelson, rock outcrops probably lower property value of the land for farming or building purposes.

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uw news

From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone (608) 262-3571

Release: Immediately 8/31/76 jb

CONTACT: Prof. Charles R. Bentley (608) 262-1922

TRIPS TO SOUTH POLE AREA TO BE PLANNED BY ANTARCTIC COUNCIL

MADISON--The University of Wisconsin-Madison will be host to representatives of five nations, meeting here Sept. 7-9 as the scientific council for the International Antarctic Glacialogical Project.

Meeting in the United States for the first time, the council is a cooperative venture of scientists in Australia, France, Russia, the United Kingdom, and the U.S. They will plan and coordinate studies of a section of the east Antarctic ice sheet. An advisory group for expeditions, the council reviews previous exploratory trips to the South Pole continent and outlines plan for the new season beginning in November.

Sessions, to be held in the Wisconsin Center and Van Hise Hall, are being coordinated by UW-Madison geophysics Prof. Charles R. Bentley, U.S. scientific representative to the council.

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uw news

From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone (608) 262-3571

Release: Immediately 8/27/76 kec

ACHTUNG! GEOLOGY CLASS TO BE TAUGHT IN GERMAN LANGUAGE

MADISON--Geogerm? Was ist das?

It is a geology class which will be taught in German this fall at the University of Wisconsin-Madison.

If you have had four semesters of college German or the equivalent, you qualify to register for this introductory course in geology which will be taught by Prof. Klaus Westphal, curator of the UW-Madison Geology Museum.

The lectures, discussion, textbook and exams for this course, titled "Das Leben der Vergangenheit--Life of the Past," will be in German and are designed primarily for non-science majors.

Geogerm was designed in a similar vein to its biological science counterpart, "Biogerm," offered last year to a successful average attendance of 80. The purpose is to develop and maintain functional skills in a second language.

The three-credit course is available for either German or geology credit and will be held from 4 to 5:15 p.m. Tuesdays and Thursdays beginning Sept. 7.

Other sections of the course are available with English instruction.

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feature story

TEMPORARY NEWS SERVICE LOCATION:
115 Science Hall
550 North Park Street
From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Geology Dept.

Release: Immediately 9/19/75 r1

MADISON--If being the first woman in an all-male department makes Prof. Mary P. Anderson nervous, it doesn't show.

Her manner is confident, relaxed, and she seems very much at ease in her new job.

Anderson, an assistant professor, is the first woman with professorial status on the geology department faculty at the University of Wisconsin-Madison. And she is one of only a handful of woman hydrogeologists in the country.

She doesn't worry about the implications of discrimination or "reverse discrimination" in her career.

"I have a strong motivation to do well, and I think that has carried me through more than anything else," she says.

Anderson, a native of Buffalo, N.Y., did her undergraduate work at the State University of New York there. She received a Ph.D. from Stanford and became an adjunct professor at Long Island University.

Her goals at UW-Madison include strengthening the teaching of mathematical hydrogeology, the branch of geology concerned with subsurface water. She hopes to use mathematical and computer models in the classroom and in research in this field.

"The willingness of people in other departments and state agencies to participate in joint research projects has been very encouraging," she says. Ground water is an important area of study in Wisconsin because it supplies nearly half our drinking supplies.

- more -

University teaching is a demanding job, Anderson contends. "It's really three-fold. You prepare lectures, spend time with students on their projects, and do your own research."

Aside from her work, she enjoys the opera and reading biographies.

Her husband, Charles, became a research associate this fall for the chemistry department and School of Pharmacy.

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feature story

From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Release: Immediately 5/15/75 r1

UW-MADISON WOMAN GRADUATE A PETROLEUM EXPLORATION GEOLOGIST

MADISON, Wis.--Mary L. Van Der Loop, who receives a B.S. degree in geology Saturday from the University of Wisconsin-Madison, will begin work this September as a petroleum exploration geologist for Texaco.

Ms. Van Der Loop will work in Midland, Tex., at a salary of $14,500 a year. She plans to do graduate work under the company's tuition aid plan.

"I was shocked because I'm getting a job with a bachelor's degree that two years ago someone with a master's would have had trouble getting," said the 23-year-old senior from Bruce, Wis.

"I know part of the reason they hired me was because I'm a woman."

Ms. Van Der Loop is one of the few undergraduate geology students who take industry jobs right after graduation. But the job market for those with advanced degrees is excellent, according to Prof. Robert H. Dott, chairman of the geology and geophysics department at the UW-Madison.

A master's degree student starts at $16-17,000, a Ph.D. student, $18-19,000 in industry jobs, Dott said.

"I think all those with advanced degrees who wanted jobs got them," he said.

At least seven UW-Madison geology graduates have taken industry jobs, and two have taken teaching positions.

The market for summer jobs is also good for geology students. Although many spend the summer on field trips or other academic work, those UW-Madison students who wanted summer jobs have found them, according to Geology Prof. Lloyd C. Pray.

- more -

Add one--geology jobs

A typical summer job for a geology student pays about $900 s month, plus expenses, if field work is done, Pray said. Exxon, Getty, Mobil, and Atlantic-Richfield are among the companies employing UW-Madison students this summer.

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news

From the University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: 608/262-3571

Release: Immediately

5/2/75 klp/rl

NEWS BRIEFS FROM THE MADISON CAMPUS

MADISON--Three sequences of the University of Wisconsin-Madison's School of Journalism and Mass Communication have been reaccredited by the American Council on Education for Journalism (ACEJ).

The sequences are News-Editorial, Radio-Television News and Public Relations.

Harold L. Nelson, director of the school, added that because of staff losses in the Advertising sequence and lack of money to replace the teachers, re-accreditation of that sequence will not be sought in the immediate future. Several advertising courses will continue to be taught, however.

- o -

MADISON--The first woman professor in the geology department at the University of Wisconsin-Madison will begin her duties this fall.

Mary P. Anderson, who received a Ph.D. from Stanford University in 1973, will be an assistant professor of hydrology.

She has been an adjunct assistant professor at Long Island University, and a visiting lecturer at the State University of New York-Stony Brook.

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uw news

From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Geology & Geophysics Dept.

Release: Immediately 11/18/74 jh

GEOLOGY, GEOPHYSICS GRADS GET TOP DOLLAR AS OIL COMPANIES RECRUIT HEAVILY AT UW

MADISON--As the pursuit after oil continues, a new search is beginning for geologists and geophysicists who know where to find that oil.

The energy crisis has prompted ten company recruiters to come to the University of Wisconsin-Madison campus so far this semester for geology and geophysics students, according to Robert H. Dott, jr., chairman of the department of geology and geophysics.

"Specialized oil exploration outfits are stealing experienced geologists from the large oil companies in droves. This depletes the oil companies' staffs, so they're searching for new replacements. This makes the geology-geophysics area a much more favorable market for students to shop in," Dott said.

He noted the U.S. Geological Survey was on campus this semester for the first time in ten years to recruit students for its expanding coal and petroleum studies.

Not only have more companies sent recuiters this year, but those recruiters are offering more jobs than in previous years.

"A typical large company three years ago might have been looking for ten new geologists from the whole country. This year, that same company is looking for anywhere from 60 to 90 new geologists," Dott said.

Michael O'Day, recruiter for the Gulf Oil Corp., said geology openings are "quite great" in his corporation, noting that he is looking for about 10 persons with Ph.Ds in geology and geophysics, and 15 to 20 persons with master's degrees. However, he said Gulf is not bound by a strict quota and may surpass this quota if it finds more qualified individuals.

- more -

Salaries for geologists and geophysicists are roughly in the $15,000-$16,000 range for persons with master's degrees, and $19,500 for persons with Ph.Ds. Both O'Day and Dott agreed that few companies will hire a person who has only a bachelor's degree.

Dott added that job prospects are particularly favorable for sedimentary geologists, who explore oil sources on land, and for geophysicists, who explore oil sources underwater.

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news

From the University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: 608/262-3571

Release: Immediately 10/11/74 jh

GEOLOGIST LEWIS G. WEEKS TO DELIVER DEDICATION ADDRESS AT WEEKS HALL FOR GEOLOGICAL SCIENCES FRIDAY

MADISON--Noted geologist Lewis G. Weeks will speak at the dedication of the Lewis G. Weeks Hall for Geological Sciences, 1215 W. Dayton st., Friday, Oct. 18, at the University of Wisconsin-Madison.

At a dedication ceremony from 10:30 a.m.-noon in room 430 Weeks Hall, Madison Chancellor Edwin Young will unveil a portrait-painting done of Weeks by New York artist, Fabian Bachrach. A public open house will be held the following day, Saturday, from 8:30 a.m.-noon.

Weeks, a 1917 UW graduate, donated $2.5 million for the building, the largest individual gift in UW history. Following postgraduate work at Cornell University, Weeks made major oil discoveries in Canada, South America, Europe, and Australia. He "retired" in 1958 by opening his own oil consulting business in Westport, Conn.

Weeks Hall, which opened at the beginning of the fall semester, brings together for the first time under one roof the entire department of geology and geophysics. Heretofore, the department was split between five separate campus locations.

Weeks Hall contains 15 new laboratories including facilities for geophysical X-ray, sedimentology, marine sediments, and geochemistry research. Besides a new geophysics computing area, UW students for the first time will be able to work in a seismograph recording room, according to Prof. Robert H. Dott jr., department chairman.

Add one--weeks hall

"Weeks Hall will allow us to produce faculty and graduate research we couldn't do before because of lack of facilities," Dott said.

He noted Weeks Hall also contains a large garage area for the preparation and staging of geophysical field expeditions.

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Release: Immediately 1/23/74 meb/jb/bb/ml

NEWS BRIEFS FROM THE MADISON CAMPUS

MADISON--The Native American Organization, Wunk-Sheek (Human Being), at the University of Wisconsin-Madison has planned a week of activities Jan. 28-Feb. 3 to focus attention on American Indian culture.

Invited speakers and native Americans from the Madison campus will appear at workshops and seminars about Wounded Knee, tribal sovereignty, and the Menominee Indians of Wisconsin, Indian history, and Indian dealings with the white society.

Among the special speakers are Russell Nelson and David Wrone, co-authors of "Who is the Savage," and Mark Lane, attorney for the Wounded Knee Defense.

Information is available by calling 263-3324.

- o -

MADISON--John A. Murphy, authority on Irish history, will speak on the Madison campus of the University of Wisconsin Feb. 14.

He will discuss "The Northern Ireland Troubles: Southern Attitudes" in Room 3650 Humanities Building at 4 p.m. The public is invited.

Prof. Murphy has held the Chair of Irish History at University College, Cork, Ireland, since 1971. He has served as head of the college's Irish history department and as editor of the Journal of the Cork Historical and Archaeological Society. He will assume new duties as visiting professor of history at Loyola University, Chicago, Feb. 1.

- o -

- more -

Add one--news briefs

Geology Dept.

MADISON--The University of Wisconsin-Madison geology department has been given a $1,000 scholarship award.

The award was presented by D. L. Gasser, president of a Lake Delton construction company.

- o -

MADISON--The University of Wisconsin-Madison pharmacy department will sponsor a seminar titled "Quality and Cost Factors in the Production of Drugs" Wednesday (Jan. 30) at 3:30 p.m. in Room 3124 Pharmacy Building.

Dr. C. C. Christman of the Polaroid Corp., Cambridge, Mass., will be the speaker.

- o -

MADISON--A lecture on "Schizophrenia: Its Causes and Preventions" will be presented Friday (Jan. 25) at 4 p.m. by Dr. Fini Schulsinger in 105 Psychology Building on the University of Wisconsin-Madison campus.

A specialist in psychology and genetics, Dr. Schulsinger has conducted research concerning the genetic influences on schizophrenia. He is co-director of the Psychological Clinic of the Community Hospital in Copenhagen, Denmark.

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From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Geology Dept.

Release: Immediately 8/22/73 bb/ksg

NEWS BRIEFS FROM THE MADISON CAMPUS

MADISON--Prof. Eugene N. Cameron, Charles R. Van Hise professor of geology at the University of Wisconsin-Madison, has been named to the United States Commission on Geology.

The commission is composed of 18 scientists who represent the U.S. in international geology matters.

Cameron's appointment was made by the Secretary of the Interior and the president of the National Academy of Sciences. He is the first professor from the University of Wisconsin-Madison to hold a position on the commission.

- o -

MADISON--In cooperation with the State Department of Administration, the University of Wisconsin-Madison is offering a course meeting in the State Office Building to deal with social welfare questions, with emphasis on income maintenance and poverty programs.

Social Work 477, "Social Legislation" will meet in Room 290 of the State Office Building at 4 p.m. Tuesdays and Thursdays beginning Aug. 28. Prof. W. Joseph Heffernan, social work, will be the instructor.

Enrollment forms are available at the State Training Center, Room 1120C, State Office Building. It may be taken for undergraduate or graduate credit. And enrollment as a special student or guest student is also possible.

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Geology dept

Release: Immediately 5/1/73 mcg

NEWS BRIEFS FROM THE MADISON CAMPUS

MADISON--Two experts on India at the University of Wisconsin-Madison have been voted post-doctoral grants by the American Council of Learned Societies to further their research on South Asia.

Prof. Robert Frykenberg of the history and Indian studies departments will investigate social conflict and political stability in South India from 1795 to 1865.

Prof. Manindra K. Verma, Indian studies department, will study the status of Nepali as a modern Indo-Aryan language.

They are among 12 scholars from 10 universities awarded the grants, sponsored by ACLS and the Social Science Research Council and subsidized by the Ford Foundation.

Prof. Frykenberg, who was born in South India of American missionary parents, has been chairman of Indian studies since 1970. His published works include a book on subversion in South India in the 19th century, and numerous articles. He has held several grants, including the Guggenheim, to study in South India.

Prof. Verma is a native of India who earned the Wisconsin Ph.D. in linguistics in 1966. He has charge of his department's courses in Nepali and teaches Hindi-Urdu, Indo-Aryan linguistics, and topics in Indian linguistics.

- o -

MADISON--Some 250 geologists from Illinois, Michigan, Minnesota, Ontario and Wisconsin will meet Thursday and Friday, May 3-4, at Madison's Sheraton Inn.

The Institute on Lake Superior Geology will hear Van Hise Prof. Eugene Cameron of the University of Wisconsin-Madison address a Thursday evening banquet. He will discuss future prospects for U.S. mineral resources.

Prof. J. Campbell Craddock will serve as program chairman.

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From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Geology Dept of

Release:

Immediately 2/21/72 wf

MADISON--A new course in environmental geology is being offered this semester by the University of Wisconsin-Madison geology geophysics department.

"The objectives of the course are to define and discuss earth characteristics and processes; the reaction of the earth to present patterns of resource development; resource supply and demand with a view of alternative resource development patterns; the problems involved in using the earth's resources and waste disposal; and the relations between man and his geologic habitat," Dr. Lon C. Ruedisili, course coordinator, said.

The course will present these issues in lectures by various professors from the department, Law School, departments of geography, landscape architecture, and urban and regional planning, and from government agencies and private industry.

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uw news

From The University of Wisconsin-Madison / University News and Publications Service, Bascom Hall, Madison 53706 / Telephone: (608) 262-3571

Geology Dept

Release: Immediately 2/18/72 jb

MADISON--The public is invited to attend a free audio-visual concert on the natural environment on the Madison campus of the University of Wisconsin Tuesday.

"Suzanne's Lament" will be presented at 3:30 p.m., 7:30 p.m., and 8:30 p.m. in 3650 Humanities Building.

The program consist of slides shown simultaneously by two projectors and collated with a soundtrack of songs and voices. It incorporates a modern concern (environmental preservation), modern techniques (multimedia units), and contemporary music.

The sponsoring groups are the Geology Club, Water Resources Management Program, the environmental resources unit of University Extension, and Dr. Lon C. Ruedisili and his environmental geology class.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geophysics

Release: Immediately 2/12/71 vh

(WITH L.A. QUAKE)

MADISON--Scientists can already predict where earthquakes are likely to happen, a University of Wisconsin geophysicist points out, and someday, by special means, they may be able to prevent their happening.

In view of the natural disaster that hit Los Angeles this week, Prof. Sigmund Hammer was zeroing in on earthquakes in his Thursday lecture. His course is patterned especially for non-science students to give them a basic knowledge of the earth and truths about it as revealed by geophysics.

One approach to actually preventing large-scale earthquakes has been suggested by circumstances occurring in Colorado several years ago, Hammer said. In the Denver area a large ordnance plant had drilled a hole some 12,000-feet deep and therein disposed of a large quantity of toxic chemicals.

Sometime later small earth tremors were felt and have since continued. One theory holds that this chemical "lubrication" of sub-surface rocks caused a series of breaks or slippages resulting in a series of small and harmless quakes.

Some scientists are at least wondering if a purposeful lubrication of rocks along a known fault-line or area of sub-surface unstable rocks might not be a means of preventing large scale quakes, Hammer noted.

- more -

Add one--Geophysics: Subject, Earthquakes

The following bits and pieces were also among a wide variety of geophysical facts which Hammer provided for the students:

An earthquake is a wave motion which spreads out through the earth when rocks beneath the surface slip or break away.

The San Andreas Fault, a branch of which was responsible for the Los Angeles quake, is one of the most prominent such unstable areas in the world. More than 1,000 miles long, it stretches along the west coast from Mexico to the San Francisco area and from there into the sea.

Approximately 80 per cent of all earthquakes are shallow wave ones, slow, close to the earth's surface, and therefore most damaging to surface features.

The strongest earthquake ever recorded occurred in India in 1950 and had a magnitude of 8.9 on the Richter scale.

The strongest earthquake ever recorded on the North American continent was the one in Alaska in 1964.

The strength or energy shown in the Los Angeles quake this week was equivalent to the explosive energy of 100,000 tons of TNT.

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feature story

Geophysics Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 1/18/71

By VIVIEN HONE

MADISON--What every man--and woman--needs today is a basic knowledge of our planet, enough at least to find the truth between the scare headlines of the news media and complacency where environmental action is needed, a University of Wisconsin-Madison scientist believes.

Fired with this conviction, Prof. Sigmund Hammer, distinguished American geophysicist, is readying a second semester University of Wisconsin course called "Survey of the Evolving Earth."

Though called our most accessible planet, our earth, particularly the interior and much of the exterior, is in fact largely inaccessible for direct study. Hammer points out that our knowledge must come then from applications of theory and observations based on the principles of physics. This approach has become an expanding branch of modern earth science called geophysics.

As introduction to geophysics, "Survey of the Evolving Earth" is not aimed primarily at the student planning a profession as scientist. Prof. Hammer notes: "For prospective science majors, however, it will not overlap materials and approach in existing introductory courses in geology.

"Most particularly the course is to be a cultural education for others--people in political science, for instance, or English or journalism. If they're going to write about or be involved with environmental subjects, they should have some basis for evaluation.

- more -

"They should also be aware of the revolution occurring in earth science thinking. Once thought to be two billion years old, our planet is now judged more than twice that age. Once believed to be a fixed thing, the earth's magnetic field is now known to be changeable. And studies in this field give strong evidence that the planet's separate continents were once united in a single global crust.

"We can predict where earthquakes are likely to happen, and if we can predict this, we may someday, by special means, even prevent their happening."

The three-credit, introductory instruction in the facts rather than the fancies of geophysics is open to freshmen and sophomores with some background in high school physics, a working knowledge of algebra, or the consent of the instructor. His lectures will be presented at 9:55 a.m. on Tuesdays and Thursdays in 175 Science Hall. Laboratory sessions will be held at the same hour with a choice of Wednesday or Friday unless the enrollment is exceptionally large. In this case, a third lecture--accompanied by demonstrations--will be substituted.

The following subjects are among the major ones in some 15 areas to be explored during the semester:

* Origin, Age, and Thermal History of the Earth
* Gravity and Shape of the Earth
* Earth Magnetism as a Key to the Drift of Continents
* Earthquakes: What They Teach About the Interior of the Earth; Earthquake Predictions; and Possibilities of Earthquake Prevention
* Origin and Circulation of the Atmosphere on the Rotating Earth
* Tidal Yielding, Strength, and Mountain-Building Forces of the Earth

Prof. Hammer's enthusiasm for teaching the survey is backed by a long, outstanding career. More than 38 of his professional years have been spent in research, exploration, executive and consultant positions with the Gulf Research and

Development Co., Pittsburgh. More than 30 technical papers bear his name. He has served as a professor of earth sciences not only at Wisconsin but at the University of Pittsburgh.

The Fourth World Petroleum Congress, held in Rome in 1955, presented him as Distinguished Lecturer. A myriad of earth science and other science organizations list him as member and often as officer. Given in recognition of his contributions, an honorary membership in the Society of Exploration Geophysicists was conferred upon Prof. Hammer in 1962.

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uw news

Geophysics Dept. of

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 11/25/70 vh

MADISON--Three scientists from the University of Wisconsin's Madison campus are in Antarctica to continue seismic investigations on the southernmost continent.

The three are Dr. Heinz Kohnen, Munster, Germany, and geophysics graduate students Bruce Kososki and James Robertson. This year's site for their studies of density, depth, and absorption within the continental icecap is in the vicinity of Byrd Station.

Results of the field investigations will enrich generally the glaciological and geophysical research program being carried out in Antarctica and Greenland by Wisconsin and other institutions. They will also be particularly significant in reduction of data from the airborne program of ice studies through radio echo sounding.

The UW trio, who left for Antarctica in October, will return to Madison in late January.

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feature story

Geology Dept

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 11/11/70

By VIVIEN M. HONE

MADISON--Geologists count in mind-shaking totals.

University of Wisconsin earth scientists say it was one and one-half billion years ago when the first sands for those ancient Wisconsin mountains were laid down in a nameless sea. They say that after other seas and other sands, the earth's crust lifted, the pressured sandstone became quartzite, and mountains high as the Rockies were twisted into being.

They say also that through the ages the elements eroded even these hard, resistant stone giants, the earth sank again, and the submerged range was mantled with new sediments. At one point in the global process of land rise and fall, of wearing away and building anew, the tallest mountain tops reached above the waters as tropical islands, lashed by hurricanes and giant waves.

Once more the mountains sank, then, only 200 million years past, slowly rose again, and here they have stayed to the present, but still exposed to surface change. Less than 25,000 years distant, a fraction of a second in geologic time, the mammoth glaciers that rode over Wisconsin were still scraping the mountain sides while dropping a telltale northern debris.

You can see these remnant mountains now as a highland ring, the Wisconsin geologists point out, their rugged purple-gray bluffs stretching east and west through Sauk and Columbia counties. Their loftiest peaks are gone, but quartzite roots still reach deeply, two miles or more, into the earth. These are the Baraboo Hills, beloved by vacationers, haunt of naturalists, and most particularly, a Mecca for geologists.

- more -

"Hundreds of geologists and their students visit the area each year," said George F. Hanson, director of Wisconsin's Geological and Natural History Survey. "It's the best outdoor geology classroom for hundreds of miles around. Few other state places can approach it for interest."

The hills are also one of the state's long-time sites for geological research, according to Madison campus geology Prof. Robert H. Dott. Early in this century, Charles R. Van Hise, UW geologist-president and a "father" of structural geology, drew repeatedly from the hills while developing his theories of rock response to deformity in the processes of mountain building. Others such as R.C. Emmons, Robert Black, and the late Stanley Tyler have made significant contributions.

Some of the nation's top geologists have climbed into the hills this week on one of several midwestern field trips complementing the annual meetings of the Geological Society of America. (More than 3,500 GSA members are attending the formal sessions in Milwaukee.)

Led by Dott and Ian Dalziel, formerly of the UW staff but now with Columbia University, the field group was scheduled to visit the Upper and Lower Narrows, spectacular cuts with quartzite facings, and quartzite quarries in Rock Springs and other hills area. (Industry has found a use for the hard metamorphic rock as abrasive and railroad ballast).

Also starred on the tour were sites where Cambrian sedimentary rocks top the quartzite and places where these half billion year old sandstones have totally entombed their fractured, sea-smoothed predecessors. The geologists would also examine the jewel-like Devil's Lake and its steep talus borders. Here at a gap in the Baraboo range, the glaciers dammed up an early Wisconsin river and changed its course. Here on the dark east bluff is a terminal moraine, last dumping ground of the waning ice.

Each of the geologists carried with him a spanking new publication: "Geology of the Baraboo District, Wisconsin." The packet, holding a 164-page book and seven maps, two employing colors as descriptive tools, is "the first major

monograph concerned with the geology of the Baraboo Hills," according to Hanson. "Prior to this," he said, "information on the geology has been distributed in bits and pieces in a wide variety of geological publications, most now out of print."

The major authors of the work are the leaders of the field trip, Dott and Dalziel, who have combined under one cover all important past research with their own extensive recent studies.

"The details of structure have never been studied as they have been this time," Hanson pointed out. He also suggested that Information Circular 14 among Geological Survey publications has more than academic interest. The quarry industry could benefit, for example, or the farmer looking to possibilities for a new field or water supply. Author Dott sees the monograph as a major instructional aid for teachers of geology and advanced students in the science, but again its uses extend well beyond strictly geological interests.

A summary contributed by UW Naturalist James Zimmerman, "The Plant Ecology of the Baraboo Hills," is in fact a setting of the stage for anyone concerned with wild living things in the remnant mountains.

The great variety of rocks, soils, surface features, and small localized climates in the hills has resulted in a rich diversity of plants and animals there, says Zimmerman in the publication available to the public at the survey (1815 University Ave., Madison), after Nov. 11.

There is a "floral count alone of over 600 species in almost any square mile area...many organisms have survived the last major glacial advances. ...The northern and southern species overlap to an unusual degree. ...and "a few species even represent outposts of Rocky Mountain forms."

Add three--Baraboo Hills

Geologists have an axiom: "The present is key to the past." In the total natural scene of the Baraboo Hills, key and past are richly joined. Look to your feet where fresh deer tracks are laced between the mosses. Look ahead--the deer themselves stand silent among the fallen ferns.

When the world was much younger, the mosses and ferns were already greening.

Look finally to the steep gray rocks of the range and a skein of geese above them. Listen to the haunting cries, for as Aldo Leopold has so eloquently said of the wild goose: "he speaks with the authority of all the far hills and the sea."

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept.

Release:

Immediately 10/29/30 vh

MADISON--Proclaimed by Gov. Warren P. Knowles as Geologists' Week, red-letter dates in November will bring 3,500 or more earth scientists to Wisconsin for annual meetings of the Geological Society of America and seven affiliated groups of specialists.

The University of Wisconsin and all other state institutions providing instruction or services in geology will serve as hosts to GSA, one of the world's largest organizations of professional geologists.

Scheduled for Nov. 9-15 at the Sheraton-Schroeder Hotel, Milwaukee, are sessions for presentation of research papers, symposia, presentations of medals and awards, and the annual dinner among numerous social events. Learning aspects will be further enriched with nine field trips planned for both before and after the main body of the Milwaukee events. The trips will explore geological phenomena at sites in Iowa, Illinois, Michigan, and Wisconsin.

A two-day (Nov.9 and 10) exploration of the Baraboo Hills is among these field trips. Led by Madison campus geologists who have centered their research on the hills, field sessions will provide new data on the remnant one-time mountains which have become a Mecca for professional geologists, vacationers, and seekers of the scenic.

UW geologists will also make contributions to the science sessions. Profs. Carl J. Bowser, Robert P. Meyer, Campbell Craddock, Frank Pica, a post-doctoral fellow, and Stephen M. Born, specialist, will present research papers.

The following Madison geologists will serve as chairmen for special sessions or symposia: Profs. J. Robert Moore, Charles V. Guidotti, Charles R. Bentley, David L. Clark, and Craddock; William J. Drescher and Carl E. Dutton, U.S. Geological Survey; and Meredith E. Ostrom, Wisconsin Geological and Natural History Survey.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology

Release: **Immediately** **7/14/70 vh**

MADISON--A University of Wisconsin field trip that will reach from the Madison campus to the Yukon's old goldrush trail began last week when 18 geology students and their leader, Prof. Robert F. Black, left Science Hall by auto caravan.

The travel-study program provides instruction and on-site experience in two advanced courses, Geology 451 and Geology 453.

Course 451, undertaken first and continuing for some weeks en route to 100-mile-long Tagish Lake, Canada, offers stops at classic geologic sites along the Alaskan Highway with the stratigraphy, structure, and regional geology lying between Fort Nelson and Whitehorse emphasized.

Study of Mesozoic beds of the continental interior, the folded and thrust-faulted Paleozoic beds of the Rocky Mountain front, and Coast Range intrusives is part of the plan, and the complex geology and mineral deposits of the Atlin and Whitehorse areas will also come under scrutiny.

Arrival at Ten Mile Ranch on Tagish Lake will mark the end of study for Geology 451 and the beginning of 453, a course in field mapping. The camp, known widely to northern fishermen and hunters, is on the old goldrush trail. The lake, stretching through the mountains of the Yukon and northern British Columbia, was once a waterway by which prospectors in the Klondike gold rush hauled their freight.

Prof. Lowell Laudon of the Madison campus geology staff will join Prof. Black for instruction in field mapping. Both are veterans when it comes to northern

-more-

field studies. The mapping course will end on August 30, but opportunities for learning and sightseeing will be many. Before returning to Madison a number of the geology majors will travel via auto ferry in the inland passage of southeast Alaska to Prince Rupert, Vancouver or Seattle. Others will visit the Canadian parks of Banff and Jasper.

The list of enrolles includes the following: John F. Bergh, Milwaukee; Thomas Bultman, Madison; Andrew Cosner, Indianapolis, Ind.; David Delgado, Madison; Duncan Foley, Appleton; David Grabher, Racine; Nancy Hardin, Madison; Michael G. Johnson, Stanford, Calif.;

Peter Michelson, Hazelhurst, Wis.; Daniel Nedland, Ladysmith; Gilbert Peterson, Madison; Robert Baxter, Ypsilanti, Mich.; David Thiede, Two Rivers; James Villwock, Mayville; Russell Wernlund, Madison; Sally Wright, DePere; Crayton Yapp, Mount Horeb; and Joel Zipp, Beachwood, Ohio.

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uw news

Geology Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 4/16/70 vh

MADISON--The public is invited to attend a panel discussion of major environmental problems involving geology and geologists at the University of Wisconsin Monday evening.

The 7:30 event in 180 Science Hall is one of several offered by the Madison campus department of geology and geophysics in observation of E-Day. Student concern and other activities in many other departments are extending National Environment Day at the University to E-Week.

The panelists and their topics for geology's Monday night contribution are:

Profs. R. H. Dott--"Man Against Nature"; L. J. Maher, "Climatic and Other Changes in the Recent Geologic Past"; E. N. Cameron--"Conservation and the Mineral Dilemma"; D. A. Stephenson--"Pollution, Water, and the People"; Clarence Clay--"Resources of the Sea?"; and Robert F. Black--"Commercialization of the Arctic."

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uw news

Geology Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **3/11/70 vh**

MADISON--The public is invited to attend a premiere of "The Story of Two Creeks," a 30-minute film on the forest which once grew near the Manitowoc County town and then nearly 12,000 years ago was buried beneath the glaciers.

The color movie on the famous fossil forest recently excavated by University of Wisconsin geologists will be shown at 8 p.m. Thursday, March 19, in 180 Science Hall.

Glaciers descended on the Two Creeks area more than once, according to Prof. Robert F. Black, and the film was designed especially to illustrate the concept of multiple glaciation. The concept is one among many in geology which the UW together with other Big Ten universities is attempting to teach via film.

Large enrollments in beginning geology present great problems in providing field trips during instruction. Film may be the answer to bringing the field to the student.

Science teachers in senior high schools as well as in undergraduate college level geology will find special interest in "The Story of Two Creeks," for it also illustrates the methods used by geologists in unraveling earth history and interpreting past environments.

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Geophysics

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 11/4/69

By VIVIEN HONE

MADISON--Working both in and near a 7,100-f00t-deep hole drilled completely through the Antarctic ice sheet to the underlying rock, University of Wisconsin geophysicists will open two new science projects on the frozen continent during the coming "summer" season.

The large exploration programs in Antarctica are completed for the most part, Prof. Charles R. Bentley pointed out this week, and in this new phase, "we will be studying more specific problems." Both new Wisconsin efforts will be carried out at Byrd Station where the drilling has already been completed and the hole's ice core has been recovered almost in entirety.

On the one project, Bentley and graduate students John Clough and Clayton Nichols will do a seismic logging. Measurements of the varying velocities of artificially induced seismic waves--as those waves travel beneath the global surface, encounter various subterranean materials, and are both reflected and refracted back to the surface--are one modern geophysical method of learning what lies hidden beneath our global crust.

Much information on the Antarctic ice sheet has already been gathered by this means, Bentley said, "but since seismic wave velocities are not known for the glacier ice under the pressure-temperature conditions prevailing at depth, the reduction of the data involves uncertainties."

To supply this lack, the UW team will lower a sonic-wave generator into the great hole and take measurements of both compressional and shear waves at many depths. The logging should make future determinations of ice thickness more accurate.

- more -

Seismic measurements within and near the hole are also expected to yield new information on the nature of the ice by way of the structure and distribution of the ice crystals.

Seismic wave velocity varies according to the orientation of the crystals in a particular direction. It is also established that these preferred orientations of the crystals depend, in turn, upon the flow patterns of the ice. Hopefully, the new measurements will expand knowledge of the physics of ice flow and of the history of the ice sheet.

In the second project at Byrd Station, the Wisconsin men will forward research on development and scientific utilization of electromagnetic sounding. This method of investigating subsurface materials somewhat resembles the seismic method, but depends upon radio waves rather than seismic ones as the travel-velocity agent.

The study will be concentrated largely in the upper mile or more of the ice sheet where reflecting inner surfaces are known to exist at several levels and are associated with readings indicating small density changes. These density changes "are probably related to melting and subsequent refreezing of the snow into ice layers when each of the now reflecting internal layers was once the topmost surface of the ice sheet," Bentley explained.

Further investigation of these reflectors may provide clues to past Antarctic climates--possibly warmer ones. It may also provide another measure of the flow pattern.

Field work for a third geological program in Antarctica will be concluded this season. The 10-year study of patterned ground has been directed by Wisconsin Prof. Robert F. Black. Patterned ground--wedge-shaped masses separated by a great complex of ice or sand-filled cracks--results from expansion and contraction in permanently frozen ground no longer covered by the glaciers.

Tom Berg, a Ph.D. candidate who has previously worked on the program, will travel from Canada to Victoria Land to remeasure control wedges and recalibrate equipment at a dozen or more research sites.

The decade of field studies is expected to widen knowledge of the lifespan of the McMurdo area's dry valleys and indicate whether related glaciers are advancing or retreating.

All three programs are supported by National Science Foundation grants.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geophysics Dept

Release: Immediately 8/8/69

By VIVIEN HONE

MADISON--While NASA observers report natural disturbances on the moon as recorded by the seismometer which the astronauts placed there, University of Wisconsin geophysicists continue to create man-made "earthquakes" and to learn the subterranean secrets of earth.

The seismic method is one of several modern ways by which Wisconsin earth scientists learn the composition, structure, and workings of what lies beneath our planet's surface. In this approach, team members set off charges of explosives to create shock waves. Refracted and reflected by the underlying rocks in various patterns according to the nature of the materials, the waves are picked up by detectors, and finally recorded in graphs. In thousands of feet of these graphs, the scientists find the likely answers.

In a widely-ranging summer program directed by Geophysics Prof. Robert P. Meyer, UW workers have been scheduled for seismic field operations on widely separated fronts. Toward learning whether the earth's upper mantle (that deep layer of materials lying immediately below the crust) varies according to its environment, the men are recording the shocks from once-nightly explosions set off at Revelstoke, British Columbia. Work along a line extending through the Rocky Mountains of Montana, Wyoming, Colorado, New Mexico, and ending in eastern Texas will continue until Aug. 24.

- more -

The shocks are being recorded by Prof. Meyer during the same period along the same line as extended from Revelstoke through the mountains to Fairbanks, Alaska. Other lines in the American and Canadian west are being worked by other cooperating research agencies identified with the project.

UW field work for studies of the upper mantle in an oceanic environment has already been carried out this summer. Shots were fired from shipboard along a line reaching from Tampico, Mexico, across the Gulf of Mexico, and ending at Tampa, Fla. They were recorded along the line as extended from Tampa across the state of Florida.

The upper mantle studies are supported by the National Science Foundation and the U.S. Air Force Office of Scientific Research.

Two seismic projects for further investigations in the Great Lakes also are scheduled for the summer. Both are part of a broad oceanic study supported by federal Grant and state funds and aimed at solving lakes problems as well as developing lakes resources. Both will produce high resolution bottom and sub-botton profiles--i.e., graphs representing the first 200 feet of sediments below the lake bottoms as they would be ordered if seen in cross section.

The one, now underway on the U.S. Coast Guard cutter Mesquite and scheduled to continue until Aug. 18, is essentially a checking on highly significant data gained last summer from studies of Lake Michigan's Green Bay.

"We saw changes in Green Bay that point to increases in materials and elevation since 1950," Prof. Meyer explained, "that indicate the bay has been filling in during this 18-year span as much as ~~20~~ 2-4 feet."

The second seismic project this month under the Sea Grant program will be a reconnaissance effort in mineral exploration. To be carried out in Lake Superior from the Coast Guard cutter Woodrush from Aug. 20 to Sept. 1, the work will be done along a line reaching between Keweenaw Point and Stannard Rock, Mich.

Bottom sediment samplings made in Green Bay last year by Wisconsin Geology Prof. J. Robert Moore resulted in a strike of manganese. He will be on hand again to take sediment samplings as the men of the seismic crew do their bottom profiling.

Members of crews working this summer under the UW banner include:

Prof. Meyer; Brian Lewis, research assistant; William Unger, project specialist; Lee Powell, electrical engineer; Joseph Laurence, project specialist; Lester Kossow, electronics technician; Judy Meyer, draftsman; Thomas Meyer, project assistant; and graduate students James G. Kosalos and Joseph F. Gettrust.

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Geophysics

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 1/30/69 vh

MADISON, Wis.--A $2,000 educational grant to the University of Wisconsin made by the Gulf Oil Corp. will extend the lifework of a distinguished earth scientist.

The award, which awaits formal acceptance by the regents, was placed in the hands of Prof. Sigmund Hammer this week. To be distributed and used as Hammer chooses, it is aimed at support of both graduate and undergraduate studies in geophysics with special emphasis on courses in the practical applications of geophysics to geophysical exploration.

An authority on the earth's gravitational field, Dr. Hammer joined the Madison campus faculty two years ago following retirement from Gulf Research and Development Co., Pittsburgh. He had spent more than 38 years in research for the firm, the last 26 as chief of the gravity interpretation section.

He also served for 16 years as lecturer and adjunct professor at the University of Pittsburgh, conducted workshops in gravity interpretation, and served on many national science committees to advance geophysics learning and science learning generally.

The Society of Exploration Geophysicists conferred on Dr. Hammer its most prestigious award, honorary membership, in 1962. It was given in recognition of his pioneer contributions, outstanding efforts to further geophysical education, and long and distinguished service to the society.

The Wisconsin professor holds degrees from two institutions including the Ph.D. from the University of Minnesota.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 4/23/68 vh

MADISON, Wis.--The leadership the University of Wisconsin has shown in Antarctic exploration is recognized in a list of place names from the frozen continent.

"Many of Wisconsin's scientific workers now have significant geographical features in Antarctica named in their honor," Prof. Campbell Craddock, Wisconsin geologist and veteran of seven seasons in the Antarctic, said Tuesday.

The names are chosen and officially conferred by the U.S. Board of Geographic Names.

"During the International Geophysical Year, 1957-58, and since then, a large share of America's national effort on the southernmost continent has been conducted by universities," Craddock explained, "and among institutions thus involved, Wisconsin has been a leader."

Geologists, geophysicists, limnologists, meteorologists, and zoologists from Wisconsin's staff have carried their studies to the ice-shrouded land, Craddock pointed out. However, the names chosen from Wisconsin investigators are largely those of geologists and geophysicists. Many of these earth scientists were "early birds" in IGY's giant push to learn the nature of Antarctica, the records show.

Like Wisconsin' contributions, the monuments which honor them are all outsize--in the order of mountains, islands, glaciers and ice tongues. In some

- more -

instances, these geographical features bear the names of the explorer-scientists who first discovered them.

The list includes the following:

MOUNT BENTLEY, 13,000-foot peak in the main ridge of the Ellsworth Mountains of Marie Byrd Land, named for Charles R. Bentley of Wisconsin's Geophysical and Polar Research Center. Prof. Bentley was among the first scientists to reach Antarctica during IGY and has chalked up seven seasons of Antarctic missions either as principal investigator or traverse leader.

MOUNT OSTENSO, 12,000 feet high, also lying in the Ellsworth Mountains, central Antarctica, and named for Ned A. Ostenso. Another of the early Badgers in Antarctica, Ostenso received a 1962 Ph.D. in geophysics from Wisconsin and is now physical sciences coordinator with the U.S. Office of Naval Research.

MOUNT WOOLLARD, 8,726 feet high, lying just west of the Ellsworth Mountains, honoring George P. Woollard. The world famous geophysicist captained and developed Wisconsin's geophysics studies during the years 1949 to 1964. He now directs the Institute of Geophysics, University of Hawaii, but maintains strong ties with Wisconsin through cooperative projects of the two institutions.

The three mountains listed above were first sighted by land by the Byrd Station oversnow traverse party in the 1957-58 Antarctic season. Bentley led the traverse and Ostenso was a member of the team.

THE THIEL MOUNTAINS, a 60-mile long range in Transantartic Mountains, central Antarctica, named for Edward Thiel. The native of Wausau, Wis., who received his Ph.D. in geology from Wisconsin, was chief seismologist for the Weddell Sea party in preliminary Wisconsin investigations for IGY. Thiel put in several additional seasons in Antarctica with Wisconsin parties before he joined the University of Minnesota staff. Killed in an airplane crash in 1961, the Wisconsin alumnus is said to be the only American scientist to lose his life in Antarctic investigations.

THE BEHRENDT MOUNTAINS in the Ellsworth Highland, West Antarctica, named for John C. Behrendt, another of Wisconsin's early Antarctic investigators. The veteran of several seasons in the frozen southland received his Ph.D. in geology from the University of Wisconsin in 1961 and has since joined the staff of the U.S. Geological Survey, Denver, Colorado.

THE BLACK GLACIER, located in northern Victoria Land, honoring Prof. Robert F. Black, glacial geologist. Black has journeyed repeatedly to Antartica to study the phenomenon of patterned ground as indicator of the advance or retreat stage of glaciers. The site for his studies has been the McMurdo Sound coastal area of Victoria Land.

MOUNT BOWSER lying in the Transantarctic Mountains of central Antarctica, named for Prof. Carl Bowser. A geochemist or specialist in the chemical elements of the earth's crust, Bowser, in collaboration with Prof. Black, has been carrying out Antarctic studies of saline glacial waters and lakes.

THE DOTT ICE RISE, an island-like mountain of rock mantled by the ice cap near the Filchner Ice Shelf and named for Prof. Robert H. Dott. Dott has made comparative studies of rocks in the northern end of the Antarctic Peninsula and in the southern tip of South America which indicate that the two continents were once joined by a mountain chain and lay much closer to each other than they do now.

MOUNT CRADDOCK, a 15,000 foot prominence in the Ellsworth Mountains, West Antarctica, named for Campbell Craddock and sighted by him on an exploratory flight in 1959.

MOUNT SPORLI, named for Swiss geologist and Wisconsin research associate Bernhard Sporli, also lies within the Ellsworth Mountains. A collaborator with Prof. Craddock, Sporli has spent two seasons in West Antarctica studying rock structure.

- more -

Add three--Antarctic Names

AHRNSBRAK GLACIER, still another feature in the Ellsworth Mountains, is named for William F. Ahrnsbrak, research assistant in meteorology on the Madison campus. Ahrnsbrak spent 11 months in Antarctica during a 1965-66 period of working as assistant glaciologist for an Ohio State University party.

Outstanding contributions in geology and geography have even earned place names in Antarctica for University of Wisconsin scientists who, presumably, never set foot on the frozen continent, Craddock pointed out. Features named for such men include the following:

CHAMBERLIN GLACIER in the Antarctic Peninsula, named for one-time UW President Thomas C. Chamberlin. Widely renowned, Chamberlin is still remembered for his early theories on the origin of the earth and for advances in scientific instruction accomplished at the University during his administration, 1887-1892.

THE MARTIN PENINSULA, jutting into the Amundsen Sea on Antarctica's west coast, named for Lawrence Martin, one-time Wisconsin professor of geology and geography. Martin's "Physical Geography of Wisconsin," though originally published many years ago, is still highly regarded and continues to be printed.

THE THWAITES ICE TONGUE, in West Antarctica, extending into the Amundsen Sea for approximately 60 miles, named for Prof. Frederick T. Thwaites. The colorful geologist, who taught on the Madison campus for 38 years, was a glacial geologist but was said to know more about all aspects of Wisconsin geology than any other man of his time.

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uw news

Geophysics dept

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** 2/6/68 vh

MADISON--"With this advantage of greater mobility, there is no place now where we can't go," Campbell Craddock, veteran of seven expeditions in Antarctica, said this week. "We are the only country which provides its scientists in Antarctica with massive operational support."

Prof. Craddock, newly joined member of the University of Wisconsin faculty, will talk on " Way 'Down Under'," geological explorations on the Frozen Continent, on Friday evening, Feb. 9, in 180 Science Hall.

7:30
The/lecture for the public is the third in the 1967-68 series presented by the University's department of geology and geophysics.

When the great scientific push known as the International Geophysical Year was begun in 1957, Antarctica was largely untouched territory, offering the most formidable of natural barriers to exploration. Craddock will trace the course of American investigations there since that date and tell of the "whys" of the probings, major geological problems encountered and scientific results of the mighty effort.

University of Wisconsin men were among the first American scientists to reach Antarctica during IGY and they have been deeply involved in Antarctic studies ever since then.

A structural geologist, Craddock became a Madison campus professor last September after 11 years on the University of Minnesota faculty. All seven of the Antarctica expeditions which he either led or directed were under Minnesota's banner.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 1/23/68 vh

MADISON--Clarence S. Clay, an expert on geophysical investigations and devices, will begin his duties on the University of Wisconsin Madison campus when the second semester begins.

He is one of three distinguished scientists appointed to the department of geology and geophysics in the current academic year.

Clay, author of some 50 publications in his field, is co-author of a recently published book on ocean acoustics. He holds a 1950 Ph.D. from Wisconsin and degrees granted prior to that from Kansas State University. His affiliation with Wisconsin follows 12 years of oceanographic research at the Hudson Laboratories, Columbia University.

The other two distinguished additions to the department who joined the Madison campus faculty in September, are Sigmund I. Hammer, an authority on the earth's gravity field, and Campbell Craddock, a specialist in structural geology.

Dr. Hammer joined Wisconsin following 21 years spent as head of the gravity interpretation section of Gulf Research and Development Co., Pittsburgh. A past president and honorary member of the Society of Exploration Geophysicists, he holds a first degree from St. Olaf's College and the Ph.D. from the University of Minnesota.

Craddock has led or directed seven geological expeditions in Antarctica and is a member of the National Academy of Sciences Committee on Polar Research. He joined Wisconsin after more than 11 years on the faculty of the University of Minnesota and worked prior to that as geologist for the Shell Oil Co. Columbia University granted him the Ph.D. in 1954 and De Pauw University a B.A. in 1951.

All three scientists were appointed to the Wisconsin faculty with the rank of full professor.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept

Release: **Immediately** **6/25/69 vh**

MADISON, Wis.--On the hundredth anniversary of a famous exploration of the Grand Canyon, 26 University of Wisconsin geology students will be tracing again the route of John Wesley Powell.

Powell, American geologist and ethnologist who led a party by boat through the canyon in 1869, began his pioneer journey in the Green River, main northern tributary of the Colorado.

The Wisconsin party, students and their professors in Geology 451-453, a summer field course, will spend the first four days of July on the famous wild river in the Uinta Mountains of northern Utah, studying geological structure and sedimentary features in the Green River canyon.

First weeks of the field trip, which began June 13 at Boulder, Colo., provided views of Precambrian geology in Colorado's Front Range of the Rockies; and of classical geological features, oil fields and operations in southeastern Colorado and eastern Utah.

The Green River trip, ending at Splint Mountain in Dinosaur National Monument, will be followed by three weeks of geological mapping at sites in Flaming Gorge and along the northern flank of the Uintas. The group will disband Aug. 1.

Instruction for 451-453 is being provided by Profs. Carl Bowser, Robert Dott, David Stephenson, and Roger Gilbertson, a teaching assistant.

- more -

Add one--canyon trip

The participating students are:

Daniel L. Bloxham, Fort Atkinson; Penny R. Adams, Barron; Kenneth A. Dedecker and James D. Servais, Green Bay;

Richard D. Lueck, Appleton; William S. Donovan, Auburn, N.Y.; Harry E. Goldstrom, Homewood, Ill.; Peter T. Holland (2338 N. 71st st.), Wauwatosa; Michael E. Huber, Brooks; Barbara A. Jones, Waterford;

George D. Deverse, Colgate; Dennis V. Krantz (1705 Jefferson st.), Ruth E. Mullen (474 Berwyn dr.), Eugene K. Schmidt (3709 Zwerg dr.), and Robert J. Wendling (1409 Trailsway), all of Madison;

Stanley J. Mancheski jr., Stevens Point; Theodore I. Gandy jr. (4167 N. Downer ave.), Milwaukee; Kenneth D. Markart, Stephan A. Root, and Mark Miron, Middleton;

Boyd N. Possin, Waupun; Michael D. Peters, Sharon; Thomas J. Hoffmann, Oconomowoc; Roger K. McLimans, Cudahy; David L. Martin, Oxford; and Shirley A. Mitchell (18330 W. Burleigh rd.), Brookfield.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** 4/4/69

UIR Science Writing Division (262-5984)

By JAMES A. LARSEN

MADISON, Wis.--Utilization of underwater mineral resources has a potential far exceeding what a few years ago would have been considered the wildest flight of the imagination.

This is the opinion of J. Robert Moore, associate director of the Marine Studies Center at the University of Wisconsin and noted marine geologist.

Moore has announced the start of a cooperative venture between the geological and the geophysical research programs at the University to explore the basin of Lake Superior.

The program will be designed to provide information on the basic geological structure of the Lake Superior bottom as well as initial surveys of possible mineral deposits of economic value.

Moore earlier announced that deposits of manganese nodules on the bottom of Green Bay in Lake Michigan assay sufficiently high in manganese to afford a very strong possibility that the deposits will ultimately be of commercial value. Lack of proper underwater mining techniques presently restrict usefulness of the deposits, he said, but appropriate methods should not be difficult to devise by ocean engineers.

Moore believes that the potentialities of the portions of the state which are underwater should be explored and developed.

- more -

"Wisconsin should take a very close look at the thousands of square miles of real estate which lie under the waters of Lakes Michigan and Superior," Moore said. "Underwater ocean mining is being conducted routinely in many parts of the world."

He added that underwater mineral resources are not the only untapped potential for states with shorelines on the Great Lakes. Although the possibilities for exploitation of copper and manganese deposits seem good, mining is not the only manner in which marine, particularly shoreline, areas can be utilized. Moore said unsightly storage tank farms, for example, could just as well be beneath water, opening cluttered urban areas for parks, playgrounds, and other recreational and cultural developments.

Moore added that many areas are favorable for underwater storage of natural gas supplies directly in the rock formations beneath the bottom of the lake. All that is needed is a drill driven deep into the formation and cased so gas could be pumped into porous sand or shale. Overlying impermeable rock would seal the gas in a natural "tank."

He said that by using natural storage reservoirs, gas could be stored when supplies were plentiful and prices low.

The procedure would be of greatest benefit for storage of materials showing seasonal fluctuations in price. Either gaseous or liquid material could be stored in this way cheaply and effectively.

"Considering that the amenities of urban life might also be served by storage of natural gas or hydrocarbons in this manner, the lowered cost would not be the only advantage," Moore said.

Discussing the mineral prospecting program in Wisconsin, Moore said that at current rates of development the techniques for underwater mining would be

perfected by engineers long before geologists will have begun to locate the mineral deposits which must exist at depth beneath the Great Lakes and shallow seas.

He cited an instance of deposits off the coast of Nova Scotia where initial assays showed a mineral content valued at 10 to 50 cents per ton. Later it was discovered that some of the areas contained ores valued at $4 per ton.

Moore said the geological survey of this area in Nova Scotia not only turned up mineral deposits but also showed that petroleum probably exists in nearby areas. The exploration also revealed four places where scallop fisheries could be developed.

Regarding the manganese deposits in Green Bay and elsewhere in the Great Lakes, Moore said assays of samples collected last summer are continuing, and a technical report on the manganese is in the process of preparation. Current industrial interest in utilization of manganese is high.

Research on the use of manganese as an industrial catalyst currently is being conducted by a number of industries and promises to provide many new uses for the mineral. Some of the work has shown that the manganese nodule materials in their natural state exhibit activities greater than those of catalysts now being used commercially.

Manganese also is useful in corrosion resistant paints for marine work as well as in nuclear reactor equipment, dry cell batteries, and other industrial products. It has long been used in steel manufacture; of signal importance, it is now eyed as a component of iron pellet feed for steel mills.

A long-standing program of seismic studies of the Great Lakes basin, including work in Lakes Superior and Michigan, is to be continued by Prof. Robert P. Meyer of the Wisconsin Geophysics Research Center. It is hoped the research will result in improved seismic techniques for exploring underwater geological structures as well as a better knowledge of the lake bottom geology.

Add three--underwater minerals

Certain problems in the Great Lakes area make seismic survey development research of some considerable importance. In certain areas, mud deposits from pollution have accumulated to such depths that seismic devices no longer give true readings of the bottom. Especially sensitive instruments must be devised by Prof. Meyer for use in such situations.

Mud depths are important since they must be taken into consideration in exploring potentialities for underwater mining of minerals. Deep mud seriously hinders such operations.

There are parts of Green Bay, for example, where mud from pollution is so deep that geological exploration is difficult and mining would probably be undertaken with considerable difficulty, Moore said. Sensitive devices for mapping of the mud-covered areas might also be of value in pollution studies and control.

The marine geological research is part of the UW's Marine Studies Program supported by the Sea Grant funds of the National Science Foundation. A survey of the program appears in the current issue of the "Research Newsletter" of the University-Industry Research Program.

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uw
news

Geology Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **3/11/69 vh**

MADISON--"Everyone has heard about the population explosion and its impact on world food supply," Prof. Eugene N. Cameron, University of Wisconsin economic geologist, pointed out Tuesday. "But only a few are aware of that impact on world use of minerals, and this poses a basic problem for the remainder of the century."

The scientist will lecture on "Minerals and the Population Explosion" at 7:30 p.m. Friday in 180 Science Hall. The illustrated talk is the last of three presented especially for the public by the Madison campus department of geology. All have been open without charge to persons interested.

The evening with Dr. Cameron promises to be stimulating if not always comforting for persons who wish to see our modern industrial society continue. He has some startling things to say, for instance:

"By the year 2,000 our mineral resources may not be adequate to sustain us; we're going to have to have a massive effort in mineral exploration on a scale we couldn't have imagined 20 years ago." And apropos of the conflict between the mining industry and conservationists, "it will have to be recognized that minerals are more important than recreation, because they are basic to the survival of our civilization."

The Wisconsin professor is the author of more than 40 papers on minerals and has taught many graduate courses on relationship of minerals to world affairs. Since the advent of the Atomic and Space ages, he has served in many capacities to further international accord on mineral studies.

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uw news

Geology Dept. of

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **1/7/69 vh**

MADISON--"Much of the earth's history and structure is revealed in surface features," Prof. Louis J. Maher, University of Wisconsin geologist, said this week. "But often, when you're on the ground, 'you can't see the forest for the trees.'"

Maher will show dramatic examples of American geological features as photographed from the vantage point of a University plane in a lecture for the public at 7:30 p.m. Friday, Jan. 10, in 180 Science Hall.

"A Bird's Eye View of the Earth," illustrated with color movies, is the first of three talks to be presented this winter by the Madison campus department of geology and geophysics.

The annual public lectures, planned for persons with little or no knowledge of geology, were inaugurated in 1967 and have drawn capacity crowds each year. They are aimed at adults and high school students, but children in the lower grades should also find them of interest, the department pointed out.

Maher and a graduate student in geology made the movies of phenomena in the West and Middle West in 1967. They were created especially for a closed circuit TV course in introductory geology which is now offered on the Madison campus. Included are shots of extinct volcanoes, canyons, meandering stream patterns, surface features associated with caves, and sand dunes resulting from wind erosion.

Prof. Sigmund Hammer will lecture Feb. 14 on "Probing the Earth with Geophysical Techniques" and Prof. E.N. Cameron will complete the lecture series on March 14 with "Minerals and the Population Explosion."

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately

5/29/68 hb

MADISON--New chairmen have been named in 15 departments of the Letters and Science College of the University of Wisconsin in Madison, Dean Leon D. Epstein announced Wednesday.

Included are Arnold Strickon, anthropology; Paul Plass, classics; Arthur E. Kunst, comparative literature; Seymour Parter, computer sciences;

Wayne Schlepp, east Asian languages & literature; Gerald G. Somers, economics; Simeon K. Heninger, English; Robert N. Taaffe, geography; Sturges W. Bailey, geology and geophysics;

John A. Nohel, mathematics; Haskell Fain, philosophy; Leonard Berkowitz, psychology; Richard N. Ringler, Scandinavian studies; Lawrence L. Thomas, Slavic languages; and David Mechanic, sociology.

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uw news

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THE BEHRENDT MOUNTAINS in the Ellsworth Highland, West Antarctica, named for John C. Behrendt, another of Wisconsin's early Antarctic investigators. The veteran of several seasons in the frozen southland received his Ph.D. in geology from the University of Wisconsin in 1961 and has since joined the staff of the U.S. Geological Survey, Denver, Colorado.

THE BLACK GLACIER, located in northern Victoria Land, honoring Prof. Robert F. Black, glacial geologist. Black has journeyed repeatedly to Antartica to study the phenomenon of patterned ground as indicator of the advance or retreat stage of glaciers. The site for his studies has been the McMurdo Sound coastal area of Victoria Land.

MOUNT BOWSER lying in the Transantarctic Mountains of central Antarctica, named for Prof. Carl Bowser. A geochemist or specialist in the chemical elements of the earth's crust, Bowser, in collaboration with Prof. Black, has been carrying out Antarctic studies of saline glacial waters and lakes.

THE DOTT ICE RISE, an island-like mountain of rock mantled by the ice cap near the Filchner Ice Shelf and named for Prof. Robert H. Dott. Dott has made comparative studies of rocks in the northern end of the Antarctic Peninsula and in the southern tip of South America which indicate that the two continents were once joined by a mountain chain and lay much closer to each other than they do now.

MOUNT CRADDOCK, a 15,000 foot prominence in the Ellsworth Mountains, West Antarctica, named for Campbell Craddock and sighted by him on an exploratory flight in 1959.

MOUNT SPORLI, named for Swiss geologist and Wisconsin research associate Bernhard Sporli, also lies within the Ellsworth Mountains. A collaborator with Prof. Craddock, Sporli has spent two seasons in West Antarctica studying rock structure.

Add three--Antarctic Names

AHRNSBRAK GLACIER, still another feature in the Ellsworth Mountains, is named for William F. Ahrnsbrak, research assistant in meteorology on the Madison campus. Ahrnsbrak spent 11 months in Antarctica during a 1965-66 period of working as assistant glaciologist for an Ohio State University party.

Outstanding contributions in geology and geography have even earned place names in Antarctica for University of Wisconsin scientists who, presumably, never set foot on the frozen continent, Craddock pointed out. Features named for such men include the following:

CHAMBERLIN GLACIER in the Antarctic Peninsula, named for one-time UW President Thomas C. Chamberlin. Widely renowned, Chamberlin is still remembered for his early theories on the origin of the earth and for advances in scientific instruction accomplished at the University during his administration, 1887-1892.

THE MARTIN PENINSULA, jutting into the Amundsen Sea on Antarctica's west coast, named for Lawrence Martin, one-time Wisconsin professor of geology and geography. Martin's "Physical Geography of Wisconsin," though originally published many years ago, is still highly regarded and continues to be printed.

THE THWAITES ICE TONGUE, in West Antarctica, extending into the Amundsen Sea for approximately 60 miles, named for Prof. Frederick T. Thwaites. The colorful geologist, who taught on the Madison campus for 38 years, was a glacial geologist but was said to know more about all aspects of Wisconsin geology than any other man of his time.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology

Release: Immediately 5/6/68 vh

MADISON--Several University of Wisconsin geologists will present the results of their research at professional meetings during the month of May.

Prof. Robert F. Black will present a paper on "The Ice Stagnation Features of the Bloomer Moraine, Northwest Wisconsin" at the 14th annual Institute for Lake Superior Geology, ending Tuesday at Superior State University.

He will present another paper, "Glacial Features of the Kettle Interlobate Moraine, Eastern Wisconsin," before the north central section of the Geological Society of America, scheduled to meet Wednesday through Friday at the University of Iowa, Iowa City.

Associate Prof. David L. Clark and James Miller, a graduate geology student, will present jointly written papers at a symposium on conodonts--tiny fossil parts of ancient marine life--to be held during the GSA sessions. Prof. Clark will present the paper on "Morphologic Evolution of Tremadocian Conodonts from the House Range, Utah" and Miller will read "A Natural Assemblage of Tremadocian Conodonts from Utah, Determined by Symmetry, Transition, and Statistical Association."

At the meeting of the National Association of Geology Teachers, held jointly with GSA, Associate Prof. Louis Maher will deliver an illustrated talk on his experiments with "Closed Circuit Television in the Teaching of General Geology."

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uw news

Geology Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **3/11/68 vh**

MADISON--"Every geologist who has written extensively on the Devils Lake area has emphasized the uniqueness of the glacial, periglacial and bedrock present," declares Robert F. Black, University of Wisconsin geologist, in a new research paper urging preservation of the popular region.

Black has synthesized previous research and added new data in "The Geomorphology of the Devils Lake Area." Perhaps one billion years of earth history is revealed in this site some 40 miles northwest of Madison. Ancient seas, ancient mountains, and "recent" glaciers all contributed to that revelation, the study shows.

"No other location in the midwest has such a rich variety of unique features in so small an area near major centers of population," Black points out. "As a tourist area and as the scientist's field laboratory, it is certainly unrivaled for hundreds of miles around."

But "the pressure of man's use continues to increase each year now to the point where even the durable rocks need protection," the geologist said. Thousands of people visit Devils Lake Park each year, according to the scientist, and even geology students in their zeal "contribute to the natural attrition of certain exposures of bedrock."

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Add one--Devils Lake Area

"Hence every effort must be made to preserve not just the features in the park but the many glacial and bedrock features adjoining it," Black said, adding:

"The need for judicious controls is painfully obvious and cannot long be withheld if we are to preserve many of the striking features."

Among those features which Black discusses in detail are the various rocks themselves, showing a tremendous time spread, talus slopes, cliffs, gaps, hanging valleys, Devils Lake and drained lakes, moraines, pot holes, erratics, and other evidences of one of the last great ice sheets to push into Wisconsin.

The scientist also lists some of the most striking views to be had in the highly scenic Devils Lake region and associated Baraboo Hills.

Black's paper will be published in the 1967 transactions of the Wisconsin Academy of Sciences, Arts and Letters.

The geologist is the author of two other recent studies of state geology: "Radiocarbon Dates from Wisconsin" and "Slopes in Southwestern Wisconsin--Periglacial or Temperate?" The former will also be published in the 1967 transactions of the academy. The latter will appear in The Periglacial Bulletin, one of Poland's professional journals.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** 2/6/68 vh

MADISON--"With this advantage of greater mobility, there is no place now where we can't go," Campbell Craddock, veteran of seven expeditions in Antarctica, said this week. "We are the only country which provides its scientists in Antarctica with massive operational support."

Prof. Craddock, newly joined member of the University of Wisconsin faculty, will talk on " Way 'Down Under'," geological explorations on the Frozen Continent, on Friday evening, Feb. 9, in 180 Science Hall.

The 7:30 lecture for the public is the third in the 1967-68 series presented by the University's department of geology and geophysics.

When the great scientific push known as the International Geophysical Year was begun in 1957, Antarctica was largely untouched territory, offering the most formidable of natural barriers to exploration. Craddock will trace the course of American investigations there since that date and tell of the "whys" of the probings, major geological problems encountered and scientific results of the mighty effort.

University of Wisconsin men were among the first American scientists to reach Antarctica during IGY and they have been deeply involved in Antarctic studies ever since then.

A structural geologist, Craddock became a Madison campus professor last September after 11 years on the University of Minnesota faculty. All seven of the Antarctica expeditions which he either led or directed were under Minnesota's banner.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release:

Immediately 1/8/68 vh

MADISON--"There are roughly 500 active volcanos in the world today," said Carl Bowser, University of Wisconsin geologist, as he prepared for a Friday evening (Jan. 12) public lecture on vulcanism.

Prof. Bowser will talk at 7:30 p.m. in 180 Science Hall on "The Fiery Underworld," great molten masses which originate deep within the earth and sometimes reach the surface. He will also show two color movies: "The Birth of Surtse" (volcano which erupted in 1963 off the coast of Iceland) and a documentary on the 1959-60 eruptions on Kilauea Iki, Hawaii.

Active volcanos are most concentrated in the Pacific Ocean area and immediately adjacent lands, Prof. Bowser pointed out. By 1914 the last active American volcano, Mount Lassen in northern California, had become extinct, but since Hawaii and Alaska joined the Union, the U. S. can now claim many, he said.

The materials which are ejected from them in violent explosions or as streams of molten rocks provide scientists with clues to the composition and temperatures of the earth's interior.

The free lecture, arranged for the pleasure of the public by the University's department of geology, is the second in a 1967-68 series. Guests may also visit the Geology Museum on the second four of Science Hall both before and after the lecture, the department suggests.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept. of

Release: **Immediately** **9/29/67 vh**

MADISON--University of Wisconsin scientists and cameramen have completed a first season of work at the state's famed Two Creeks buried forest on a major "bring-the-mountain-to-Mohamet" project calculated to improve instruction for thousands of undergraduate geology students.

"We have covered the gross features of the buried forest," Geology Prof. Robert F. Black, specialist in glaciation and project chairman, said Friday.

"We've made 8,000 feet of colored movies at the excavations and several hundred color slides. We have also taken hundreds of samples."

Black pointed to piles of small transparent boxes neatly stacked in a Science Hall laboratory. Each held forest soil and the brown, brittle, but still recognizable remnants of trees which perished on Wisconsin land under glacial ice nearly 12,000 years ago.

Geology is one of the most popular subjects taught on Wisconsin's Madison campus, Black pointed out. Approximately 1,200 students enroll each semester in introductory courses of the earth science. But these large enrollments at Wisconsin and elsewhere greatly increase the problems of transportation and instruction on field trips.

Banded together, Wisconsin and the 10 other midwestern university members of the Committee on Institutional Cooperation are out to lick such problems by bringing the field's geological phenomena to the student, largely through film media.

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Chosen to carry out the pilot effort in this direction, the Wisconsin crew of geologists and cameramen plus a scientist from the University of Indiana moved into the Two Creeks site in August. The area, bordering Lake Michigan in Manitowoc County, has been internationally recognized for the exceptionally vivid evidence it holds of repeated glaciation ever since a University of Chicago geologist discovered the buried forest beds in 1905. The Wisconsin chapter of the Nature Conservancy, national organization to preserve America's natural treasures, now owns the land.

"We don't really know how many advances of the ice there were, but probably many more than four," Black explained. But what the geologists do read from their careful excavations is that with each advance, the glaciers carried into the area rock and soil and upon melting, left behind great loads of these unstratified materials. They know also from the stratified sands and muds there that the bordering great lake has made its own contributions between glacial periods.

"The final two ice sheets removed all evidence of the others," Black indicated. But the Valders, last glacier to push southward into Wisconsin lands, did not completely destroy the evidence of the northern-type forest it mowed down. Though buried with glacial till, tamarack and spruce and the forest soil in which they grew have remained. In nearly 12,000 years of death and subsequent curing, these trees have not lost their woody identity. After almost 12 centuries their needles and cones retain their original form.

Many of the stumps and logs from this geological past, some logs as much as 10 feet long, are now revealed. But the geologists have been careful to leave them in their original fallen positions and still partially imbedded. Wisconsin hopes that the Nature Conservancy will make all this a permanent exhibit, beyond that, has proposed that the area be incorporated within Wisconsin's Ice Age Reserve, Black said.

A temporary building to cover the excavations and a viewing platform have been constructed and educational groups are permitted to visit the beds.

But for the thousands of beginning geology students for whom field journeys en masse are not feasible, Two Creeks will teach the lessons of multi-glaciation and Great Lakes geology through color celluloid and video tapes.

"Next summer we'll turn the cameras on details of the forest and of the lake deposits," Black said. The $50,335 which the National Science Foundation has provided for the project, is a two-year support.

After that, Black concluded, if this first attempt is successful, the other CIC member universities will attempt other geological subjects with the camera substituting for on-the-spot viewing.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **3/27/67 vh**

MADISON--The University of Wisconsin and 10 other midwestern universities have launched a major program to improve the teaching of undergraduate geology.

Supported by a grant of $50,335 from the National Science Foundation, the 11 members of the Committee on Institutional Cooperation (CIC) will employ a combination of visual techniques in their pilot project to bring geological phenomena into the classroom.

Robert F. Black, University of Wisconsin professor of geology and chairman of the CIC project committee, pointed out that beginning classes in geology at the 11 cooperating universities now hold thousands of students.

"Since it is becoming harder and harder to transport so many to field study sites," Black said, "it is time to use the excellent visual techniques we have today to give our students the comprehensive training they need."

The demonstration site chosen for the pilot venture is the Two Creeks Forest Bed at Manitowoc, Wis. on the shore of Lake Michigan. This area is internationally famous for the evidence it holds of repeated glacial advances and recent Great Lakes geological history.

Color slides, motion picture photography and video tape all will be employed to recreate the field circumstances for students on campus.

Application of this technique in the teaching of other subjects requiring field demonstrations may result from the success of the pilot undertaking in geology, Prof. Black pointed out.

Wisconsin's partners in the teaching experiment include: the Universities of Chicago, Minnesota, Iowa, Michigan and Illinois; and Indiana University, Ohio State, Purdue, Northwestern, and Michigan State.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 11/7/67 vh

MADISON--"Exploration" of some of the most spectacular geology on the North American continent is in store for the public when Lowell R. Laudon, veteran University of Wisconsin geologist, lectures for the public at 7:30 p.m. Friday, Nov. 10, in 180 Science Hall.

"Gold in Them Hills" will offer highlights of the field trip which Laudon led last summer into the rugged mountains of British Columbia and the Yukon where the full evidence of Rocky Mountain development is revealed. It will also cover the 10-day journey down the Yukon River which the professor and Wisconsin students made last August in celebration of the 100th anniversary of the Klondike goldrush. Traveling from White Horse to Dawson City in a 61-boat flotilla, persons from all over the continent retraced the river route of the men who toiled for gold a century ago.

The lecture will be illustrated with color slides from the collections of Laudon and students on the trip. It is the first in a series of four planned for the public and presented during the 1967-68 year, the department of geology announced.

Guests may also visit the Geology Museum on the second floor of Science Hall before or after the lecture, the department pointed out.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** 10/31/67 vh

MADISON--University of Wisconsin scientists will explore some of the earth's most dramatic natural phenomena and events associated with them in four public lectures planned for 1967-68 by the Madison campus department of geology.

As he announced the following schedule, Prof. Robert Dott said all ages are welcome to attend and little or no knowledge of geology is required to enjoy the talks.

Nov. 10--"Gold in Them Hills," the Klondike gold rush and highlights of a Wisconsin field trip to the Yukon on the 100th anniversary of the rush--Prof. Lowell R. Laudon:

Jan. 12--"The Fiery Underworld," active volcanoes in Hawaii and East Africa, illustrated with two color films--Prof. Carl J. Bowser:

Feb. 9--"Way 'Down Under'," geological explorations in Antarctica--Prof. Campbell Craddock; and

March 8--"Frontiers in Geological Oceanography"--Prof. J. Robert Moore.

All of the lectures will occur on a Friday and will begin at 7:30 p.m. in 180 Science Hall. Guests may also visit the Geology Museum on second floor of the hall either before a talk or following it.

The public lecture program in introductory geology was inaugurated last year and proved highly successful with Madison audiences. 1966-67 talks featured the geology of Madison and other state areas.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept

Release: Immediately 6/26/67 vh

MADISON--The western mountains are the rugged settings for 20 University of Wisconsin students now enrolled in Geology 451 and 453.

The annual summer field trip which covers geologic mapping and regional field geology is a requirement for all Wisconsin geology majors.

Led by Profs. Robert Dott and L. G. Medaris, the group left Madison June 10 for eight weeks of study. Students travel by car, pitch camp by night, and cook their own meals. It is not uncommon, their instructors point out, for students to wear out three or four pairs of boots while studying in nature's rugged laboratory.

These items are listed among many on the itinerary: Visit at the U.S. Geological Survey Hydraulics Research Laboratory, Foothills campus, Colorado State University, Fort Collins; visit at U.S.G.S. Denver Federal Center for tour of topographic map making facilities; study of Precambrian rocks west of Boulder; visit museums and study at Dinosaur National Park, Vernal, Utah, and Sheep Creek Canyon, Utah;

Study of Idaho thrust belt, Snake River George, and lava plateau in Manila to Boise, Idaho area; study in Ochoco Mountains, central Oregon, and areas enroute including John Day River Valley, Pictured Gorge, and Mitchell; observations of varied volcanic features of the Cascade Mountains between Ochoco Mountains and Crater Lake; examining of spectacular sea cliff outcrops of Eocene sediments, Crater Lake at Coos Bay, Oregon; and

Mapping on a topographic base map in Pistol River area, Oregon.

The students will complete their maps and reports and take their examinations July 25-26. They are expected to return to the Madison campus not later than July 30.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept.

Release: Immediately 5/15/67 vh

MADISON--Once the haunt only of vacationers, a group of small lakes in north central Wisconsin have become the "guinea pigs" for University of Wisconsin geologists and as such, may point the way to important water conservation measures for the state.

All lakes are transitory, the Wisconsin earth scientists point out. One lake may appear and disappear within a man's lifetime; another may last 10,000 years. But sooner or later each will be destroyed by one or more agents such as sedimentation, loss of water, deposits of windblown materials or deposits of aquatic plant remains.

"This normal aging process of all lakes can be accelerated by man's use of the lakes and of the adjacent areas," said Prof. Robert F. Black, one of six principal investigators in the three-year study called "Geological Aspects of Eutrophication (Aging) of Small Lakes in North Central Wisconsin."

"It is imperative to maintain the lakes and streams of Wisconsin in a condition suitable for multi-use purposes," said Black, and if we are to do so, he added, the degree to which each of these agents influences the rate of aging must be established in the different lakes.

Now under the spotlight of science, Little St. Germain and the lakes immediately surrounding it in Vilas and Oneida Counties are serving as test cases. Reasonably typical of many in northern Wisconsin, they are all "kettle" lakes, formed when buried ice blocks of the Glacial Era finally melted. Part of the large northern recreation area, they have a large number of resorts and cottages located on or near

- more -

them. They also have prominent use problems such as aquatic weed nuisance, summer-kill of fish and slow-growing pan fish.

The approach to the geological investigation is unique, Black indicates. Each scientist is examining the lakes according to his specialty: Black--physical geology and glacial history, Carl J. Bowser--geochemistry, David L. Clark--paleontology, L.J. Maher--palynology, Robert H. Dott--sedimentation, and David A. Stephenson--hydrogeology.

Preliminary work on the lakes has been carried out even in winter, through the ice, but the greater share of the studies will be concentrated in the open, summer months.

The first year of the project has been supported with $24,728 from the Wisconsin State Geological and Natural History Survey. A sum of $28,000 from the Office of Water Resources Research, U.S. Department of the Interior, has been asked to support the second and third years of the investigation.

"It needs to be stressed," said Geologist Black in a progress report on the research, "that in order to predict quantitatively when and what will happen to the small lakes in north central Wisconsin, it is vital to understand, not just document, the changes that have occurred in these lakes in the past as well as to understand their present environment."

Drainage patterns, watertables, organic ooze and other sediments, even ancient pollens, preserved in the sedimenta are among the many means by which the geologists expect to find that understanding, the report reveals.

Studies of the life within these same lakes have been undertaken by a separate group of scientists and are expected to be integrated with the findings of the geologists.

Once gathered and integrated, these data should provide the basis for practical applications, according to Black.

"It should be possible, within limits, to suggest certain procedures that might alter the rate of aging of individual lakes," Black emphasizes, "or perhaps even reverse that rate temporarily."

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept.

Release: Immediately 4/12/67 vh

MADISON--Rain, snow, dew--approximately 100 billion gallons of water fall daily on the Badger State.

Three-quarters of the total is immediately evaporated. The quarter that remains to replenish surface and ground water will come in for special attention Friday, April 14, in a free public lecture by Prof. David A. Stephenson, a University of Wisconsin hydrogeologist.

"The Trouble with Water is People" is the title of Prof. Stephenson's lecture. It will be presented at 7:30 p.m. in 180 Science Hall as the last in a series of free public lectures in geology.

Keenly aware of water as a natural resource, Prof. Stephenson indicated he will include discussion of current water problems "which are necessarily people problems" and what his special field of geological knowledge and research can contribute toward the wise use and re-use of our natural heritage.

The lecture also promises some surprises as misconceptions about water--water dowsing, underground rivers, and the "cure-all" of desalinization, for instance--are explored.

One among a number of specialists added to the Madison campus geology staff in the past few years, Prof. Stephenson joined Wisconsin in 1965 after work with the Illinois Geological Survey and the Atomic Energy Commission on problems of ground water supply and contamination.

All five of the 1966-67 lectures on geology have been especially planned for persons with little or no knowledge of the science. An eagerness to know is all that is required to attend.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 3/13/67 vh

MADISON, Wis.--An opportunity for persons with only beginner's knowledge of the science to study geology among the lakes and mountains of the Yukon and northern British Columbia opened this week as the University of Wisconsin announced inauguration of a new summer field course.

Geology 150, a four-credit, four-week program, will be conducted July 1-28.

Prof. Lowell R. Laudon will lead the student group. He recently termed the chosen study sites "the most spectacular geology I have seen in the North American Rockies."

The course is especially designed to introduce students in any field as well as high school and junior college science teachers to the simple geologic phenomena they will encounter throughout their lives, Laudon pointed out.

The first week of study will be directed toward rocks in the Cordilleran mountains of the Yukon between Mile 375 and Tagish Lake. The last three weeks will be spent in the Tagish and Atlin Lake areas in northern British Columbia. Each of the lakes has more than 1,000 miles of mountain-bordered shoreline. The combined areas provide for study glacial lakes, glaciers, mountains, and rock exposures including a complete transition from metamorphic mineralized zones into Coast Range granitic batholith.

Camps will be established at several sites during the four weeks with main camp at Ten Mile Ranch on the 100-mile-long Tagish Lake. The camp, known widely to fishermen and hunters in northern British Columbia, is on the old goldrush trail.

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Add one--Geology course

Tuition is $60. Students will buy their own food and prepare it, provide their own camping gear including sleeping bags and will travel in student cars at two cents per mile for the 7,500-mile round trip. The University geology department estimated that total costs for the six weeks--travel time included--would be $400. If the student already possesses suitable clothing and camp equipment the total will be reduced accordingly.

It will be necessary to leave the Madison campus no later than June 26 in order to be on hand for the first day of instruction, Prof. Laudon stressed. He also pointed out that recreation opportunities for persons who do not want to return to Madison immediately after the course ends are varied and inviting.

Fishing is excellent, he said, and the following trips are possible: to Fairbanks and Anchorage, Alaska, with possible return by inland passage ferry to Prince Rupert, Vancouver, or Seattle; to Haines, Alaska, with return by inland passage ferry to the above mentioned ports. Laudon also said that a joint Yukon-Alaska 70th anniversary celebration of the discovery of gold in the Klondike, to be held in Dawson, Aug. 17, is also among the possibilities.

Persons interested in enrolling in the course may gain further information from Laudon or the University's geology department. The address for either is Science Hall, University of Wisconsin, Madison, Wis.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept.

Release: **Immediately** **3/7/67 vh**

MADISON, Wis.--"It would fill a trillion six-ton trucks," Prof. Robert F. Black, University of Wisconsin geologist, said Tuesday, estimating the amount of soil and gravel transported by the great glaciers to just a 20 by 50 mile area south of Madison.

Black tossed out this chunky statistic while marshaling material for "Glaciers and Wisconsin's Dirt," the lecture he will deliver for the Madison public at 7:30 p.m. Friday, March 10, in 180 Science Hall.

What's more, Black pointed out, these six trillion tons south of Madison are a small fraction of the load which the northern juggernauts carried into this state and dumped here. Glacial drift is spread thickly over southeastern Wisconsin, averaging 45 feet in depth.

Black has studied glaciers in the polar regions where they still exist and in places where they have left behind their telltale marks. He is widely known for his theory that even the so-called Driftless (unglaciated) Area west of Madison has felt the ice.

Slides and examples from his polar research will suggest what Wisconsin looked like before the last glacier melted away. "Our Wisconsin scenery, either directly or indirectly, is all the result of the ice sheets," Black stressed.

His Friday talk is the fourth lecture in a 1966-67 University series planned to introduce Madison area people to the science of geology.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept

Release: Immediately 2/14/67 jl

UIR Science Writing Division (262-5984)

MADISON, Wis.--One of the most puzzling questions on earth to geologists is "Why continents and ocean basins?"

The way in which these earth features were formed, and--even more important--how they have been maintained for billions of years, are still mysteries, a University of Wisconsin geologist points out. The existence of many conflicting explanations does not help to clarify the problem, Prof. Robert H. Dott, Jr., explains.

"The many geological differences between high-standing continents and deep ocean basins are so impressive as to make one believe that they have existed for a very great time," he says.

"Yet the everlasting mountains and plains of North America could be reduced to sea level in a mere 10 million years by natural processes of erosion."

Because the earth's features have existed for much longer than a "mere" 10 million years, these continental structures must be rejuvenated--or "grow"--in some way. Thus, the question arises--how and with what?

Geologists have proposed many explanations for the formation and preservation of continents, none of which can be either completely proved or disproved. As a result, Prof. Dott says, geologists still lack a satisfactory explanation and at present understand "very little of the gross tectonics and evolution of the earth's crust."

For example, the existence of mobile belts--long narrow zones of unusually active coastal movements as in the mountain ranges--has been used to explain the

- more -

development of continents. However, Dott points out, mobile belts are found in places where they cannot influence the growth of continents. It seems more probable that continents are rejuvenated from below by the addition of lighter elements from the underlying mantle.

But mobile belts clearly play a major role in the structure of the earth. Indeed, they are the chief zones of dissipation of the great reservoir of energy within the earth that causes such things as earthquakes and volcanic eruptions.

Prof. Dott is currently re-evaluating present knowledge of the sedimentary record in mobile belts to determine if any new or revised generalizations can be made from the sediment patterns within them. Many relevant hypotheses and speculations--such as pole wandering, continental drift, heat convection in the earth's mantle, and spreading of the sea floors--cannot now be satisfactorily tested, he says, "in order to allow confident rejection of any or all of them."

Ultimate answers to these questions, he points out, lie buried in the mantle and core of the earth, now inaccessible to geologists due to technological impossibilities. The ill-fated "Mohole" project was conceived to try to partially remedy this shortcoming.

The trio of scientists which must work together to explain the earth's mysteries, Prof. Dott feels, are the earth historians, geophysicists and geochemists. The historian must tell us what has happened in the past. This knowledge should help the geophysicist and geochemist to finally decide how the earth has evolved.

Prof. Dott's geological studies are supported by the Wisconsin Alumni Research Foundation and the National Science Foundation.

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From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** 1/31/67 vh

MADISON, Wis.--Whatever the "freezes" in the American automotive industry, the automotive situation in frigid Antarctica is in good shape, thanks to the University of Wisconsin and the National Science Foundation.

Since 1961 Wisconsin's Geophysical and Polar Research Center on the Madison campus, which dispatches one or two research parties to Antarctica each season, has had full responsibility for procuring and keeping mechanically fit all motorized equipment used by American Antarctic research parties.

In the first year of the University's contract with the National Science Foundation, the Wisconsin crew kept 24 vehicles in running order. These were mainly the large track-equipped vehicles carrying research parties on long oversnow traverses and often operating in extreme sub-zero temperatures. Badger traverse engineers traveled with the parties to see that their transportation remained in operation.

By 1965 the addition of smaller field vehicles brought the total to 35, and in that same year Wisconsin agreed to expand its service to include maintenance of garages at Antarctic stations and of vehicles held at these sites.

The motorized equipment count today is 114.

"This doesn't mean there are more parties or more scientists working in Antarctica," explained Jack Long, traverse engineer and director of Wisconsin's motor procurement and maintenance program. "It simply means the mechanical work has been concentrated in Wisconsin's hands."

- more -

Add one--Antarctic equipment

The 114 motorized pieces include 20 large track vehicles, 32 motor toboggans, 6 trailers, 6 sleds, 20 heaters, 4 welders, 2 air compressors, and 24 generators.

Wisconsin's crew of eight traverse engineers for the 1966-67 Antarctic season includes: Long, Ed Parrish, Michael Galan, Michael Boman, Michael Thern, Darrell Rowe, Richard Robinson, and Gene Brush. Robinson and Rowe wintered in Antarctica following the 1965-66 season.

Boman, Galan and Thern are due to winter. on the frozen continent this year. They will work during a portion of the winter at the McMurdo Station garage, but from time to time will be flown out to the remote Pole, Plateau, and Byrd Stations for servicing of equipment held there.

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uw
news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 1/25/67 vh

MADISON, Wis.--A first opportunity to study introductory geology with the advantages of televised lectures will begin for University of Wisconsin students with the opening of the second semester Monday.

Prof. Louis Maher, lecturer for the five-credit General Geology 101, has traveled some 18,000 miles by University plane and auto to film geological phenomena for the new instructional program and has spent a year or more in organizing and editing it.

"We're attempting this in order to show those visual aspects of geology that can't be handled adequately in the standard type of lecture," Maher said Wednesday.

Broadcast by closed circuit from Station WHA-TV, the lectures will be given on Mondays, Wednesdays, and Fridays of each week beginning Monday at 7:45 a.m. On each day the initial lecture will be repeated each hour thereafter, ending with the final session which starts at 3:30 p.m. All will be presented in 175 Science Hall.

By this sort of repeat scheduling, students will be able to pick a lecture time which fits their own class schedule and a total enrollment of perhaps 250 students will be broken into lecture sections for 30-35, an ideal number for good viewing of the TV screen, Maher said.

A two-hour laboratory session and a one-hour quiz section held each week must also be attended in General Geology 101.

Prof. Maher said he planned to be available each Wednesday evening in 175 Science Hall while school is in session so that students may meet their TV professor and take part in "live" informal discussions with him.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geology Dept

Release: Immediately 1/12/67 vh

MADISON, Wis.--"There are approximately 1,000,000 earthquakes occurring yearly--that's something like 3,000 a day--each one of which you could feel if you were in the right place at the right time," Prof. Robert P. Meyer, University of Wisconsin geophysicist, said Wednesday.

Meyer offered the startling figures while listing a few of the great earth processes he will talk about in a public lecture at 7:30 p.m. Friday, Jan. 13, in 180 Science Hall. Attendance has reached "standing room only" proportions at the two previous lectures in the 1966-67 series planned to introduce Madison area people to the science of geology.

Earthquakes, volcanos, the shifting of the magnetic poles, the conflict between ocean and continents, the force which may have torn the global crust into separate continents--all will be spotlighted as the lecturer explores the constant adjustment and inner workings of the restless earth.

"This is our planet and we need to know more about it," Meyer said. "There are some things we can watch happening within a lifetime, others we can never see, but we can 'see' suggestions for what's going on."

"The Hidden Earth" to which all people of the Madison and University communities are invited will be followed by a color movie on the same subject. Guests are also invited to browse among the exhibits in the Geology Museum, second floor, before or after the lecture.

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uw
news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 12/6/66 vh

MADISON, Wis.--Today's residents of Madison will "meet" some monstrous former residents of the area Friday evening (Dec. 9) when Prof. David Clark talks on "Giants of the Past."

The illustrated public lecture at 7:30 p.m. in 180 Science Hall is the second in a series of five which the University of Wisconsin geology department has scheduled for Madison people during the academic year. Entertaining lessons in introductory geology, they lay special emphasis on the geology of Wisconsin.

Clark, who works with fossil remains, will trace the development of the giant vertebrate animals which once populated North America. Some lived millions of years in the past. Others may have been seen by early man as recently as 10,000 years ago.

The audience is in for surprises, Clark indicated. For example, most of the great dinosaurs (meaning terrible lizards) were not ferocious meateaters. On the contrary, they were gentle vegetarians, browsing among the leaves and grasses. And it doesn't take a desert environment to produce a camel. While portions of the great ice cap lingered over Wisconsin, camels as well as elephants, sabre-toothed tigers, cave bears and Irish elk lingered there, too.

All Madison area people including high school and upper grade young persons are invited to attend the talk. They may also view the exhibits of fossils and rocks in the Geology Museum. The museum, second floor, Science Hall, will be open from 7-9 p.m. on lecture nights.

###

Geophysics

uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: **Immediately** **11/9/66 mes**

UIR Science Writing Division (262-5984)

By MARLETTE SWENSON

MADISON, Wis.--A vast, blank area on geologic maps of the United States is slowly being "drawn in" by University of Wisconsin researchers.

These scientists, authorities on geophysics, are gathering preliminary information on the basement rocks underlying the Great Lakes. This information is needed to draw together existing knowledge of the geology of the entire upper Midwest region.

Their task is no simple one, for the unknown bottoms of the Great Lakes span 95,200 square miles of the earth's surface--nearly two times the total area of the state of Wisconsin.

"The area around the lakes has been studied extensively since the 1800's, because of economic interest in minerals, but nothing has been done to study the geology of the lakes themselves," explains Richard J. Wold of Wisconsin's Geophysical and Polar Research Center.

"From our present knowledge of the geology surrounding the lakes we can make some assumptions," he points out, "but we have not been able to draw definite conclusions because we know nothing of the geology underlying the Great Lakes."

Within the past 10 years considerable geophysical work has been done in the Lake Superior and Michigan region but, except for exploratory programs undertaken by commercial concerns, the bulk of the Great Lakes geophysical studies have been conducted by Wisconsin researchers.

- more -

Add one--Great Lakes geophysics

The Great Lakes are of particular interest to geophysicists because they obscure the juncture of major geologic structures, Wold explains. Copper and iron deposits, occurring around Lake Superior, may be found beneath the lakes as well.

Wold and Ned A. Ostenso are thus directing a major program of magnetic, gravity and sub-bottom profiling surveys of the Lakes to study their relatively unknown tectonic framework. Preliminary research has been conducted on Superior, and the researchers plan to eventually cover all the Great Lakes.

Results of the aeromagnetic survey of western Superior indicate that the major portion of this area has a very flat magnetic character "probably reflecting the asymmetrical synclinal structure of the lake," Wold explains. The scientists traced several known geologic features (the Keweenaw, Douglas and Lake Owen faults and the Gogebic and Marquette iron ranges) by magnetic anomalies and confirmed the existence of the Isle Royal fault.

Another clue to the structure of the lake basins comes from gravity data. A preliminary survey of Superior two summers ago was continued on an enlarged basis during 1965, when 200 bottom gravity stations were established at five-mile spacings. The Wisconsin researchers continued the gravity survey of Lake Superior this summer, occupying an additional 600 underwater gravity stations.

Simultaneously with the gravity studies, Ostenso and Wold obtained 900 miles of sub-bottom profiles in 1965, and 1,400 miles this summer. These show a wealth of sedimentary and basement structure detail and are of value in interpreting history and structure of the lake basins and for understanding dynamic processes.

The Wisconsin geophysicists are now expanding their research with an extensive four-year program covering all the Great Lakes.

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news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 11/2/66 vh

MADISON, Wis.--Capital city people are invited to attend a lecture on "Stories from Madison's Rocks" to be given by University of Wisconsin Prof. Robert H. Dott, Jr. at 7:30 p.m. Friday (Nov. 4.)

The lecture in 180 Science Hall and four to follow have been arranged by the Madison campus geology department as a public service feature. Like the lecture-demonstrations in astronomy presented at the University's Planetarium, the new series on geology offers the public a chance to learn at elementary level more about the natural world and its phenomena.

The lectures, emphasizing the geology of Wisconsin, are open to all persons without charge.

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uw
news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 10/27/66 vh

MADISON, Wis.--University of Wisconsin Prof. Robert H. Dott, Jr. will go no farther than his own backyard for many of the specimens he will use to illustrate his coming public lecture "Stories from Madison's Rocks."

The geologist, who lives at 231 Du Rose Terrace on the city's west side, has a fossil-studded natural "wall" edging his grounds--the remains of an early Madison quarry.

Dott's talk at 7:30 p.m. Friday, Nov. 4, in 180 Science Hall is the first of five on geology, especially Wisconsin geology, which have been planned by the Madison campus geology department for the benefit of the public. Some of Wisconsin's top earth scientists have been picked to present the lectures.

Prof. Dott said the fossils from his backyard, like all fossils, are important clues to the geological past. The many of marine animal life testify to the formation of the Madison sandstone and Oneota dolomite in sea environments. And the fossil of algae, for instance, suggests the depth of one of those ancient seas.

Prof. David L. Clark will give the second lecture in the series, "Giants of the Past," on Friday, Dec. 9. As the others, it is open to the Madison public without charge.

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Geology —
Dept. of.

uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 10/19/66 vh

MADISON, Wis.--A chance to learn something about geology in general and about the geology of Wisconsin in particular will be provided in a series of five public lectures scheduled to begin at the University of Wisconsin in early November.

Some of Wisconsin's leading earth scientists have been recruited to give the lectures, the geology department said this week in listing the following lecture titles and dates:

Friday, Nov. 4--"Stories from Madison's Rocks" (how our geological history is interpreted through the rocks and fossils), presented by Prof. Robert H. Dott, Jr.; Friday, Dec. 9--"Giants of the Past" (the evolution of now extinct reptiles, especially the dinosaurs), Prof. David L. Clark; Friday, Jan. 13--"The Hidden Earth" (the earth's interior and how seismologists decipher it), Prof. Robert P. Meyer; Friday, March 10--"Glaciers and Wisconsin's Dirt" (effects of the Ice Age including landscape modifications), Prof. Robert F. Black; and Friday, April 19--"The Problem with Water Is People" (ground water supplies and conservation problems), Prof. David A. Stephenson.

All Madison area people including high school and upper grade young persons are invited to the lectures, all beginning at 7:30 p.m. in Room 180 Science Hall. The lectures are planned especially to inform those with little previous knowledge of geological science.

The Geology Museum on second floor of Science Hall will be open from 7 p.m. until 9 p.m. on lecture nights so that guests may browse among the specimen cases either before or after the talks.

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uw
news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 10/12/66 vh

MADISON, Wis.--Though the nearest ocean lies a thousand miles distant from Bascom Hill, the University of Wisconsin has appointed a marine geologist to the Madison campus faculty.

Associate Prof. J. Robert Moore who joined the department of geology this fall, is the first such specialist to work in the University's expanding program of oceanography. Wisconsin zoologists, geophysicists, meteorologists, bacteriologists, water chemists, and engineers are also identified with this joint study of the oceans and their phenomena. But thanks to the swiftness of air travel, none of them requires a briny deep in his backyard.

"Of course oceanographers should maintain an active at-sea program," the 40-year-old Texas-born Moore said this week," but I personally consider a ship to be nothing more than a platform to carry the marine scientist and his equipment to the sampling site. The main work, the most time consuming, is done in the laboratory--and the lab can be anywhere."

Primarily interested in ocean floor sediments, the new faculty member has reached from Arctic Ocean to tropical waters in his research. Most of his professional life has been spent in the employ of American oil companies, but he is no stranger to teaching, having conducted seminars for the Texas Research Laboratories, instructed at the University of Houston, and presented guest lectures at Harvard, Baylor University and the Woods Hole Oceanographic Institute, Massachusetts.

- more -

He is scheduled to teach during the Wisconsin 1966-67 academic year a course in marine geology, primarily for graduate students; a seminar in problems of oceanography, offered jointly by geology and meteorology; and the heavily attended introductory geology survey.

Prof. Moore holds a 1964 Ph.D. from the University of Wales, Aberystwyth, and earlier degrees from Harvard and the University of Houston. In the course of earning them, he won the following honors and awards: the Somer Prize in geology, Houston, 1951; the Houston Geological Society Student Award, 1951; Teaching Fellowship, Harvard, 1953; Socony-Vacuum Fellowship, Harvard, 1953-54; Emerson Scholarship, Harvard, 1955; research fellowships from Woods Hole Oceanographic Institute, 1953, 54, and 55; and Sigma Xi Grant-in-Aid, University of Wales, 1962-63.

Perhaps the most important among 10 or more papers contributed by Moore to his field is one examining the dispersal of today's sands--from source to site of deposition--on the floor of Cardigan Bay bordering the Welsh coast of the Irish Sea. It will shortly be published by the British Museum.

"We use the present, the living, breathing geology, to interpret the past," Moore explained. His Cardigan Bay investigations are linked with a multi-discipline program for study of the greater Irish Sea in which the marine geologist took part from 1962 to 1964. Many of the people on this large University of Wales research venture were Welsh speaking and proud of their tongue-twisting language. "I had to learn a bit of Welsh in order to get things done," said the professor whose duties included organizing the sedimentary research section. He also learned the pleasures of the British tea-break, observed twice daily on shipboard.

In the years ahead, the modern day push to learn more about the world ocean and the great natural resources it contains will take Moore to old and new salt water sites and bring him back swiftly to the Madison campus for "the main work" in the laboratory.

"We have begun planning for at-sea operations in the Irish Sea, the Gulf of Mexico, the North Sea and the Greater North Atlantic Ocean area," the newly arrived geologist revealed. Already a loyal Badger, he emphasized a point: "We as a nation inherit the leadership in the study of the world ocean and its potential. In this regard, Wisconsin has as important a role to fill as any university."

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uw
news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Release: Immediately 9/28/66 vh

MADISON, Wis.--The goal of producing University of Wisconsin engineers also informed about the rocks and soils on which they will build has brought a young Canadian to the University's Madison campus this fall.

Asst. Prof. Franklin Davis Patton, appointed jointly to the department of geology and the department of minerals and metals engineering, is currently teaching a three-credit course titled geology for engineers. Designed principally for students in civil engineering, "the course gives them an understanding of the rock and soil formations on which they will construct highways, bridges, dams and tall buildings," explained Prof. Robert M. Gates, chairman of geology.

Patton is scheduled to teach in the second semester a College of Engineering course in rock mechanics--instruction in the varying aspects of rocks under varying conditions of pressure and temperature.

The 32-year-old Calgary, Alberta native holds a B.Sc. in civil engineering from the University of Alberta, an M.S. in civil engineering from the University of Illinois, and also from Illinois, a 1966 Ph.D. in engineering geology.

He came to Wisconsin following six months of research in Lisbon, Portugal. The engineer-geologist also spent six months in Egypt in 1963, serving as a foundation engineering consultant for an American AID program for building grain storage silos. In the summer of 1961, he was a foundation engineering consultant for an oil refinery in Porto Bello, Panama.

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uw news

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706 • Telephone: (608) 262-3571

Geophysics Dept.

Release: Immediately 7/29/66 vh

MADISON, Wis.--University of Wisconsin geophysicists are again taking part in Lake Superior explosion studies aimed at new knowledge of the earth's crust and upper mantle.

Led by Prof. Robert P. Meyer, the 11 member crew is joined with men from 12 other U.S. and Canadian research institutions for 20 days of earth studies by the seismic method. Wisconsin people are stationed on shore and at various points west and southwest of the lake while two 10,650-pound detonations at a 650-foot depth in the lake are set off in the early morning hours of each day.

The shock waves created by the explosions, picked up by geophones and recorded in the form of graphs, are the indicators of what lies hidden beneath the surface.

Approximately 50 mobile seismographs or listening stations are being used by the scientists to monitor the shots along 11 lines radiating in various directions from Lake Superior into the United States and Canada.

The data gathered this season will find two immediate applications in further explaining the nature of the man-made seismic or earthquake waves and in improving ability to detect and locate underground nuclear tests.

University of Wisconsin men from the Geophysical and Polar Research Center at Madison have been involved in an international program of earth crust and mantle studies for some years. The summer studies in Lake Superior have been made not only by seismic methods but by measurements of the earth's gravity and its magnetic field.

-more-

Add one--geophysics study

Another Wisconsin team from the Geophysical and Polar Research Center, led by Prof. Ned Ostenso, will resume gravity studies in Lake Superior in August.

Members of the seismic crew which will shortly complete its work this season include: Prof. Meyer; William Unger, project supervisor; James Kosalos, Terry Shackelford, Tom and Judy Meyer, Brian Lewis, and Lee Powell, all project assistants; Don Bednarek, electrical engineer; and crewmen Burt Tanner and Greg Mueller.

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U.W. NEWS

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706
Telephone (Area Code 608) 262-3571 Release: Immediately
5/31/66 vh

MADISON, Wis.--The University of Wisconsin's Stanley A. Tyler Award, $100 annual prize for teaching excellence in geology, has been presented to Dietmar Schumacher, a graduate student assistant on the Madison campus.

Schumacher, who will receive his master's degree in geology this June, is a Milwaukee resident, son of Mr. and Mrs. Jakob Schumacher (8150 W. Lisbon St.), Milwaukee. He was slected for the honor from among some 32 student assistants in the Madison campus geology department.

The award is given annually to the individual who, in the opinion of the department, "has exhibited outstanding ability and interest in the teaching of introductory geology." A memorial to the late Prof. Stanley A. Tyler, widely known Wisconsin geologist who died in 1963, it was originated that year with funds from Tyler's colleagues and other friends. Dr. Tyler was regarded as one of the finest teachers and scientists in his profession. His personal and class contact with students left an indelible impression on pupils.

Schumacher received his B.S. degree from Wisconsin in January, 1964, and since then has done research toward his master's degree on microfossils in shale formations in the Milwaukee area. Through his work with conodonts, microscopic fossils of marine life, Schumacher has established that formations previously thought to be Mississippian rock, some 350 million years old, are actually Devonian formations, more than 10 or 15 million years older.

##

U.W. NEWS

Geology Dept

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706
Telephone (Area Code 608) 262-3571 Release: WEDNESDAY, MARCH 30 AM
3/28/66 mes

By MARLETTE SWENSON
UIR Science Writing Program (262-5984)

CHICAGO, Ill.--(Advance for release Wed., March 30)--Valuable ground water resources lie hidden in the bedrock of Wisconsin and upper Michigan. They were buried there with tons of gravel and sediments in the retreat of the last great glacier from the area more than 9,000 years ago.

The many lakes of this area were formed by the same glacier. Many of these lakes are now dying, and are in the final stages of the aging process.

Distribution of this glacier, the Valders, still is not completely know in Wisconsin and upper Michigan. Not enough is known about the geology of the area to describe their distribution and extent of ground water reservoirs. Not enough is known about the natural history of the thousands of lakes to describe their aging process.

University of Wisconsin geologists are now piecing together the scanty clues to this glaciation to define its boundaries and, additionally, to describe its economic implications.

Prof. Robert F. Black reported most recent results of his glacial studies at the Great Lakes Research Conference, held at the IIT Research Institute in Chicago this week.

For the last two years Prof. Black has analyzed field indicators of the Valders glaciation in areas of Wisconsin and upper Michigan. Direction and movement of the ice were indicated by bedrock striations and drumlins, the elongated hills composed of glacial drift. The glacial front was mapped from end moraines, the tell-tale deposits of earth and stones left in the glacier's wake, and from abrupt changes in direction indicators.

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However, precise location of the former ice boundary was almost impossible to determine, Black explained. It was detected in some areas by drilling cores with the University's power auger.

On the basis of current research results, the Wisconsin geologists have redefined the boundaries of Valders glaciation in Wisconsin.

"Valders ice was confined largely to upper Lake Michigan," Black pointed out. "It extended radially south, southwest, west, and northwest in Wisconsin and upper Michigan, and southeastward near Grand Traverse Bay east of Lake Michigan."

Wisconsin researchers have now begun detailed textural and compositional studies of samples collected in the mapped area of Valders drift and in adjoining areas. Once they define the Valders front on the basis of the direction indicators and frontal features, they will undertake a sampling of lakes near the front for bottom sediment studies.

"Immediate economic justification for continued study is obvious in our search for and evaluation of sand and gravel aggregates in the Valders deposits, in ground water resources, in surface waters of lakes and streams formed by the drift, in building foundation problems and excavations," Prof. Black explained.

"The burial of bedrock with potentially valuable mineral resources means that detailed knowledge of the glacial ice and the glacial drift may help in future prospecting," he continued.

Knowledge of the extent of Valders ice in the Lake Superior and Michigan basins is essential also to understanding the history of the Great Lakes.

"We have a long way to go to define the Valders glaciation, but our findings from the past two years have given us a big step in this direction," Black said.

His glacial studies are supported by Wisconsin State Geological Survey and State Highway Commission, National Science Foundation, and Wisconsin Alumni Research Foundation.

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U.W. NEWS

Geology Dept.

From The University of Wisconsin News and Publications Service, Bascom Hall, Madison 53706
Telephone (Area Code 608) 262-3571
12/9/65 vh

Release:
Immediately

MADISON, Wis.--"We have here for the first time the prospect of an integrated attack on geological problems of the state," Prof. Eugene N. Cameron, University of Wisconsin economic geologist, said today following the organization recently of the Wisconsin Geological Association.

Cameron was elected president of the group, a first time banding together of the State's geologists with a view toward a coordinated program of geological investigations. The new association was the result of a conference called by State Geologist George F. Hanson and members of the UW geology staff.

The meeting on the Madison campus, attended by 32 geologists representing 10 Wisconsin universities and colleges, discussed the role of minerals and water in the State's future economic development. It also focussed on problems of making increased knowledge of State geology available to resource development planners.

If mineral and water resources are to play an important role in the State's economic development, geological investigations must be accelerated, the 32 geologists at the conference agreed. State's geologists offer the most effective means of bringing about that acceleration, they believe.

"The information gained should contribute significantly to the development of the mineral and water resources of Wisconsin," Prof. Cameron said. "It should also be of great value to programs that depend on best use of Wisconsin's geological environment.

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"Not only is a pooling of manpower under discussion," he added, "but a sharing of laboratory and other research facilities in Wisconsin institutions."

Members of the newly formed association listed the following immediate needs:

1) More complete knowledge of both bedrock formations and glacial deposits, essential to the State's economic betterment since bedrock formations contain important water supplies and, possibly, new minerals, and since the widely distribted glacial deposits of Wisconsin are important sources of both water and constructional materials;

2) In the area of geological education, geologic mapping of Wisconsin done by modern methods, and publication of maps and reports not available to the public;

3) Modern textbook materials for Wisconsin elementary and secondary schools.

The new association also elected as secretary Prof. Leonard W. Weis of the University Center System. Membership is open to all practicing Wisconsin geologists and also to persons in related fields who are actively concerned with Wisconsin's geological problems. The group, which will hold its first formal meeting early in 1966, will maintain close contact with the State Geological Survey and will be available to serve in an advisory capacity to that agency, Prof. Cameron pointed out.

The conferees and charter members of the Wisconsin Geological Association included:

From the University of Wisconsin, Madison campus, department of geology--Ian Dalziel, Sturges Bailey, D. W. Stephenson, L. M. Cline, R. H. Dott, Robert Gates, C. R. Bentley, and E. N. Cameron; department of minerals and metals engineering--L. D. Clark, T. D. Tieman, and R. Heins; Geological and Natural History Survey--George F. Hanson, M. E. Ostrom, and John McKee;

Add two--Geological Association

From UWM--Richard Paull, A. G. Milnes, and Katherine G. Nelson; from Wisconsin State University, Superior--Paul Tychsen and J. Mangel; from Wisconsin State University, Eau Claire--J. R. Bergstrom and A. C. Cahow; from Wisconsin State University, Oshkosh--G. La Berge, J. McKee, R. Friedel, and B. Karges; from Wisconsin State University, Platteville--W. A. Broughton and H. Palmer; from Wisconsin State University, Whitewater--R. Peterson; from the University of Wisconsin Center System, Fox River Valley--L. W. Weis;

From Lawrence University--R. Tank; and from Beloit College--Robert Stenstrom and J. A. Berger.

##

Geology Dept.

U.W. NEWS

From The University of Wisconsin News and Publications Service, Observatory Hill Office, Madison 53706
Telephone (Area Code 608) 262-3571

3/18/65 mes

Release: Immediately

By MARLETTE SWENSON

MADISON, Wis.--How rare are the "rare earths"? Not very rare at all, for the chemical elements so classified are found in all common rocks and soils.

Despite the misconception, relatively little is known about the chemical forms in which these rarely uncommon elements are found.

A University of Wisconsin chemist, Prof. Larry A. Haskin, is now studying the rare earths by an exacting analytical process--neutron activation analysis. What he learns will give geologists clues to determining origins and compositions of many kinds of rocks.

Prof. Haskin and his associates are one of three research groups in the United States using neutron activation analysis to study the rare earths in naturally occurring materials.

"The name 'rare earths' is misleading," Prof. Haskin says, "for they are not at all rare. The 15 elements belonging to this group are considerably more abundant than lead or tin.

"However, they are not as readily available as lead or tin, which are found in concentrated deposits suitable for mining," he points out. "Rare-earth elements are widely dispersed over the earth's crust but in such minute concentrations that they are not easily extracted."

Several of the rare earths, such as europium and ytterbium, are named after geographic areas. Ytterby is a small community near Stockholm, Sweden. Another element, promethium, is named after the Greek god Prometheus. Although not many practical uses have yet been developed for the rare earths, one, cerium, is used in ceramics, and praeseodynium and neodynium are used to tint glass in welders' goggles.

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Individual rare-earth elements are very difficult to isolate because of their extremely close chemical resemblance to each other. These 15 elements are always found together in nature, although not always in the same proportions. Specialized procedures are necessary to separate them.

Even laboratory separation of the individual elements is difficult. It was not until development of the ion exchange process during World War II that it became possible to separate rare earths into pure forms. They could then be made available in quantity for experimental study.

Haskin's research group at Wisconsin is studying the distribution patterns of these elements in rock and soil samples to learn the chemical processes causing them to occur in the varying proportions found. They observe relative proportions in each sample in the hope of correlating these with origins and the chemical processes responsible.

Neutron activation analysis is extremely sensitive. With it, chemists can detect elements in amounts as small as one trillionth of a gram, or one ten-millionth the weight of a small piece of hair. This amount is so small that a particle that size cannot be seen even with the most powerful optical microscope.

Material from a sample under analysis is first made radioactive by bombardment with neutrons in the University of Wisconsin's nuclear reactor. Then, by determining the resulting pattern of radioactivity created in the sample, the quantities of the various elements present can be measured.

Another useful application of neutron activation analysis is found in criminology, where it is now used experimentally as an analytical tool.

"For example," Prof. Haskin says, "if a person has fired a gun, his hands will be covered with minute quantities of an element in the gunpowder which can be detected by this method."

Haskin says that caution should be observed in using this analysis for court evidence, however, because of the great chance of accidental contamination of the sample with the element being sought.

add two--rare earths

For example, if the chemists are conducting an analysis for gold, they cannot wear gold rings or watches while conducting the experiment.

"And if one had gold fillings in his teeth," Haskin grins, "he would have to keep his mouth shut."

Prof. Haskin is analyzing the rare-earth elements by this method to study the genetic relationships between the geological materials found on earth and in meteorites, as well as relationships between the various rock types found on the earth.

"We found some rock samples from two underwater mountain chains, the Mid-Atlantic Ridge and East Pacific Rise, have the same relative distribution of rare earths as do chondritic meteorites," he says. "This finding helps support the theory that the earth and meteorites are produced from the same materials."

This same distribution of rare-earth elements is not found in terrestrial rocks, he points out, because these rocks have undergone more chemical differentiation since the earth was formed. Rocks from underwater mountains, on the other hand, are believed to be formed by an upwelling of material from deep in the earth's mantle and have not changed as much chemically.

In addition to studies on rock samples, one of his students, Jo Ann Poetz (1321 Carroll White, Indianapolis, Ind.) is conducting experiments using mice to determine what biochemical processes may separate the individual rare earths from each other in a living animal.

The work may make analysis of rare-earth distribution patterns a dependable method for geologists to use in determining interrelationships and origins of rocks.

###

9/10/65 VH

SUNDAY, Sept. 12

BY VIVIEN HONE

MADISON, Wis.--The University of Wisconisn's two men who rode Arlis II, "escaped" Arctic Ocean ice island, into the North Atlantic, are back on the Madison campus, rich in Arctic experience but richer in geophysical science data.

Arlis II, the floating site for Wisconsin geophysical observations since June 1961, broke out of its customary pattern of circulation in the world's northernmost ocean late last winter and began a terminal trip southward via the swift Greenland Current. Only one other such floating science station--a piece of thin pack ice with a Russian science team aboard--had followed the same route of exceptional exploratory advantage and certain ultimate "death" by melting in the waters of the Atlantic.

When the Soviet scientists abandoned their ice at break up in the spring of 1937, they had floated through the frozen wastes of the Arctic Circle to a point 1,500 miles south of the Pole. When Wisconsin's Karl Redell and Jim Pew and some 20 other men from American science institutions were evacuated from Arlis, their island had floated more than 300 miles beyond the Russian point of leave-taking. It had also traveled a total of 6,000 zigzag miles during its four years as a mobile American research center. Moreover, the expected disintegration of Arlis II was far from imminent.

Frozen into and traveling with the pack ice during the entire Greenland Current journey, the island had slipped into the North Atlantic before the annual thaw, late arriving this year, had occurred. It was apparent to the island occupants and to US Navy men aboard the icebreaker Edisto, sent to carry out the

evacuation, that it would be weeks before the last thin shard of what had once been a three-mile-long ice slab dissolved into North Atlantic Ocean, weeks of additional advantage from the scientists' viewpoint.

Pew and Redell were each veterans of Arlis when each was landed separately on the ice to take more of the seismic, gravity and magnetic readings that reveal the structure and composition of the earth's crust. Redell had done a stint on Arlis in 1963-64 and was flown again to the island last March after "escape" into the Greenland Current had occurred. Pew had spent eight months on Arlis in 1962 and returned there last December, before the "escape."

So little is known about currents and ice movements at the top of the world that riders of the island had no sudden or definite knowledge of the "escape," according to Pew.

"There was a lot of speculation but no certainty. Observational flights had revealed that the pack ice was moving southward, taking everything with it. We also had a map and plotted our progress from navigational 'fixes.' We could tell by that we were perhaps 20 miles closer to going out."

But the hour and day of "escape" remains a mystery and the fact of travel in the north-south current wasn't accepted for a long time. "Finally we were pretty sure we were in it and moving along the northern coast of Greenland." There was confirmation further south when "Greenland's icy mountains" were sighted.

Pew's reactions to confirmation were mixed: on one side, immense pleasure for the rare opportunity to carry out Wisconsin observations in uncharted waters; on the other, sadness at what was in store for his island home. Returning from his first trip to Arlis, he had declared the long chunk of ice including mudflats, hills, moss, lichen and an airstrip, "a friendly habitable place" and his assignment on it "the fulfillment of a lifelong far north dream."

Redell also regarded Arlis with affection and enjoyed life there. "There was time to watch the sunset," he commented recently, "and I certainly didn't miss all the carbon monoxide, noise and parking tickets you associate with civilization."

The darkness was total, 24 hours daily, when Pew arrived on the ice in December, but the sun had reappeared when Redell arrived in March. By the time of evacuation there was daylight from 3 a.m. to approximately 10 p.m.

Temperatures during the occupation of Arlis ranged from 40 above to 60 below, Pew said, but in the plywood hut buried beneath the snow, which he and Wisconsin's research instruments occupied, a stove wasn't even necessary. The instruments, all electrically powered and all running constantly, supplied sufficient heat.

Pew was able to estimate the speed of the traveling science station by taking a navigational "fix," sometimes called "shooting the stars." "The movement was something like 10 miles a day," he said, "and during a storm, I clocked it at one knot (one nautical mile per hour), but this was really flying for an ice island. Three nautical miles per day in the Arctic Ocean is considered pretty good."

Between the hours devoted to research the ice islanders found high spots of experience which, according to Pew, "were not what you'd ordinarily think of as exciting. It was the sun coming up for the first time, an airplane passing over or making a paradrop with supplies from Iceland, or the sight of an Arctic tern.... It was certainly exciting when we made our first radio contact with Iceland in March."

Animal life on the island included the terns and Arctic foxes, seals, and polar bears. There were also three huskies, left on Arlis when a recent attempt to reach the North Pole by dogteam was abandoned. The dogs had become pets and even the polar bears, approached to within 30 feet, didn't seem particularly aggressive.

Conflicts between the men, a threat always under conditions of isolation, did crop up on Arlis, the Wisconsin pair reported, but as Pew pointed out: "If you have to blow off, the middle of the Arctic Ocean is a good place to do it. I would say we all made more friends than enemies, and the group stayed together even after we were evacuated to Iceland."

Clashes of men in isolation were scarcely the problem as Arlis edged into the North Atlantic and contact with the outside world was further established. Groups of North European newsmen were flown out to the island by plane while the island runway still remained firm, by helicopter after it became too soft for use. And a number of distinguished visitors came aboard including the U.S. ambassador to Iceland and American Admiral Weymouth, from a NATO base in the North Atlantic.

"The admiral sent out a box of lobsters for us after he left," Pew reported.

Meanwhile the Navy icebreaker Edisto was chewing its way through the pack ice toward the imprisoned island. After a month of effort it was still five miles away.....Arlis might possibly have remained firm another month, but there was always the chance of sudden breakup. It was decided to delay evacuation no longer. Transport of equipment from island to ship was begun then, both by helicopter airlift and by "weasels" and sleds, these making the rough journey over the pack ice.

All of the Arlis party gathered for an impressive American ceremonial immediately preceding takeoff operations. The American flag that had flown always at the island's main camp was lowered by two Eskimo workers and given to the captain of the Edisto. It was understood Old Glory would ultimately be placed in the hands of the chief of the Office of Naval Research. His federal agency had supplied the funds for the Arlis venture.

Redell and Pew were evacuated from Arlis by helicopter, landed on the Edisto, and later flown to the U.S. naval base at Keflavik, Iceland. Icelanders and officials at the base gave the Arlis party a royal welcome and a week of special entertainment and sightseeing before members were flown back to their American

Behind them, now certainly in the twilight of its floating vessel contribution to science, lay Arlis II, still locked within the pack ice and still riding within the Arctic Circle. But it would make that contribution to the end. One of his last duties before evacuation, Redell had set up a system of radio beacons on the island. Aircraft checking the course of Arlis by radio would add another chapter--one on North Atlantic currents--to knowledge of Arctic phenomena before the big ice cube met oblivion.

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Geophysics Dept.

U.W. NEWS

From The University of Wisconsin News and Publications Service, Observatory Hill Office, Madison 53706
Telephone (Area Code 608) 262-3571
5/11/65 vh

Release:
Immediately

MADISON, Wis.--Two University of Wisconsin geophysicists who have been floating southward toward the North Atlantic are preparing to abandon their melting research base.

Arlis II, an Arctic ice island, "escaped" into the Greenland Current this winter. It has already passed the point at which a 1957 Russian science team had to leave a research station which was melting away from under them.

Prof. Ned Ostenso, director of the Arctic program for the University's Geophysical and Polar Research Center, said an April 30 relayed radio message from Karl Redell and Jim Pew reported all was well. The island then was at a position in the North Atlantic Ocean 67 degrees, 35 minutes North and 23 degrees, 56 minutes West--roughly 200 miles farther south than the Russians had traveled.

Arlis II was still frozen into ocean pack ice and floating with this great mass, according to the report, but a U.S. Navy icebreaker was within 52 miles of the island and getting ready to evacuate the Wisconsin pair and eight other scientists from the island. The iceriders probably will be taken to Koslavik, Iceland, and from there either shipped or flown home.

The University of Wisconsin has kept one or two men and their geophysics science equipment on the three-mile-long chunk of floating ice since June, 1961, one year after the UW's continuing program of studies in the Arctic Ocean began. Until late last fall, the island had circulated within one of two great water systems at the top of the world, Then, somehow, it escaped into the Greenland Current and began the trip southward.

-more-

Add one--Arlis II: Geophysics

For the men on board this floating scientific base, it was a rare opportunity to learn more of the earth's secrets in a frigid ocean wasteland almost untouched by man. Only the Russians on their thin piece of pack ice had also passed into the Greenland Current and made observations from this vantage point.

But during any such journey, if continued southward, the spring thaw will ultimately be encountered, the warmer waters of the North Atlantic will be reached, and the floating ice will begin to break up. This happened to the Russians. It was anticipated for the Wisconsin men and careful plans were made, calling for evacuation by plane while the ice still remained solid enough for landing and takeoff.

The reason for planned evacuation by icebreaker instead of by plane remains to be told, once Jim Pew and Karl Redell are off the ice and safely returned to the University's Madison campus.

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Geophysics Dept.

U.W. NEWS

From The University of Wisconsin News and Publications Service, Observatory Hill Office, Madison 53706
Telephone (Area Code 608) 262-3571 Release:

Sunday, April 4

3/29/65 vh

By VIVIEN HONE

MADISON, Wis.--Even in what is likely the most isolated area on the globe, the latchstring of hospitality among the world's scientists can be found.

University of Wisconsin geophysicists recently returned from a rugged two-month oversnow traverse in Queen Maud Land, last vast unexplored Anatarctic region. They found at their goal--the Pole of Inaccessibility--the small hut erected by a Russian team. They also found at this point, farthest in all directions from the Antarctic coasts, cigarettes, matches, food supplies, a reminder to lock the door before leaving, and a bust of Lenin.

Once again the Wisconsin team had pioneered across the ice fields a zigzag path of measurements to fill gaps in knowledge of the Antarctic icecap and the rock underlying it. When the International Geophysical Year began in 1957, the ice-wrapped southernmost continent had been shrouded in its secrets, almost untouched. In the eight years since then, scientists from many nations, Wisconsin men among them, have fought their way by many routes over the hostile terrain and the "picture" of Antarctica has become more and more detailed.

The hut at the end of the Wisconsin trek was built by the Russian team in early activities of the IGY, according to Prof. Charles R. Bentley of Wisconsin's Geophysical and Polar Research Center. The Russians had pushed their way to the Pole of Inaccessibility by a route opposite to the Wisconsin 1964-65 trail. Russians had touched this point again only last year and provided the housewifely courtesies for those to come later.

-more-

Add one--Oversnow traverse

Bentley led the motorized traverse of Sno-Cats, rolitrailers, and 10 men when it left the South Pole station on December .4. He is now back on the Madison campus with six season of Antarctic exploration to his credit.

"We had more mechanical breakdowns than we hoped for, but all in all it was a successful trip," he said. "Hopefully, we got the best information yet obtained on the mean velocity of seismic waves traveling vertically through the icecap."

One surprising feature the scientists found was a rough subglacial topography. Mountains lying beneath the ice began much closer to the South Pole than was expected, starting within 50 miles of it.

In temperatures that averaged 15 degrees below, the Wisconsin party zigzagged across the desolate high polar plateau. They worked always at heights greater than 9,000 feet and on ice that was often two miles thick. They worked frequently for 20-hour stretches, for the summer session in Antarctica is short. Ultimately, in order to reach the Pole of Inaccessibility before the winter closed in, they curtailed one zig of the traverse, reducing the total journey by 200 miles.

When their goal was reached January 27, only one leg on a planned 5,000-mile traverse reaching from the South Pole to Roi Baudoin on the coast nearest to Africa had been carried out. Completing that route will be left to three other parties in three subsequent seasons.

The traverse party was evacuated from the point February 2 by Navy planes and returned to McMurdo Station by way of the South Pole. Listed among Madison campus personnel who took part in the traverse were Prof. Bentley, John Beitzel and Bruce Redpath, project assistants in geophysics, and Raymond Koski and Edward Parrish, traverse engineers. Also working and traveling with the five from Wisconsin were five scientists from Ohio State, the U.S. Coast and Geodetic Survey, and institutions in Belgium and Norway.

-more-

Add two--Oversnow traverse

Bentley reported that some of the most interesting results of the 1964-65 Antarctic season, as related to Wisconsin activities, were in the area of testing equipment, especially a radio-sounding device. This new tool, which reveals the nature of subsurface features through reflected radio waves, will reduce the need for the more time-consuming and laborious seismic reflection measurements. George Jiracek and James Nicholls, Wisconsin project assistants, undertook the testing in the McMurdo Station area and south of there at Skelton Inlet.

"One of the discoveries we made with the radio-sounding equipment was the existence of radio-reflecting layers of ice within the upper few hundred meters of the icecap," Bentley said. "One possible explanation for this phenomenon--also observed in the Greenland icecap--is that ice once lying at the surface was subjected to unusually warm temperatures, resulting in abnormally dense layers of ice. These may now be the radio-reflecting horizons in the upper meters of the cap."

In another Antarctic project undertaken by Wisconsin's Geophysical and Polar Research Center, William Boman, traverse engineer, and John Albright, a civil engineering student, crossed the dome of Roosevelt Island by motor tobaggan. The pair replaced stakes set out during past Wisconsin surveys and close to buried by subsequent snowfalls. They also did some surveying and measured snow depth.

The United States Antarctic Research program is financed by the National Science Foundation and is given logistical support by Operation Deep Freeze of U.S. Navy Task Force 43.

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Geophysics Dept.

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

3/3/65 vh

RELEASE: Monday, March 8

By VIVIEN HONE

MADISON, Wis.--(Advance for Monday, March 8)--Even in the frozen stretches of ice and dwindling darkness which are the Arctic at this season, income tax time is a potent factor in human behavior.

The usual University of Wisconsin equipment went with Stephen den Hartog, sturdy veteran of more than four years of polar research, when he left Madison this week for a gravity survey of the Arctic Ocean Basin. But he also carried the vital U.S. income tax form 1040 which he must fill out and file, even as thee and me, by April 15.

"I'll probably mail it from one of the base points along the Alaskan coast, or from an ice island station," the research assistant for the University's Geophysical and Polar Research Center speculated before departing. "There won't be a postoffice on the island, certainly, but planes may touch there."

"You can wait until June 1, if you're outside the country," added den Hartog, whose zigzag course over our northernmost ocean shows Alaska the nearest land at some points, Siberia at others. "I'll be home again by then, but I'm not sure I could qualify."

How many other Wisconsin researchers will file their tax reports from remote global corners? The question is difficult to answer but surely there will be many.

Den Hartog's 1965 flights back and forth over the northern seas will add up to his fourth season of gravity survey in the continuing program of Arctic studies which Wisconsin began in 1960. The big sandy-haired geologist made his first flights in 1962 and has put in a three-mouth stint each year since then.

-more-

Add one--den Hartog

Two single-engine Cessna 180s, always traveling in pairs, are used in the gravity survey. Den Hartog and his pilot are in one, a pilot and extra fuel in the other. The planes supplied by the University of Alaska's Arctic Research Laboratory are set down on the ice at 20-30 mile intervals, just long enough for the Wisconsin scientist to take gravity and water depth measurements. On each daily flight, an average of eight landings on the ocean ice are made.

"We'll be working out of Point Barrow, Alaska, and Arlis II--and beyond that play it by ear," den Hartog said. Arlis II is the three-mile long floating ice island now traveling southward in the Greenland Current with two Wisconsin men and eight other investigators aboard. It is destined to break up as the spring and warmer waters in the North Atlantic Ocean are reached.

"The gravity survey is done only during March, April and May because then we have enough sunlight to land and the pack hasn't yet begun to thaw," the geologist pointed out.

The 32-year-old den Hartog who holds degrees from Harvard and the Montana School of Mines, was born in Massachusetts of naturalized Dutch parents. He was the first of the Geophysical and Polar Research Center men to do a stint on Arlis II. That was in the summer of 1961. In 1963, in addition to his annual flights for gravity measurements, den Hartog worked on the Arctic seismic program.

Wisconsin studies at the other end of the earth have taken den Hartog to Antarctica twice--in 1957 for 14 months in the frozen south, and in 1962 for a single three-month season.

The 1962 tax statement for Stephen den Hartog reported a wife but didn't mention that the bridegroom faced departure for Antarctica only two days after marrying Miss Susan Smith of Bronxville, N.Y.

This year he leaves behind not only his wife but a daughter, four-week-old Dorcas. The 1965 tax exemption will be nearly four months old when her father returns to Madison.

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Geophysics Dept

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

2/18/65 vh

RELEASE: PMS of Monday, Feb. 22

By VIVIEN HONE

MADISON, Wis.--The recent departure of Karl Redell, University of Wisconsin geophysics technician, for an ice island in the Arctic Ocean has added new dimensions to the mounting drama of Wisconsin science against the northern forces of nature.

Redell is being flown to Arlis II by an Arctic Research Laboratory plane. The island, a floating base for U.S. scientific observations, is now moving southward within the Greenland Current and is expected to disintegrate once the spring thaw occurs and the warmer waters of the North Atlantic Ocean are reached.

But the chance to make geophysical observations in this frigid, top-of-the world waste is so rare that Redell and James Pew, another Wisconsin technician, who has been on Arlis II since late last fall, will stay aboard the ice until the last possible moment for take-off. Eight men from other American science centers, also making observations on Arlis, will share their experience.

There comes a time, once the thaw has set in, when landing a plane on the melting ice is not possible, Prof. Ned Ostenso of the Wisconsin's Geophysical and Polar Research Center, pointed out. Ostenso directs the center's Arctic program.

"The date for evacuation will probably be somewhere in mid-April," he said, "but will be more exactly determined by the advance of the thaw and how far southward the island has moved."

The island, as it now exists in subzero temperatures and before the thaw, measures more than three miles long and one mile wide and reaches below the surface of the ocean for perhaps as much as 100 feet. Redell was flown to Arlis,

not only to help Pew with seismic, gravity and magnetic measurements but to

-more-

serve as navigator. He carried with him special radio equipment to pinpoint the island's position when time for evacuation nears.

"Before this, the only means of doing this was by 'shooting the sun' or the stars," Ostenso explained. "But you have to be able to see these objects to do that, and the area they're passing through is marked by frequent storms."

Since 1937, some 18 science stations have been established on the icy reaches of the Arctic Ocean, 13 Russian and five American, Ostenso said. Most of these have been on ocean ice, perhaps no more than 10 feet thick, but three have been set up on more durable ice islands. Such islands originate as broken away parts of the Ellesmere Island ice shelf.

Each of these ice or island bases has circulated within one of two great water systems at the top of the world. Only two have escaped to enter a third, the Greenland current, passing southward between the clockwise and counter-clockwise movements.

The first of the 18 Arctic science stations, a Russian geographical pole station established in 1937, was one of these, according to Ostenso. The Soviet scientists rode the thin Arctic ice southward to a point 1,500 miles from the pole before abandoning it.. Arlis II, the second to escape, is now within 800 miles or six weeks travel time of that point in the Greenland Sea and may proceed south beyond that area before the men are taken off, Ostenso indicated.

Wisconsin first put a man on Arlis II in June, 1961, one year after its continuing program of geophysical studies in the Arctic Ocean got under way. The island did not pass into the Greenland current until late fall, 1964. All told, six hardy explorers from Wisconsin's Geophysical and Polar Research Center have done stints on Arlis II. Pew and Redell are there each for the second time.

Their companions in the journey south are glaciologists, marine biologists, meteorologists, and oceanographers from the U.S. Navy Oceanographic Office, Washington, D.C., the Universities of Washington and Southern California, and Hokkaido University in Japan.

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U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

12/30/64 vh

RELEASE: A.M. Monday, Jan. 4

By VIVIEN HONE

MADISON, Wis.--Would your allergies be reduced if only you could find the offending weed that produces them?

Is it important to Know whether an exotic honey comes from Algerian desert flowers or a Midwestern buckwheat field?

Would knowledge of its long dead plants help you to trace the economic decline of a long dead empire?

If the answers are "yes," then palynology may help you. More important to a University of Wisconsin geologist, it is helping him to understand the long ago earth. Louis J. Maher, first palynologist to be appointed to the University's department of geology, explains the new science this way.

"Palynology," he says, "is the study of recent and fossil pollen and spores." Pollen and spores, the dictionary shows, are the dust-like substances essential to the reproduction process of the flowering and lower forms of plantlife.

By an odd quirk of Nature, Maher points out, the walls of these microscopic pollen and spore grains are immensely resistant to destruction and remain still structurally identifiable, according to their various species, after millions of years have passed. Some of them have survived since the earth's Devonian period, roughly 400 million years ago.

(more)

The reasoning behind palynology as a new geological tool goes as follows: "If plants produce pollen and the type and distribution of plants depend on climate, then fossil pollen is an index to past climate--and all of this gives a better idea of what has happened in the geologic past."

The pollens are extremely resistant.

"We can grind up rocks, dissolve them in acid, and destroy everything else, but the pollen grains remain," Maher says. "The grains are then examined under a high-power microscope and by the unique surface markings and structures of their walls reveal their plant types.

"In some sediments where no animal fossils are found, the burden of dating these sediments depends entirely upon pollens," the scientist continues.

Maher is especially interested in ferreting out the secrets of the Pleistocene or Ice Age. Only 12,000 years past, the Pleistocene, from the viewpoint of the earth scientists, is a mere geologic yesterday. Concentrating his field work in the Rocky Mountains, the specialist has been studying today's pollen "rain" or fallout from plants in the western area and comparing them for distribution, quality and type with pollens recovered from Ice Age sediments of the region.

His approach to the past through plants of the present is no cut-and-dried foolproof procedure, Maher stresses. "To use a geological analogy: Pollen is something like the dust on your window. Often it gives some information on the eroding rocks of your area, but dust may also blow in from thousands of miles away."

A Swedish geologist, L. Von Post, was the first worker to see the possibilities in pollen for his science. Taking corings from Swedish peatbogs, Von Post used the pollen grains within as "index" fossils or indicators of the forest of 10,000 years past. He made his first report of his studies in 1916. Before him, certain 19th century geologists had noted

pollen in coal beds and other sediments but had failed to recognize their "key-to-the-past" value.

As interest in the new tool increased, Maher says, some geologists and botanists stayed with the original direction of research, concerning themselves particularly with pollen as an index to plant evolution and climatic change in the Ice Age. Other workers in Europe and other parts of the world began to interpret far more ancient ages of the earth through the pollens locked within the sediments representing those ages.

In recent years, oil companies have found an economic application for palynology.

"They've discovered pollen as a useful fossil for identifying the age of rock strata as they explore for oil," Maher said. "The pollen grains remain identifiable even after the sediments have been ground up by a drill."

American interest in palynology as adapted to geology has blossomed only in the past 10 years. The University of Wisconsin geology department brought Maher to the campus two years ago, one move among several in the past decade to broaden the scope of geological instruction. Geophysics, geochemistry, oceanography, and marine geology are other modern specialties which are augmenting the learning possibilities in geology at the University of Wisconsin.

A native of Iowa City, Maher took both bachelor and master degrees from the University of Iowa and his Ph. D. in 1961 from the University of Minnesota. A year of post-doctoral research at Cambridge University, England was carried out in 1961-62 immediately preceding affiliation with Wisconsin.

Trained both as geologist and botanist, Maher is instructing Badger students in elementary geology and palynology, and is supervising a palynology laboratory.

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Geophysics Dept.

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

10/26/64 vh

RELEASE: Immediately

MADISON, Wis.--The Pole of Inaccessibility will be the tough geographical goal of the University of Wisconsin's 1964-65 Antarctic oversnow traverse as the 10-man team leaves the South Pole in late November and heads across the snow-fields for Queen Maud Land.

The Pole of Inaccessibility is that point in Antarctica which is farthest in all directions from the coast--some 900 miles from the nearest approach by ship.

The research goal of the traverse will be the same as in past Antarctic "summers"--investigation of the thickness and properties of the great Antarctic icecap and of the nature of the underlying rocks. But this time the zigzag trek will lead into the vast last unexplored portion of the Frozen Continent.

Prof. Charles R. Bentley of the University's Geophysical and Polar Research Center, a veteran of six seasons in Antarctica, will be the traverse leader. The team will travel in big, motorized SnoCats. The 1,200-mile, two-month trip into Queen Maud Land will be one of the toughest undertaken since 1957 when the University of Wisconsin joined institutions from all over the world in the grand push to study Antarctica and other remote areas, known officially as the International Geophysical Year.

Even in the "summer" season Queen Maud Land is certain to be a windy desert of snow and ice with temperatures of 60 below zero likely. The ice cap in some places is more than two miles deep.

On this high polar plateau, equal in size to all the U.S. west of the Rockies, the terrain will be extremely rough. Supplies for the party will either be flown ahead and cached where a plane landing is possible or dropped directly to the team while it is en route.

-more-

Two members of the party left for the South Pole early in October. They are Raymond Koski and Edward N. Parrish, traverse engineers from the University of Wisconsin who are readying the motorized equipment for the long Antarctic trip.

Prof. Bentley and the rest of the team will join them in early November. Others in the team are John E. Beitzel and Bruce B. Redpath, UW project assistants in geophysics; Richard L. Cameron and James Gliozzi, glaciologists from Ohio State University; Ronald Peddi of the U.S. Coast and Geodetic Survey; and two visiting scientists, Edgar E. Picciotto, nuclear geochemist from the University of Brussels, Belgium, and Olav Dybvadskog, meteorologist from the Norsk Polarinstitutt, Norway.

Koski, Picciotto, and Cameron are also veterans in Antarctic studies.

The usual seismic, gravity, magnetic, and altimetric methods will be employed and a geochemical investigation, undertaken on the Wisconsin traverse this season, will widen the means for delving the nature of Antarctica.

When the 10man traverse team wins its rugged way through to the Point of Inaccessibility early in 1965 and is evacuated by plane, Wisconsin will have completed only the first leg on a 5,000-mile journey. In three subsequent seasons scientists will complete the trail through unexplored Queen Maud Land, a trail stretching from the South Pole to Roi Baudoin, Belgian station on the Antarctic coast nearest to Africa.

In a second Wisconsin geophysical project of the 1964-65 season in Antarctica two men from the Geophysical and Polar Research Center, project assistants George R. Jiracek and James E. Nicholls, will be trying out a new radar-like method for "seeing" the contours of the land below the ice. If successful, Prof. Bentley pointed out, "it will eventually enable us, traveling either in a moving land vehicle or in aircraft, to obtain a continuous record of ice thickness without having to stop and make seismic shots."

Nicholls and Jiracek will work in the McMurdo Station area. They also hope to work at other points. They will travel partly by surface vehicles and partly by Navy small planes and helicopters.

Another Wisconsin geophysical effort is also planned for the 1964-65 Antarctic summer. William M. Boman, University traverse engineer, and John C. Albright, UW civil engineering student, will cross the dome of Roosevelt Island by motor toboggan.

Boman and Albright want to replace stakes set down during past Wisconsin surveys of the island before the continual snows completely bury the markers. Along the route they also will measure snow depth and do surveying.

Boman's assignments in Antarctica this season also call for work at the Pole, readying the motorized equipment for the oversnow traverse, and at McMurdo station, preparing Snocats for future traverses.

Some fourteen men are due to work in Antarctica this season under the University of Wisconsin banner. Nine are identified with the Madison campus. Some 150 U.S. Scientists will take part in 50 field projects on the frozen continent supported by the National Science Foundation.

Logistic support for the U.S. Antarctic Research Program is provided by Operation Deep Freeze of the U.S. Navy Task Force 43.

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U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

Geophysics Dept.

10/20/64 vh

RELEASE: Immediately

MADISON, Wis.--Research to prove the existence of a long suspected "bridge" between Asia and North America has taken three hardy explorers from the University of Wisconsin and one from the University of Hawaii to the Arctic this fall.

Before the Siberia to Alaska "bridge" disappeared under the sea, early man may have used it to migrate eastward from Asia to North America.

Members of the arctic team are UW research assistants Perry Parks Jr., Mark F. Miller, and James Pew. The other member is Noel Thompson, research assistant from the University of Hawaii and former member of a UW geophysical research team.

Director of the Wisconsin-Hawaii arctic program is Prof. Ned Ostenso of the UW Geophysical and Polar Research Center.

"North America and Asia are separated by only about 40 miles of water in the Bering Strait," Prof. Ostenso pointed out. "On either side of the strait there are shallow seas nowhere more than 200 feet deep--the Chukchi Sea, reaching northward more than 1,000 miles, and the Bering Sea stretching a similar distance to the south."

The floor of these seas represents to some scientists the "bridge" the arctic team is seeking.

"If the sea level were lowered by less than 200 feet, this floor would become dry land--the bridge between the continents," Prof. Ostenso said. "In our geological past such a lowering could easily have taken place with the trans-[illegible]ping of the water into an icy part of the great continental glaciers."

-more-

Add one--UW Arctic Studies

Prof. Ostenso has little doubt that the bridge, though submerged, exists, and has emerged from time to time during the thousands of years of the past ice age. Conclusive proof of it would help geologists to link crustal studies of the two continents.

For other sciences it would help explain such things as ecological relationships in the northern world and similarities between Asian and North American plants and animals. It also would trace one step further the origins of primitive North American man.

Hostile weather conditions and ice packs have long delayed investigation in the Arctic, Prof. Ostenso said, "but now with the cooperation of the U.S. Coast Guard we are able to do research in these northern seas."

This season the research team will work from the Coast Guard icebreaker Northwind and will concentrate on the floor of the Chukchi Sea. The team will study the structure, composition and permanency of the "bridge" through underwater seismic measurements and sea bottom gravity observations.

Three tons or more of research equipment was shipped ahead of the team to Barrow, Alaska, where the men boarded the Northwind on Oct. 1. Two of the Wisconsin team and much of the equipment will return to the Madison campus in November.

Jim Pew and a special underwater seismograph will instead be flown to Arlis II, an ice island floating in Arctic waters, for another season of Wisconsin observations. Pew spent eight months on Arlis II in 1962.

Wisconsin's Arctic program this fall is supported by the Arctic Institute of North America and the U.S. Coast Guard. The 1964 project is part of a continuing investigation of the Arctic Ocean area, begun in 1960.

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Geology Dept.

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

RELEASE:

7/10/64 gl

Immediately

MADISON, Wis.--The scenic beauty of South Dakota, Wyoming, and Montana is serving as an outdoor laboratory for 25 University of Wisconsin geology students.

The annual summer field trip is a requirement for all UW geology majors and covers geologic mapping (Geology 451) and regional field geology (Geology 453).

The group left Madison by car on June 13 and proceded to Mount Rushmore National Monument. The first two weeks of the eight week session were spent studying various ages and types of rocks and geologic structures as the group traveled through Wyoming to their campsite at Fairy Lake near Bozeman, Montana.

On the way, the group visited Yellowstone Park and studied the oil fields near Wind River Indian Reservation.

Under the direction of Prof. Robert Dott and Carl Bowser the class gets a good taste of outdoor living along with study of sedimentation, stratigraphy, paleontology, and structural geology.

Long-forgotten scouting skills are resurrected as the students make camp east night, pitch their tents, and cook their food over open campfires.

The class includes: James P. Goldschmidt, 221 E. Sunset Ct.; John Melby, 39 N. Rosa Rd.; Richard C. Lenzer, 410 N. Ingersoll; Bonny Moen, 1149 E. Dayton; Kenneth R. Hunzicker, 217 S. Midvale Blvd.; all of Madison; Robert C. Laudon, Route 1, Waunakee;

Leonard G. Knitter, 4400 Taylor; Frank A. Zuerner, 9600 W. Layton; Peter D. Dixon, 816 N. Chicago Ave.; all of Milwaukee;

-more-

Add one--Geology

David M. Sprouls, Superior; Archie R. Naysmith, Kenosha; Ned K. Blever, Neenah; Michael P. Gross, Waterloo; Sarah Stoll, Sheboygan; John Zerwick, Oconomowoc; Michael L. Sargent, Green Bay;

Alex T. Feucht, Mayville; Terry J. Mather, Fond du Lac; Laverne C. Harrison, Hustler; Jack Knorr, Menasha; Dennis Luchterhand, Scarsdale, N.Y.; Gordon L. Nord Jr., Cincinnati, Ohio; Paul F. Hlava, Berwyn, Ill.; Larry Loidolt, Berwyn, Ill.; and Philip E. Olson, Sacramento, Calif.

##

Geology Dept

MADISON NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

5/14/64 gc1

RELEASE: Immediately

MADISON--Two University of Wisconsin geologists and 12 graduate students will attend a meeting of the Friends of Pleistocene Geology in Minneapolis this week-end (May 16-17).

Profs. Robert F. Black and Louis J. Maher Jr., will head the Madison campus delegation which will also take a field trip in the Duluth area to study the stratigraphy of glacially deposited sediments.

The society is an informal group of people interested in the glacial history of the Midwest.

##

U.W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

5/12/64 vh

RELEASE: Immediately

(Glossy prints of the map available on request)

By VIVIEN HONE

MADISON, Wis.--A first aeromagnetic "look" at Wisconsin, promising enough to suggest a second examination with the potential of revealing important new mineral resources within the state, was reported the past weekend by a University of Wisconsin geophysicist.

Robert W. Patenaude, a research assistant at the UW geology department's Geophysical and Polar Research Center on the Madison campus, told of the state-wide airborne magnetic survey which he has recently completed--10,000 miles of flight and 50,000 measurements or readings--at the Institute on Lake Superior Geology, held at Ishpeming, Mich.

A similar but more detailed survey over a smaller area, conducted recently by the Minnesota and U. S. Geological Surveys and reaching to within 10 miles of Wisconsin's border, has pointed a magnetic "finger" at a large concentration of magnetic materials in Minnesota's Filmore County. There are indications that a tabular body, 5,000 feet wide and lying 1,000 feet below the surface, may be an iron deposit of a quality similar to that of the Mesabi Range, one of the principal iron areas of the world. Minnesota geologists are proceeding with even more detailed investigations before drilling.

The inventory of Wisconsin's magnetic field, flown largely at six-mile intervals along north-south township or range lines and at a 3,000 foot altitude, grew out of initial 1960 summer flights to test the possibilities of airborne use of a new absolute-type magnetometer unit, Patenaude said. Now a part of reconnaissance studies reaching into central, eastern, and Upper Michigan as well as southeastern

-more-

Illinois, the survey had the principal goal of extending knowledge of the earth's broad scale structural and geologic features rather than of mineral exploration.

"Although anomalies--deviations from the normal magnetic field--do not necessarily point to minable mineral deposits, they are 'a symptom of mineralization,'" Patenaude said. "Any time the readings are high this indicates there is a relative concentration of magnetite below. The concentration may be minable iron materials. The anomaly may also point to non-magnetic minable minerals commonly found in association with magnetite."

As might be expected, Patenaude reported large anomalies on readings taken above known areas of iron concentration such as the Penokee-Gogebic range in Bayfield, Ashland, and Iron counties; in the Black River Falls area; the Butternut area in Ashland County; and Magnet Center in Iron County.

But he also encountered areas of significantly higher-than-normal magnetic field in western, northern, and north-central parts of the state where mineral concentrations have not been suggested. Among these were regions south and west of Rhinelander; north of Wittenberg in Shawano and Langlade counties; east of Wausau in Marathon County; and in the vicinity of Eau Claire.

Patenaude also reported finding 80 small, local magnetic anomalies of such limited horizontal extent that they can not now be correlated with measurements on adjacent flight lines.

"In part, the relatively smooth contours of the map reflect the lack of detail inherent in widely spaced flight lines," Patenaude pointed out. "We haven't begun to cover the ground for detail as yet, for the Wisconsin measurements were made to reveal the gross structural and geologic framework of the state. The Minnesota survey over Filmore County was flown at one-mile spacings and even then the important anomaly showed clearly only on two adjacent flight lines. Thus it is apparent that this preliminary regional survey of Wisconsin at six-mile spacing likely has missed features of possible economic significance."

Add two--magnetic survey

In the light of the findings in this first aeromagnetic "look" at Wisconsin, Profs. Ned Ostenso and Robert Meyer of the UW Geophysical and Polar Research Center said today that they recommend continuation of the survey to further explore the revealed anomalies and possibly, to pinpoint others.

"Today very little of the earth's mineral resources exposed at the surface remains undetected," Ostenso pointed out. "Most of the world supply lies beneath the surface and discovery of these raw materials has become a team effort between geologists and geophysicists. In this endeavor initial investigations by means of airborne magnetometers have frequently proved to be the best and most economical method of delineating areas worthy of later, more detailed study with all of the tools available to the earth scientists."

The recent development of magnetometers capable of being used in airplanes has immensely expanded the scope of operations and has already located ore deposits worth billions of dollars, Ostenso said.

Meyer said that the huge Marmora deposits of magnetite in southern Ontario, estimated to contain as much as 1,000 million tons of the mineral, were discovered in 1949 solely on evidence from aeromagnetic mapping. Canada is currently conducting a program to explore all of the potential mineral-bearing regions of that country, he emphasized, and added that nations such as Ghana, Turkey, Venezuela, Bolivia, Angola, Chile, and the United Arab Republic are now planning or conducting similar surveys.

The University of Wisconsin, beginning in the 1940s under the leadership of Prof. George P. Woollard, pioneered many earth-science investigations by means of gravity, magnetic, and seismic measurements. Long famous for its work in geology, Wisconsin is now also one of the world's centers for geophysical studies.

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Add three--magnetic survey

In the development of magnetic studies alone, the University has made significant contributions to instrumentation and interpretation techniques. Beyond this, the Geophysical and Polar Research Center has conducted regional magnetic surveys of the entire Arctic Ocean basin, the Greenland and Chukchi Seas, and of large portions of the Antarctic continent.

The recently completed aeromagnetic mapping of Wisconsin was supported through funds from the Wisconsin Alumni Research Foundation and the National Science Foundation. The map is available for inspection at the Geophysical and Polar Research Center and the Office of the State Geologist, University of Wisconsin, Madison.

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Geochemistry Dept

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

2/27/64 vh

RELEASE: Immediately

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Wisconsin, beginning in 1946, has pushed geophysics to the forefront in this earth science progress. Now another arm is being added to a department with a nearly century old tradition of high accomplishment.

Prof. Bowser has started the teaching program with a new course open to undergraduate and graduate students, "and we're going to set up a lab with special research equipment."

Like other branches of geology, geochemistry has important economic application as well as academic knowledge.

Researchers will make chemical analyses of various ingredients of the earth's crust and also will try to simulate conditions for formation of minerals. It is known that minerals form in nature over a wide range of temperature and pressure. With the appropriate equipment, these conditions for formation can be recreated in the laboratory.

-more-

Add one--Bowser: geochemistry

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Geochemistry Dept.

FEATURE STORY

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-more-

Prof. Bowser's interest in borax, a mineral which contains the element boron, goes back to 1955 when the geochemist worked on a U.S. Geological Survey project aimed at learning more about borates and their occurrence. The possibility of using boron as an ingredient of rocket fuel was being explored. It has long been used in fuels and paint and glass-making, Prof. Bowser says.

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More knowledge about borax and the conditions for its occurrence could lead not only to discovery of new deposits but also to greater understanding of other salt deposits, Prof. Bowser points out.

How was the mineral deposited in the first place and why is it concentrated there? What were the conditions of temperature and pressure resulting in the formation? These are the sort of questions which geochemists try to answer. "We know pretty well that boron occurs dissolved in waters at the surface of the earth and was brought there by hot springs," Prof. Bowser says.

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But the time for formation of minerals is still a great problem. "You can't compress time," the UW geochemist points out, "and how can we know that what we have in the 'bomb' after the application of heat and pressure duplicates what may have taken millions of years to form?"

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U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

4/27/64 rf

RELEASE: Immediately

MADISON--Two University of Wisconsin women faculty members, one at UW-Milwaukee and the other on the Madison campus, are among 79 women scholars from the United States and 20 other countries who have been granted fellowships by the Educational Foundation of the American Association of University Women in Washington, D.C.

They are Dr. Evalyn R. Aligwekwe, assistant professor of political science at UW-M, and Dr. Judith S. Lister, research assistant in geology on the UW's Madison campus.

Dr. Aligwekwe will use her fellowship to make political science studies in Southern Nigeria, Africa, and London, England, while Dr. Lister will continue her studies in geology on the Madison campus.

The awards, totaling $265,000, will be used for research and advanced study during 1964-65 in the humanities andin the natural and physical sciences, including medicine.

Of the 79 awards, 51 go to American fellowship recipients in 16 states and Washington, D.C., and 28 are international fellowship recipients living in 20 nations scattered across the world.

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Geology Dept

WIRE NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

3/26/64 vh RELEASE: Immediately

MADISON, Wis.--Some 30 University of Wisconsin geology students and seven members of the Madison staff will spend their spring vacation in on-the-spot studies of American rock features. Two separate tours will be conducted.

Led by Prof. Lewis Cline, geology department chairman, the field trip for Course 558 will include inspection of three widely differentiated areas of the Midcontinent: the Ozarks Dome, south of Springfield, Mo., a fine example of a stable structure with shallow water sediments, particularly fossil-bearing limestones; the Ouachita Mountains of southeastern Oklahoma, an unstable, highly faulted and complicated fold belt; and the Arbuckle Mountains of southern Oklahoma, where one of the most complete records of rock strata is exposed.

Other members of the staff who will make the tour include Profs. Louis Maher, David Clark, and Ian Dalziel, and Acting Instr. Richard Hammes.

The six-day field trip for Geology 102, a beginning class in the history of the earth, will be led by Profs. Robert H. Dott Jr. and Lowell Laudon. It offers a look at various types of sedimentary rocks--from 200 to 400 million years old, and a chance to view and collect fossils associated with some of them. The route will lead into the Ohio River region of southern Indiana and southern Illinois.

Students accompanying Prof. Cline will include: from Madison--John Eissfeldt (3214 Lake Mendota Dr.), and James Silver (501 S. Midvale Blvd.); Henry Moeller (1060 W. Silver Spring), Milwaukee; John Beitzel (6109 W. Lloyd), Wauwatosa; Ronald Larsen, Racine; Les LaFountain, Marinette;

-more-

Add one--geology trips

Jack Hallberg, Delavan; Eric Luttrell, Eau Claire; George Froming, New Holstein; Ned Bleuer, Neenah; and Philip Olson, Janesville; Robert Howe, Baton Rouge, La.; Robert Laury, Danville, Ill.; and George Asquith, Amarillo, Tex.

Students accompanying Profs. Laudon and Dott to the Ohio River region will include: from Madison--Phyllis Ferry (137 N. Prospect), Tom Sweet (4326 Waite Circle), and Don Gilpin (118 Lynnhaven Rd.); William Hughes (5851 Santa Monica), Milwaukee; Barbara Franson (1466 S. 80th), Wauwatosa; Judy Glen, Hubertus; Stephen R. Meyer, St. Germain;

Chandler Campbell; La Crosse; Elizabeth Wenger, Portage; Bruce Haugh, McFarland; Tom Wakeman, Lake Mills; Janet Schmidtman, Two Rivers; Wayne Grip, Eau Claire; Bruce Donair, Boscobel; Betty Bass, Ft. Collins, Colo.; and Bruce Strathearn, Menomonee, Fla.

The travelers will make the trips in cars owned by students and staff.

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Geology Dept.

U.W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON, WISCONSIN 53706

3/24/64 gcl

RELEASE: Immediately

By GERALD LUBENOW

MADISON, Wis.--Two University of Wisconsin geologists are developing refined techniques for using patterned ground to date recent surfaces as a result of research done in Antarctica.

Prof. Robert F. Black has spent the past three field seasons in Victoria Land gathering quantitative data on patterned ground in the area.

Proj. Asst. Thomas Berg has put in four field seasons and wintered over in 1960-61. He has examined patterned ground in Victoria Land, at the head of the Beardmore Glacier, and at numerous localities on the Antarctic Peninsula.

The two scientists have published one paper and have three more at press outlining results of their research, which is being financed by the National Science Foundation.

Black and Berg maintain that in areas where radioactive carbon is commonly limited because of absence of living organisms, the patterned ground could be an extremely useful substitute in determining the age of surfaces.

"At least for the present in Victoria Land no better method of dating the events of the last 10,000 years or so is known," they say.

Many scientists have used patterned ground as an age indicator. Black feels that in the absence of quantitative data such usage is little more than an expression of faith.

The patterned ground with which Black and Berg are concerned consists of nonsorted polygons resulting from annual fillings of thermal contraction cracks in permafrost.

-more-

Add one--patterned ground

The process can be roughly equated to that by which dust and dirt fill contraction cracks in concrete sidewalks.

However, in the case of patterned ground the polygons are outlined by ice wedges or sand wedges which exist as end members, between which gradation occurs. Ice wedges are more common along the humid coasts, while sand wedges predominate in the dry inland areas.

The basic premise is that these wedges widen by contraction cracking and infalling of sand and rubble or by partial filling with hoarfrost. As a consequence, annual temperature cycles are commonly recorded by an increment of sand, rubble or ice.

Black and Berg are attempting to gather quantitative data which will allow them to determine accurately the growth rate of the sand wedges and ice wedges. This work is not without complications.

Theoretically, ice wedges will increase their growth rate with time. As more and more ice is added to the ground, growth approaches a maximum rate where all the ground responds as ice does to temperature changes.

Growth rates of sand wedges theoretically will diminish with time as loose sand is added to the ground, leaving small cores of ice-cemented materials in the centers of polygons too small to crack under the seasonal temperature changes.

A constant annual growth rate for a particular wedge is not likely. However, the scientists feel that by selecting certain wedges in a fairly homogeneous environment where conditions are expected to have remained constant since the wedges started to grow, one can obtain a frequency of cracking and an average growth rate.

The work done thus far provides support for the concept of the minor ebb and flow of the Antarctic ice sheet today, for the sluggishness of most glaciers, and for far greater recency of deglaciation than is generally accepted.

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Geology Dept

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

11/13/63 db

RELEASE: Immediately

By DENNIS BLAKESLEE

MADISON, Wis.--Consider the case of the tiny conodonts.

These curious little fossils are one of the most perplexing of geological mysteries yet they stand today as one of the most useful tools in dating and correlating rocks of the past, a University of Wisconsin geologist explains.

Conodonts come shaped a bit like teeth or jaws, often quite elaborate, with no known counterpart in living organisms. They range in size from that of a pinhead on down and are found virtually by the million in rock such as shale, limestone and sandstone throughout the world.

The origin of conodonts is entirely unknown and geologists must be content with making good guesses. In spite of this, conodonts are used extensively to plot the ages of marine sedimentary strata and to correlate it, with great precision, to strata of similar age all over the world, Dr. David L. Clark, associate professor of geology on the Madison campus, points out.

During the 100 years since conodonts were first discovered and described by a Russian geologist, some 2,000 types, each given a species name, have been found, he says. They first occur in marine sedimentary rock laid down something like 600 million years ago and existed for about 400 million years before extinction.

At first, Prof. Clark relates, they were thought to be teeth or perhaps the jaws of marine worms. But conodonts are laminated with the newest layers on the outside, just opposite the growth of teeth.

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All considerations seem to deepen the mystery. For example, their composition, calcium phosphate, would indicate that they are closest to vertebrates, which today often contain this mineral while it is not as common in invertebrates.

Yet conodonts appear on the geologic scene millions of years before the first definite vertebrate creature evolved, Prof. Clark continues.

They have never been found associated with fossil material known to have come from the same animal. This fact, plus their world-wide distribution, seems to indicate that the conodont animal was soft-bodied, free-swimming or floating and tremendously abundant, he explains.

In very rare instances, conodonts have been found situated in a pattern, suggesting that they came from an animal that was bilaterally symmetrical. "From their composition, general shape and size, they seem to have been enclosed in fleshy material," he adds.

Summing all this scant evidence, the best present guess is that conodonts were flesh supports for some unknown vertebrate type, Prof. Clark guesses.

"The real value of thse things is that in certain layers they are the best index fossils found," he points out. Thus far they have been found in every continent except Antarctica.

"Most of the species existed for a very short duration of time," he states, adding that in progressively younger rocks conodonts display marked evolutionary patterns, thus accounting for their great value as index fossils.

"The average rate of conodont evolution in certain strata was perhaps a new species every half million years," the geologist says. As a result, rock containing a particular form of conodont can be dated relative to other rock with extreme precision.

"The degree of accuracy for correlations is greater than that in the real quantitative techniques," he explains, referring to methods such as the measurement of the radioactive decay of uranium to lead.

For the past two summers, Prof. Clark and his co-workers have studied conodonts in certain strata in the Great Basin region of the southwestern United States. On the basis of these studies, one particular layer of rock previously considered to be a single bed has been subdivided into many sub-series.

What's more, he continues, identical conodonts are found in the same group of layers all over the globe.

Useful they may be, but a mystery's a mystery. "I suppose every geologist dreams of one day turning over a rock and finding a pattern of conodonts within the outline of an animal," Prof. Clark concludes.

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Geology Dept.

U.W. NEWS

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2/27/64 vh

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Geology Dept

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WIRE NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

1/10/64 jb

RELEASE: Immediately

MADISON--Fourteen contracts with federal agencies, including one of $100,000 with the Atomic Energy Commission to carry out research titled "A Study of Fundamental Particles," were approved by University of Wisconsin regents Friday.

The UW department of physics will work with the Chicago Operations Office of the AEC in handling the fundamental particles project.

The 14 contracts totaled $386,620, covering various services provided by University departments.

Other projects, amounts, and departments:

With the Air Force Electronic Systems Division, $11,836, meteorology; Army Medical Research and Development Command, $30,400, medicine; Army ROTC Flight Training Program, $2,520 and $2,245, both with the military science department;

AEC, $60,000, Institute for Enzyme Research; $8,220, dairy and food industries; and $35,000, radiology; National Aeronautics and Space Administration, $8,945, Space Astronomy Laboratory; Office of Naval Research, $29,849, geology; U.S. Forest Service, $3,000, entomology; Geological Survey, $59,250, state geologist; Fish and Wildlife Service, $14,500, bacteriology; and National Science Foundation, $20,855, geology.

###

U. W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

3/8/62 vh

RELEASE: Immediately

MADISON, Wis.--Eugene N. Cameron, University of Wisconsin professor of geology, will leave Saturday, March 10, for conferences in England and Holland aimed at setting up an international commission on ore microscopy.

The preliminary discussions will be held with scientists at the Atomic Energy Establishment in England, at Cambridge and Durham Universities, and Virje University at Amsterdam.

The commission proposal will be acted on in mid-April by the International Mineralogical Association at Washington, D.C. At the meeting, Prof. Cameron, in a symposium on layered intrusives, will present a paper based on his chromite studies in the Bushveld complex of South Africa.

The Wisconsin geologist also will deliver the Distinguished Lecture for the joint meeting April 23-25 of the Geological Association of Canada and the Canadian Institute of Mining and Metallurgy. His lecture at Ottawa will be on the subject of pegmatites.

These bodies of rock resembling granite in composition have been problems for geologists for more than 100 years. Their mineral crystals are of extraordinary size and many rare minerals occur in these. They are important as the only sources of certain minerals for industry.

Cameron has been studying pegmatites for some years.

###

U. W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

10/16/63 db RELEASE: Immediately

MADISON, Wis.--Four faculty members, one a native of Scotland, have assumed new duties this semester on the staff of the University of Wisconsin department of geology at Madison.

They are: Ian W. D. Dalziel, David L. Clark, Ned Ostenso and Alfred B. Parker.

Dr. Dalziel, born in Glasgow, Scotland, was appointed visiting lecturer. He is teaching courses in structural and metamorphic geology during the current academic year pending a permanent appointment. The 25-year-old geologist received his Ph.D. in July from the University of Edinburgh, Scotland.

Dr. Clark, 32, named associate professor of geology, came to UW from Brigham Young University to teach in the fields of paleontology and micropaleontology. A native of Albuquerque, N.M., he took his doctorate from the University of Iowa in 1957.

Dr. Ostenso, born in Fargo, N.D., was appointed assistant professor of geology. He has been at the UW for several years doing geophysical research in the Arctic and will teach marine geophysics. Dr. Ostenso, 33, received his Ph.D. from the UW in 1961.

Parker will receive his doctorate from Columbia University this semester. He was named assistant professor in the department and assists in instruction of minerology and petrology.

###

U. W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

RELEASE:

10/7/63 db Immediately

MADISON, Wis.--During the 10 academic years from 1949-59, the University of Wisconsin department of geology at Madison awarded the second highest number of Ph.D. degrees in the nation, according to a recently released tabulation.

Over this period, the UW department granted 88 doctorates, a report from the Office of Education, U. S. Department of Health, Education, and Welfare, said. Columbia University, in first position, conferred 143 doctorates during the period.

###

Geology

U. W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

7/25/63 vh

RELEASE: Immediately

MADISON, Wis.--Final exams now nearing for 17 University of Wisconsin geology students will be decidely al fresco, in keeping with a course that uses the Black Hills and the great Rockies for its laboratory.

The written tests, scheduled July 29 at a camp in Utah's La Sal Mountains, culminate eight weeks of strenuous outdoor study in the annual summer field course covering Geology 131 and 132. The course is required for students seeking to become professional geologists.

Students travel by car, pitch camp at night, and cook their own meals. Each student traditionally wears out three to four pairs of boots in nature's rock-strewn "classroom."

The first four weeks are devoted to geologic mapping; the second to problems of rock strata, sedimentation, paleontology, and rock structure.

The class includes these students:

William H. Bird (5006 Hammersley) and Roberts H. Ellison (410 Virginia Terr.), both of Madison; Dietmar Schumacher (1830 W. Vine St.), Milwaukee; F. W. Bachhuber, Mayville; John F. Baesemann, Chippewa Falls; George T. Froming, New Holstein; Terrance M. Gerlach, Weyauwega; Thomas E. Harrington, Portage; Walter R. Holthaus, Onalaska;

Lester J. La Fountain, Marinette; Kenneth Thomas Miles, Kenosha; Douglas R. Nolte, Baraboo; Douglas E. Pride, Osseo; Charles E. Schweger, Green Bay; Edward F. Wietor, Fond du Lac; Kenneth A. Montgomery, Dubuque, Iowa; and Barbara A. Schneider, Bryan, Ohio.

##

Geology Dept.

WIRE NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

5/28/63 vh

RELEASE: Immediately

HAMILTON, Mont.--The University of Wisconsin's seismic explosion studies in Montana's Bitter Root River, halted recently after protests from western sportsmen and ranchers, will begin again this week with approval of the previous objectors and Montana conservation officials, according to UW geologist Prof. Robert P. Meyer.

Further, Prof. Meyer said, "We will proceed now, as a result of the publicity, with a great deal more local assistance and help than we would have had without it."

Prof. Meyer and Dr. Murli Manghnani head an eight-man team from the UW Geophysical and Polar Research Center which began studies in the Bitter Root Valley, May 20, to extend knowledge of the nature and genesis of the rock structure underlying this southwestern Montana area.

Their research by the seismic method involves setting off a series of nitro-carbronitrate blasts, half of such blasts in the river, and of registering the shock waves that result. Earlier investigations of the valley and flanking mountains have been carried out over the past two years by Dr. Manghnani through gravity measurements.

"Our problem arose in the first place through a misunderstanding in completing arrangements with Montana conservation officials," Prof. Meyer explained. He pointed out that explanatory meetings this past weekend with civic leaders, sportsmen, and ranchers have resulted in resolutions of approval being forwarded to the Montana fish and game department.

-more-

Add one--Montana research

UW geology teams have carried out crustal studies of the earth in many parts of the United States including investigations in Montana in the summers of '59, '60, and '61. Last summer their work in the Mississippi River, another seismic explosion investigation, was widely and favorably reported. Later this summer, a Wisconsin group will begin seismic research in Lake Superior in cooperation with Canadian scientists.

The work in Montana will require some 50-100 shots and is expected to be completed in the next 10 days, Prof. Meyer indicated. Dr. Manghnani will remain for three or four weeks "to enlarge the gravity coverage and work on the magnetics of the valley."

Dr. Manghnani believes his gravity studies indicate that the whole valley is the result of an underlying horst and graben structure--a great block down-faulted in relation to the flanking mountains.

Prof. Meyer also said that work done thus far in the seismic portion of the study "is scientifically favorable."

The Wisconsin team now working in Montana includes: Meyer, Manghnani, Joe Laurence, UW graduate student in geology; Richard Heidemann, Peter Kienitz, David Schlabach, and Allen Kronsnoble, all Madison area project assistants for the Geophysical and Polar Research Center; and Jack Sampson, Wyoming rancher, hired for the duration of the western studies.

###

Geology Dept.

U. W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

4/3/63 vh

RELEASE: Immediately

MADISON, Wis.--Some 15 or 20 University of Wisconsin students in geology will spend their spring recess exploring the rocks of the Appalachian Mountains.

Prof. Lewis Cline, chairman of UW geology studies, said this week that he and his students in 125B, a conducted field course in stratigraphy, would head for the Chattanooga, Tenn., area April 11, traveling by cars.

From the Tennessee site they will work northward along the Appalachians into Pennsylvania. "There is a very fine display of Paleozoic rocks on this route," Cline pointed out, "everything from Cambrian through the Permian."

The work will terminate at Harrisburg, Pa., in time for students to return to the Madison campus for classes on April 22.

Field studies for 125B are preceded by a seminar in stratigraphy.

###

WIRE NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

3/8/63 jb

RELEASE: Immediately

MADISON, Wis.--Nine contracts aggregating $655,003 for service and research to be performed by the University of Wisconsin for federal agencies, plus an agreement for use of a 30-foot motor launch for research on Lake Mendota, were approved by UW regents Friday.

The boat, on loan from the Office of Naval Research, will be used for civil engineering studies supported by a U.S. Public Health Service grant.

Other contracts, agencies, and amounts approved by the regents:

Air Force Research, $168,916, with the geology department; Atomic Energy Commission, two contracts with the UW physics department, one of $315,000, the other for $54,000;

Navy Research, $16,400, zoology, and $29,324, geology; Department of Commerce, Bureau of Public Roads, $2,500, commerce, and $14,450, law; Peace Corps, $6,939, various departments; and National Science Foundation, $47,474, meteorology and electrical engineering.

###

FEATURE STORY

Dept. Geology

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

2/6/63 vh

RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--The recent "passenger" in the elevator of Madison's Park Towers apartments was a strange one--a delicate looking, 30-pound object of bright metal and electrical fittings. The ups and downs of the unique test promise a new and much needed instrument for University of Wisconsin research.

Gravimeters--and this is one of them--are mechanical devices for measuring the gravitational pull of the earth on things at its surface. With them, and with the fundamental knowledge that this pull varies according to the materials beneath the surface, scientists are making educated guesses about the "insides" of our planet.

There are many kinds of gravimeters, Prof. Jose Mateo of La Plata University, Argentina, pointed out. But the instrument which the internationally known scientist in gravity has developed at the UW Geophysics and Polar Research Center is suited especially for making gravity measurements underwater--and by remote control. Wisconsin Alumni Research Foundation grants have supported the inventor's work over the past two or three years.

Water covers eight elevenths of the earth, the South American professor declared, and because of the great submerged expanses to be investigated, researchers are eager for equipment that will simplify measurements at sea.

Ordinarily a voluble Latin, Prof. Mateo explained the tests in the Park Towers elevator with a rare bit of northern simplification: "When you are going up, you are farther from the center of the earth. When you are going down, you are nearer and the pull is greater."

-more-

Add one--new gravimeter

More explicit are the results of the tests. "We made two (tests) and we can say the accuracy is better than one milligal. The best we had hoped for was two milligals--and with better techniques, we can improve on that accuracy," he reported.

When the gravimeter is at work underwater, it must be encased in a large ball of stainless steel, adding 300-400 pounds of weight to the light gear. The large protective shell must be heavy enough to withstand water pressure at maximal working depths.

All parts, both mechanical and electronic, were made in the shops of the geophysics section of the UW geology department, Prof. Mateo indicated. This is not surprising for Wisconsin geophysicists have carried their studies and instruments around the world and to do so has required great mechanical know-how.

The new gravimeter also can be used for measurements on land and for airborne work, Prof. Mateo pointed out. But the principle on which it is based is entirely different from that for the familiar spring-equipped "thermos" instrument or for the heavy pendulum equipment.

"I cannot say what is this principle--or the design," he stressed. "The patent would be no good then--but the University knows."

The patent is pending and when completed will be turned over to the Wisconsin Alumni Research Foundation. WARF will administer it.

"I like that way. I love the University here," the grateful scientist said. It was helping me and if I can help it in any way, I shall do that."

Prof. Mateo came originally to the Madison campus in 1959 with personal expenses paid by his government and with funds from WARF promised for research. It was the first time Argentina had financed a professor in geophysics for a research trip out of the country.

Chairman for Argentine gravity studies under the International Geophysical Year and chairman for all gravity studies at La Plata University, the visitor represents a South American institution of learning which has been carrying out research in geophysics for the past 29 years.

-more-

Add two--new gravimeter

"In 1935 at my observatory was the beginning of formal gravimeter investigations," Prof. Mateo said proudly.

Teaching duties took the scholar back to his home campus in 1960, but within two years he had rejoined Wisconsin geologists to work further on his instrument.

Only a month away from a final UW assignment, he is making plans now for a tour of base points in the world gravity network. Wisconsin geophysicists have established these stations for gravity readings around the globe. Prof. Mateo, with other men from the Geophysical and Polar Research Center, will recheck the stations for the most accurate measurements possible.

The project is an international one with Italian and British institutions also taking part.

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Geophysics Dept.

WIRE NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

2/1/63 vh

RELEASE: Immediately

MADISON--University of Wisconsin scientists who have participated in history-making traverses across Antarctica now have a monument to their achievements in an Antarctic mountain range.

The United States Board of Georgraphic Names announced this week that an important segment of the Horlick Mountains has officially been named the Wisconsin Range in honor of the Badger investigators.

The Horlicks themselves, lying southwest of the head of the Ross Ice Shelf and discovered in 1934 by the Byrd expedition, have a Badger flavor, being named for William Horlick, Racine, Wis., malted milk manufacturer. Horlick helped to finance the 1933-35 Byrd expedition to Antarctica.

The Thiel Mountains, eastern end of the Horlicks, were named by the board last year for Dr. Edward C. Thiel, a native of Wausau, Wis., and one of the UW's first scientists to arrive in Antarctica during International Geophysical Year activities. He was killed in a plane crash at Wilkes Station during 1961 Antarctic investigations.

A recently published map of the National Geographic Society shows the Wisconsin Range so designated for the first time and includes other geographic features identified with Wisconsin.

###

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

1/25/63 vh

RELEASE: Immediately

MADISON, Wis.--With the opinions of famous explorers Nansen and Stefansson to support him, James Pew, University of Wisconsin technician in geology, has returned from the far north, convinced that the Arctic is a friendly place.

Pew, who has just completed an eight-months stay on Arlis II, floating ice island in the Arctic ocean, says: "People like to think of the North as full of risks and crises. But this isn't true. From the standpoint of deriving a living out of natural resources, as the Eskimos do, it is a habitable place--and not a tough, hard life."

Furthermore, Pew points out, "the Arctic is a place of great beauty with tremendously long and colorful sunsets and dawns between the periods of 24-hour darkness and 24-hour daylight. And when it is clear, there are always the Northern Lights, often the great classical curtain of reds, greens, purples and blues, often reaching to the zenith and down again."

Arlis II, Pew explains, is a large chunk broken away from some main Arctic glacier. In the summer it drifts freely for a distance of approximately three miles a day. In the winter, frozen into the great icepack, it drifts with the pack.

The UW's Geophysical and Polar Research Center has been making seismic, magnetic, and gravity measurements from this moving base for more than a year and a half. The studies of the Arctic ocean basin are supported by the National Science Foundation, the Arctic Institute of North America, and the Office of Naval Research.

-more-

The Russians, long recognizing the scientific and military importance of the Arctic, support a long-range science program there. American scientists are only recently underway on investigations in the Arctic area.

Pew, who was landed by a Navy R4D on Arlis, early last April, joined a dozen or more scientists from other American institutions. The colony lived in plywood huts, used Diesel fuel for heat and generating electricity.

"We had a brief 'visit' from a group of Russian scientists," the technician recalls. "They flew over the runway, not more than 50 feet above us, and waved."

And Arlis had less apparent visitors. Pew is certain that one of the two Navy submarines making an historic rendezvous at the Pole passed through the waters under the island while he was there. "A talkative cook on another island radioed that the Sea Dragon had arrived in the neighborhood," he relates.

Foxes and seals appeared on Arlis and occasionally an Arctic tern, Pew says. A biologist from Southern California, working with nets and winch, brought up many marine forms of life from the two-mile deep waters including a new species of squid.

"Polar bears came from time to time and would approach as close as 15 feet. They didn't seem to want to eat us up, but then we didn't antagonize them. Perhaps as explorer Stefansson suggested, in this environment they're no more dangerous than taxicabs to a man in New York," he says.

"We had our share of things happening," Pew admits but disclaims any major crises when a lake suddenly "went out" or when a greater use of fuel than had been anticipated brought a shortage.

"The lake, lying a quarter of a mile from camp, developed a crack in its bottom and drained completely into the waters below within a matter of five or six hours," Pew explains. But an earlier man on Arlis remembers the summer previous when a crack split the island in two, the half with the camp remaining, the other half breaking up.

Temperatures ranged from 45 below to 44 above during Pew's Arctic stay. When the fuel shortage developed, the only means of resupply was by plane. "It was too late in the season for an icebreaker." But the runway, melting in summer, made plane landing uncertain. "The first plane scheduled to help lost its engine and never did arrive. The second landed short, hit a barrel, and refused to come back," Pew recalls. "Finally, Air Force C124s dropped fuel to us by parachutes."

The shortage reduced research and comfort but not safety, according to the Wisconsin technician. "Even without the fuel, the men, dressed for the Arctic, could have survived by burying one of the huts in the snow and remaining in it. Body heat would have kept us from freezing.

"Wherever you are, you learn to live with these things," he concluded.

###

WIRE NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

1/17/63 vh **RELEASE:** Immediately

MADISON, Wis.--A two-day tour of the University of Wisconsin's Geophysical and Polar Research Center which two Russian scientists are scheduled to make Friday and Saturday will include informal conferences between the Soviet men and UW geologists, as well as inspection of laboratories and equipment.

Prof. Lewis Cline, chairman of the UW department of geology, said that Profs. Yu. V. Risnichenko and Ye. S. Borisevich, both from the USSR Institute of the Physics of the Earth, come to Wisconsin with a special interest in the University's earth crust studies. Borisevich is deputy director of the Russian institute.

Members of the Academy of Sciences of the USSR, the two men are in this country on an exchange program between the Russian Academy and the U.S. National Academy of Sciences.

Arriving Thursday evening by plane, the visitors' first stop Friday will be at the large Brittingham unit of the Geophysical and Polar Research Center at 6021 S. Highlands Rd. Prof. Risnichenko will tell his hosts about his own work in theoretical and applied seismology.

On Friday afternoon the visitors will be taken to the center's group house at 2544 University Ave. for additional conferences and inspection. Saturday is left open for informal exchanges between the Wisconsin and Russian scientists.

Prof. Robert P. Meyer, who heads the crustal studies group at the UW, and Ned Ostenso, project associate, also identified with crustal studies, will be host to the visitors at dinner events during their Madison stay, and a noon luncheon has been arranged for the visitors and geology faculty at the Wisconsin Union Friday.

-more-

Add one--Russian geologists

The one-month tour of the Soviet pair also includes visits to the California Institute of Technology, Columbia University, the University of California, Berkeley, Carnegie Institute and the U.S. Coast and Geodetic Survey at Washington, D.C., and St. Louis University.

The scientists come to Madison from St. Louis.

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Note to editors: A news conference with the Russians has been scheduled at 11 a.m. Friday, Jan. 18 in the Rosewood Room of the Wisconsin Union. Reporters and photographers are invited to attend.

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WIRE NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

Dept - Seismology

1/10/63 vh

RELEASE: Immediately

MADISON, Wis.--Two Soviet scientists will visit the University of Wisconsin for three days this month to confer with University geologists in geophysics studies and to inspect their laboratories and equipment.

Prof. Yu. V. Risnichenko, a member of the staff of Russia's Institute of Physics of the Earth, and Prof. Ye. S. Borisevich, deputy director for the institute will come to Wisconsin Jan. 17-19 under an exchange program for the U.S. National Academy of Sciences and the Academy of Sciences of the U.S.S.R. Both men are members of the Russian academy.

The seismologists also will visit the California Institute of Technology, University of California at Berkeley, Columbia, the Coast and Geodetic Survey and Carnegie Institute at Washington, D.C., and St. Louis University during their one-month tour in this country.

###

Depts - Geology

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

1/8/63 vh

RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--Hundreds of University of Wisconsin student geologists will learn a portion of their earth science in field trips during the coming spring and summer months.

One third to one half of the 900 or more students expected to enroll in a second semester introductory course, Geology 1A, will make a trip in April to Wisconsin's Baraboo Range.

Under direction of Prof. Louis Maher and graduate assistants, the students will examine the area for glaciological features and lower Paleozoic and pre-Cambrian rocks. The one day afield will be carried out by bus transportation to the hills. Students will break into small groups for the field work.

Students in 1B, Geologic Evolution of the Earth, are scheduled to use the Central Mississippi Valley for a laboratory for one week during the UW's spring recess. Led by Prof. Robert H. Dott Jr., they will study strata of different ages, types of sedimentary rocks, and fossils. The 15 or more enrollees, with Prof. Dott and one teaching assistant, will travel by private cars and camp out each night.

Also during the spring recess, Prof. Lewis Cline, chairman of the UW department of geology, will take his students in Geology 125B to the foothills of the Rockies. The 15 to 20 expected enrollees will examine an area between Trinidad, Colo., and Raton, N.M., for stratigraphy and sedimentation, particularly in the Cretaceous and Tertiary periods.

-more-

There will also be opportunity in this region to examine volcanic phenomena and certain structural features. The two weeks in the field, preceded by a seminar on the geology of these foothills, constitute the course, completion, of which earns two credits.

During the first week in May, Prof. Robert M. Gates' class in Geology 126A will head for the White Lake area approximately 30 miles north of Ironbridge, Ontario. The class will do mapping and study original Huronian rocks and possibly other pre-Cambrian sediments. The group, usually comprising 20 or more students, will travel by car and make camp in the area.

From one to three field trips will be made by the second semester students in Geomorphology 109. Prof. Robert Black said recently that dates for the one-day spring trips in his course are not yet established, but it is certain the work will be done in south central Wisconsin within 100 miles of the Madison campus.

The terrain will be studied in the light of how it has been molded and modified by geomorphic agents such as streams, ice, wind, and gravity. A three-credit course, Geomorphology 109 is expected to have a second semester enrollment of 20-30.

Prof. Black also plans to conduct a small group of four to eight students on several field excursions lasting anywhere from one to several days and "going all over Wisconsin and into Illinois, Minnesota, and Iowa."

The spring field work for Seminar 264 will be mainly in glacial and Pleistocene geology with attention to the effects of the same geomorphic agents as are studied in Course 109, but will be carried out "in much greater detail and more complexity," according to Black.

-more-

Add two--geology trips

Eight weeks of work in the Black Hills and Rocky Mountain regions are in store for students who enroll in the annual summer field course embracing Geology 131 and 132. The course is a requirement in the earning of a first degree in geology.

The 1963 itinerary calls for some 15-20 students, with Prof. Maher at the helm, leaving the Madison campus in June shortly after second semester classes are ended. For close to a month, their caravan will be halted in the Black Hills.

The second four-week period will take them to two or more sites farther west in the Rockies. Geologic mapping will occupy one half of the eight weeks, and work in sedimentary formations, particularly in the Paleozoic and Mesozoic, the other half.

###

Geology

U. W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

1/7/63 vh

RELEASE: Immediately

MADISON, Wis.--Etuzo Shima, Japanese geologist, will continue his research at the University of Wisconsin as a Wisconsin Alumni Research Foundation post-doctoral fellow during the second semester and summer of 1963, it was reported Monday.

Shima, who comes from the Earthquake Research Institute, University of Tokyo, is working with Wisconsin geologists concerned especially with earth crust studies. His principal interest is micro-tremors, the tiny earth movements which take place continually.

The visiting scientist, who came to the Madison campus in September, is a native of Kumamoto, Japan, took his bachelor's degree from the University of Tokyo in 1951, and received his doctor of science degree from the same institution in 1962.

In Japan he has worked in explosion seismology and earthquake engineering--provisions against earthquake damage.

###

Geology

U. W. NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

11/28/62 jb

RELEASE: Immediately

MADISON--A posthumous citation for capable and loyal service was awarded Tuesday to the late Henry B. Dyer, a University of Wisconsin graduate who was employed for eight years as a geologist for the U.S. Geological Survey of the Department of Interior.

The presentation of the citation, which carries with it a gold medal and pin, was made to his widow by William J. Drescher, research engineer for the Survey, based on the UW campus. Dyer died June 6, 1962, at Long Beach, Calif.

The citation, the Commendable Service Award of the Department of the Interior, praised Dyer's contributions to groundwater investigations in California. It was signed by Thomas B. Nolan, director of the Geological Survey. A lifetime pass to all U.S. national parks was also presented to Mrs. Dyer, and signed by Secretary of the Interior Stewart L. Udall.

Mrs. Dyer, like her husband a native of Wisconsin Dells, now is attending the University of Wisconsin as a graduate student. She lives at 653 Segoe Rd. in Madison, with their two sons. Dyer received his B.S. in 1952 and an M.S. in 1954 at Wisconsin.

###

Geology

MADISON NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

11/15/62 vh

RELEASE: Immediately

MADISON--A delegation of University of Wisconsin geologists took part this week in the annual meeting of the Geological Society of America, held at Houston, Tex., (Nov. 12-14).

The following UW geologists contributed papers either as sole or joint authors: Bradford Macurda, National Science Foundation Fellow; John C. Behrendt, project associate; Richard Schmidt, project assistant; Prof. Louis Maher; Kevin M. Scott, project assistant, together with Prof. Robert H. Dott Jr.; and Prof. Lewis Cline together with Garrett Briggs, a former UW research assistant.

Other staff members who participated included Profs. R. C. Emmons, George P. Woollard, Eugene Cameron, and Sturges Bailey.

A luncheon for UW geology alumni was held during the three-day meeting.

###

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

10/23/62 vh

RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--What materials may future astronauts expect to encounter as they travel millions of miles in outer space?

More than a ton of snow shipped from Antarctica and preserved in University of Wisconsin refrigerators until the time for "sacrifice" may hold a partial answer.

Richard A. Schmidt, a UW project assistant in geology, has just begun the long process of melting, section by section, some 108 snow cores for the extra-terrestrial particles they contain.

The samplings, three inches in diameter and a yard long, were drilled from the snowcap of the Antarctic Peninsula by a UW team during its 1961-62 traverse. Each core represents a portion of 30 to 35-foot-deep cuttings in snow accumulations of 20 to 30 years.

"Extra-terrestrial particles have gone by many names," Schmidt explained, "but most commonly they are called cosmic dust."

This dust, presumably from space, is constantly falling on the surface of the earth, Schmidt pointed out, and theories on its origin are many. It has been suggested that it derives from the disintegration of meteorites, caused as these bodies encounter the earth's atmosphere; that it may represent dust clouds surrounding the earth; or even clouds in space into which the earth runs as it orbits the sun.

"Either or all of these views may be right," Schmidt said. "The origin doesn't seem to be from any one single source."

-more-

Previous studies of extra-terrestrial particles have been made by measurements from satellites, collections from deep sea sedimentary deposits and from snows in Greenland. But Schmidt's research, extending a pilot study of 1959-60, begun by the late Ed Thiel, one-time UW geologist, is the first extensive U.S. investigation of such particles to be found in Antarctic snow and ice.

The great southern icecap offers especially advantageous conditions for cosmic dust reclamation. The remoteness of the cap avoids industrial contamination of the dust; and because of the continued cold, much of the dust-laden snow, year after year, is preserved. Thus layer upon layer adds up to one of the world's largest natural "filing cabinets" or giant glacialogical "time table."

By virtue of such qualities of hardness, texture, and density, snow layers, like tree rings, can be dated, Schmidt pointed out. "If we can estimate the age of a layer of snow," he continued, "we can estimate the annual rate of accumulation for the cosmic dust within it, assuming this dust fell to earth at the same time as the snow."

Cores will be compared directly with glacialogical material in Antarctic snowpits where the "time table" is believed to be complete. Also, isotopic methods will be used to check the accuracy in determining age, Schmidt pointed out.

He uses an ingeniously constructed dust-free box for the first process of melting the snow and obtaining the particles. Inside the box is a large glass container tube, heated with a winding of electrical wires. Inside the tube, for each melting, Schmidt places one quarter of one of the snow cores taken along the 1,200 mile route over the icecap.

The melt water, passing through a very fine filter into another container, leaves behind the wanted dust residue. Schmidt manipulates his equipment with rubber glove-covered hands thrust through sealed sleeve openings in the cabinet.

Add two--cosmic dust

The filtered out particles are examined by microscope for their number and character, are photographed, and will be studied also through mineralogical and chemical analysis.

Two basic types of particles have turned up, Schmidt said--metallic ones and clear silicate spheres. Some of the tiny metallic particles look exactly like BBs, he declared, some like mashed BBs--an agglommeration, and some are rough, resembling cinders.

Beyond the attempts to determine particle variety, chemical and mineralogical character, annual deposits, relative abundance of types, and areal distribution, Schmidt will seek the answers to the following space age questions:

How does the variation in occurrence of the particles from one coring station to the next tie in with variations in strength of the magnetic field at these points? Is particle abundance correlated with comets which pass near the earth? Do the spherules represent products of the disintegration of a planet? Is there what appears to be a relation between sunspots and the number of spherules in yearly snow layers?

"We found an apparent relation between particle occurrence and sunspot cycles in the pilot study," Schmidt declared.

The future looks good, Schmidt said, for projects such as his. There are plans to drill a hole through the entire mile-and-one half deep icecap of Antarctica. Who knows what the ancient snows taken in this enterprise may reveal about the contents of space?

Meantime the answers to today's UW study of comparatively recent cosmic dust fallout are sought. The Wisconsin investigation, supported by the National Science Foundation, has been termed "urgently necessary for future space research."

###

U. W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

Geology

10/15/62 jl RELEASE: Immediately

MADISON, Wis.--New evidence confirming the extreme antiquity of fossils found in preCambrian rocks near Schreiber, Ontario, by University of Wisconsin and Harvard scientists has been reported by geologists at the Massachusetts Institute of Technology.

Scientists Stanley A. Tyler, University of Wisconsin geologist, and Elso S. Barghoorn, Harvard paleobotanist, discovered the fossils in rocks of the Gunflint formation in southern Ontario during routine geologic explorations. At that time, rough estimates placed the age of the fossils at around 2 billion years, utilizing age determinations of nearby structures which had been made by P. M. Hurley of the Massachusetts Institute of Technology.

Hurley and three colleagues have now completed the necessary work to date the actual material in which the fossils were found and they report in a current Journal of Geology that the original age estimate appears substantially correct and that the fossils are between 1,700,000,000 and 2,100,000,000 years old. Working with Hurley were H. W. Fairbairn, W. H. Pinson, Jr., and J. Hower.

The MIT scientists used new techniques of establishing the age of ancient geologic materials by determining their content of radioactive potassium, argon, rubidium, and strontium.

The fossils are remains of "primitive lower plants, representing both blue-green algae and simple forms of fungi," Tyler and Barghoorn reported in their original description of the find. "The collective plant remains thus far studied constitute a small, but significant, flora of remarkably ancient plant life.

-more-

Add one--Tyler, Barghoorn, and Hurley

"As far as we are aware, these plants are the oldest structurally preserved organisms that clearly exhibit cellular differentiation and original carbon complexes which have yet been discovered in preCambrian sediments and, as such, are of great interest in the evolutionary scheme of primitive life," the scientists point out.

Five distinctly different types of organisms can be recognized in the material, the scientists add, two of which are algal forms, two fungal, and one a unicellular type, probably a calcareous flagellate. They are all different in detail from any living species, but the algae seem similar to certain species of existing genera named Lyngbya or Oscillatoria.

Tyler has pointed out that these fossils are in some instances the actual carbonaceous remains of the plants themselves. Structural replicas created by replacement of the original organic matter with iron sulphide (pyrite), iron oxide (hematite), and iron carbonate (siderite) are also present.

These fossils are of tremendous scientific interest because they indicate that the biochemical systems necessary for life were in existence at a very remote period in the geological history of the earth.

##

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

RELEASE:

1/28/64 db

Immediately

By DENNIS BLAKESLEE

MADISON, Wis.--When a geologist says that a certain thick layer of sedimentary rock was deposited very rapidly, he generally means the whole process took place in a million years or so.

It isn't hard, then, for such a person to be a bit short of descriptive ideas when he finds a layer that was formed in a matter of an hour or two.

These sort of layers do exist--not lava flows, either--and, what's more, nearly identical ones exist fully a hemisphere apart, says Dr. Lewis Cline, chairman of the University of Wisconsin geology department at Madison.

These beds, composed primarily of thick sandstones, are the aftermath of swift, powerful underwater slides that once thrust millions of cubic feet of sand into submarine trenches, he explains.

They are best known in two mountain ranges, one running across part of the southern United States, the other extending across Europe and Asia, from the Rock of Gibraltar to Tibet. These mountain ranges are examples of what geologists call the alpine-type, and the "instant" sandstones are characteristic of them.

Alpine-type ranges are made up of highly folded and faulted sedimentary rocks that have been uplifted and eroded. The chains, or ranges, characteristically twist and wind like a snake.

Perhaps the world's best example of this type is the one in Europe for it starts at the western mouth of the Mediterranean with the Atlas Mountains, across that sea to the Apennines up the Italian boot, and on to include the Alps, the Carpathians in the Balkans, the Caucasus of Turkey, the Hindu Kush in the north of India and, finally the great Himalayas.

Add one--rocks

In the United States an outstanding example of the alpine-type range is the low, ancient Ouachita chain that begins at the base of the Appalachians, runs west through the gulf coastal states and, after a northward loop in Oklahoma, into Texas.

"When last seen they were headed southwest into Mexico," Prof. Cline states, for the Ouachita are indeed difficult to find.

These mountains are far older than the European representative and have been eroded nearly flat. On top of that, much of the range is buried beneath soft clays of the gulf coastal plain.

Prof. Cline first ran across the "instant" sandstones in the Ouchita quite by chance about 10 years ago. Since then, his major research effort has been the study of the rocks. Last summer he returned from his second trip to Poland where he examined the sandstones in the Carpathians with Polish geologists, among the leaders in the study of this type of geology.

"Here are two very different areas on different continents having the same geologic features," Prof. Cline states.

This suggests, of course, that the ranges had similar origins, Prof. Cline says, and the character of the sandstones tells practically the entire story.

Evidently, great troughs--vast downwarpings of the ocean floor--occasionally formed in the geologic past just off land masses.

As many millennia passed, huge amounts of sediment eroded from the land and washed into the troughs. But, as the sediments piled up the troughs deepened and thicknesses of sediment on the order of four miles accumulated.

These slowly-deposited sediments consisted mainly of mud, which in time became shale, Prof. Cline relates. The sand carried from the land, along with the mud, being heavier, was dumped at the mouths of rivers, on deltas, and never reached the troughs.

But these sands, which grew to immense thicknesses, were occasionally jarred loose by earthquakes, or especially powerful currents, and were sent thundering down into the trenches at high speed. These sands, showing swirls and eddys, later became sandstones lying between the shales.

-more-

Add two--rocks

Such flows, called turbidity currents, are receiving considerable attention today. In 1929, for example, an earthquake triggered loose tons of sediment on the Grand Banks near Newfoundland that went cascading 400 miles down the banks and out onto the flat ocean floor, breaking a dozen underwater telephone cables in the process.

After the sediments in the troughs hardened to rock, they were thrust up, with great folding and faulting, to become the alpine-type ranges.

Although most geologists today agree that this was the origin of the alpine-type mountains, Prof. Cline goes on, there is little agreement as to the forces inside the earth that cause downfolding of the crust in the first place.

But, he continued, the process is nonetheless observable today. The islands of Sumatra, Java and New Guinea are part of an alpine-type fold belt and, in parts of the world, deep troughs are slowly filling with sediment.

##

U.W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

Geology

9/12/62 vh RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--The University of Wisconsin will be represented by 18 or more men as the 1962-63 field season in Antarctica gets underway this fall.

Many are veterans of Antarctic research with one to five seasons on the frozen continent. Most of them will be carrying forward projects already begun by UW teams.

Wisconsin has figured prominently in probings of this ice-covered southernmost land ever since Badger geologists undertook preliminary investigations in 1956-57 for the International Geophysical Year. Wisconsin has sent more men than any other institution on traverses in the Antarctic.

Again this year geologists will dominate among Wisconsin parties, but zoologists and a meteorologist will also be on hand.

Readying to depart late this month are Prof. Robert Black and grad students Tom Berg and Peter Vogt who will extend investigations begun in the 1960-61 season on ground patterns.

Under Black's direction, the team will operate in the dry valleys northwest of McMurdo Sound. Here where the ground is not covered by ice, expansion and contraction of the ground have brought crisscrossing cracks--cracks which ultimately have filled with sand and ice.

The pattern resulting is a mosaic of wedges or hexagons. Greater understanding of this phenomenon is expected to reveal how long the area has been ice free and whether surrounding glaciers are advancing or retreating.

-more-

Later this season the team may also set up a station for similar studies in the Antarctic or Palmer Peninsula.

One of Wisconsin's most extensive investigations in Antarctica will be carried forward when a seven-man team led by Edwin S. Robinson makes another of the oversnow traverses.

Starting at the South Pole, their route will describe a 1,000-mile-long double triangle. On the first triangle the traverse will lead to the Queen Maud range, east along the range, then back to the pole; on the second, to the Horlick Mountains, east along the Horlicks, and back to the pole.

Knowledge of ice thickness, underlying rock, elevations, annual snow accumulation, gravity, and magnetic field is again the objective. The team will include Perry E. Parks, Jack Long, William Boman, and Raymond Koski from the Madison campus as well as Lawrence Taylor and Henry Brecher, drawn from the staff of Ohio State University, and David Perkins from the U.S. Coast and Geodetic Survey.

Departure from the South Pole is scheduled for Dec. 1 and completion of the journey for early February. Traveling by plane to the pole, the group will leave Madison in eary November.

The Roosevelt Island project, begun by UW men last season, will be led this year by Charles Bentley. Bentley will take four men with him to extend an ice movement network; remeasure for the network established last year; make further studies of ice thickness and accumulation and of the electrical properties of ice; finish gravity and magnetic maps; and run a traverse from the island out to Cainan Bay on the Ross Sea and back.

The 90-mile-long island is being studied as a continent in miniature. Included in Bentley's team are Edgar Doss, Lee Kreiling, David Tranter, and Manfred Hochstein. Hochstein comes from the Institute of Geophysics, University of Munster, Germany.

Stephen den Hartog is scheduled to carry out the program of airborne magnetic studies for this season. He will make flight lines up a number of valley glaciers in the Transantarctic Range, extend flights in parts of West Antarctica not yet touched in the program, and also make gravity ties for the Antarctic gravity network.

On the flights, the UW scientist will travel in Navy DeHaviland Otters and R4Ds. He expects to leave Sept. 26.

The mysteries of two lakes with peculiar temperature distributions will be probed in an Antarctic project beginning this season and led by Prof. Robert A. Ragotzkie, meteorologist. Lakes Vanda and Bonney in the dry valleys near McMurdo Sound are deep and always ice-covered but water near their bottoms is very warm and salty.

Ragotzkie and Dr. Gene Likens, zoologist, will attempt to describe this phenomenon fully and explain why it exists. They will use oceanographic and radio-isotope tracer techniques. The two also will have a look at the micro-climate in the area (climate very near the ground) to study both heat exchange near the ground and with the ground. The pair expects to leave Madison Nov. 1.

A continuing study of the Adelie penguin, most numerous of the penguin species, will be carried out this season by Zoology Prof. John T. Emlen, assisted by Richard Penney. Penney will be undertaking his third year of research on the bird. Early studies concentrated on breeding and mating behavior in the penguin colonies near Wilkes Station. This season distance orientation of the birds and ability to find their way home will be the goals.

Emlen and Penney will leave for the Antarctic around Oct. 1. During the studies Adelies will be taken from several colonies and flown to various points--some, hundreds of miles distant from the colonies.

Flown out and set down each time near a point, the scientists will then track the birds "to see what they can do in the way of orienting toward home." Tracking will be accomplished largely by foot, but in some instances, motorized toboggans will constitute transportation. Some observations will be made by plane.

Working on a project which may ultimately unite Antarctica and South America in geologic times past, Kevin Scott will this year bypass Antarctica for research in the Andes Mountains. UW geologists began investigations during the 1960-61 season to establish a possible connection between the Palmer or Antarctic Peninsula and the Chilean Andes. It is considered likely that the northern part of Antarctica and the southern part of South America were once parts of a single continuous mountain belt and have a similar geologic history.

Traveling by horseback, truck, and sometimes even by boat, Scott will explore rock structure and type in Chilean Andes. He will be accompanied by a graduate student from the University of Chile. The Chilean National Oil Co., a government agency, will supply Scott with transportation on the project which is supported by the U.S. with the cooperation of Chile. Scott, who works under the direction of UW Prof. Robert Dott, expects to leave Madison around Nov. 1.

The 1962-63 season in the Antarctic marks the second "summer" of studies since the U.S. and 11 other nations signed the Antarctic Treaty. The treaty binds these nations to using the continent for peaceful purposes only and to a continuation of the spirit of international cooperation demonstrated during the International Geophysical Year.

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U. W. NEWS FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

9/11/62 vh

RELEASE: Immediately

MADISON, Wis.--Louis Maher will join the University of Wisconsin department of geology this fall with the rank of assistant professor.

The new faculty member is a specialist in the field of palynology (plant remains including ancient pollens). This study is useful in correlating sediments and sedimentary rocks and in age dating. Prof. Maher is expected to work closely with UW Prof. Robert Black in studying some of the Pleistocene lake deposits of the state.

He will teach a lecture course in elementary geology and also supervise the laboratory and quiz sections for other large beginning courses in geology. He will also probably offer a seminar in palynology.

The new Wisconsin professor holds an undergraduate degree from the State University of Iowa and a Ph.D. from the University of Minnesota. During the past year he has been at Cambridge University, studying on a National Science Foundation postdoctoral fellowship.

###

MADISON NEWS

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

9/6/62 vh

RELEASE: Immediately

MADISON--Prof. John Rose of the University of Wisconsin department of geology will fly to Paris to present three papers next week at the meeting of special study group V of the International Gravimetric Commission.

The subject for the Sept. 10-15 conference will be international gravity standardization.

###

Geology

FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

7/12/62 vh

RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--Two University of Wisconsin geologists have returned to the campus from the Great Lakes where they inaugurated tests on a new instrument while on board "The Inland Seas," a science ship belonging to the Lakes Research Institute.

A third member of the Wisconsin team, John Kolar, has remained on the ship for several more weeks of testing. The tests are preliminary to magnetic studies which will be made later this year in the Arctic Ocean basin.

Kolar, a research assistant, Richard Wold, project assistant, and Ned Ostenso, project associate, all with the UW's Geophysical and Polar Research Center, joined parties from the Universities of Michigan and Minnesota late in June on the cruise into Lakes Michigan and Superior. The group making limnological studies includes Dr. James H. Zumberge, president of Grand Valley State College, Michigan, and a former professor of geology at the University of Michigan.

The Wisconsin team began their try-outs of a Varian nuclear precession magnetometer with the instrument being towed some 600 feet behind the ship. UW geophysicists have not previously used a ship-towed magnetic instrument to determine the nature of the rock layers beneath ocean or lake bottoms.

The work is expected not only to test electronic parts and towing mechanisms but to yield new information on the subbottom layers of the two Great Lakes. Further, it must be done before similar investigations can be made in the Arctic Ocean basin.

-more-

The instrument, which was received from the electronics instruments firm of Varian Associates, Inc., Palo Alto, Calif., is a gift to the UW, presented in memory of the late Dr. Edward C. Thiel. Thiel was a one-time project leader of a UW geophysics agency, the Data Reduction Center; a UW-trained scientist; and a veteran of several Antarctic explorations. He was killed last November in a plane crash in Antarctica.

Later this season, Ostenso and possibly other UW men will leave for the Arctic to work the month of October in the Chukchi Sea, a part of the Arctic Ocean lying north of the Bering Strait.

Ostenso will tow his magnetometer behind a cooperating U.S. Coast Guard ship, "The Northwind," which will also carry other scientists making oceanographic studies. The Wisconsin study of the geology of the layers beneath the ocean floor is part of a program begun in the spring of 1960. Until then, UW polar investigations had been concentrated in Antarctica.

Now looking to the north as well as to the far south, Wisconsin has expanded operations to the world's northernmost ocean basin, conformation on which is "still scarce, provocative, and cannot be interpreted with confidence."

Besides seeking knowledge of sub-ocean geology, Wisconsin will ultimately investigate the crustal character of the Arctic basin, the transition in crustal structure at the continental margins, sub-ocean topography, Arctic ocean currents and sea ice movement, and the Great Arctic magnetic anomaly.

In terms of geophysics, an anomaly is a subsurface feature of the earth with qualities unlike adjoining masses. Unseen, it is known to exist because of the non-conforming readings taken at the surface with instruments for measuring gravity, magnetism, and seismic waves.

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FEATURE STORY

FROM THE UNIVERSITY OF WISCONSIN NEWS SERVICE, MADISON 6, WISCONSIN

5/16/62 vh

RELEASE: Immediately

By VIVIEN HONE

MADISON, Wis.--Recently announced national rankings emphasize an excellence in University of Wisconsin geology studies which carries forward the great Wisconsin earth-science tradition.

The department of geology, mining and metallurgy was established at UW in 1869. In the developing years, Wisconsin played a leading part in introducing four major themes into American geology, became a Mecca for advanced students in pre-Cambrian studies, and found world fame through its distinguished geology faculty.

Today, nearing a century of academic endeavor, Wisconsin has pushed to second place in the number of Ph.D.'s granted in geology over the 1950-59 period. The UW, awarding a total of 88, stands second only to Columbia among some 50 U.S. institutions of higher learning, according to the latest survey conducted by the American Geological Institute.

The 1962 directory of the agency lists 271 departments offering a major in geoscience studies in colleges and universities of the U.S. and Canada. For Wisconsin, it shows a geology staff of nine full, two associate, and four assistant professors; three instructors; 28 teaching fellows; 28 research assistants; and seven post-doctoral fellows.

The directory also shows a Wisconsin geology curriculum including 33 advanced undergraduate and graduate courses as well as seminars in stratigraphy, structural, glacial and economic geology, geophysics, paleontology, x-ray, crystallography, geomorphology, and petrology.

-more-

The UW position in the nationwide competition for National Science Foundation awards testifies to the quality of this broad instructional program:

"For the second time in the past two years, the UW department of geology has ranked among the top six schools for number of NSF fellowships awarded," Prof. Lewis Cline, chairman of the department, said recently. "We received five for the 1962-63 year. We are turning out quality material, young fellows able to compete with students at any other graduate school in the country.

"On our own campus, only mathematics and chemistry among the various departments received more of these awards."

Prof. Lowell Laudon's 1959 contribution to the distinguished lectures of the American Association of Petroleum Geologists points further to the bracing climate of UW geology instruction. Each year AAPG invites a small number of outstanding scholars to undertake an extended speaking tour. Laudon, called one of the very best stratigraphic paleontologists in the country, presented some 42 lectures to university and AAPG chapter audiences throughout the U.S. and Canada.

In a further analysis of Wisconsin's contemporary contribution and prestige, the prominent places which UW geology alumni have consistently occupied in the affairs of the AAPG are highly significant. This association is the world's largest organization of its kind, numbering 16,000 professional geologists and professors of geology.

During the past four years, three of the association's presidents have been drawn from UW alumni. At its 1962 meeting, held this March in San Francisco, Robert Rettger assumed leadership of the group. The chief geologist for Sun Oil Co., Dallas, Tex., took his B.A. from Wisconsin in 1920; earned his UW master's in 1922.

Mason Hill, 1961-62 president, chief geologist for Richfield Oil Corp., California, received his Wisconsin Ph.D. in 1932, and the 1959-60 president, Lewis G. Weeks, credits Wisconsin for a 1917 B.A. Weeks has headed oil exploration in many parts of the world and filled outstanding roles as scientist, administrator and teacher.

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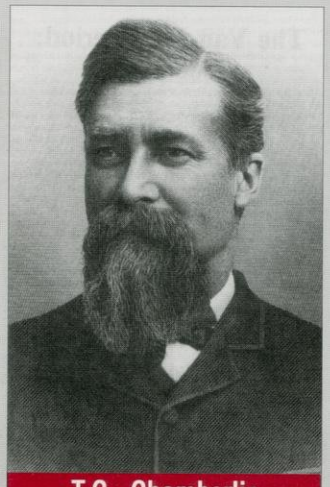
THE DEPARTMENT OF

Geology & Geophysics

1848 1998

University of Wisconsin-Madison

The Geologists Who Made Wisconsin Famous



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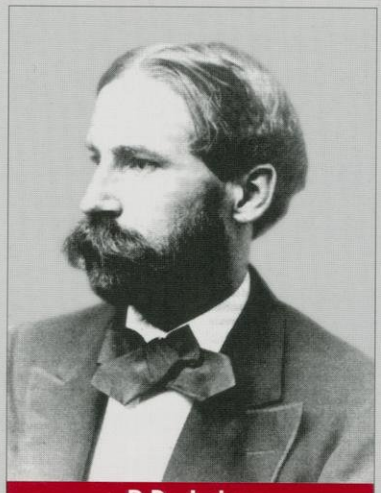

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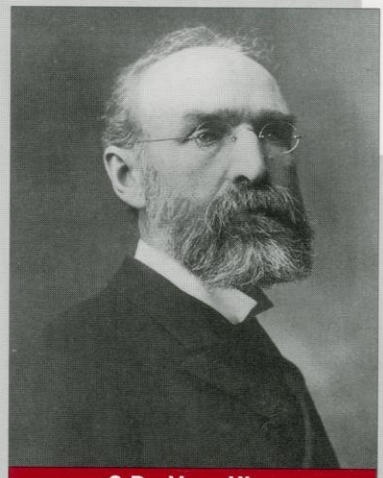

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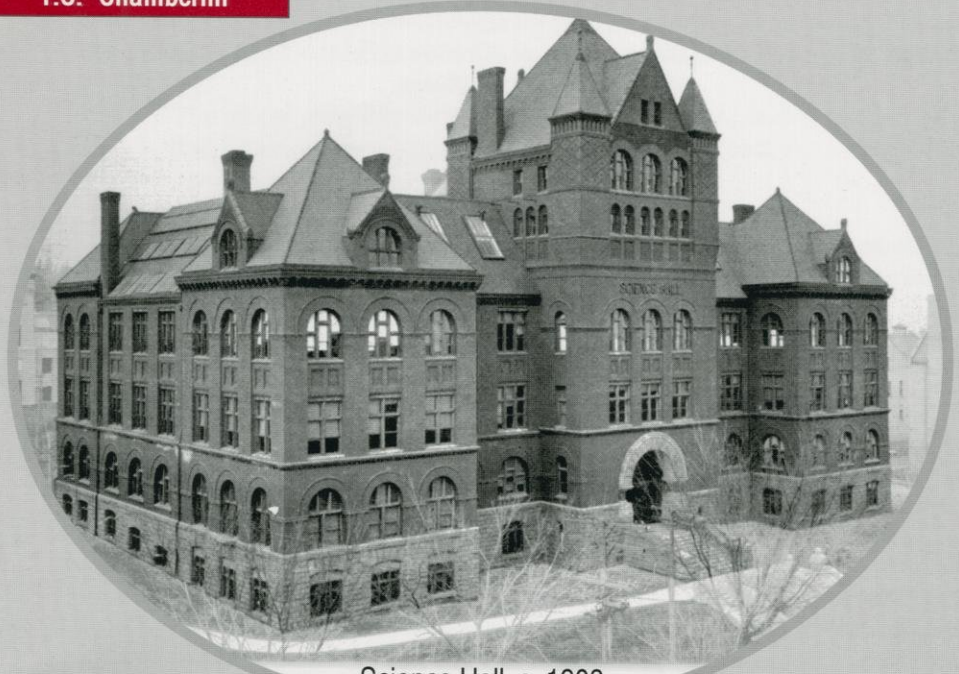
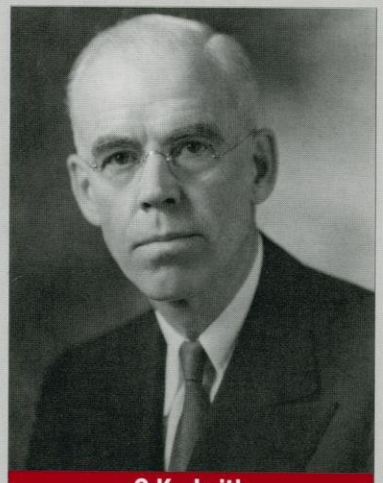


Science Hall c. 1908



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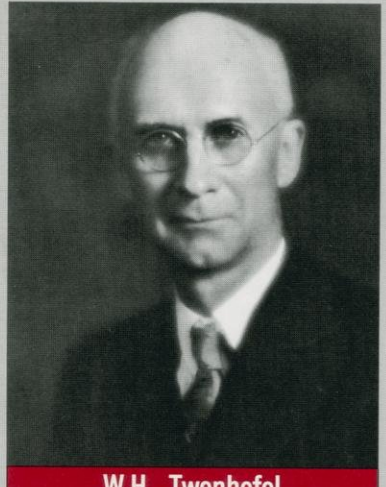

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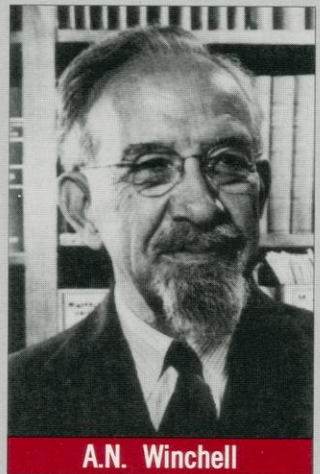

A.N. Winchell

Alumni Newsletter

Department of Geology and Geophysics
University of Wisconsin-Madison

Lewis G. Weeks Hall for the Geological Sciences
1215 West Dayton Street
Madison, Wisconsin 53706-1692

Website: http://www.geology.wisc.edu/

Phone: 608-262-8960
Fax: 608-262-0693
E-mail: geodept@geology.wisc.edu

Newsletter Staff

Chuck DeMets–Newsletter Editor
(chuck@geology.wisc.edu)
Jo Bailey–Editing
Mary Diman–Design, Production, Editing
Bob Dott–Department Historian

Many thanks to the alumni, faculty, and department staff who contributed.

1998 Alumni Newsletter

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And if you'd like to hear from us weekly you can receive a copy of the *Geobulletin* (weekly news from Weeks Hall) via e-mail.

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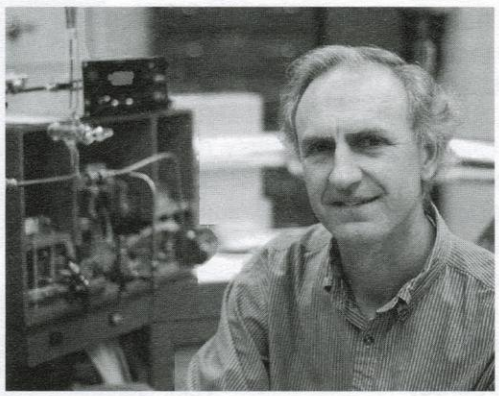
On the subject line: G&G Alumni

UNIVERSITY OF WISCONSIN–MADISON

Department of Geology and Geophysics



The Chair's Message

Y0.15K*

Dear Geo-Badgers:

This will be my third and last Chair's Message to you. I complete my term in August, and Andrée, David and I will be at Caltech on sabbatical next year (Matthew will be in college.) Dean Certain has just approved the department's unanimous choice of Mary Anderson as the next Chair of the Department of Geology and Geophysics.

Hot off the press: last week, we learned that Mary Anderson has also been elected a Fellow of the American Geophysical Union, a recognition limited to less than one of each thousand members a year. This is in addition to the Meinzer Award. Triple congratulations to Mary!

This newsletter uses fewer trees than last year, but packs just as much information. There are reports of prestigious awards to faculty, students and alumni. John Fournelle reports on Badgers in the Aleutians, and science pieces include shaking and baking in Mexico, the strike slip mystery solved, and shocking faults.

I hope this newsletter reaches you well before the May 7 reunion. We have over 100 probable attendees and the list is growing. A fun and informative time is planned with presentations by faculty, an afternoon symposium on climate change, a fieldtrip, the annual banquet, and of course time to gather by the keg. We will be happy to accept your reservation right up to the last minute, but if you can't join us, put your Y0.15K message on a courtyard brick and be here in spirit.

The Alumni Board has shouldered much of the work for organizing the reunion. They have also worked to keep us in touch with many of you and to start a mentor program for our students. Ken and Jamie have done a great job as co-chairs and Jay Nania will assume the double duties as the new chair of the Board starting in May. I have enjoyed working with the Board and sincerely thank them. I also want to thank all of you who have supported the department during the year. I think we have the most loyal alumni on campus, and one thing I will miss next year is bragging to other chairs about our graduates.

I hope to see you in May.

John W. Valley
Chair and Professor

*For those interested in cryptology, the above does not originate from me, but answers the question: what happens when you cross the UW sesquicentennial celebration with the end of the millennium computer crisis?

Faculty in Geology and Geophysics

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P.E. Brown
C.W. Byers
A.R. Carroll
N.I. Christensen
D.L. Clark
M.L. Cooke
D.C. DeMets
J. Fournelle
D.H. Geary
C.M. Johnson
L.J. Maher
D.M. Mickelson
J.A. Simo
B. Singer
B. Tikoff
C.H. Thurber
J.W. Valley, Chair
H.F. Wang
K.W. Westphal

Emeritus Faculty

C.R. Bentley
E.N. Cameron
C.S. Clay
C. Craddock
R.H. Dott, Jr.
R.M. Gates
L.G. Medaris, Jr.
L.C. Pray
J.S. Steinhart

Affiliated Faculty

R.F. Cooper (Materials Science)
V.T. Holliday (Geography)

Collateral Faculty

J.W. Attig, WGNHS
K.R. Bradbury, WGNHS
L. Clayton, WGNHS
M.G. Mudrey, Jr., WGNHS
J.M. Robertson, WGNHS

Visiting Professors

Colgan, Patrick (Northern University-Boston)
Hussein, Kamal (University of Damascus)
Larsen, Eiliv (Geological Survey of Norway)
Luther, Frank (U.W.-Whitewater)
Young, Cheryl (Clark Atlanta University)

Committees

Council–Valley, Mickelson, Thurber, Bahr, Simo (Salary Committee)
Finance–Johnson (Weeks), Simo (Grad), Clark (101), Thurber (Computer),Valley
Staff/Personnel–Mickelson, Christensen, Geary, Bentley, Valley
Graduate Studies/Admissions–Simo, Brown, Bahr, DeMets
Undergraduate Studies–Mickelson, Geary, Cooke, Tikoff, Banfield
Alumni and Public Relations–Wang, Dott, Mickelson, Clark
Computer Committee–Thurber, Johnson, Brown, Bowser, Abernathy, Donlin
Curriculum Committee–Byers, Bahr, Christensen, DeMets, Johnson, Tikoff, Valley

Special Duties

Chair–Valley
Associate Chairs–Bahr, Mickelson, Simo, Thurber
Building Manager–Maher
Faculty Advising Service–Carroll, Brown
Faculty Meetings Secretary–J. Bailey
Friends of the Museum–Byers
Grievances–Anderson, Byers
GSA Representative–Bowser
Historian–Dott
Honors Program–Geary
Individual Majors Committee–Mickelson
Interviews– MaryBeth Wegner
Library Coordinator–Wang
Microprobe Liaison–Brown
Minority Programs–Geary
Newsletter–DeMets, Diman (98-99)
Senators (District 58)–DeMets, (Wang), Byers, (Christensen)
Speaker Program–Christensen, Mullins
Thin Section Lab Liaison–Valley
Timetable–Brown, Meinholz
Undergraduate Advisers–Geary, Mickelson, Cooke, Tikoff, Banfield
Vans–Unger, Donlin

Post Doctoral Fellows and Research Specialists

Bindeman, Ilya (Valley)
Bond, Philip (Banfield)
Cutler, Paul (Mickelson)
Lestringant, Renaud, (Bentley)
Long, Chenging (Christensen)
McConnell, Vicki (Valley)
Welch, Susan (Banfield)
Zhang, Hengzhong (Banfield)

Weeks Post-Docs
Amato, Jeff
Heiser, Patricia
Saylor, Beverly
Schneider, Jay

Associate and Assistant Scientists

Barker, William (Geomicrobiology/Director, Wisconsin Microscopy Resource)
Beard, Brian (Radiogenic Isotopes)
Fournelle, John (Director, E.N. Cameron Microprobe Lab)
Hotchkiss, Sara (Quaternary Geology/Paleoclimatology)
Ianco, Viorica (Petrology)
Lutter, William (Geophysics)

Sesquicentennial Alumni Day Symposium May 7, 1999

Herb Wang

Our last Alumni Day Reunion was five and a half years ago. It was a great chance to get together across many miles and many years. By the time you receive this, the reunion will be nearly upon us and next year's newsletter will have pictures of the event.

Geo-Bucky in '94.

The 1999 reunion is part of the university-wide Alumni Week Sesquicentennial celebration. The Symposium will include a talk by Emeritus Professor Robert Dott featuring how UW geology crossed the Atlantic. Other talks feature newer department faculty, including Professor Nik Christensen, our Albert and Alice Weeks Professor, and Professors Jill Banfield, Basil Tikoff and Brad Singer. The afternoon session will feature a "Symposium on Paleoclimatology and the Future of Sustainable Energy Development." Confirmed speakers include alumnus Professor Richard Alley (Penn State) and Dr. John Wise of the EPA. Read more details about the events in Jamie Robertson's report, right.

If you're reading this before May 7, 1999 and still want to come, just call the department immediately at 608-262-8960, fax 608-262-0693, or e-mail (geodept@geology.wisc.edu) to register.

See details about the program and an outline of events on our Alumni web page at http://www.geology.wisc.edu/alumni/sesqday.html.

The Alumni Board–September 1998

Kenneth W. Ciriacks, *Co-Chair (1997-98)**
James F. Davis**
David Divine*
Mark Emerson*
Carl A.P. Fricke*
Patrick Lehmann**
John Mack*
Walter D. Mooney**
Jay Nania, *Vice Chair (1997-98)**
Marjory Rinaldo-Lee**
James D. Robertson (Jamie), *Co-Chair (1997-98)***
Christine Rossen**

**Development Committee*
***Career Development, Department Support Committee*

Alumni Board News

Jamie Robertson

The Alumni Board of the Geology and Geophysics Department met at Weeks Hall in Madison on September 25, 1998. In addition to hearing updates on the university from Dean Phillip Certain and on the department from Chair John Valley, the Board concentrated on the following two items, which are the current focus of its activity:

- **Fund-raising**–In conjunction with the University of Wisconsin Foundation, the Board is pursuing a fund-raising campaign to substantially increase the amount of money flowing to the department from its alumni. Direct solicitation of some major gifts has begun and application of these funds is underway. For example, early alumni donor funds provided in excess of $17,000 in support of student field research projects in the summer of 1998. All alumni will soon be given the opportunity to participate in the overall fundraising effort. The Board also is continuing to support the Courtyard Bricks program. Alumni can show support for the department by donating money to have bricks in the Weeks Hall courtyard inscribed either with their own names or with the name of a former professor or fellow alumnus that they wish to honor.

- **Alumni Reunion and Symposium**–The Alumni Board and the department are joining to sponsor an Alumni Reunion and Symposium in Madison on Thursday and Friday, May 6–7, 1999. The University of Wisconsin-Madison will be celebrating its 150th anniversary with a series of campus, community and statewide activities running from September 1998 to November 1999. Seven signature events have been planned, one of which is Sesquicentennial Alumni Week on May 2–7, 1999. The Geology and Geophysics Reunion and Symposium is designed to be a special Alumni Week event for department alumni that can be attended by itself or in conjunction with other campus-wide activities. Festivities will begin with an Icebreaker Reception on Thursday evening, May 6, 1999. The Symposium will be held in Weeks Hall on Friday, May 7, 1999 and will be followed by a Friday night Geology and Geophysics Alumni Banquet. The Alumni Board invites all geoscience alumni of the UW-Madison to put this event on your calendars and to return to Madison and celebrate the Sesquicentennial with fellow alumni. For general information on the 150th, you can visit the sesqui web site at www.wisc.edu/150/index.html.

Gifts to the Department in 1998

Thank you for remembering us.

Aalto, Ingeborg
Aalto, Kenneth
Aiken, James
Aiken, Shireen
Allong, Albert
Amundson, Burton
Anderson, Gerald
Anderson, Lance
Anonymous
Aserlind, Eric
Asmus, Lawrence
Babcock, Jack
Babcock, Laurel
Ball, Brian
Battista, Janet
Behrendt, John
Beringer, Robert
Berkson, Jonathan
Bethke, Karl
Blohm, John
Boebel, Richard
Boucier, Leo
Bourgeois, Joanne
Boyd, Robin
Bradley, William
Brooks, Elwood
Bultman, Thomas
Burnweit, Cathy
Cameron, Donald
Carr, Timothy
Cendella-Sumner, L.
Charpentier, Ronald
Christopher, Jane
Ciriacks, Kenneth
Ciriacks, Linda
Cole, Rebecca
Colgan, Patrick
Connell, Doug
Craddock, Campbell
Craddock, Dorothy
Crossfield, Nancy
Dahm, John
Darby, Dennis
Darkow, Glenn
Davies, William
Divine, David
Divine, Ruth
Dott, Robert Jr.
Durch, Jean
Durch, Michael
Edwards, James
Einhorn, Theresa
Eisen, Craig
Evans, John
Fagerlin, Stanley
Fahlstrom, Beverly
Falkenstein, Bruce
Fedell, Jean
Flaten, Luvern
Fricke, Carl
Fuller, Henry
Gasch, Sylvia
Gates, Robert
Gerlach, Terrance
Gerlach, Terrence
Gibson, Thomas
Gilbertson, Roger
Gillespie, Robert
Goffman, Jackson
Grether, William
Guidotti, Barbara
Guidotti, Charles
Haddox, Charles
Hamilton, Stanley
Hart, Helen
Hart, Orville
Hartman, James
Herr, Paul
Herzon, Paige
Hill, Patricia
Hornbostel, Lloyd
Iltis, Steven
Ison, Rosemary
Jackson, Goffman
Jacobson, Dean
Johnson, Michael
Johnston, Steven
Kaiser, Charles
Kaiser, William
Kerr, Dennis
Klett, Roger
Kocurek, Gary
Koehler, Robert
Kux, Editha
Kux, Otto
Laing, Laura
Laing, William
Langdon, Lisa
Langdon, Robert
Larson, John
Larson, Thomas
Lee, David
Lehmann, Patrick
Lewallen, Kyle
Lewallen, Sherry
Linden, Laura
Luttrell, Eric
Luttrell, Janet
Maby, Robert
Macdonald, Heather
Mack, John
Mackey, Scudder
Marshall, Samuel
Mayer, Victor
McEvoy, Thomas
Meigs, Lucy
Mertins, Richard
Miller, William
Millet, Lori
Milner, Sam
Monahan, Robert
Moody, William
Morgan, William
Morgridge, John
Morgridge, Tashia
Munter, Elizabeth
Munter, James
Nania, Jay
Nelson, Henry
Nelson, Vivian
Newell, David
Nielson, Ronald
Niem, Alan
Niem, Wendy
Niemuth, Nyle
Nord, Gordon
Oetking, Clare
O'Neill, Brian
O'Neill, Teresa
Orengo-Nania, Sylvia
Paull, Carol
Paull, Donald
Paull, Martha
Perko, Albert
Pidcoe, William
Plouff, Carol
Plouff, Donald
Porter, Michael
Prucha, John
Pruett, Diane
Pruett, Robert
Rector, Sharon
Reise, William
Rinaldo-Lee, Marjory
Robertson, James
Roehl, Perry
Rossen, Christine
Ruf, Amy
Salkowski, Michael
Salkowski, Susan
Salstrom, Barbara
Salstrom, Phillip
Sarg, Ann
Sarg, Frederick
Schoenike, Howard
Schwab, Frederic
Scott, Richard
Solien, Mark
Spatz, Jeffrey
Stathis, George
Stephens, Michael
Stephenson, Thomas
Stoertz, Mary
Sullivan,Thomas
Sun, Albert
Sundelius, Harold
Sunderman, Harvey
Sweet, Lily,
Sweet, Mihael
Szymanski, Daniel
Thornton, Scott
Turk, Lon
Turner, Daniel
Umhoefer, Paul
Van Buskirk, Dennis
Vitcenda, John
Vitcenda, Lois
Walker, Theodore
Waters, Georgia
Weertman, Bruce
Wegner, Warren
Welsh, James
Wendte, John
Wilcox, Mary Jane
Wilcox, Ray
Winters, Leonard
Wollenzien, Thomas
Wray, John
Yehle, Lynn
Young, Ann
Young, Keith
Yurewicz, Donald

Corporate Donors

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BP America
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Exxon
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Mobil Oil
Morgridge Family Foundation
Oxy USA
Pioneer Natural Resources
Richards Group
Shell Oil

Alumni Support for Student Field Research

During 1998, the department used alumni gifts totalling $17,000 to assist 15 graduate and undergraduate students in field research projects sponsored by six faculty members.

Dean L. Morgridge, late 1950s

Morgridge Fellowship Gift

A Distinguished Graduate Fellowship Program has been created with a $2.5 million gift to the U.W. from John ('55 BBA SOB) and Tashia ('55 EDU) Morgridge. One fellowship will be established in Geology and Geophysics to honor John's brother Dean L. Morgridge ('52 BS, '54 MS). As an early member of Exxon's Alaska exploration team, Dean played a role in the history of the famous Prudhoe Bay field. He remembers fondly being a student research assistant in Bull Bailey's new x-ray laboratory, but his mentor, Lowell Laudon, also infused a strong dedication to field geology. Dean hopes that the new fellowship will enhance the field training of young Wisconsin geologists.

Department of Geology and Geophysics

Best Paper Award

In Spring 1997 the department initiated the Albert and Alice Weeks Best Research Paper Award. The award is given for an outstanding paper published in a journal or a book that is first authored by a student or recent graduate of the department. Up to four awards can be given each year. The three papers found deserving of the award for 1998 were:

Colgan, P.M. and Mickelson, D.M., 1997, Genesis of streamlined landforms and flow history of the Green Bay lobe, Wisconsin, U.S.A.: Sedimentary Geology, v. 111, p. 7-25.

Drzewiecki, P.A. and Simo, J.A. (Toni), 1997, Carbonate platform drowning and oceanic anoxic events on a mid-Cretaceous carbonate platform, south-central Pyrenees, Spain: Journal of Sedimentary Research, 1997, v. 67, p. 698-714.

King, E.M., Barrie, C.T., and Valley, J.W., 1997, Hydrothermal alteration of oxygen isotope ratios in quart phenocrysts, Kidd Creek Mine, Ontario: Magmatic values are preserved in zircon: Geology, v. 25, p. 1079-1082.

Congratulations to Pat, Peter, and Liz! We're proud of you!

Awards and Scholarships Announced

The following awards were announced at the department Spring Banquet April 16, 1998:

- Thomas E. Berg Award for excellence in teaching at the intermediate level for the academic year–Weston R. Dripps
- Stanley A. Tyler Award for excellence in teaching at the introductory level for the academic year–Eric C. Carson and Ayako Kameda
- Mack C. Lake Outstanding Senior Scholarship–Katherine R. Griffin and Matthew O. Schrenk
- Lowell R. Laudon Outstanding Junior Scholarship–Elizabeth J. Hermsen and Julie A. O'Leary
- Carl and Val Dutton Scholarship–Douglas P. Simon
- Laurence Dexter Environmental Scholarship–Ben J. Laabs
- The Paull Family Undergraduate Scholarship in Geology and Geophysics–Nicholas J. Salkowski
- Wasatch-Uinta Field Camp Scholarship–Herbert and Albert Weeks Scholarship–Michael T. DeAngelis, Thomas M. Gihring, Brian R. Nodolf, Nicholas J. Salkowski, and Heather E. Whitman
- The AMOCO Fellowship–Meredith K. Rhodes
- The Graduate School Travel Award for Research Abroad–William H. Peck

Professional News Briefs

• Gene Cameron has informed us that **John M. Guilbert** received the Penrose Medal from the Society of Economic Geologists for 1998. This is the highest recognition from SEG for lifelong achievement. The medal was awarded March 2, 1999 in Denver.

And the Society of Economic Geologists also announced the selection of John M. Guilbert as SEG International Exchange Lecturer for 1998-99. He was a professor of Economic Geology at the University of Arizona for 29 years, until his retirement to emeritus status in 1994.

Dr. Guilbert earned a bachelor's degree from the University of North Carolina and received his M.S. (1954) and Ph.D. (1962) degrees from our department, working with Gene Cameron. He arrived at the University of Arizona, Tucson in 1965, after eight years at the Geological Research Laboratory of The Anaconda Company in Butte, Montana. As a professor, he mentored several generations of economic geologists and made fundamental research progress in porphyry copper deposit geology. His major research contributions include studies in the petrology and zoning of porphyry copper deposits, development of geologic models and exploration methods for porphyry copper deposits, and classification of lithotectonic ore deposits. He is currently developing methods for multimedia instruction of field relationships in economic geology.

• Professor **Mary P. Anderson** received the 1998 O.E. Meinzer Award at a luncheon meeting of the Hydrogeology Division of the Geological Society of America in Toronto. The Meinzer Award has been presented annually since 1965 to recognize the author of an outstanding paper or set of papers advancing the science of hydrogeology. Professor Anderson received the award for a set of four papers that were published between 1993 and 1996, co-authored by her students.

• Professor Emeritus **Charles Bentley** received the 1997-98 Hilldale Award in recognition of life-long achievements at the University of Wisconsin. It was awarded at a meeting of the Faculty Senate on May 4, 1998.

It was announced recently that Prof. Bentley has been formally made an honorary member of the American Polar Society and he received the Richard Goldwaite medal for Antarctic achievement from the Byrd Polar Center of the Ohio State University.

• **L. Gordon Medaris**—Professor Emeritus, has been awarded the Gold Medal of the Faculty of Science, Charles University, Czech Republic. The Gold Medal is awarded occasionally, usually to Czech scientists for life achievement. In celebration of the 650th anniversary of the founding of Charles University, Gold Medals were awarded to four foreigners: a German biologist, an Austrian chemist, a Scottish geologist (Don Bowes), and Gordon. For the past decade, Gordon has studied peridotites, eclogites and granulites from the region. He has worked closely with Czech scientists and has helped modernize geologic research in the Czech Republic. The medal and citation will be displayed in the lobby of Weeks Hall.

• Professor Emeritus **Lloyd Pray** has received the 1999 SEPM (Society for Sedimentary Geology) William H. Twenhofel Medal. The medal is the highest award of the Society and recognizes "outstanding contributions to sedimentary geology" and acknowledges sustained excellence in paleontology, sedimentology, stratigraphy and/or allied disciplines. Lloyd is now a member of a small elite of sedimentary geologists and his name is attached to Twenhofel, a former UW-Madison faculty member who "invented" sedimentary geology. **Bob Dott, Jr.** received the award in 1993.

Lloyd was also honored on April 24, 1998 with an award by the Guadalupe Mountains Park Rangers "for his significant research and resource management contributions to the Guadalupe Mountains Park." This is the first such award the rangers have given in 25 years. As most of you know, Lloyd and his students have worked on the carbonate rocks of the Guadalupe Mountains for many years.

• **Vance T. Holliday**—Professor in the Department of Geography, received the Kirk Bryan Award (Quaternary Geology and Geomorphology Division) and the Rip Rapp Archaeological Geology Award.

• Graduate student and Research Assistant **Michele L. Stoklosa** was selected by the AAPG Grants in Aid Committee to receive a grant from the AAPG Foundation.

• Graduate student and Research Assistant **Salma Monani** received a 1998 Outstanding Student Research Award from GSA. There were only 25 such awards from 443 applicants in 1998.

• **William W. Montgomery** was promoted to assistant professor of geology at New Jersey City University, Jersey City, N.J. He previously completed his Ph.D. in geology and hydrogeology at Western Michigan University, Kalamazoo, Michigan, and has been a senior geologist, Atlantic Richfield, Dallas.

• **J. Frederick Sarg**–Mobil Exploration Technology, was inducted as SEPM Foundation secretary-treasurer in May at its annual meeting in Salt Lake City.

• **David A. Stephenson** was inducted by the American Geological Institute (AGI) as its 1999 president during its reception and awards ceremony on Tuesday, October 27, 1998 at the annual meeting of the Geological Society of America (GSA). Stephenson, a former UWG&G professor, has worked in academia, with government agencies, and as a consultant. He is vice president of S.S. Papadopulos & Associates (SSPA), an environmental and water resources consulting firm.

• The Duncan R. Derry Medal of the Geological Survey of Canada was awarded to **Rodney V. Kirkham**. Rod, in his acceptance speech, gave glowing praise to the UW Geology Department and also to Professors **Cameron, Dott** and **Bailey** among others.

• Department alum **M. Ray Thomasson**, of Thomasson Partner Associates in Denver, was voted president-elect of the 31,000-member American Association of Petroleum Geologists. Thomasson will serve as president of AAPG in 1999-2000. A native of Columbia, MO, he earned a doctorate from the UW after serving in the U.S. Air Force.

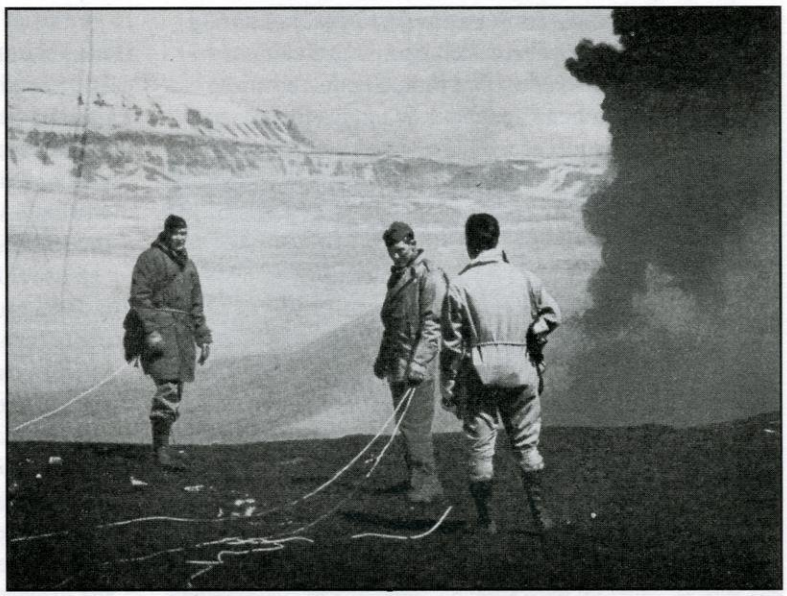
• A new video from **Margie Chan**, *Women Who Walk Through Time* was winner of a 1998 Telly Award in Category of High School Education.

The Telly Awards is a well-recognized, prestigious, national competition which recognizes outstanding non-network programming as well as film and video productions. Competition is against a high standard of excellence (winners score 9.0 or higher on a 10 point scale), judged by a panel of 20 production professionals from all over the U.S. In the 1998 competition (19th Annual Telly Awards), there were over 10,000 entries and the ratio of winners is on the order of 7-10%.

Badgers in the Aleutians

by John Fournelle

There is a growing tradition of Badgers doing geology in the Aleutians, starting with World War II and Ray Wilcox, Charles Bradley and Sheldon Judson. Bill Bryan came to UW right out of the Aleutians. Bob Black started his work on Umnak in 1962-3 while at UW John Fournelle landed in the middle of Unimak Island in 1984 to work on Shishaldin volcano. In the '90s, Tina Dochat, Eric Carson, and Dave Mickelson studied the post-glacial geology in the Cold Bay area. And new Badger Brad Singer did his Ph.D. on Seguam Island and hopes to return.



Lt. Ray Wilcox, Sgt. C.D. Clawson and G.D. Robinson prepare to descend into Okmok Caldera, June 1945. (From the article "Exploring Aleutian Volcanoes" by Robinson, which appeared in the October 1946 issue of National Geographic.*) Photo by Col. G.A. Polk.*

The Aleutian volcanic island arc, one of the U.S.'s most remote archipelagos, received little attention from scientists and politicians until World War II. The landing of Japanese troops and bombing of U.S. forces there gave impetus to map the islands and adjacent ocean waters. Geologic interest peaked in June 1945 with the eruption of a volcano on eastern Umnak Island near the Ft. Glenn military base. Alaska's Commanding General Emmons had witnessed the 1912 Katmai éruption and immediately put in a call to the U.S. Geological Survey. A geologist, G.D. Robinson, was forthwith dispatched from Anchorage. Fortunately, ten days before, Signal Corps 2nd Lt. **Ray Wilcox** (UW BS 33, MA 37, Ph.D. 41) had been transferred to Ft. Glenn from Adak.

Ray's Ph.D. research, under 'Con' Emmons, had been on the mixing of rhyolite and basalt magmas at Yellowstone, and after graduation he worked for Jones and Laughlin in NY state iron ore exploration. He enlisted "with the draft breathing down" his neck. He chose the Signal Corps thinking that his background in mineralogy would qualify him to work on quartz crystals, used in radio transmitters; this did not come to pass. He arrived on Adak in January 1945, working with the Alaska Communications System, and in May he transferred to Umnak Island, a week and a half before the eruption within Okmok Caldera.

> "I heard there was a USGS geologist in town to check it out. He was staying at the general's residence, and I called him up. He was about to give up getting into the caldera, which was socked in by clouds. Together we decided to give it another try, and went up there, where it was a perfect day. We cased it, and Robinson went back to Anchorage to report to the commanding general, and they put me in charge of the volcano. I was to show visitors around—in addition to my other duties. Howell Williams came up from Mexico to check it out; I had known him before and we had a good time. Later on the head of USGS (Bill Wrather) and the chief of Alaska Branch (John Reed) came out. They had been in Anchorage and talking with the commanding general, who asked if they wanted to go out to see the volcano. I got acquainted with the Survey out there; this eventually led me, after the war, to work for the Survey. They wanted me to go back to Aleutians for the volcano program, but I begged off. They then offered me the job at Paricutin. Talk about luck...I don't know why I was assigned by the Army to the Aleutians in the first place, just a lucky break."

Ray and **Mary Marks** (BA 42) had met in the UW geology department, and were married in Madison in 1942. After the war, they moved to Mexico in September 1946 with their infant Peter. Ray spent two years at Paricutin as the "resident observer" at the observatory,

at the base of the volcano. He was responsible for monitoring the volcanic activity—seismicity, explosive and effusive activity, and sampling of tephra and lava. His petrologic examination (USGS Bulletin 965-C) is a classic study of variation in magma composition during an eruption. Ray was also called upon to provide expertise to authorities elsewhere in Central America when other volcanoes threatened. When his tour at

Ray and Mary Wilcox, Denver, October 1998

Paricutin was over, Carl Fries Jr. (BA 37, MA 39) took over the mission.

Ray would return to the Aleutians during the 1949 and '50 field seasons, as a member of the USGS's Volcano Investigations Unit. With the concern over Okmok and the strategic importance of the Aleutians, the War Department pushed for the USGS to start this program in late 1945. The first geologists were in the field during 1946 and '47, with bare bones logistical support from the military or Coast & Geodetic Survey. By 1949 the program had expanded its personnel and acquired the 80' halibut schooner *Eider*, mastered by experienced Alaskan fisherman Carl Vevelstad.

> "Many of us would get to Seattle by late June and board the *Eider*, for the long trip across the Gulf of Alaska. It was a great adventure for those of us who'd never been on ship. The *Eider* had been on bottom several times before—its motto was *'Immer floats der Eider.'* In the Near Islands, Howard Powers was the chief. We got dropped off, four pairs, each with a geologist plus field assistant. Attu was biggest island. We would take two to five days to cover an area, then the ship would pick us up. Weather was an important factor. The ship made it more flexible, tremendously more efficient than the previous way of getting on or off an island dependent upon the military's schedule."

During the summer of 1952, Ray conducted a reconnaissance of volcanic deposits in the Valley of Ten Thousand Smokes.

> "We put in three days, by boat and foot, in June. It never got dark enough to sleep, so we just kept working. We returned to King Salmon hungry and tired. I'll never forget that meal."

The 1953 eruption of Mt. Spurr, west of Anchorage, brought Ray back again to active Aleutian volcanoes.

> "It was just a light dusting of ash, pretty luggy stuff, some juvenile glass but cloudy. I conferred with civilian authorities and decided there needed to be a report for civilians on how to deal with eruptions like this. It resulted in a USGS Bulletin [1028-N] on the effects of volcanic ash eruptions in Alaska. It was used quite a bit later, including at the time of the Mt. St. Helens eruption. I got lots of flack from my Branch Chief Jim Gilluly, for the write up—as usual, I was behind in my other reports."

Ray's career in the USGS continued with 'applied volcanology,' tephrochronology, being applied to problems of stratigraphy in the Western U.S. Using his background in optical mineralogy, he developed the spindle stage and then the dark field masking technique to compare the minerals and glasses from different ash layers. He retired in 1984, and remains active as a Volunteer Scientist Emeritus.

Charles Bradley (BPh '35, MA '46, Ph.D. '50) graduated with a bachelors degree in geology during the Depression, and ended up running a commercial photographic business on State Street. When the winds of war began to blow strongly, he enlisted in the Army in 1941. His desire to go into the Army Mapping Service failed—he was "too old" at 28. He appeared headed to a dreary assignment, building boardwalks at Camp Grant, IL. Fate had him read a newspaper article about the army creating a unit able to live and fight in mountains and under winter conditions. Luckily it mentioned who was recruiting for it. Charlie loved camping and skiing, knew the organizer, and immediately began the surreptitious progress that soon found him transferred to the 87th Infantry Regiment (Reinforced) at Ft. Lewis, WA.

For the next couple of years, he was involved in testing

continued on page 10.

Living Next Door to Parícutin Volcano

Mary Marks Wilcox (BA '42)

"I had loved to write in high school so I started in journalism at UW. The one journalism course I took was the worst class I ever had. I was required to take science, which I wasn't interested in, so took physical geography with Loyal Durand and loved it. I switched my major to geography and took a couple classes which showed me I didn't like the geography, but the physical part, the rocks etc., so by 2nd year I was majoring in geology. I loved it.

"The first year in general geology we had a field trip, which was fun. A high point was the mapping course where Ray and I got acquainted (we had probably known each other before). We were mapping at Devils Lake; near the end of the week, I was having trouble with my alidade. Ray, a grad student, was there substituting for Freddy Thwaites (the professor) who had gotten chicken pox from his three little boys. Ray gave me quite a bit of special help. [Ray: "I didn't think it was special."]

"Con Emmons taught mineralogy. He would come in and address the class, 'fellows'. That bothered me, I wasn't a fellow. So I made up my mind to show him, and I got the highest grade on the first exam. He stopped calling us 'fellows' after that.

"There was only one other female geology major, Donna Danke. I loved hard rock, but Twenhofel told me 'there's no place for women there,' and coerced me into doing my senior thesis on the Brachiopedia of Maquoketa Shale—which was interesting enough, and I had my own little office. I didn't tell anyone but I had made up my mind to go into hard rock geology in grad school. Then the war came along and I got married.

"We moved to Mexico in 1946. We lived 3 miles from the volcano. I'll never forget the first day there. We arrived late in the day from Mexico City, and the next morning everyone had left to go up to volcano. I was left with Peter (2 1/2 years old) alone in that strange place, no one else there except people down below in a horse camp (I couldn't speak Spanish yet), and volcano was booming and the earth was shaking. I wasn't sure what was going to happen. But I got used to the volcano quickly and I loved camping, which is what our life really was.

"We lived in the observatory which had asbestos board walls and roof, and no running water, no electricity. Two other families lived there with us. To get water, once a week we went to Uruapan, and brought it back in drums. We had to boil everything. There was no refrigeration; meat from the market would last a couple of days. We got a *filete*, would hang it in a cage with mosquito netting; by the 2nd or 3rd day it would be covered with hideous looking stuff—you would cut this off and cook what was left. In the rainy season, we collected water off the roof in a rain barrel—the ash would settle to bottom. Our teeth turned sort of black, but cleared up after we left. [Ray: "It was from fluorine coating the ash."]

"After 9 months, we went into Mexico City to have our baby there—there was no medical care at volcano. Ray was in Nicaragua the day Anne was born. We stayed in Mexico City until she was two months old, then went back out, not to observatory but to Uruapan. Ray would come in on weekends. We were there a year or so more, then Ray had to go into Mexico City to finish up, and we all went there.

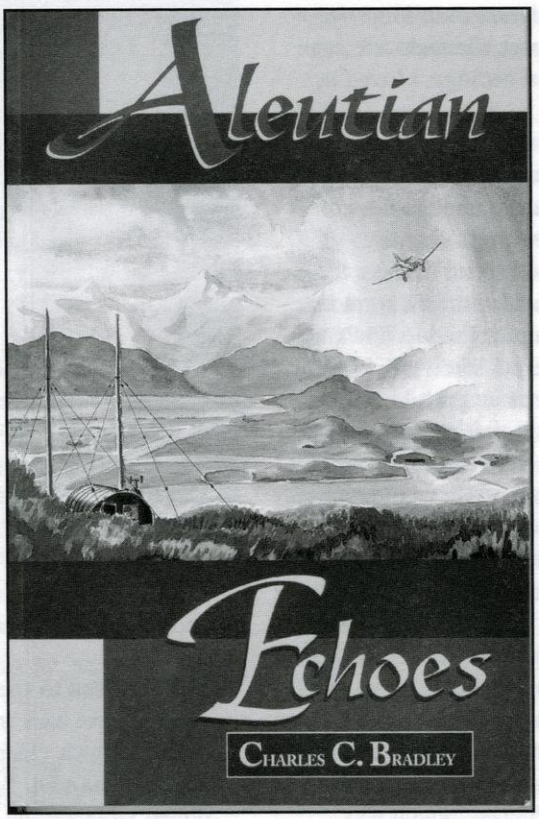
"Pete learned to speak Spanish very well there. After we got back to the U.S., he refused to speak Spanish. 'Here people don't speak Spanish,' he said. We tried to keep it going at the dinner table, but he wouldn't cooperate. He took Spanish in high school; his teacher was from Michoacan and was amazed that Pete spoke Spanish with a Michoacan accent. When he graduated from high school in the '60s, he went all by himself down to Mexico. It was a bit traumatic for us.

"Living in Mexico was a great thing for us, living in a completely different culture. Coming back here was real culture shock; in a sense, we've never gotten over it."

Mary continued her studies and received a Masters degree from the Iliff School of Theology in 1968. She works in research, education and writing on social concerns and theological issues.

techniques and equipment: skis, snowshoes, tents, stoves, sleeping bags, clothing, much of it on the slopes of Mt. Rainier. Crossing crevasses, learning how to deal with avalanche threats, traveling under white-out conditions. In fall '42, he traveled to Ft. Benning for officer training and commissioning and then was assigned to the Winter Training Group, at Camp Hale in Colorado, as a trainer. That winter he was back in Wisconsin, "winterizing" the Second Infantry Division, at Ft. McCoy.

June of 1944 found him aboard a ship out of Seattle headed north for "Armageddon," which would turn out to be Dutch Harbor, Unalaska. He would be an essential part of the soon-to-be-born North Pacific Combat School, that would train the troops that would "carry the war" back to Japan via the Kurile Islands—Islands that are virtually identical to the Aleutians. In August of '44 the NPCS shifted to Adak, 600 miles further out the chain; Adak would be the secret base for the offensive to drive the Japanese off the western Aleutian islands of Attu and Kiska.



Charlie has written a riveting account of his experiences in the Aleutian Islands during WWII, *Aleutian Echoes* (1994, University of Alaska Press. ISBN 0-912006-75-7 paper,-74-9 cloth; order from your local bookstore or call the publisher at 1-888-252-6657), from which the following is excerpted (pp 229-232). It is profusely illustrated with gorgeous color photographs and water color drawings (such as the one on the cover, above).

> "It was a pleasant spring day when our gang took the six-mile hike from Shagak Camp to Adak Base for a weekend in civilization. As we crossed the low pass, I was keeping an eye out for the blooming of our earliest spring flower, the narcissus anemone, and admiring the rare view of Great Sitkin volcano with its vapor plume trailing off to the southeast—toward home. Maybe I was thinking of home, too. The last thing I could have anticipated for this particular time and place was an event that would change the course of the rest of my life.
>
> "Coming toward us up the trail from [Adak] town was a man carrying a knapsack and walking with a brisk springy stride. He was medium sized and looked well adapted to the outdoors. Since it was rare that we ever saw any non-NPCS person on that trail, I stopped to get acquainted. He stuck his hand out and said, 'I'm Bob Sharp and I'm looking for the NPCS.'
>
> " 'You're looking at the NPCS marching right by you at this very instant,' I said. 'What can we do for you.'
>
> " 'In town they told me you lived out this way, so, well, it was a good day for a hike.'
>
> "He was on a mission for the 10th Air Corps to examine Adak's emergency foods for downed pilots and had been told that we had done quite a lot with that subject....I stayed behind to help our visitor. To tell the truth, Adak town held no real charm for me....
>
> "My flower sketch book was in my pack so we went over to a big boulder, sat down and discussed what we had tested as edible plants, roots, and berries. It was the wrong time of year to see much on the ground, but Mr. Sharp seemed to know his plants very well. As far as I was concerned, except for the berries, which were delicious, most of the edible plants required a pretty severe emergency to make them edible.
>
> " 'How about sea food?' I asked. 'You don't even need an emergency for that.' So we talked about mussels, the real backbone of sea food opportunity. We talked about crabs, shrimp, and salmon. I was a little reluctant to mention the giant clams because our only source, Shagak's tidal flat, was beginning to reveal signs of too many hungry mountain trainees....

"As we got up to continue the hike, he pointed to the lone boulder we had been sitting on. 'What do you make of that?'

"I answered, 'Glacier, I suppose, but I can't decide whether is came off Mt. Moffet to the north or that mountain range to the south.'

" 'Is there evidence of glaciers to the south?'

" 'Yes, and I think it was separate from the Moffet glacier because there are striations in a couple of high passes to the south that suggest a fairly thick ice sheet over there flowing this way.'

" 'You've had some geology,' Bob suggested. I told him I had a bachelor's degree in geology from the University of Wisconsin, Madison. 'Do you keep a notebook?' I took my notebook from my shirt pocket. Bob looked it over, then passed it back. 'You've got enough here to make the basis of a paper. I suggest you write it up when all this military distraction is over. Very little Aleutian geology is known at this time.'

"Pangs! I had gotten my degree ten years before. I loved geology but graduated at the tail end of the Great Depression which produced no geological employment for me. I drifted into commercial photography. That, too, was interesting. I enjoyed the surprise of each new assignment, the challenge, and the fact that each assignment came finally to an end. Finished! A sense of accomplishment, and on to the next. All that was fine, up to the day I saw a large billboard carrying the result of my biggest and best job, out there for all the passing motorists to see. It gave me a wrench in the middle. I loath billboards. When the draft came my way I sold off the whole photographic outfit. Mixed feelings, of course, but commercial photography had lost it charm. Geology! How could I return ten years late?

"Nevertheless, when the war was over, I went back to the University of Wisconsin Geology Library and started my paper on the geology of Adak. One of my former professors, R.C. 'Con' Emmons, came by, recognized me and asked, 'What are you doing here?'

"After looking over the paper he said, 'Why don't you come back to geology? You might be able to use this for your master's thesis.' My return to geology was under way.

"Bob Sharp was and is a well-known geologist and teacher. *Life* magazine later listed him as one of the ten best teachers in the U.S. Home base was California Tech. He did try one of the giant clams of Shagak Bay but I believe he cooked it instead of having it on the half shell. Cautious scientist. Although I have not seen Bob again, we have been in fairly close contact ever since that day on Adak."

Charlie and Nina Leopold Bradley, Baraboo WI, Oct '98

Charlie did write up his notes from Adak—and they became his Master's thesis, and were published in the *Journal of Geology* in 1948. He continued and received his Ph.D. in 1950. He joined the faculty of Montana State University, continuing onward in teaching, research and administration. He retired in 1970, and lives in Baraboo with his wife Nina Leopold Bradley (BA Geography, '41). He helps manage the Leopold Memorial Preserve.

Sheldon Judson (Ph.D. Harvard; UW faculty 1948-56) served in the U.S. Navy in WWII, and arrived in the Aleutians in 1943. Based on both ground investigation and photo interpretation, he published an article in *Journal of Geology* in 1946 on the postglacial geology of Adak Island. He joined the UW Geology faculty in 1948 and remained until 1956, when he joined the faculty at Princeton University.

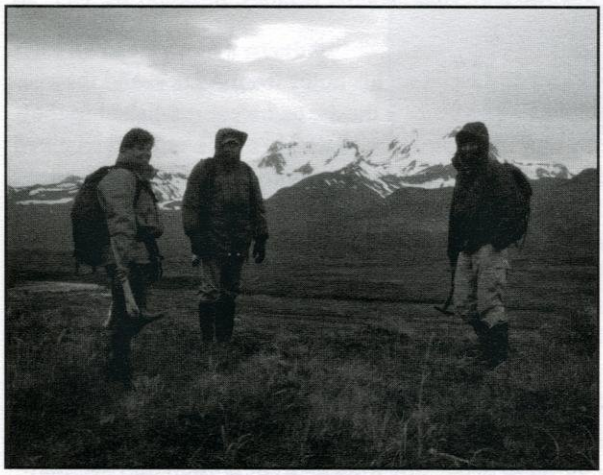
"I was commissioned into the Naval Reserve as an ensign in World War II and assigned to photographic

interpretation training as were a number of other geologists. After training I was assigned to Hawaii and from there to Adak. There I was attached to a photo interpretation unit, a part of the intelligence group for the North Pacific Command. I was land based.

"I arrived on Adak just after we reoccupied Kiska [August 1943]. The area was very quiet thereafter. A few photos of Kamchatka and the Kuriles, and a rehashing of photos versus ground truth for Kiska. We had jeep transport available, but chiefly foot was the method of transport for those of us who wanted to look at geology. I thought that my observations might produce a paper, and in fact wrote the first draft of it on Adak. I wasn't aware that Bradley and Wilcox had been stationed on Adak until after the war."

Bill Bryan (MA '56, Ph.D. '59) came to UW as a grad student in 1954, following a summer as field assistant on Unalaska.

"I did hope to use the Aleutian rock data for my Ph.D. work which I began after the field season ended. Ray Wilcox helped me dig through the USGS system for a way to get access to the samples, but for various reasons it did not turn out to be workable. Too many problems with others having priority, manuscripts in progress but not yet in print, etc. So Ray put me in touch with a group at Scripps that was looking for help with a volcanic project in the Revillagigedo Islands, Mexico. At the time we all thought this was an extension of the trans-Mexican volcanic belt, with island arc affinities. It turned out to be nothing of the sort. This is how I ended up spending most of the rest of my life doing work on oceanic islands and deep-sea volcanism.



Tina Dochat (Ph.D. 1997), Dave Michelson and Jim Jordan (UW Geography Ph.D. student) pause for a break in field work east of Frosty Volcano near Cold Bay, in July 1996. Eric Carson (M.S. 1998) began work on the tephrochronology there the following year. UW Anthropologists (Herb Maschner, PI) have also been working in this area for several years.

"My one field season on Unalaska Island began a long-term relationship with USGS volcanologists such as Ray Wilcox, George Snyder, Gordon Macdonald and Howard Powers, who all offered much help and guidance over the years. It might be interesting to know how many other geological careers were influenced or guided by the experience of one or two field seasons in the Aleutians. It is the kind of mentoring that is supposed to be part of the USGS mission, but for which it often seems to receive little credit."

"I finally got to see the 'forbidden' end of the Aleutian subduction system in 1989, when I was invited to visit the Koriyak Mtns. in the Russian far east. There were a lot of similarities to the older units on Unalaska Island, and of course all of this is interpreted as transported accretionary terrain. Perhaps much of the underpinnings of the Aleutians has a similar origin? It would have been fun to take the Russians there to see what they think about our stuff. Unfortunately funding both here and the USSR went sour shortly after this, so that did not happen.

"About three years ago I got tired of trying to stay alive on soft money and retired. I now build boats for amusement but have carried on some work on giant tsunami deposits in Hawaii, another long term interest initiated by a personal experience with an Aleutian-generated Tsunami."

Support for travel expenses for the Wilcox interviews came from the Weeks Fund. This project has expanded beyond solely Badgers in the Aleutians. If you know of anyone involved in mapping, ocean surveys, geologic or geophysical studies in the Aleutians, please contact me.
—John Fournelle, johnf@geology.wisc.edu

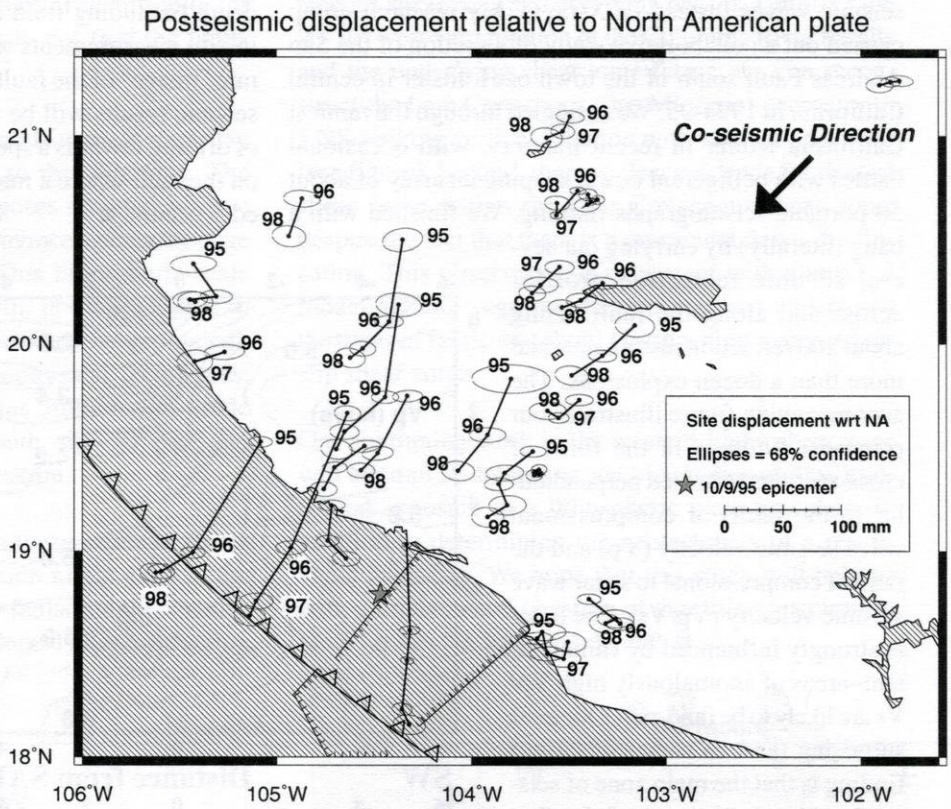
Tectonic Teasers

Featured Faculty Research

Shaking and Baking in Western Mexico

C. DeMets and W. Hutton

The Pacific coast of western Mexico lies above several oceanic plates that are plunging eastwards into the mantle beneath it. Two devastating consequences of the subduction of these oceanic plates are periodic large earthquakes that shake the coastal areas and persistent volcanism in the large stratovolcanos that lie above the subducting plates. To better understand the response of a continental margin to plate subduction, Prof. DeMets and his graduate student Wallis Hutton initiated a long-term study in 1995 of the Jalisco region of western Mexico. To do so, they are employing Global Positioning System technology, which enables them to measure the relative and absolute locations of sites distributed around western Mexico to the nearest few millimeters.



Measurements within this network of sites through time are used to determine how the crust deforms before, during, and immediately after large earthquakes. Seven months after this project was initiated, a magnitude 8 earthquake ruptured the fault offshore from the new network (see figure). The earthquake caused sudden horizontal and vertical displacements of the measurement network of up to 1 meter, and the pattern of vertical and horizontal displacements provided unique information about the slip that occurred along the subduction fault. The nature of deformation in the 3.5 years following the earthquake is proving to be even more interesting than the co-seismic displacements.

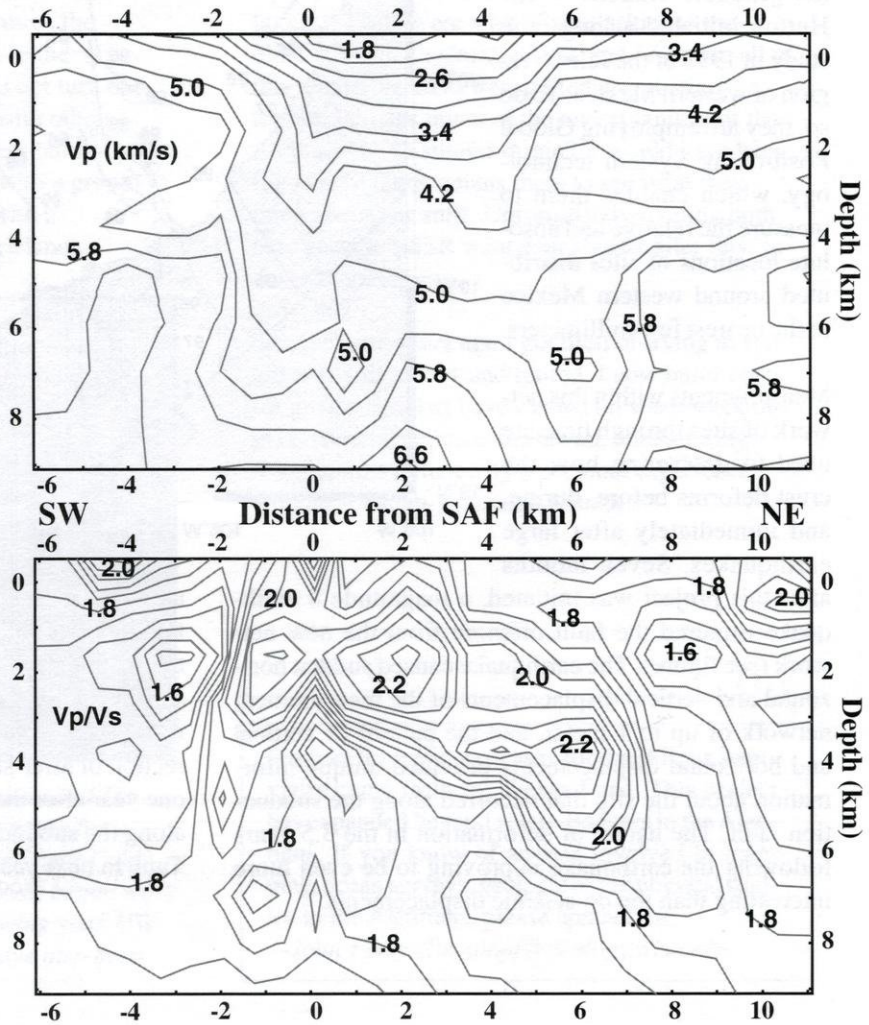
During this post-seismic phase, sites have continued moving rapidly toward the 1995 earthquake rupture zone (i.e. to the southwest), presumably reflecting continued afterslip along the subduction fault. We are now using the measured surface displacements to solve for the distribution of slip along the subduction fault and the manner in which it has changed during the post-seismic phase. Thus far, afterslip has decayed logarithmically, in accord with expectations; however, the direction of after-slip appears to have changed gradually one year after the earthquake, suggesting that afterslip along the subduction fault may be shifting its location. Tune in next year for the next report! ■

Shocking Fault Findings

Cliff Thurber

We know surprisingly little about the nature of faults at depth in the earth. A variety of geological and geophysical evidence suggests that the San Andreas Fault is relatively weak, and the most popular explanation for its weakness is that its strength is reduced by the presence of fluids at relatively high pore pressure. One way to probe the deep structure of a fault is to use "seismic tomography" (like giving the earth a CAT scan, but with seismic waves instead of X-rays). My research group carried out a collaborative study of a section of the San Andreas Fault south of the town of Hollister in central California in 1994-95. We struggled through the rainiest California winter in recent memory, with occasional battles with belligerent cows, keeping an array of about 50 portable seismographs running. We finished with a bang (literally) by carrying out several seismic refraction profiles across and along the fault, using about 200 refraction instruments and more than a dozen explosions. The accompanying figure illustrates our principal findings in the form of cross-sections (oriented perpendicular to the fault) of compressional wave seismic velocity (Vp) and the ratio of compressional to shear wave seismic velocity (Vp/Vs). The latter is strongly influenced by fluid content–areas of anomalously high Vp/Vs are likely to be fluid-rich. Our most surprising (and, to some, shocking) finding is that the main zone of seismicity along this part of the San Andreas does not occur on a simple, nearly vertical fault, but instead lies along a plane dipping about 70° southwest. Also, we find that the most fluid-rich zones (based mainly on the interpretation of the Vp/Vs cross-section) occur at shallower depths than the earthquakes. This suggests that if a fault is weakened by the presence of fluids, it will not fail in a brittle manner in earthquakes.

We are hoping to carry out a comparable seismic array project in the Parkfield, California, area, as part of a proposed multi-institutional project to drill and instrument a borehole into the San Andreas Fault to the depth at which earthquakes begin to occur (about 3.5 km below the surface). If the drilling project is funded, we will have the first direct measurements of material properties of the San Andreas Fault at depth (including fluid content and pressure). These in-situ measurements will help us interpret our seismic "image" of the fault at Parkfield. In addition, our seismic results will be used to guide a second stage of drilling towards a specific target–the precise patch on the fault where a magnitude 2 earthquake repeatedly occurs. ■



Where Has All the Strike-Slip Gone?

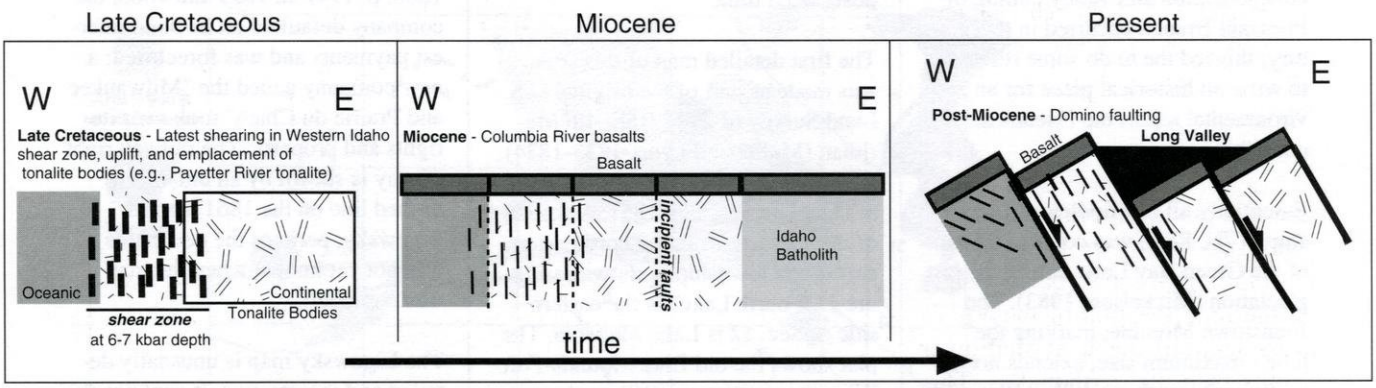
Basil Tikoff

A recurring problem in the North American Cordillera is the missing strike-slip motion required by paleomagnetic analyses. These analyses suggest that large portions of western Canada and Alaska, were located hundreds to thousands of kilometers south of their present location during the Cretaceous. This suggests that most of the western margin of the United States may have resembled a San Andreas type margin during the Latest Cretaceous and/or Early Tertiary. The difficulty for geologists is very simple: We can not find the faults that accommodated the motion.

Ongoing fieldwork in the western Idaho shear zone may provide some critical answers to this dilemma. The western Idaho shear zone juxtaposes accreted oceanic terranes of the Blue Mountain Province against the edge of the North America craton. This lithospheric-scale boundary is oriented north-south, is longer than 250 km, and is sub-vertical, as determined by geological, isotopic, geochemical, and geophysical techniques. Within the zone, which exposes amphibolite-grade rocks, the fabrics strike north-south, dip ~70° east, and have a prominent down-dip lineation.

My work and that of my graduate student Britta Gustavson suggests that a solution might exist to the conundrum of missing strike-slip faults and shear zones. There are two parts to this problem: 1) Reconstructing the original geometry of the shear zone; and 2) Interpreting the fabrics in the shear zone. Unbelievably, the key to reconstructing the Cretaceous geometry of the shear zone is the Miocene Columbia River basalts, which dip 20-30° west and locally overly the western Idaho shear zone. Subsequent extensional deformation produced domino-style block rotations on E-dipping normal faults, resulting in rotation of both the Late Cretaceous shear zone and overlying basalts. Untilting the 20-30° westward rotation of the Columbia River basalts and the underlying shear zone fabric, we can reconstruct the Late Cretaceous (pre-Miocene) geometry to a NS-striking vertical foliation with vertical lineations (see figure). Second, there is clear evidence for dextral shear sense within the Late Cretaceous shear zone, despite the fact that there is a prominent down-dip lineation. This observation is consistent with numerical modeling, and suggests that we may not understand the types of fabric that should form within major strike-slip shear zones.

Our continuing work in the western Idaho shear zone will attempt to determine the kinematics on this mid-crustal exposure of a lithospheric plate boundary, in addition to determining the neotectonics of a reactivated boundary. We hope that this study will help us with a fundamental question of Cordilleran tectonics: How far has the west wandered? ■



Inferred geologic history of the western Idaho shear zone. The Cretaceous deformation juxtaposed the different lithospheres. Neotectonic deformation is hypothesized to have followed the Cretaceous fabric.

Featured Faculty Research

The Early History of the Pheasant Branch Watershed, Middleton, Wisconsin

Louis J. Maher

Pheasant Branch drains a 23 square-mile area at the west end of Lake Mendota. Land use within its drainage basin is changing from agricultural to light industrial. A small airport lies on the floodplain of Pheasant Branch. I have used it for the past 35 years, but a developer sought to buy the airport and convert it to an industrial park. I joined "The Friends of Morey Airport" to save the field, and that in turn led me to the "The Friends of Pheasant Branch," a group that is interested in improving its environment. Today Pheasant Branch is one of the main contributors of sediment and nutrients to Lake Mendota. The high sediment yield was caused by various channelization projects to drain the area's wetlands. The end result was that the stream's original watershed was increased by a factor of about 20. The added water produced a rapidly down-cutting and unstable channel that has required millions of tax dollars to "control." I was surprised to learn that the local hydrologists believed that most of the channelization and valley cutting of Pheasant Branch occurred in this century; this led me to do some research to write an historical piece for an environmental report the Friends are publishing.

Essentially all of Middleton Township (T7N, R8E) was covered by ice of the Green Bay Lobe during the last glaciation (Mickelson, 1983). The Johnstown Moraine, marking the lobe's maximum size, extends northwest-southeast through the village of Cross Plains. Meltwater flowed westward toward the Wisconsin River. The glacier began to waste away about 13,000 radiocarbon years before the present. By the time the ice had retreated to the site of present-day Middleton, a good-sized proglacial lake had formed in a bedrock lowland whose eastern margin was the glacier. The proglacial lake received sand, silt and mud from the meltwater, and it existed as a deep lake until the ice receded far enough eastward to open up lower drainage routes to the south. In 1995 Lee Clayton (personal communication, Wisconsin Geological and Natural History Survey), drilled a 95 foot hole in the lake sediment in the NW¨, SE¨, Sec. 3, T7N, R8E (Core DN-1421b-F, Bruce Company property). At the core site the material is composed of sands and muds. I examined the pollen in an unoxidized sample at a depth of seven feet below the soil surface. Spruce pollen composed a quarter of the pollen sample whereas sedge and other herbaceous species made up half of the total. In this area abundant spruce pollen indicates the sample formed more than 10,000 C-14 years ago. The old lake flat existed as a poorly-drained region of open lakes and marsh throughout postglacial time.

The first detailed map of this area was made as part of the original U.S. Land Survey of T7N, R8E, 4th Meridian (Mullet and Lyon, 1833-1834). A copy of the original plat was made at Dubuque, Iowa, in 1851. A sketch of the 15 sections in the northeastern part of the township is shown as Figure 1. "Fourth Lake" at the eastern side of Sec. 12 is Lake Mendota. The plat shows the old Blue Mounds-Fort Winnebago (Portage, WI) road. Woods are shown in green and wetlands in blue. Lyon's notes describe the southwest part of the township as hilly and the northeast part as rolling. "It is timbered with burr, white, and black oak, with an undergrowth of grass." He describes several areas of prairie. The upland would best be characterized as an oak savanna. The floor of Glacial Lake Middleton is the blue area in sections 2, 3, 4, 10, and 11. It is of interest that the valley of what became Pheasant Branch Creek is clearly shown to extend headward to near the center of Sec. 11 (near the location of today's Highway 12). The old lake bottom is about 90 feet above the level of Lake Mendota. Pheasant Branch apparently eroded headward into the old lake flat during the postglacial interval—perhaps aided by spring sapping when the valley reached the permeable sandstones under the Quaternary sediments.

Ligowsky (1861, see Figure 2) compiled the next detailed map of this area about 27 years after the land survey. The whole area had been settled by this time. The "Milwaukee and Mississippi Railroad Company" reached Madison in 1854 and Prairie du Chien by 1856 (Anonymous, 1880, p. 174). In 1859 and 1860, the company defaulted on its bond interest payments and was foreclosed; a new company called the "Milwaukee and Prairie du Chien" took over its rights and property. The railway right of way is shown by an unlabeled dashed line on the 1861 map of Ligowsky; perhaps the new name was not yet known when the map was compiled.

The Ligowsky map is unusually detailed and informative. It contains the names of all the property owners, and it uses hachure lines to provide information about the topography. The site of present-day Middleton is labeled as Peatville, a community established on December 10, 1856

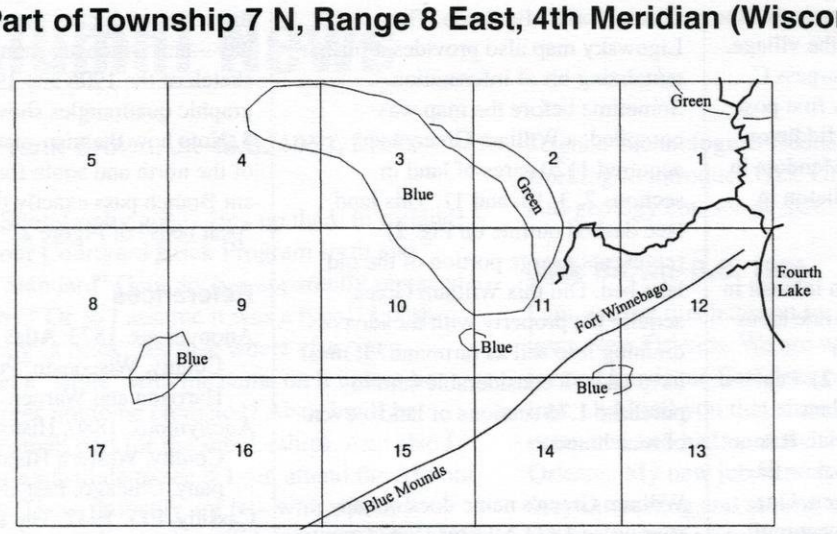


Figure 1. Survey of 1833-1834 by John Mullet and Orson Lyon. Copy of Original Plat made December 1, 1851, Dubuque, Iowa.

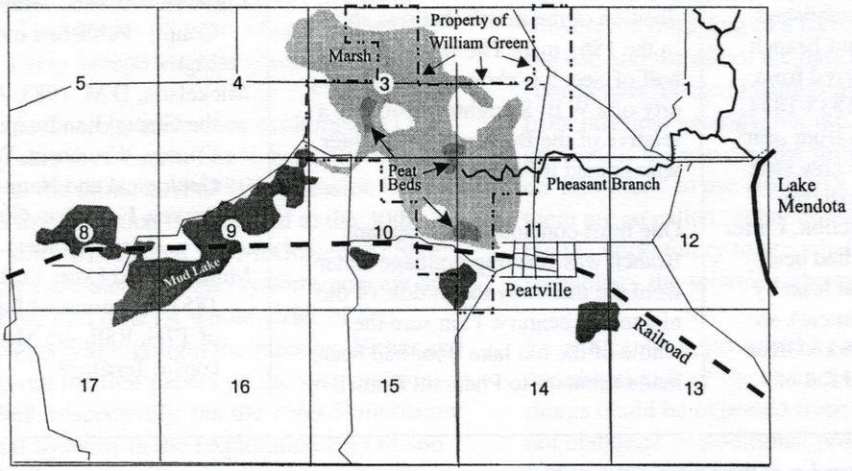


Figure 2. 1861 Map of Dane county, Wisconsin. Compiled by A. Ligowsky, Published by Menges & Ligowsky.

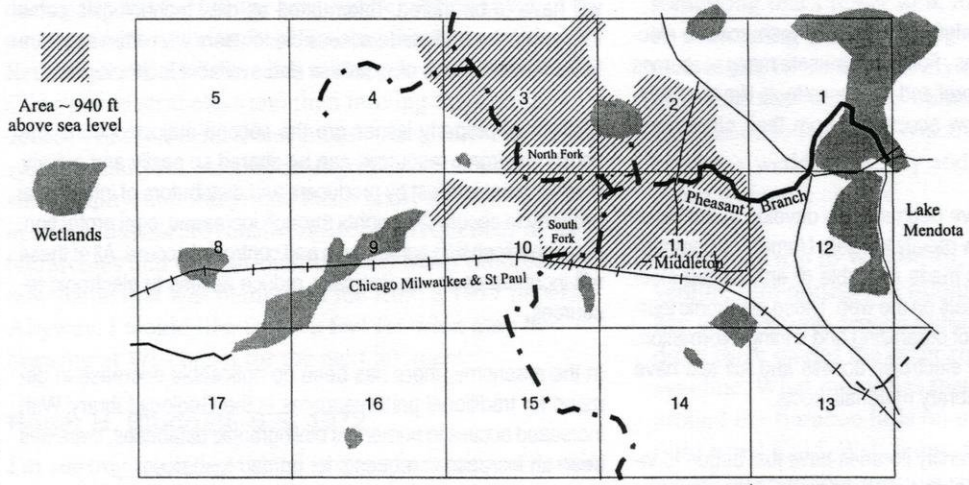


Figure 3. 1909 Cross Plains Quadrangle. | *1906 Madison Quadrangle.*

(Cassidy, 1947), with the coming of the railroad and the platting of the village. The name was picked by Burgess C. Slaughter, who served as its first postmaster. (Peatville became Middleton Station in June 1862, then Mendota in July 1862, and finally Middleton in April 1870.)

Burgess C. Slaughter had an interest in digging peat, and three separate areas of "peat beds" are shown on Ligowsky's 1861 map (Fig. 2). Peat—a deposit of undecomposed plant debris—is interesting material. It is not preserved unless it is kept below the water table away from oxygen. One normally never encounters peat until the water table is lowered. The Ligowsky map makes it very clear how the peat workings were established. The headwaters of Pheasant Branch had been considerably altered from their mapped position of 1833-1834. Rather than flowing north from near the center of Sec. 11, they now start near the peat beds in the extreme northwest corner of the section. I infer that the area's water table had been drawn down sufficiently, at least by 1856 (Peatville's establishment), so that peat beds could be worked in at least three areas on the old flat of Glacial Lake Middleton. The Ligowsky map also provides a further tantalizing bit of information. Sometime before the map was compiled, a William Green had acquired 1120 acres of land in sections 2, 3, 10, and 11. This land (see dashed outline on Fig. 2) represents a large portion of the old lake bed. Did this William Green acquire the property with the idea of draining it to sell as farmland? It must have taken a considerable sum to purchase 1.75 sections of land—even of marshland.

William Green's name does not appear on an 1873 Atlas of Dane County (Anonymous, 1873); his holdings had all been sold to others. There is no indication of the marsh that was shown in the 1861 map. The whole southern half of Sec. 3 is shown to be the property of a W.B. Slaughter, probably a relative of the Burgess C. Slaughter who named it Peatville.

One must conclude that Pheasant Branch was carrying drainage water from the marsh by the middle of the nineteenth century. I am sure the whole of the old lake floor had been made tributary to Pheasant Branch by the series of ditches that we see today—and which are manifest on the sketch of the 1906 and 1909 topographic quadrangles shown in Figure 3. Note how the man-made channels of the north and south forks of Pheasant Branch pass exactly through the "peat beds" of Figure 2.

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GEOLOGY AND GEOPHYSICS LIBRARY

Marie Dvorzak

1998 saw the continuing migration of library resources to electronic, Web-accessible forms. For campus users many resources such as databases like Georef and reference tools like the Encyclopedia Britannica are now accessible from their offices and home computers.

Full text journals which have been slow to develop in the discipline of earth sciences grew rapidly in 1998. Numerous commercial and scientific societies made available or announced electronic versions of their journals on the web. These electronic journals will provide new ways of organizing and finding information. Unfortunately, the move to electronic access and full text have increased, not decreased library materials costs.

Geology and the other university libraries have just begun to incorporate electronic journals into their collections. Among the numerous concerns are easy access, consistent authentication requirements and reasonable pricing.

But two other issues present the most difficulties. The first is long term storage of scholarly information. These electronic resources will have to be stored, reformatted as new technologies come into existence and made accessible to users with often substantially different levels of expertise and available technologies.

Intellectual property issues are the second major concern. Because electronic resources can be shared so easily and quickly, there is great interest by producers and distributors of intellectual property to secure their rights through increased legal protection, restrictive licensing agreements and controlled access. All of these will increase costs, or, ironically, reduce access to electronic resources.

In the meantime, there has been no noticeable decrease in demand for traditional print resources in the Geology Library. With increased access to numerous bibliographic databases, there has been an increase in requests for printed resources.

For the near future Geology will continue to integrate new electronic resources into its collections while maintaining access to printed materials.

Alumni News

Leonard Frank Brown, Jr.–M.S. 1953, Ph.D. 1955

Where has Stratigraphy gone? Hey up there in iceland! Received your Courtyard Brick Program form and noted that "Standard" Geology has apparently replaced "Stratigraphy." Or so I assume it was a typo!! I probably will "buy "a brick, because where else can a geologist get a "stone" with his name on it unless he dies and agrees not to be cremated? Also, I will be sending my small part for the scholarships. And also I am juggling a schedule to see if I can attend the Alumni Day in May. There probably are few with whom I attended graduate school who will be there, but it would be fun to hear from the current crop of students and faculty about what they think are the key events in Geology and Geophysics 48 years after I arrived in Madison as a very green first year graduate student.

My 50 years in Geology have been exciting and I still am up to my ears in research. I have been asked to be a co-keynoter at the initial AAPG/SEPM session in San Antonio this Spring which is dedicated to the 30th anniversary since Bill Fisher, Joe McGowen, Al Scott and I publicly presented the depo systems concept and methods for the first time (A whole series of dep systems sessions will highlight the meeting. Fisher and I had each given the first papers on the systems ideas in 1967 and 1968, respectively, but the 1969 Symposium: "Depositional Systems in the Exploration for Oil and Gas" was the first comprehensive presentation of our research. I plan to give my perspective of Stratigraphy during the last half of the century, beginning in an undergraduate class at Baylor using the first edition of Krumbein and Sloss (ouch!) and a year later in Lewis Cline's grad strat class and then moving through the decades of Holocene facies models, depositional systems analysis, seismic stratigraphy, sequence stratigraphy, and integrated basin analysis–petroleum systems, basins/provenance/tectonics/sequences of all hierarchies and depositional systems tracts (another new name that was blamed on me from a 1977 paper). Anyway, I would like to get a feel for what may be brewing at Wisconsin for the next 50 years.

Roger H. Blodgett–B.S. 1972

I'm starting to settle into the grove of teaching at Austin Community College. This has allowed me time to serve as Vice President of the Austin Geological Society and to actively participate in the GSA Earth and Space Science Technological Education Project. I am working to introduce GIS, GPS, and image analysis into geology courses at ACC.

Jake Brown–B.S. 1996

I am writing this letter on top of a high rise in downtown New Orleans. We are waiting to see what the new formed hurricane Earl does off our immediate coast line. Did I tell you that since the last time that I was promoted and had to move from Lafayette to New Orleans. My new job here at Western Geophysical is very interesting and at time very challenging. I am currently working to put together a seismic processing department that is geared for the field. We typically do most of what is called "front end processing." We convert the field data to a format that the processors can use and we adjust the data to the appropriate coordinates (Global Positioning System). It is a far cry from physical geology, but this area of geology, in my opinion, is the wave of the future. Most of the computers that I tend to use are UNIX based and some of them are so called "super computers." This job gives me the opportunity to see what kind of cutting edge technology the seismic industry has to offer.

I was recently approached by a good friend from the operations side of the business and he said that good things could be expected from me in the future. He did not elaborate on additional promotions in the near future, but he did hint that I would make a good Senior Geophysicist designing seismic prospects. That is something that I really look forward to. Anyway, I will be soon going out to one of the seismic crews in the near future to implement my new department (hurricane Earl and my wife's opinion permitting). I did have the chance to return to Wisconsin this summer for my brother's wedding in July and the change of climate was a welcome change.

During my trip to Wisconsin, I did have the chance to venture into northern Wisconsin to do a bit of fishing. My grandparents have a cottage in Wautoma and the drive there passes the outer rims of the Baraboo syncline. What memories that brought to mind. Poking around the Baraboo hills on many different geology field trips! Cold, Wet, Snow, Oh how I miss it! Well for me it's nothing but tropical storms, blistering heat, and lots of humidity. I may have time to pen another letter when I am out on the crew, so till then relish in your

temperature zone climate. P.S. Allen Odegaard was just hired at Western Geophysical. He is now a Junior Observer on the crew. I have not talked to him since the first part of August, but I know he is learning all he can about Seismic Exploration.

Alan M. Goodwin–M.S. 1951; Ph.D. 1953

Fred Klinger's stimulating contribution in last year's Newsletter has spurred me to record impressions of graduate years in Madison during the early 50s . In certain respects this particular graduate group occupied an unusual niche in the history of the Department of Geology. I was a member of a 16-strong Canadian contingent, which represented 1/5 the total geology graduate population (80). As an early post-war (WW2) group, we were a mix of older veterans and younger graduates–all male in keeping with the times! The Canadian graduate content was high in those days because the great post-war building surge in Canadian graduate departments had just got underway, and it was still common for Canadian to go abroad for graduate studies–U.S., U.K. and France. We were probably one of the last such sizeable Canadian geology contingents to arrive in Madison.

At that time the Madison geology department was one of the largest and most diverse in the U.S. It had an outstanding record for current and former staff, the latter including such notables as Van Hise, Chamberlin, Winchell, Twenhofel, Schrock, C.K. Leith and C.O. Swanson, making it a popular goal for Canadians. The large size and diversity stood us all in good stead. For example, coming from a then-small "hard-rock" school (Queen's University, Kingston), I particularly appreciated and took full advantage of the opportunity to catch-up and consolidate such basics as sedimentology (Tyler), stratigraphy (Cline) and paleontology (Thompson).

In those days, field aspects were stressed throughout. Fred Klinger's description of Stan Tyler entering the coffee room of a Monday morning with field hammer dangling from rear pocket was not at all out of place in that setting! The range of annual graduate field trips, each about two weeks long, offered during a 3-4 year period, was truly outstanding: Cline ran stratigraphy trips sequentially to SW states, central southern states, and Appalachians; Tyler visited the Lake Superior iron ore district; Cameron ran ore-deposit trips to points south; Laudon led paleo-trips to the west coast and points north (Alaska). In addition there were numerous shortie trips (2-3 days) to various Wisconsin (e.g. the Dells) and Tri-States sites; also the undergraduate field trip to the Huronian area of Ontario (Gates and Emmons). All in all, for someone with a compelling interest in field relations (such as myself!), it was a decidedly stimulating and broadening environment.

The calibre of staff research was notably high during our graduate years. To cite just one example, at the time of Tyler's celebrated field hammer incident in the coffee room, he was well on the road, with appropriate collaboration, to establishing the presence and age (~1.9 Ga) of Earth's still-oldest known heterocyst fossils. In Gunflint chert, a seminal discovery with broad paleontological-Precambrian impact. The 16-strong Canadian contingent came from across Canada–New Brunswick to British Columbia–with a majority from Ontario universities. We were about equally divided between "hard-rock" and "soft-rock" types. During our 3-4 year stint in Madison we all worked and played hard. I particularly remember the Christmas parties, Club banquets, and annual sporting challenges including football (U.S. always won) and hockey (we always won, with Dick Hutchinson our stellar goalie!). As I recall, all 16 of us returned to Canada on graduation. Sadly, two of our members were killed in field accidents shortly thereafter–Ted Howell and Cecil Hewlett.

The 50s ushered in the decades-long "Golden Age" for geology in North America. The post-war boom in oil and mineral exploration, and enlarging government surveys and universities were matched by across-the-board increases in quantitative research facilities and exploration techniques. In brief, the earth science cauldron was really boiling! Attractive professional jobs were widely available. Our contingent split about equally between industry, government, and academia. My own career well illustrates this point: 8 years industry (Algoma Steel), 8 years in government surveys (Ontario and Canada), and 20 (+ ongoing emeritus) years at University of Toronto.

I had occasion to revisit the Madison geology department in 1994, exactly 41 years after graduating. It is now housed in the Lewis G. Weeks Hall for Geological Sciences–quite a change from Science Hall. I was greatly impressed with new building, staff and current research directions, the latter based on an impressive array of state-of-the-art equipment well designed for meaningful research. One relevant example of current research was provided last week (Feb., 1998) at University of Toronto, by John Valley, on visit from Madison. His lecture topic concerned possible organic contributions to the now-famous Martian meteorite; his

research has produced an impressive array of very sophisticated spectrographic, microscopic, chemical and x-ray data. An astonishing feature is the quantity and range of data obtained from such a small rock sample–the best available, John emphasized, pending future planned Martian probes 7 years hence. This well illustrates the impressive and still-accelerating changes in North America geology departments. Indeed, one has only to consider the impressive contributions of geochronology, notably U-Pb zircon dating (revealing my Precambrian bias!) to appreciate the dramatic changes since the 50s, the one common denominator being, however, that field relations remain the final arbiter for practically all substantive geologic problems.

So times have changed–even for geologists! But the geologic challenges remain as enticing as ever, with available quantitative techniques wondrously expanded! One thing has not changed, however. To return to my starting point, I am confident I would speak for all 16 of that early 50s Canadian contingent in saying: Thanks, Wisconsin, for some wonderful, worthwhile years. May the future be as kind to you in the coming decades as you were to us in the 50s!

Marci Friedman-Hamm–IES 1984

Masters in Water Resource Management hydrogeology concentration 1985–I have been working in Winnipeg as a hydrogeologist for local and dynamic engineering firm. If there are any Canadians out there who are passing by, they are welcome to drop in. Hello to Mary Anderson.

Fred G. Heivlin–B.S. 1963

My work includes working with absorbent clays for cat litter, oil absorbent, bleaching edible oils, filtering jet fuel, and carriers for pesticides and herbicides, throughout the U.S. and N.A. Last year was Program Chairman of Industria Minerals Division of SME. Still active in tennis and Secretary of County Republican Party. Still married and have a 2 month old grandson.

Andrea Kenter (Sutherland)–B.S. 1986; M.S. 1989

I'm still employed as a geologist in a small environmental firm in Portsmouth, NH. I keep busy with three kids–Linas (7 years), Davis (5) and Magdalena (1 1/2). Still renovating our 14 room farmhouse with plenty of room for UW field trip stops!

Otto Kux–M.Sc. 1958

I am grateful that I had the chance to study at UW under Professor Cline and that my career was most enjoyable and fruitful. Wish everybody could study a little geology.

Paul LaPointe–M.S. 1976; Ph.D. 1980

Continuing as a consulting geologist/engineer for Golder Associates Inc., in Redmond, WA. I work with Tom Doe (M.S. Geol. '75; Ph.D. Geol. Engr. '80) of Madison, and also several other Madisonians of '70s and early '80s vintage. Two books on fractal geometry published in '95; at work on a new book for Plenum Press on fractals. Elected to AAPG as Associated Editor (Note: editor is Neil Hurley, also of Madison Geology fame). Growing older, balder, fatter and happier here in the Silicon Rain Forest (home of Microsoft, Nintendo of America, etc.). Met with Dave Hite, Eric Frodesen, Dan Nedland and many others at AAPG in Salt Lake. See you all at SEPM–Door County in September!

Robert L. Maby, Jr.–B.S. 1947

After separating from the Eighth Air Force of World War II fame with one Distinguishing Flying Cross and four Air Medals plus the usual assortment of service ribbons, Robert returned to college, married one of his students, and, then, learned the nuts and bolts of the oil business in Oklahoma. It was in Saudi Arabia, however, where he worked and taught for nearly thirty years, that marked his entrance into the international oil scene. While an expatriate, he juggled jobs from geology to petroleum engineering to geophysics and back again to geology for a broader Middle East perspective, and, in the process, gained two more languages for a total of eight.

Initially during his geological career, he examined the entire Arabian sedimentary rock sequence by travelling up-slope across the peninsula from the Persian Gulf to the Red Sea mountains. When the summer heat lessened, he drilled structure and stratigraphic holes for information (not oil) in the great southern desert, the Rub' al-Khali, as well as in northwestern Arabia. Unusual for a geologist, he became a drilling superintendent with the result that the complexity of recovered reservoir rocks sparked an interest in the petrophysics of carbonates that remain with him still. Soon he was in engineering full time: as a drilling engineer he worked offshore on well completions; as an oilfield production

Death Notices

Saul Aronow (Ph.D. 1955) died on May 16, 1998 at the age of 74. Saul taught and became Emeritus Professor at Lamar University in Beaumont, Texas.

Pierre DeBethune died in 1998. Pierre received his Bachelors degree in 1931 in Louvain, Belgium, Masters degree at the University of Wisconsin-Madison in 1933 and his Ph.D. at Stanford University in 1934. He was a professor at the Institut Geologique, Universite de Louvain, Belgium.

Julian C. Krumholz died of a heart attack at his home on Tuesday, April 7, 1998 at the age of 83. Julian graduated from the University of Wisconsin-Madison with a degree in geology and was immediately called into the armed forces in World War II. After the war, Julian worked as a geologist in Oklahoma, Texas and Louisiana. He wrote many geologic reports on the geology of the Anadarko and Permian basins. His reports played a significant role in the discovery of oil in those regions. He also worked as a geologists in the Williston basin of the Dakotas. Julian spent his retirement years on his farm in the Pine Creek area of western Wisconsin. He still worked on his farm the day of his death and died peacefully at his home in Arcadia, Wisconsin.

Gilbert O. Raasch died in Calgary, Alberta, Canada, on January 20, 1999, at the age of 95. He was a well-known expert on Cambrian, Silurian, and Devonian paleontology and geology.

Gil was born in Milwaukee, Wisconsin, on May 27, 1903. His interest in geology began at an early age, collecting Devonian fossils along the Milwaukee River. Hired as an assistant at the Milwaukee Public Museum when he was only 17 years old, Gil rose in rank to associate curator before leaving there in 1929. From 1929-1936, Raasch was curator of the Geology Museum at the University of Wisconsin in Madison, where he received his B.A. and Ph.D. After World War 2, he worked briefly at the Illinois State Geological Survey. In 1953, Gil moved to Calgary to work as a paleontologist in petroleum exploration for a number of oil companies including Shell Canada. Gil founded Raasch & Associates, a private paleontological consulting firm, in 1967, which he ran until well into his eighties.

Gil had many interests in paleontology and geology, however, he is most noted for his expertise and innovative work on the Cambrian of central North America and the Devonian of the central U.S. and western Canada. Spanning nearly 75 years, his publication record includes such well-respected papers as the GSA Special Paper on the Cambrian Merostomata published in 1939. The extensive and well-documented paleontological collections Gil made throughout his life continue to serve as the basis for recent papers on Cambrian, Silurian, and Devonian paleontology. These collections and his research will remain his legacy far into the future.

Lon B. Turk died on May 20, 1998 in Oklahoma City. Lon graduated with degrees in geology from the University of Wisconsin-Madison (B.A.; M.A. 1933)where he was a member of Sigma Alpha Epsilon Fraternity. He was actively engaged for 67 years in exploration for oil and gas and is credited with discovering and extending several fields in Oklahoma and Michigan. He contributed many innovative concepts that have proved useful to exploration geologists in discovering oil and gas. He was an Emeritus Certified member of the American Association of Petroleum Geologists, having become a member in 1930 when he was employed by Peerless Oil and Gas Co. and living in Tulsa. He was a Charter member of the American Institute of Professional Geologists. In 1987 the Oklahoma Section of A.I.P.G. honored him with Emeritus membership and in 1988, he was presented with a plaque naming him "Pioneer Professional Geologist." Lon also was a long-time member of the Geological Society of America, as well as the Geological Societies in Oklahoma City and Tulsa. His wife Lucille wrote how grateful she was that they came to Wisconsin approximately a year ago and had such a wonderful time visiting with Emeritus Professor Robert Dott, Jr. and Professor John Valley, chair of the department. *(See the p. 60 in the1997 Newsletter for an article about Turk.)*

Alumni News, continued

engineer he wrote the definitive company manual on bottom-hole testing; and, as a reservoir engineer he became the company remote-sensing log analyst, and, in this capacity, had a little-known by-passed oil show tested that increased oil reserves by three-billion barrels, proved. This success propelled him back into geology as head of exploitation where he codified oil-reserve calculations.

Later, to better coordinate newly evolving technology, he transferred to geophysics where he supervised the integration of geologic, seismic, gravity and magnetic profiles into one all-inclusive tectonic peninsular grid for a better evaluation of earth history. Eventually, he did return to a geology involving the entire Middle East. As soon as he retired, the Society of Petroleum Engineers awarded him a Distinguished Lectureship, and, for a year, he travelled throughout the United States and western Europe. Afterwards, he began juggling again: this time between three main consulting

positions: constructing a mathematical model of the world's largest oilfield, doing the conceptual planning for a 30-million dollar hands-on oil exhibit for Saudi Arabia, and teaching geology and production engineering overseas.

In between these phased assignments, he assisted the National Aeronautics and Space Administration with the Martian Landing Program and the U.S. Army Topographic Laboratory with preparation for the Gulf War. In addition to all of the above, Robert managed to squeeze in four-year course in theology followed by a two-year course on the collected works of C.G. Jung. Finally, all those years of study began to coalesce: scientific theories melded easily with archaeological and linguistic findings and, each in turn, fit loosely into a personal paradigm having a theological and social framework. Result: the questions just became bigger.

Sharon E. Okin–B.S. 1985

Married in 1989 to James Reback, daughter Laura, born 1997. Employment experiences have been varied since I left UW Have worked as archaeologist (WI & PA), for environmental remediation company (NY), and non-profit Lackawanna River (PA) Corridor Association on EPA sponsored water quality monitoring project. The last 4 years have been spent at PADOT concentrating in environment impact analysis, Corp. of Engineer permitting, wetland assessments, and cultural resources.

Adam Roder–GLE 1997

Before I graduated last December, I think I let both departments know that I was interviewing/had a job in Illinois. I started out in Springfield with Patrick Engineering Inc., which is based in the Chicago suburb of Illinois. I let them know that I really wanted to be in their main office (Lisle) in the near future (closer to home, friends, etc.), and as it worked out, I was transferred up here at the start of June. My most recent project (still going on) was doing rock coring and subsequent borehole testing at a rock quarry on the south side of Chicago. I logged the four borings that we did. They ranged in depth from about 500-630 feet, all dolomite and finishing in shale. Included with the borehole testing was hydraulic fracturing...and of course Professor Haimson was chosen to be doing this work for us. It was great for me because I was basically the only person in our office who knew anything about the hydrofrac work and had to explain to my co-workers the ideas of hydrofrac. Working with a former professor was quite an experience! Other work at this site includes geophysical testing, permeability testing, and grout testing. Other types of work I've been involved with include geotechnical soil borings (soil identification, logging, etc.), report writing for underground storage tank pulls/closures and other types of reports, surveying, environmental/Geoprobe sampling, proposal writing, water well sampling, rock coring, and other typical engineering office work.

I've seen a wide variety of work in a short amount of time, but this is exactly what I like about my job. The wide variety definitely keeps things interesting and enjoyable around here. Much of the classwork at UW has definitely put me at an advantage in the "real world" because our education is so broad and in-depth (i.e., hyrofrac, hydrogeology department, remediation geotechnics, technical writing). Many things that we expect or take for granted at UW really sets us apart from other schools.

Note from Cam Craddock–On July 17, 1998, **Professor Sam Romberger** and his wife Marge made a visit to Weeks Hall after driving up from Chicago (where they were visiting their son). Sam was a member of our faculty in the early 1970s when we were still in Science Hall. At present he is Dean of the Colorado School of Mines, overseeing 190 faculty members.

Howard G. Schoenike–PH.B. 1945; M.S. 1955

When I am not skiing, traveling, flying, playing tennis, or SCUBA Diving, I am waiting for the phone to ring requesting an examination and evaluation of a mineral deposit somewhere in the "non-combative" part of the world. Unfortunately, most of my clients are either dead or retired making for slow business. However, this gives me time for sports and travel. I have also just completed (for my family) a 400 plus page autobiography of the many exciting adventures of my life and am now busy going though my business files weeding out all the chaff. I am also looking for that "sleeper" that I might have overlooked years ago when the economics and technology were different from these today.

Bill Wayne

(Visiting Professor–I was there for only one semester–Fall 66-67 to fill in for Bob Black)–UNL retired me (at age 70) in 1992, but I taught for the next year, then received a Fulbright award to return to Salta, Argentina to prepare an inventory of landslides in the province. Since returning to the US in May 1994, I've finished guiding several graduate students to their degrees and have kept up some research. Spring 1998 I taught "Geography of Latin America" for a colleague on leave and in June this year attended the 7th Conference of the

International Permafrost Association in Yellowknife, NWT. Naomi and I drove and tent-camped the 5200-mile round trip, then spent a couple of weeks camping, fishing, and geologizing in the Snowy Range in Wyoming. We continue to make renovations of one kind or another on our 90+ year-old house in Lincoln, and each summer grow most of the vegetables we eat.

Rick Whittecar–M.S. 1976; Ph.D. 1979

Rick is still active in studies of alluvial fans, boulder streams, and other surficial deposits in the central Appalachians. New work on the hydrogeomorphology of wetlands will consume much of the next decade. Rick was recently designated one of the first "University Professors" at Old Dominion University in recognition of his teaching record. Being Assistant Chair of a very large new department in a new building is also a challenge.

Signing the Badger Book at National Meetings were...

GSA 1998 Annual Meeting, Toronto

Mary Anderson
Larry Anovitz
Jody Bourgeois
John R. Bowman
Ken Bradbury
Bob Cassie
Jim Castle
Nik Christensen
Pat Colgan and Kelly Heid
Ian Dalziel
Robert H. Dott, Jr.
and Nancy R. Dott
Tim Eaton
A.J. Erickson, Jr.
Stanley C. Fagerlin
Doug Faulkner
Tod Frolking
Steve Gaffield
Alan Goodwin
Steve Guggenheim
Steffen Hagemann
Henry Halls
Liz King
Kent Kirkby
Bart Kowallis
David Leigh
Jim Mayer
James F. Miller
Bill Mode
Dave Moecher
Claudia Mora
Maureen Muldoon
Maria Mutti
Greg Nadon
Bill Padgham
William Peck
Lee Penn
Lee Riciputi
Sam Romberger
Keith Seramur
Al and Betty Schneider
Fred Schwab
Bill Simpkins
Dave Sinclair
Dave Stephenson
John Valley
Tom Waller
Chris Zahm

AAPG 1998 Annual Meeting, Salt Lake City

R.W. Boebel
Bob Cluff
Peter Drzewiecki
Tom Faulkner
Evan Franseen
Tina M. Hariu
Eric Hatleberg
Robert G. Heckman
Patrick Lehmann
Richard Lenzer
Phillip D. Mitchell
William A. Morgan
Greg Nadon
Jay C. Nania
Dan Nedland

Dan Nedland–M.S. 1971 – Come visit us in Sinapore!

Larry Anovitz (Oakridge National Lab)–In Vino Veritas!

Bob Cassie (Ph.D. 1965)–Just completed (retired from) 30 yr association with Indiana U Geologic Field St in MT and in middle of 3 year half time bridge to retirement from SUNY Brockport.

A. Joe Erickson, Jr. (B.S. 1976; M.S. 1964)–Outgoing President SEG Foundation; retired from Exxon Coal and Minerals, Co., Sept. 1st; and have a passport–experience–will travel!

Alan Goodwin (M.S. 1951; Ph.D. 1953)–Nice to be back in a "Wisconsin" group.

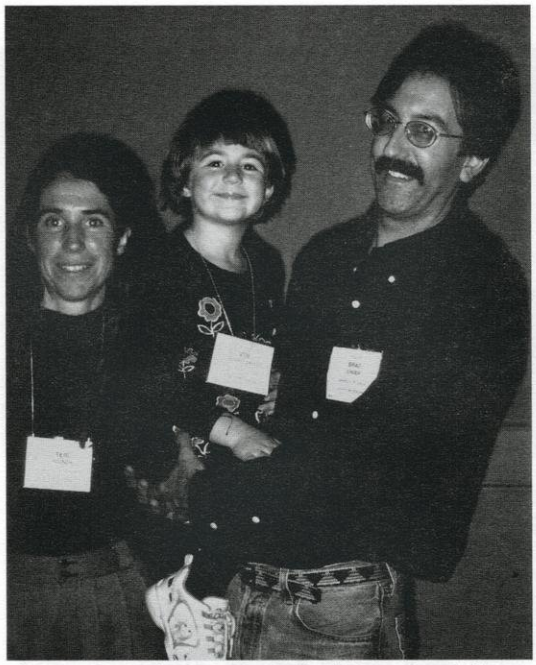
Henry Halls (U of Toronto)–A (small) freeloader!

James F. Miller (M.A. 1968; Ph.D. 1971)–Still married to Louise Miller (B.A. 1968). Both children now in college.

Claudia Mora (Ph.D. 1988)–Valley is wrong!!

Bill Padgham (Ph.D. 1969)–I've met more Wisc grads I knew at this meeting than any other.

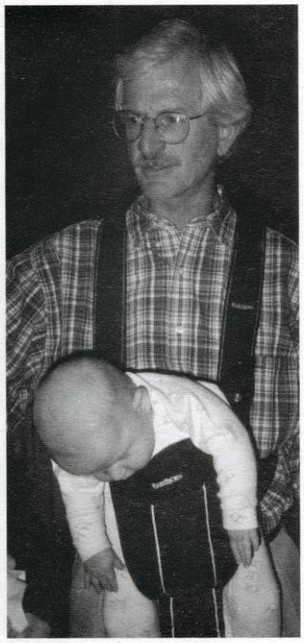
Tom Waller (B.S. 1959; M.S. 1961)–Why does everyone look so young?



Theresa Boundy, Zoe Boundy-Singer, Brad Singer.

Claudia Mora, John Valley, Will Lamb, Lee Riciputi.

Jean Morrison and Sara



Lawford Anderson and James (Geology is an acquired taste.)

Bill Simpkins,Todd Rayne, Rich Whittecar, David Leigh

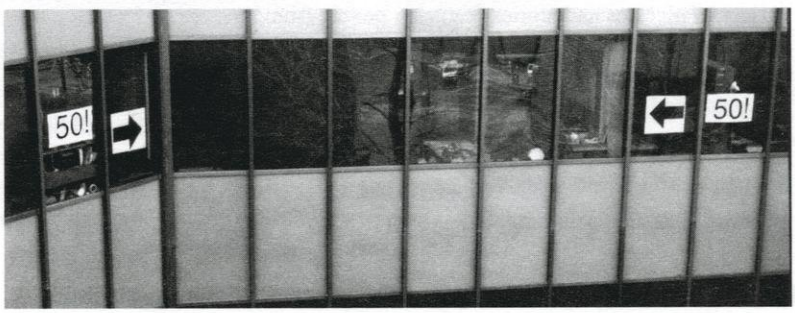
–GSA–Toronto 1998

photos by Dave Mickelson

Hilary Sanders, Pat Colgan, Kelly Heid, Sue Swanson

Dave Moecher

Maureen Muldoon



Feb. 28, 1998. John Valley had a milestone birthday and his students wanted to make sure the whole campus knew about it. (Photo by Diane Kiesel)

GEOCLUB NEWS

Tim Lee, Geoclub President

This year's wave of Geoclub activities began with the 1998 Spring Picnic, held at Vilas Park. With food and drinks aplenty, rain was certain to fall. In spite of the rain, however, several of us had an entertaining time watching ducks swimming in the pond while we enjoyed each other's company.

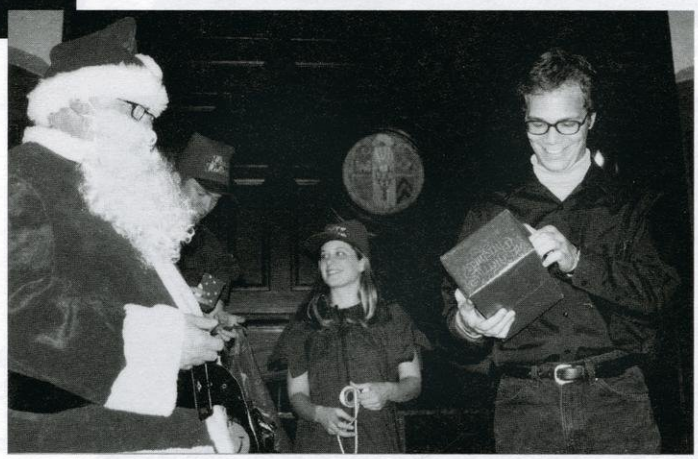
Wes Dripps and Salma Monani cook up a storm in Vilas Park during the spring '98 picnic, while (from left) Darrell Stanley, Beverly Saylor, Kevin Blake, and Mike Spicuzza enjoy the good food.

Danny Douglass became perhaps the first "new" graduate student to lead the annual fall field trip, September 12-13. The trip provided a fun-filled introduction to Wisconsin geology for most of the 23 new graduate students who joined the department this past fall. Three more students have joined the department for the Spring '99 semester, helping fill Weeks Hall with shiny new faces.

Danny Douglass, at the top of Rib Mountain's fire tower, explains the geology of Wisconsin to (from left) Pete Taglia, Tyson Strand, Paul Jensen, Shaili Pfeiffer, and Colin Walling during the fall '98 field trip.

The OOPS Award, 1998

The widely known and respected OOPS! award was granted to Professor Phil Brown for his sure-fire navigation through the New Mexico desert during the undergraduate spring break field trip. After several hours of driving on a remote dirt road in the middle of the night, Professor Brown and his group were forced to backtrack when their way was blocked by a solidly locked fence guarded by vicious dogs.



Santa (Dave Mickelson) and his elves (Mike Tryggestad and Ann Dansart) deliver a gift to Tim Lee during the '98 Holiday Party.

The fall picnic was held in Olin-Turville park on Lake Monona. This time we had a warm sunny day, and frizbee and hackey sack matches abounded well into the evening.

Santa and his elves came to the University Club on December 10th this year, where he doled out a variety of gifts to faculty, students, and families of the Department of Geology and Geophysics.

Wes Dripps, this year's elucidator, found that he had already collected so many photographs that he held a fall elucidation on December 11. The presentation included a variety of pictures and stories featuring people from the department. In spite of the rumors you may have heard, we believe that there were no doctored images or invented stories presented at this elucidation.

In addition to the usual Geoclub events, we've seen the introduction of a World Wide Web page (http://www.geology.wisc.edu/~geoclub) and a new t-shirt design, featuring the stratigraphy of Weeks Hall, that will be available this spring.

Thanks to the help of the Geoclub officers, including Darrell Stanley (vice-president), Salma Monani (secretary), Sarah Principato (treasurer), and Anne Ebenreiter (undergrad representative), this year's events have been fun and well organized.

Degrees Awarded–Academic Year–1997-98

Ph.D. Degrees

Choi, Yong Seok (Luke), Simo, *Sequence Stratigraphy and Sedimentology of Middle to Upper Ordovician Ancell and Sinnipee Groups, Wisconsin.*

Kiesel, Diann S., Mickelson, *Holocene Stratigraphy of the River-Mouth Sediments of the Pigeon River, Eastern Wisconsin: Implications for Lake-Level Fluctuations.*

Roselle, Gregory T., Baumgartner, *Integrated Empirical and Modeling Study of Contact Metamorphism in Siliceous Dolomites.*

Stenoien, Mark D., Bentley, *Interferometric SAR Observations of the Pine Island Glacier Catchment Area.*

Masters Degrees

Champion, Glen S., Anderson, *Transient and Steady-State Flow Models of a Ground-Water and Lake System: Trout Lake Basin, Northern Wisconsin.*

Chung, Kuo-Po, Anderson, *Zones of High Hydraulic Conductivity to Represent Lakes in a Groundwater Flow Model.*

Everman, Rebecca L., Baumgartner, *A Textural and Microfabric Analysis of the Deformation at the Ubehebe Peak Contact Aureole, Death Valley.*

Rhodes, Meredith K., Carroll, *Tectonic Controls on Lake Type Evolution, Ridge Basin, Southern California.*

Sessions, Robert M., Thurber, *Investigations into the Temporal Association between Creep Events and Earthquakes along the Central San Andreas Fault.*

Stephens, Nathaniel P., Carroll, *Salinity Stratification and Upwelling during Organic Carbon Deposition, and Related Stratigraphy in Permian Phosphoria Formation, Utah, Wyoming, and Idaho, U.S.A.*

Stocks, Diane L., Bahr/Simo, *Hydrostratigraphy of the Ordovician Sinnipee Group Dolomites, Eastern Wisconsin.*

Tompkins, Michael J., Christensen, *Ultrasonic Wave Attenuation in Oceanic Basalt.*

Undergraduate Degrees

12/97

B.S. Degrees

David M. Buser
Christopher L. Johnson
Jamison T. Langdon
Geoffrey E. Pociask
Penelope C. Sackett
David C. Stach, Jr.
Heidi A. Woelfel

GLE Degrees

Kevin A. Eisen
Thomas J. Fischer
Brian J. Kammer
Michael J. Mengelt
Eric J. Nelson
Adam J. Roder
Carol L. Schultz

5/98

B.S. Degrees

William R. Buckingham
Matthew E. Darga
Peter B. Davis
Michael T. Deangelis
Amanda L. Heimberg
Daniel R. Joswiak
Melissa A. Kidon
Rachel E. Michaels
Matthew O. Schrenk
Samia L. Shalabi
Angela J. Williams

GLE Degrees

Douglas C. Bablitch
Paul A. Bellin
Rene Cortez
Cristin A. Harris
Josh E. Hartmann
Jeffrey A. Henrickson
Joseph T. Hoban
Joseph R. Kovacich
Peter L. Madarasz
Megan A. Ondrasek
Andrea S. Pittman
Scott M. Vasko

8/98

B.S. Degrees

Benjamin L. Bloom
Tracy L. Lemmermann
Paul D. Rohde
Nathan J. Wolf

New Graduate Students

Chapel, Dawn, BA'98, Smith College Geomorphology.
Dansart, Ann, BS'98 St. Norbert College, Hydrogeology.
Domber, Steven, BS'94 Hobart College, Hydrogeology.
Douglass, Daniel, BS'97 Northland College, Quaternary.
Dryschel, Gregory, BS'95 Muskingum College; MS'98 WA State Univ.
Ferdinand, Roman, BS'89 Czech&Slovak Fed, Hydrogeology, MS'95 UW-Madison (CEE).
Gustavson-Unger, Britta, BA'93 Carleton College, Structura.
Hildreth, Matthew, BS'98 St. Norbert College, Quaternary.
Jensen, Paul, BS'96 UT State Univ, Economic Geology, MS'98 Univ of AZ.
Kuchta, Matthew, BA'98 Lawrence Univ, Paleontology.
Lackey, Jade Star, BA'97 Middlebury College, Petrology.
Miller, Jonson, BS'98 WV Univ, Quaternary.
Parent, Laura, BS'83 U of MA, Hydrogeology, Sem 2, MS'98 San Jose State Univ.
Pfeiffer, Shaili, BA'95 Carleton, Hydrogeology.
Piccoli, Leonardo, BS'91 Venezuela, Sed/Strat, Sem 2, MS'95 U of Alberta.
Root, Tara, BS'98 CO Schl of Mines, Hydrogeology.
Strand, Tyson, BA'98 Kalamazoo College, Geophysics.
Suzuki, Yohey, BS'96 Waseda U, Japan, Geomicrobiology, MS'98 Tokyo Univ.
Taglia, Peter, BA'98 Univ of MT, Hydrogeology.
Taunton, Anne, BS'97 Univ of AR, Geomicrobiology.
Trabant, Chad, BS'97 Univ of AK, Geophysics.
Tyrrell, Erik, BS'95 Univ of MN, Mineralogy, MS'98 Univ of MT.
Tryggestad, Michael, BA'97 Lawrence Univ, Geophysics.
Venkat-Ramani, Maitri, BS'98 Univ of IL, Structural.
Walling, Colin, BS'95 Univ of IA, Sed/Strat, MS'98 N IL Univ.
Zeiler, Kurt, BS'98 MT State Univ, Hydrogeology.

Lectures in the Department, 1998

January 30–Chris Maples, NSF, Washington DC, "Carboniferous" Ecinoderms in the Late Devonian Refugia, Rebound, and Repopulation."

February 13–Hakon Austrheim, University of Oslo, "Metamorphism of Crustal Root Zones: Consequences for Geodynamics of Continent Collisions."

February 27–Trevor Elliott, University of Liverpool, United Kingdom, "Fluvial Systems in Mountain Belts and Foreland Basins: An Alpine Himalayan Perspective."

March 27–Andy Knoll, Harvard University Geology & Zoology Colloquium, "Early Animal Evolution: New Perspectives from the Geological Record."

March 31–Thomas L. Holzer, US Geological Survey AEG/GSA 1998 Richard H. Jahns Distinguished Lecturer Joint Geological Engineering program and Geology and Geophysics Department Seminar, "Forensic Seismology of the Oklahoma City Bombing" and "Earthquakes and Natural Disaster Insurance."

April 3–Larry Peterson, Rosentiel School of Marine and Atmospheric Science University of Miami JOIC/USSAC distinguished lecturer series, "Climate Change in the Tropical Atlantic: Clues to Patterns and Processes From the Cariaco Basin."

April 17–Stanley Williams, Arizona State University "Why Study Active Volcanoes?", April18-Public lecture, "Life and Death on Erupting Volcanoes."

April 29–Jeff Hanor, Louisiana State University GSA Birdsall Dreiss lecturer sponsored by the Hydrogeology Division of GSA

May 1 Ron Bruhn, University of Utah "Tectonics and Fluid Pressure Distribution in a Deformed Forearc Basin, Cook Inlet, Alaska."

September 11–Sara Hotchkiss, UW-Madison, "Late Quaternary Climate History from Hawaiian Pollen Records."

September 25-Jill Banfield, UW-Madison, "Microbes as Agents of Geochemical Change."

October 2–Timothy W. Lyons (Simo), University of MO, Columbia,"Recent advances in the sulfur/redox chemistry of modern anoxic sedimentary systems."

October 16–Jay Schneider, UW-Madison, "Evolutionary Patters of the Cardiidae: A Long-lived and Mophologically Diverse Group of Shallow Marine Bivalves."

November 6–Jonathan Lees, Yale, "Music and Fire: Boom-Chugga-Lugga at Karymsky Volcano."

November 13-Vicki McConnell, UW-Madison, "Scientific Drilling in Long Valley Caldera, CA: What's Hot and What's Not."

November 20–Donna Whitney, University of MN, "Garnet Tectonics: What small mineral grains reveal about large mountain belts."

December 4–Laurie Anderson, Lousiana State University, "Molluscan Evolution and the Closure of the Central American Isthmus."

Dana Geary with Molly, left, and Sarah, at the Spring Banquet, 1998.

Faculty Activities in '98

Mary Anderson

Research this year focused on groundwater-lake modeling in the Trout Lake Basin in Northern Wisconsin. I co-authored a paper with former hydro **Randy Hunt** (USGS, Middleton) and **Vic Kelson** of Indiana University which was published in the December issue of *Ground Water*. Randy also got me thinking about the increasing complexity in current groundwater models, which led to a co-authored paper presented at the spring AGU meeting in Boston in a session organized by Randy and another former hydro **Chunmiao Zheng** (Univ. of Alabama). Randy also enticed me up to Trout Lake for a look at his field sites and he managed to pick two perfect autumn days in September.

The fall brought the start of my one year long sabbatical, allowing me to participate in a conference on fluid flow in carbonates, organized by hydro student **Moe Muldoon** (now at Univ. of Wisconsin-Oshkosh), and a conference on MODFLOW, with Chunmiao Zheng as one of the organizers. A big highlight of 1998 was the presentation of the Meinzer Award at the GSA meeting in October in Toronto. I received the official Meinzer bowl, engraved with the names of all previous winners, which I get to keep for a year, as well as a miniature bowl to keep forever. I also received a handsome plaque. But even more memorable was the bouquet of flowers from the many current and former hydro students present at the ceremony and the eloquent and extremely generous citation by Chunmiao Zheng. In November, I was off to Japan for two months of lecturing and research collaboration. Former hydro, **Erik Webb**, who was completing a two year stint in Japan, showed me the ropes on the Tokyo subway system. Quite a year!

Jean Bahr

Research projects in my group for 1998 included continuing studies of springs and wetlands in areas of rapidly changing land-use. The Nine Springs project with **Ken Potter** (Civil and Environmental Engineering) is now in full swing. We completed instrumentation of two field sites in this watershed south of Madison, and have collected several rounds of samples for major ion and stable isotope analyses. The isotope data show interesting patterns, which suggest a variety of flow paths to the springs and which should provide important constraints for inverse modeling that Ph.D. student **Sue Swanson** plans as part of her dissertation. Undergrad **Jill Thompson** was awarded the Hilldale Research Scholarship to conduct evapotranspiration studies that will provide additional constraints for this modeling. Following up on the 1997 Water Resources Management (WRM) Workshop in the Token Creek Watershed, northeast of Madison, M.S. student **Steve Domber** is conducting another modeling study employing a telescopic refinement of the Dane County Model.

We also continued studies of anaerobic biodegradation processes in collaboration with **Bill Hickey** (Soils). **Maddy Schreiber** turned her attention from field tracer experiments to modeling and laboratory microcosm work. **Pete Taglia**, a new M.S. student, joined this project during the summer, helping with analysis of the microcosms. He is planning to install "in-situ microcosms" at the field site this coming summer. By that time, Maddy will be preparing to leave Madison for an appointment as Assistant Professor at Virginia Tech.

Four other new students joined my group in September and I look forward to reporting on their progress in the 1999 newsletter.

J.F. Banfield

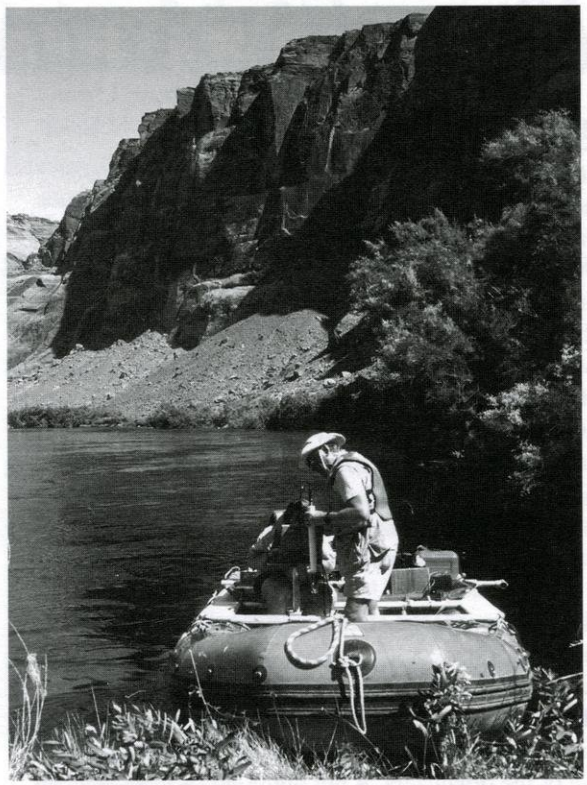
The first eight months of 1998 were spent mostly in Tokyo, but with frequent trips back to Madison for

Jean's students about to install a weir near a spring at one of their Nine Springs field sites.

research and meetings. During the spring, 1998 semester I taught Geomicrobiology in Tokyo and Gems and Precious Stones to Madison-based students via the internet. The latter was the second in a series of experiments with "distance" learning. Over 200 internet students navigated their way through the semester, guided by frequent email, quizzes, and examinations. In general, the students appreciate the freedom to work at times that suit them. The site is continually evolving as we learn more about how to use this new teaching format.

Summer brought graduation of my first Ph.D. graduate, **R. Lee Penn** and start of the process of moving back to Madison. Gradually our apartment emptied as things were dispatched to "recycling,", trash, and by post. My children made the most of their last few months in Tokyo; they were heartbroken to leave their friends and teachers. One of the "highlights" of our last few months was my interview by a reporter for the Asahi Evening News. Evidently, he was coerced into writing an article about me, supposedly to explain that, for the first time, a woman in the sciences had been promoted to Full Professor. Mr. Akagawa turned up in my office at the University of Tokyo, camera and notebook in hand. It was obvious from his manner that he did not expect this to be a piece of highly acclaimed journalism. After a few half hearted attempts to find out about my origins and research interests he stumbled upon the (evidently) fascinating fact that my children accompanied me to Tokyo and that my husband was their "primary care giver" (needless to say, a pretty novel concept for many Japanese men). Clearly, this caught his attention. After bombarding me with a dozen questions about my husband's experiences, social contacts, problems, and so forth, I finally suggested (a little sarcastically) that perhaps Mr. Akagawa might like to ask my husband these questions directly. Oh yes! And off he went. Sure enough, a large newspaper article eventuated, graced with color photos of my husband, our 4 year old (**Elliot**), and other children and their mothers. In expressing his gratitude, he said to **Perry**, "you know, you are very interesting, but your wife… she is very dull." On that note, close of the Tokyo saga.

Fall semester was back in full swing soon after we returned. Over the past year, a number of personnel changes had occurred, many of which made my return to Madison especially exciting. **Phil Bond** joined our group in May as a post doc (biology) working on the acid mine drainage project. **Hengzhong Zhang** was promoted to Assistant Scientist and became a co-PI on our joint nanocrystalline research project. **Bill Barker** was promoted to be the first director of the new



Carl installing chemical monitoring instrument on the Colorado River in Glen Canyon.

Wisconsin Microscopy Resource (this being a step towards unification of microscopy resources on the Madison campus). He still retains a research presence in our group. Prof. **Cheryl Young**, from Clark Atlanta University, joined our group as part of a one year exchange program. **Katrina Edwards**, near completion of her Ph.D., accepted a faculty position at Woods Hole Oceanographic Institute, starting May, 1999. **Yohei Suzuki** moved to Madison from Tokyo and began work on the biogeochemistry of uranium. **Anne Taunton** joined our group, starting her field work in Australia in April with **Sue Welch** and myself. **Matt Schrenk** left to start graduate school in Seattle. **Tom Gihring** finished his senior thesis and began his M.S. research on microbes and metal sulfides. **Cara Santelli** began her senior thesis work, mostly supervised by continuing post doc, Sue Welch. We began the process of converting another lab to a biogeochemistry facility (in the basement) to accommodate our growing efforts in this area. All in all, it was a successful year.

Carl J. Bowser

Go West "young" man, seems to be my motto these past few years. Following the spring semester, where I taught three courses, Computer Applications in Earth Science with **Chuck DeMets**, Geological Oceanogra-

phy, and the White Lake course with **Alan Carroll** (for the 25th time in my 35 years at Wisconsin) I loaded the car with all my "stuff" and drove West. In cooperation with the USGS and Bureau of Reclamation my research found me in Lees Ferry, AZ to collect data on 16 miles of the river from Lees Ferry to the dam. Traversing the river in a Zodiac and Boston Whaler we installed Hydro-Lab instruments to measure pH, dissolved oxygen, conductivity and temperature for a few days to evaluate the daily changes in primary production along three mile segments of the river.

The following week there I spent a week slowly working my way back to Alamosa, Colorado to begin my annual bike trip with my Denver biking friends. Excitement was added by the fact that the area was alive with troopers and marshals trying to capture the renegades who had shot a policeman near Bluff, Utah. (I was stopped once with guns pointed in the car before I convinced them that I was not the person they were looking for.) The slow trip was profitably spent with my medium-format and 35 mm gear trying to find a new way to capture the West on film. Page, Arizona, Monument Valley, Mexican Hat, Muley Point via the Moki Dougway, Chaco Canyon and the great gorge of the Rio Grande provided the vistas; my finger and a ton of film did the rest. On the way I spend a couple of days with my photography friends in Santa Fe before driving on to Alamosa, CO. **Judy** joined me there to take part in the bike ride that took us from Alamosa to Chama, NM via the Cumbres Pass, thence to Pagosa Springs, CO over Wolf Creek Pass to Creede, then back to Alamosa.

On return to Madison I spent about six weeks before heading to Europe to present a paper at the Goldschmidt Conference in Toulouse, France thence on to Israel to attend the 30th year celebration of the Lake Kinneret Laboratory where I gave one of the invited keynote addresses (on lake-groundwater interaction). With Judy along we got a chance to visit with our old friends the **Gats** (**Joel and Ilana**) in Rehovot as well as take in a few sights of the country before heading home to the fall's semester of courses. Fall was a struggle with classes every day of the week, one of which had mostly new material to prepare. Life goes on.

Philip Brown

My research program in Economic Geology continues to focus on the nature and role of fluids in the Earth's crust.

Tim Lee is now in the second and final year of his M.S. research studying the origins of the mineralization in the Paddington gold deposit in Western Australia. The Paddington deposit lies just north of the famous Kalgoorlie gold field and provides a fairly simple geological and structural setting that hosts several generations of veins. Gold mineralization is associated with several of the vein sets and Tim is using fluid inclusion analysis to answer the question of how do the vein forming fluids differ between generations and what role does structure play in localizing ore. This study is being undertaken in collaboration with several researchers from the University of Western Australia—the latest example of a ten year collaboration between UWA and UW-Madison.

In September 1998 **Paul Jensen** joined the department as a new Ph.D. student. Paul has just finished a M.S. thesis with Spence Titley at the University of Arizona where he undertook a structural study of the Sieritta porphyry copper deposit. Paul's interests in combining structural geology with GIS information on a sub-regional scale have lead us to design a Ph.D. project which will examine several hundred kilometers along a major Archean crustal deformation zone in Western Australia. Ore deposits are scattered along the fault or 'break' (slipping into Canadian terminology for a moment). Explorationists have known for decades that these crustal weaknesses are fundamentally important to the search for undiscovered ore deposits. But 'Why?' and how to limit the search to shorter segments of the zone has eluded modern researchers. Perhaps Paul's integrated study will shed some much needed light on the subject which is already producing its share of noise and heated discussion.

Clark Johnson and I have been working for the past two years on developing accurate 3D renderings of the geology and topography of the United States as a whole and more detailed looks at specific well known areas like some of the National Parks. We are delivering the results of the modeling and rendering as interactive, manipulable 3D computer objects that our test group of Geology 100 students have found intriguing and instructive. Clark and I have a tentative agreement with GSA to distribute a CD-ROM that will provide both a significant teaching aid and cater to the 'wow look at that beautiful map' feeling that most geologists experience.

The future health of geology and geophysics in the universities requires not only cutting edge research but also the willingness to innovate and keep our courses relevant both in content and delivery style. Computer-aided or augmented instruction is here to stay and some aspects of geology are particularly well suited to this

delivery medium. As an example, Virtual Field Trips can be used to visit famous localities that could never be visited in person in the course of an undergraduate curriculum. Several examples of such trips can be seen by visiting my personal web site at http://www.geology.wisc.edu/~pbrown/index.html and following the links.

On a personal note, my family continues to be well. **Kris** is a librarian at Memorial High School, **Jason** will be off to college next fall, **Peter** is currently in 9th grade, and **Karin** is enjoying 7th grade and her last year as a pre-teen. Yikes time does fly.

Charles W. Byers

I am continuing to try to understand the local Ordovician rocks in terms of the sequence stratigraphy approach. It is clear that there are depositional breaks in the section–so-called hardgrounds–but their origin is obscure. Were they formed by submarine nondeposition and/or scour, or were they subaerial sequence boundaries? Last summer I put two senior undergrads to work on the problem. **Rich Krause** is tracing the hardground surface that truncates the Guttenberg Formation regionally across southern Wisconsin. He is also investigating Guttenberg sedimentology to ascertain paleoenvironment. **Chris Ott** is studying the unit above the truncation surface, in eastern Wisconsin, to verify its lateral correlation with the Dunleith Formation in the Driftless Area. In other words, we are bracketing the hardground. This hardground is the local incarnation of the Black River-Trenton chronostratigraphic boundary, traceable over the whole eastern craton, so we hope our results will be significant beyond Dodgeville and Fort Atkinson!

Alan R. Carroll

The highlight of my past year was summer fieldwork conducted with **Marwan Wartes** (M.Sc. student) on Permian lake facies in the Junggar-Turpan-Hami basins, western China. This year we made a significant technological advance by using 1960s-vintage spy satellite photography to do detailed mapping of a key area in the northern Turpan basin. These photographs, only recently declassified, provide a ground resolution of approximately 3 m (compared to 10 m or greater for the current generation of SPOT or TM data). By using these photographs in conjunction with stratigraphic and sedimentologic analysis we were able to map the first Early Permian normal fault to be identified in this area, a key breakthrough in our understanding of the origin of Permian lakes.

I also began a new research project on the influence of regional tectonics on styles of lacustrine sedimentation in the Eocene Green River Formation, and on the radiogenic isotopic record of sedimentary provenance contained within these deposits. Lacustrine basins by their nature provide a unique record of the erosion of adjacent uplifts, since they capture both the physical and chemical products of weathering. Since Eocene uplifts surrounding the greater Green River basin differ widely in age and radiogenic isotopic composition, their relative contributions to the Green River Formation should be readily recognizable. These data will also be used to help examine the relative importance of changing sediment supply versus changing base level in controlling the sequence stratigraphy of various members of the Green River Formation. This study will include collaborations with **Clark Johnson, Basil Tikoff, Dana Geary,** and **Brad Singer**.

Two students completed M.Sc. theses this year. **Nat Stephens** finished his work integrating stratigraphic and organic geochemical analyses of the Meade Peak Member, Phosphoria Formation. **Meredith Rhodes** finished her thesis on the lacustrine facies of the Ridge Basin, California.

Nik Christensen

During the spring semester I was in Seattle at the University of Washington as a visiting professor. In March I participated in a seismic experiment on the Olympic Peninsula with scientists from the United States Geologic Survey's Earthquake Hazard Program. This spring a second phase of the research will concentrate on crustal structure of the Seattle region.

This fall I taught a graduate course with **Clark Johnson** on crustal cross sections, which included a field trip to the Kapuskasing region in Ontario, Canada. In addition, I was busy teaching a section of Geology 100. At the GSA meeting in Toronto I presented an invited talk for the Pardee Keynote Symposium Deep Crustal Processes. Committee duties included the Geological Society of America's George P. Woollard Award Committee, the American Geophysical Union's Fellow Committee and associate editor of the *Journal of Geophysical Research.*

Continuing research projects supported by NSF's Continental Dynamics Program include investigations of crustal structure and composition of the South Island, New Zealand and along the coast of British Columbia, as well as a transect extending from Wyoming to New Mexico. New projects underway include laboratory

studies of the seismic properties of coesite eclogites from the Dabie ultrahigh pressure metamorphic belt in China, rocks from the Kola borehole in Russia, and peridotites and eclogites from diamond bearing kimberlites in the Slave Province, Canada.

Mike Tompkins completed his master's thesis in June on seismic attenuation in oceanic basalt. **Darrell Stanley** is, at present, studying seismic attenuation anisotropy in shale. **Chris Long** and **Helmut Duerrast** have recently joined our laboratory as post doctoral research associates.

David L. Clark

Some 30 years after initiating research in the Arctic, I completed one of my earliest objectives for the project—documenting the paleontology of the Ocean. With publication of description and interpretation of the Cretaceous phytoplankton assemblage of core Fl-533 (with palynomorphs, dinoflagellates, etc.), the Cretaceous-Eocene and Plio-Pleistocene paleontology of the Arctic Ocean is completed with only a possible late Eocene-late Miocene part of the section yet to be recovered. This may occur only after an ODP type drilling program is possible in the 21st Century. Additionally, the Sr isotope work with the Pleistocene foraminifera and our interpretation of the tectonic development of the Northwind Ridge were published, and our suggestion for a continental origin of the Alpha Ridge was presented at the December AGU. There are only a couple of additional Arctic Ocean projects to complete before I hang it up!

My term as chairman of the Polar Research Board of the National Academy's NRC ends in January of 1999. My final act as chair was conducting a workshop on Arctic research in Washington in November that generated three new Arctic projects for the post-Clark Polar Research Board. Fortunately, the new director of the NSF is a former PRB member with a strong Arctic interest and I am confident that the NSF and the National Academy will pay attention to the Arctic without any additional help from me!

The Wisconsin Cambrian-Ordovician contact conodont project is on the Wisconsin Survey's web site http://www.uwex.edu/wgnhs/geosci17.html, and suggests that the uppermost Jordan (formerly considered to be all Cambrian) is really Ordovician. **Jeff Kuglitsch** will complete his Silurian conodont study in 1999. Now that conodonts are assumed to be primitive vertebrates, its interesting to note that the department has had a vertebrate paleontologist faculty member for 36 years but didn't know it!

Chuck DeMets

Each year, I wish that I could report that the past year was a relaxing, well-paced year for my research, teaching, and personal life. I'm sad to report that once again, I've failed in that respect. The past year was a frenzy just short of panic. Despite this, things came out well as they always seem to do. I spent two weeks doing GPS field work in western Mexico, had two new projects funded by NSF, formed several new collaborations, and published three papers describing ongoing projects. Between those efforts, I taught several courses and gave talks at several conferences, most notably an invited talk at AGU in San Francisco.

My most enjoyable professional accomplishment this year was writing software that has set part of my research on automatic pilot for years to come–each night while I am asleep, the software auto-analyses data that are collected daily around the globe at continuously operating GPS stations, thereby providing me with near-real-time estimates of the velocities of the major tectonic plates. Now I can claim that I am working even while I sleep–clearly, a further step toward insanity. Thus far, the software has run without failing for the past 4 months, a pretty good record! The GPS velocities constitute a rich source of tectonic information that I look forward to milking in the coming years.

John Fournelle

During 1998 I evaluated 3 different software packages for the UW-Madison electron microprobe. It had become clear that the full potential of the instrument was not being attained; an upgrade from Cameca as well as two competitors' products were evaluated both at the annual Microscopy meeting in Atlanta, and then at site visits in December. By this time next year, you will know the outcome.

Research that I assisted with on the probe included locating apatite dissolution pits and secondary REE phases in biotite (geomicrobiology); trace element mapping in garnets (e.g. Sc at the hundreds of ppm level); x-ray mapping the Mars meteorite; CL imaging quartz from Yellowstone, and more. The probe saw material science research ranging from Ag solubility in silicate glass; characterization of phases in welds; thin films on GaInAs, and our good friend Mo-Si-B. Other applications ranged from archeology and anthropology (characterizing "jade" artifacts; diagenetic history of fossil teeth from the African Rift Valley), to attempting to identify white patches–crystals–growing on cheese (Center for Dairy Research). Remember, this is Wisconsin. Utilizing the microprobe's imaging and

column control capacity, we analyzed experimental charges where it was nearly impossible to distinguish the tiny phases in BSE (opx, cpx, wo, fo), by first creating an x-ray map, and then using it to pick precise spots to analysis.

My own research efforts included examining four recent tephras from the Mexican volcano Popocatepetl that I had collected during a 1995 field trip. FeTi oxide compositions provide indications of the magmas pre-eruptive temperature and oxidation state. Popo is one of the world's top SO2 producers and I am interested in seeing whether the magma would have been saturated with anhydrite, as was Pinatubo's. In May **Eric Carson** presented his M.S. research on the tephrochronology of the Cold Bay Alaska region, which I had provided some guidance with. Starting in the fall, two undergrads began Senior Thesis projects with me: **Ryan Jakubowski** on an SEM and EMPA study of Pinatubo anhydrites and possible polymorphs; and **Andrew Klaetsch** on chemically characterizing by EMPA volcanic ash from an Argentine lake core collected by **Bruce Jackson** several years ago.

During the year I became involved in departmental oral history. I was well aware of alumnus **Ray Wilcox**'s work on Aleutian volcanic eruptions as well as his involvement in the study of Paricutin. With assistance from the Weeks Fund, I interviewed **Ray** and **Mary Marks Wilcox** (another alumnus) in Denver in October. About the same time, by coincidence, I learned that **Charlie Bradley**, another Badger, had written a great book (*Aleutian Echoes*) on his experience in the Aleutians in World War II. Let me digress: a few years ago I learned that one of my father's colleagues at the Arctic Health Research Center in Anchorage had been involved in mapping in the Aleutians with the Coast & Geodetic Survey in the 1940s. His long letter about his experiences told me that there definitely was a story there that needed recording. All this has led me into a project to document–mainly by interviews–the mapping and geologic and geophysical research carried out in the Aleutians in the 1940s and 50s. (See "Badgers in the Aleutians," page 7.)

I received an Academic Staff Professional Development Grant to attend a Digital Image shortcourse during the summer, taught by **John Mackenzie** at North Carolina State University. In July I joined the Executive Council of the Midwest Microscopy and Microanalysis Society as editor of Midwest Microscopy.

Dana Geary

1998 was a productive research year for me, primarily because of the continued presence of **Imre Magyar**, my colleague/postdoc/friend from Budapest. Imre and I completed several papers, including a revision of the biostratigraphic system for Lake Pannon deposits, a detailed paleogeographic history of Lake Pannon, an overview of the biogeographic significance of Lake Pannon endemics to the region, and shorter papers on the faunas and significance of three classic Lake Pannon localities. After two years here in Madison, Imre and family returned to Hungary in July, although we are continuing our active collaboration.

Several students are pursuing interesting paleo projects. **Hilary Sanders** is working on the systematics and evolutionary patterns of Lake Pannon dreissennid bivalves. Ph.D. students **Norlene Emerson** and **Paula Allen** are studying various aspects of Ordovician paleontology. Norlene is looking at species-level turnover and coordinated stasis in brachiopods; Paula is combining a paleontological approach with geochemical studies to look at the relationship between productivity and diversity. **Paul Mayer** is working slightly higher up in the geologic column, studying stratigraphy and community evolution in the Devonian. M.S. student **Matt Kuchta** is beginning a thesis on the taxonomy and evolution of bivalves from the Green River Formation.

Clark Johnson

The biggest event in my research group in 1998 has been the discovery of Fe isotope anomalies in ancient rocks that can only be explained by biological fractionation. These results were part of an extensive effort by **Brian Beard** and me at developing the challenging analytical methods required for high-precision (+/- 0.03 - 0.02 %) isotope analysis of Fe, as well as assessing the Fe isotope compositions of "inorganic" (igneous) Fe in the Earth and Moon. As it turns out, "inorganic" Fe seems to be isotopically homogeneous (what was suspected), which provides an excellent baseline for which to compare the effects of biological processing of Fe. Experiments with Fe-reducing bacteria with scientists at NASA-JPL show that Fe that is processed by microorganisms is isotopically "light," providing an excellent "biosignature" for ancient life on earth or other planetary bodies. This work is being funded by NSF and NASA, most recently through participation in the new NASA Astrobiology Institute. Efforts are underway to obtain a new mass spectrometer that is much better suited to Fe isotope research, using seed funds from department gift funds and the UW Madison Graduate

School, to be matched by NASA and NSF.

Research continued on projects in the Cascade volcanoes (graduate students **Garret Hart** and **Tim Zeichert**), as well as paleo-tectonic reconstructions using sediment provenance (graduate student **Ron Schott**). Work on the timing of uplift in the western Alps continued with post-doc **Jeff Amato** and now-departed faculty member **Lukas Baumgartner**.

John Valley and I co-taught a course on stable and radiogenic isotope geochemistry in the spring, and I taught undergraduate petrology with **Gordon Medaris** (for his last time) and **Allan Carroll**. In the fall, I taught Geology of the National Parks with **Dave Mickelson** (the course they keep saying they should write a textbook for), and my new course, Volcanoes and Civilization. Computer graphics work on three-dimensional visualization was wrapped up in 1998 with **Marcia Blanco's** departure; hopefully **Phil Brown** and I will find time in 1999 to put the finishing touches on those efforts! My term on the department Council concluded in 1998 (although I remain chair of the Finance Committee), and I was heavily involved in both the petrology/geochemistry search (which produced new hire **Brad Singer**) and the structure/tectonics search (which produced new hire **Basil Tikoff**), who are exciting additions to the department.

Louis J. Maher

See my article, "The Early History of the Pheasant Branch Watershed, Middleton, Wisconsin," on page 16.

Dave Mickelson

Congratulations to **Diann Kiesel** and **Kevin Blake** for completing their dissertations, and **Eric Carson** for finishing his master's thesis! I was pleased to be invited to give a talk in Alaska in March on our Alaska Peninsula work. Our group then had quite a few presentations at North Central GSA in Columbus. Shoreline erosion studies continued throughout the year with contracts from the Corps of Engineers and DNR. I was pleased to visit Mammoth Cave with my friend **Vin** for the first time ever—considering the length of time I've been teaching Geology of the National Parks, it was about time! I enjoyed teaching a 3-week Geology of the State Parks course in June. Summer saw field work in Manitowoc County, where mapping is being wrapped up, Sheboygan County where **Sarah Principato** was beginning her M.S. project, the Fox Valley where **Betty Socha** is working on her Ph.D., as well as considerable writing. Two students (**Jeff Munroe** and **Danny Douglas**) are doing research in the Uintas, and we spent two weeks in the high country, including visits to Dinosaur and Timpanogos Cave. Eric Carson will start a project there this summer, insuring at least a few more years of research there.

I'm pleased that **Eiliv Larsen** was able to spend another sabbatical year with us. He and his family arrived in August and will be here all year. **Pat Colgan** made a couple of visits to work with postdoc **Paul Cutler** and me on our paleoglaciology project, which was re-funded by NSF for another 3 years. We hope to be able to reconstruct physical parameters and model the Great Lakes part of the Laurentide Ice Sheet. **Patricia Heiser** was also here for the last academic year as an Albert and Alice Weeks Postdoc, working on the distribution of fossil permafrost features, a study that ties to our paleoglaciology project. I was pleased to be a co-organizer (with **John Attig** and **Nelson Ham**) of the Midwest F.O.P. meeting in May in north central Wisconsin. John and I are also editing a GSA Special Paper on paleoglaciology that will come out in about a year.

On the home front, the kids are all out of the house! **Amy** is still living in Milwaukee and **John** is a sophomore at UW and living in an apartment near campus. **Becca** and **Shaynnah** live in Middleton and Becca is finishing up college at Edgewood.

Quite a bit of information about the Quat program is available on the Web at : www.geology.wisc.edu/~qlab/. Give us a visit for a list of publications, present activities, and links to other glacial and Quaternary pages.

Toni Simo

1998 continued to be a productive year. In addition to continuing research in the Ordovician and Silurian in the Midwest, Late Paleozoic of West Texas and New Mexico, and Eocene of California (where I did abundant field work through the year), I began new areas of research in southern Australia and Southern Spain. Some of the work in the Ordovician and Silurian sequence stratigraphy and hydrostratigraphy, Wolfcampian platform margin architecture, and Pennsylvanian facies analysis was published in 1998. **Diane Stocks** (Hydrostratigraphy, Ordovician, WI), **Jen Lien** (Glenwood Fm, WI, IL, MN and IO) and **Jeff Pietras** (Eocene, Santa Barbara basin, CA) finished their Masters theses, and **Luke Choi** (Sequence stratigraphy, Ordovician, WI) finished his Ph.D. Luke works for the Korean Oil Company, Jen for Exxon, and Diane and Jeff are continuing their education at Wisconsin. A SEPM Research Conference on Fluid

Flow in Carbonates (co-organized with **Muldoon, Bradbury** and **Harris**) was held in September in Door Co. WI. The conference was a success and we saw numerous Wisconsinites presenting their work. The associated fieldtrip was also very successful. A SEPM Special Publication volume on *Advances on Carbonate Sequence Stratigraphy* (co-edited with Harris and **Saller**) will be on the bookshelf soon.

The Oligocene and Miocene in the area near Alicante (SE Spain) is a new Ph.D. area for **Michelle Stoklosa**. An Oligocene platform-to-basin transition is superbly exposed. The Miocene reflects the initiation of thrusting and facies changes occur very quickly in short distances. Fieldwork in September was exciting and challenging. During most of the fall, I participated in the ODP Leg 182 in southern Australia (departing from Wellington, New Zealand, and arriving in Fremantle, Australia) to study the Cenozoic southern Australian continental margin that has been bathed by cool-waters and represents a carbonate setting. After leaving New Zealand, we had 13 days of transit with waves up to 30 m tall! The boat survived and I am trying to remember as little as possible. One of the highlights of the transit was to go across the Bass Straits and see the oil platforms that have provided Weeks funding to the department for many years. Drilling for two months was long, but the science was good. One of the highlights was to drill 540 m of Pleistocene and bryozoan mounds on the slope, and finding a highly saline brine throughout most of the shelf and cutting across sequence boundaries. The relevance of the Pleistocene unit is that previously, cool-water carbonate models suggested slow rates of deposition and grainy facies. The drilling's initial results indicate that cool-water environments produce thick, fine-grained, and mud-rich facies with similar accumulation rates and facies (but different fauna) as modern shallow-water, tropical carbonates. These bryozoan mounds are unique in the world oceans, and are excellent analogs for ancient slope mounds dominated by calcified heterotrophs. And the brines can provide a new model for dolomitization. Much more to come in the future.

Teaching in the spring semester included Geologic Evolution of the Earth and the Spring Break field trip, this year to Florida. El Nino weather hunted down the trip with storms, flooding, and cold temperatures. Jumping in the water was definitely not as fun as other years.

Remodeling of the "new" house is still happening which gives **Eva** and me one more excuse to have a third "progress report open house party."

Basil Tikoff

Having just arrived in Madison in September, I am still trying to find maps and field notes that must be around somewhere. The first floor structure wing (also known as the isolation ward to those in the know) is slowly getting minor renovations, after **Cam Craddock's** Herculean efforts to send his significant proportion of Antarctica (all well oriented) to a repository at Ohio State. Cam has done an admirable job of passing the torch, providing slides, teaching material, equipment, and sage advice. There is now a small experimental facility on the first floor, used for both research and teaching purposes. The structure group has also initiated a new department-wide informal seminar–*melange*–in an attempt to "disrupt" the Weeks Hall stratigraphy. Generally, I am glad to be here and look forward to working and interacting with faculty and students from all parts of the department.

Clifford Thurber

1998 saw the start of several exciting new research projects. Two are in the area of volcano seismology, and the third is related to monitoring the Comprehensive Nuclear Test Ban Treaty. A new post-doc will be hired to work on these projects. Two new graduate students (**Mike Tryggestad** and **Chad Trabant**) began working with me in the fall. I am continuing to work with **Lee Powell** on the construction of a new-generation portable digital seismograph. Lee was promoted to the position of Instrumentation Innovator this year, recognizing his many significant achievements. I have also continued some international collaborative projects that I started while I was on sabbatical in 1996-97, one involving aseismic fault slip, another a study of Rabaul Caldera, Papua New Guinea, and a third involving international workshops on the topics of earthquake location and seismic tomography. Several other research projects drew to a close this year, including seismic tomography studies in central and southern California and at Valles Caldera, New Mexico. At the end of the year, I was honored to be appointed an Associate Editor for JGR.

John W. Valley

Many of my duties as Chair are rewarding and one of the best last year was presenting the 1998 Hilldale Award to **Charlie Bentley** before the entire Faculty Senate. The Hilldale is UW's highest award for lifelong achievement. We all can feel pride in Charlie's achievements.

I spent much of July near Mammoth Lakes, Calif. with UW Research Associate, **Vicki McConnell**; recent

graduate, **Polly Sackett**; and new graduate student, **Jade Star Lackey**. Vicki and Polly were the on-site science team for Phase 3 of scientific drilling in the Long Valley caldera. The hole was extended from 2.3 to 3km with continuous coring and gas sampling. No new evidence of volcanic activity was encountered and temperatures were surprisingly low suggesting complex hydrothermal circulation. UW and USGS personnel logged the core (mostly hornfels with minor dikes), maintained the Web site (http://icdp.gfz-potsdam.de/html/longvalley/news.html), and coordinated the many science teams. Jade Star is studying contact metamorphism of equivalent rocks, 5km to the south in the High Sierras. One goal of this project is to understand the volcanic/ hydrothermal system that is active under Long Valley today. The volcano is dormant but very restless, the last eruptions were 500 years ago; will there be another? I received a lesson in the human side of predicting catastrophes one Saturday night. At 10:05 PM, I was in the Mammoth Lakes theater and a magnitude 5.1 earthquake rocked the building. We were seeing *Armageddon* (honest!) and no one flinched. People require accurate, realistic assessment of risk or they become blasé and inactive even in the face of an obvious threat.

Ilya Bindemann started research on similar volcanic processes at Yellowstone in October. Ilya completed his Ph.D. at the University of Chicago in September and is now a Research Associate at UW, funded by the DOE.

Liz King, Salma Monani, and **William Peck** are working with **Mike Spicuzza** and myself to continue our NSF-funded zircon project to determine the primary compositions of magmatic rocks, world-wide. Several papers were published and they all gave talks at GSA in Toronto. (In fact, our department set what must be a record at GSA this year with 40 abstracts presented by current faculty and students.) One discovery is that magmatic zircon megacrysts, separated from kimberlite by diamond miners, show regional correlations in oxygen isotope ratio that are inherited from the mantle regions where diamonds are formed (Valley et al., 1998, *Contributions to Mineralogy & Petrology*). This has implications for the genesis of kimberlite and exploration for diamonds.

Herb Wang

I finally completed the first draft of my book on poroelasticity. If anyone wants to see the draft, e-mail me and I'll give you instructions for ftp'ing a complete postscript copy. I am now going through the final revisions.

Along with the book writing, I taught Geology 100 and a seminar on poroelasticity in the spring. For a month during the summer, I worked on thermomechanical modeling of heater tests at Yucca Mountain with colleagues **Steve Blair** and **Pat Berge** at Lawrence Livermore Laboratory. Also, I had a chance to see former graduate student, **Steve Carlson**, who is working there now.

In the fall I began duties as associate dean for natural sciences and faculty director of the Honors Program. Both jobs have brought me in contact with many people and activities on campus that personalize the breadth and excellence of our university.

My research projects this year involved poroelasticity. **Dave Hart** and **Dr. Tomochika Tokunaga** (who was visiting from the U. of Tokyo) obtained the first complete set of poroelastic constants for a transversely isotropic rock, Berea sandstone. Dave also demonstrated experimentally that poroelastic effects occur in the transient pulse method for measuring permeability of low permeability rocks. These effects show up in the field as reverse well fluctuations. Dave and I are beginning a project with **Tim Eaton** and **Ken Bradbury** of the WGHNS to try and use reverse well fluctuations to characterize the Maquoketa shale in Waukesha Co.

Tim Masterlark is pursuing his thesis on poroelastic modeling of southern California following the 1992 Landers earthquake. The model is benchmarked against satellite radar interferometry data, which give ground deformations to an accuracy of several centimeters.

Klaus Westphal

Besides teaching Life of the Past, I kept busy with museum exhibits and outreach programs. For details see the museum's annual report on page 43.

Publications in 1998

Please see individual faculty web pages for listings of faculty publications for 1998, at http://www.geology.wisc.edu/people/faculty.html

EMERITUS ACTIVITIES—1998

C.R. Bentley

My big news is that I retired last May—I am now an emeritus professor. My Antarctic field program ended, at least for now, with the participation in a joint 1997-98 radar-sounding field project with the University of Washington by **Neal Lord** and new graduate student **Ben Smith** (I didn't go.) That project was two-

May 5, 1998. Charlie Bentley and Gordon Medaris were honored with a "Last Lecture" party in the Cline Lounge where they were presented with Crumpled Overhead Awards. Refreshments included "blackboard" cakes. Toasting their soon-to-be-emeritus colleagues with champagne (above) are Carl Bowser and Clark Johnson, and Gordon had a bottle of Bohemian Slivovitz on hand which he shared with the group.

pronged—an examination of satellite-image "scars" on Roosevelt Island that were thought likely to be old ice-stream shear margins, and a tracing of the northern shear margin of stagnant ice stream C, with an aim of pinning down better, if possible, the stagnation history of the ice stream. The Roosevelt Island scars turn out to be simply surface expressions of sharp drop-offs in the subglacial topography—no sign of ancient ice streams. So far, the indicated timing along ice stream C shows total agreement with what **Rory Retzlaff** found a decade ago. Ben Smith is studying the lateral variations in snow accumulation rate from internal radar-reflecting layers to provide more accurate, locally specific time scales. We hope this will give results of high-enough resolution to provide time differences along the ice stream. Back home, two students finished their Ph.D. programs last year: **Mark Stenoien**, with a thesis on interferometric SAR applied to the Pine Island Glacier catchment area, and **Chen Liu**, whose thesis examined the relative motion between the surface and the bed of ice stream B using the radar-fading-pattern method. Mark has taken a job in industry, whereas Chen will continue as a postdoc, working on the radar sounding survey of ice stream D a couple of seasons ago.

I will continue my participation with the NASA "GLAS" team, helping to design the satellite-laser-altimeter experiments for "ICESAT," which is to be launched into a high-inclination (about 86°) in July, 2001. If all goes well, ICESAT will provide rates of change of surface heights with an accuracy of a few centimeters a year over all of the Antarctic and Greenland ice sheets. I have a pipe dream of conducting a ground-truth experiment in West Antarctica as ICESAT passes overhead (I would love to return south in the 21st century); how realistic that is remains to be seen!

Last May I received the 1998 Hilldale Award in Physical Sciences from the University. I was also inducted into Honorary Membership in the American Polar Society and presented with the Goldthwait Medal by the Byrd Polar Research Center at Ohio State.

Eugene N. Cameron

I have been very pleased in 1998 that highest honors have been awarded to two of my former graduate students. The Penrose Medal, awarded by the Society of Economic Geologists, will be given to **John M. Guilbert**. John asked me to be the citationist, but I could not because of health problems. Last fall the Duncan R. Derry Medal of the Geological Survey of Canada was awarded to **Rodney V. Kirkham**. Rod, in his acceptance speech, gave glowing praise to the geology department here at Wisconsin, and also to me and Professors **Dott** and **Bailey** among others.

In December Professor **Barry Teicher** completed the oral history of my years at the university. The tape will be placed in the university archives.

My office in Weeks Hall has been transferred with the help of my family and Professors **Valley** and **Brown** to 4414 Rolla Lane, but a large number of specimens, polished surfaces, thin sections are still stored in Weeks Hall and in the Geology Archives. I hope this material will be available for study and research not only by U.S. persons but to qualified research people outside the University. [*Chair's note: The department intends for this to happen also–JWV.*]

C.S. Clay

Being emeritus gives me the time to study a few things that I like, pursue a few crazy ideas, collaborate with young scientists, tilt wind mills, and practice more on my baritone and trombone.

About 10 years ago, **Herman Medwin** and I started to do a mild revision of our old 1977 book. But, the mild revision became a decade of hard work and a new book, *Fundamentals of Acoustical* Oceanography (1998).

Geophysical and bathymetric studies of the seafloor have shown that the spatial spectra of the sea floor topography are proportional to $k^{(-b)}$ where k is 1/(wave length) and b is a constant. **Jon Berkson** (Ph.D., Geophysics, 1972) published early results for ocean basins. We now know that these results are a marine application of Mandelbrot's ideas about fractals and scaling. Mostly to test my MatLab code, I did the spectral analysis of a set of seafloor data. The results were the expected power rule and an unexpected linear phase dependence on k after I unwrapped the phases. I gave my results in the Chaos and Complexity seminar.

Very long range acoustic transmission in the ocean are a way to measure temperatures of the water masses for global warming research. Misunderstandings between professionals in audiology-biology and underwater sound engineers had a very serious consequence. The acoustic research was stopped while marine biologists studied the effects of the sound transmissions on whale behavior, a difficult and expensive task. Audiologists use the decibel (the logarithm of the ratio of sound intensities with the units dB) to report sound levels in air. The thresholds of hearing and pain are approximately 0 and 130 decibels. The sound levels near the speakers of a rock band can be painful. Actually air acousticians and the underwater sound community use grossly different references for their calculations of decibels. Now, consider a sound transmissions in water. The source level for a 5000 km underwater sound transmissions was 195 decibels. The actual source power was less than 260 watts, a modest audio amplifier. Given the 195 decibels level, audiologist would conclude that sound pressures from this source would be extremely painful for whales. The whole misunderstanding would have been avoided if the underwater sound people had used SI units (international system of metric units) of pressure and acoustically radiated power. The acoustic power outputs of most underwater sound sources range from a few watts to kilowatts. During a meeting at Scripps Institution of Oceanography, Professor **Walter Munk** and I proposed: 1) Sound pressures are to be reported in pascals and 2) Radiated source powers are to be reported in watts. Last summer I reminded underwater acousticians of the need to use SI units.

On music, many of us played an instrument in bands and orchestras through high school, perhaps college. Then, we put our instruments in the closet. Madison has a New Horizons Band for adults over 50 years and who want to learn an instrument or start playing again. **Jane** got her clarinet out of our closet, is taking lessons, and is playing in this band. I joined Jane in the New Horizons Band. In addition, I play trombone in the Madison Community Orchestra and baritone in the Madison Municipal Band. The holiday concert season and summer concerts in the park keep us very busy.

Robert H. Dott, Jr.

During 1998 I continued my retirement career as dilettante. In spite of it being an El Nino winter, my wife and I managed to find a little cross country skiing in the north woods. In March we spent a week in New Mexico, first at Santa Fe and then in Georgia O'Keeffe country at Ghost Ranch. We hiked amongst Mesozoic strata so well exposed around the Ranch. One trail passes by a famous Coelophysis (Triassic) dinosaur quarry and the museum at the Ranch has fine exhibits of this and other fossils. At Albuquerque, we saw **Chris Rautman** (Ph.D. 1976), who works at Sandia National Laboratory, as do several hydrogeology alums, including **Lucy Chambers Meigs**, whom we also visited.

In our early and long spring, a great novelty in Wisconsin, I lectured at the University of Minnesota-Duluth, where ice had already completely disappeared from Lake Superior in mid-April! And I wrote for publication some oral remarks I had made at a Penrose Conference a few years ago about the history of geology, "What is Unique about Geology?" The result was published in *GSA Today* in October.

Much of the summer was spent field checking for a writing project with **John Attig** (Wisconsin Geological and Natural History Survey), a *Roadside Geology of Wisconsin*. Our book will be part of a popular series published by the Mountain Press of Missoula, Montana for lay travellers interested in knowing a little about the geology along their routes. John is covering the Pleistocene and I the older geology. We made good progress in 1998, and hope to be able to complete the project in 1999, however the illustrations may take a bit longer to prepare.

Also during the summer, I again became entangled with a remarkable Cambrian trace fossil called Climactichnites, which is a conspicuous animal trail resembling a tire track; it is found only in certain Cambrian beach and intertidal sandstones in North America. It is a large track, so is on the spectacular side. A collector, **Dan Damrow**, had found a pair of such tracks near Stevens Point, which curve and cross themselves. This got my longtime friend, **Ellis Yochelson** from the Smithsonian, excited enough to make a special trip from Washington to see the thing on a huge slab about 10 x 10 feet. Yochelson and Russian paleontologist **Fedonkin** had come to Wisconsin about 8 years ago to visit known localities and museums, and in 1993 they published a monograph on Climactichnites in which they interpreted the track maker as a large, slug-like animal, which grazed on microscopic algae from moist, intertidal sands. This new find got me re-energized to visit several other track localities during our reconnaissance trips for *Roadside Geology*.

When September rolled around, it was time to don my

Report from Albert and Alice Weeks Postdoctoral Fellow

Jay Schneider

I arrived at the University of Wisconsin in August to begin my project entitled The Origin and Diversification of Brackish-Water Cockles (Bivalvia: Cardiidae: Lymnocardiinae). *Cardiids are a predominantly marine group of clams which have a tremendous fossil record from the Late Triassic to the Recent. During the Neogene, as Africa and the Near East moved northward towards Eurasia, the Tethys Seaway became increasingly narrower and restricted. From what is now Austria to Kazakstan, there were bodies of water that were cut off from the Tethys. These isolated lakes decreased in salinity, and some components of what had been a marine fauna diversified in these brackish to freshwater basins. One of the groups which underwent a remarkable diversification were the lymnocards. The lymnocards prospered until these brackish and freshwater basins dried up late in the Pliocene. Today there are only fifteen species of lymnocards, living in the Black, Caspian and Aral Seas.*

I have worked on fossil and Recent marine cardiids for my doctoral dissertation at the University of Chicago, and for postdoctoral research projects at the University of Michigan and at the Smithsonian Tropical Research Institute in Panama. Because the lymnocards have always been restricted to southeastern Europe and southwestern Asia, I thought that I, just like virtually all previous American and western European paleontologists who have studied cardiids, would have to permanently shunt this group off to the side. Fortunately, I was awarded a Weeks Postdoctoral Fellowship to work with ***Dr. Dana Geary****, one of the few American paleontologists who has worked on the Cenozoic molluscs of eastern Europe.*

There are virtually no specimens of fossil lymnocards in American museums. Fortunately, ***Dr. Imre Magyar****, a Hungarian paleontologist who had just completed a postdoctoral fellowship with Dr. Geary, left a large collection of lymnocards in Madison for me to work with. In early November I embarked on a month-long research trip to examine the vast fossil lymnocard collections of the Naturhistorisches Museum and the Austrian Geological Survey, both in Vienna, Austria; Muzeul de Geologie in Bucharest, Romania; the Hungarian National Museum and the Hungarian Geological Survey, both in Budapest, Hungary; and the Croatian Museum of Natural History and the Croatian Geological Survey, both in Zagreb, Croatia. I examined thousands of specimens, and returned to Madison with a notebook full of notes and 25 rolls of film to develop. Now I am in the midst of analyzing all the data that I have collected. I am planning to present my preliminary findings at the combined meeting of the American Society of Naturalists, the Society for the Study of Evolution, and the Society of Systematic Biologists, which will be held here in Madison in June. In September I plan to go to a symposium on the Evolution of the Bivalvia being held in Cambridge, England.*

historian hat again as off we flew to Switzerland for a delightful two-week-long international conference on the history of geology. The meeting had two themes appropriate to the venue, which were Mountains and Glaciation. I had been asked to speak about the American geosynclinal theory for mountains, which I did for the umpteenth time. Two fine excursions took us into different parts of the Alps, where we saw lots of nappe structures under the able guidance of veteran Swiss geologists, **Rudolf Trumpy** and **Paul Masson**. We also experienced the season's first snow, which was lovely, but storm clouds concealed the Matterhorn from our view. The meetings themselves were held at Neuchatel, a charming city at the foot of the Jura Mountains, which was the home of Louis Agassiz and the place where he announced his startling theory of continental-scale glaciation in 1840. On the slopes of the Jura just above the city, we were shown striated pavement and a huge erratic boulder from the Alps, which were among the features that Agassiz cited in postulating his famous eiszeit. On one of the trips into them Alps, we saw additional large erratics and other features studied by Jean de Charpentier, who first introduced Agassiz to the concept of past, much greater extent of the Alpine glaciers. We also descended into a 400-500 year-old salt mine at Bex, of which Charpentier was the superintendent in the early 19th Century. We had a fine underground dinner served in the Bex mine. Near Neuchatel, we also visited the villages of Valangine and Hauterive, type localities for the early Cretaceous stages, Valanginian and Hauterivian.

Late October found us taking a long road to the GSA meetings in Toronto in fabulously mild weather and gorgeous autumn foliage. Among other things, we spent a couple of days at Albany perusing the James Hall archives, visited the famous dinosaur footprints in the Connecticut valley and Edward Hitchcock's amazing 19th century collection of slabs of these at Amherst College, and looked at some Cambrian sandstones on both sides of the St. Lawrence River. At Toronto, I participated in the GSA's History Division sessions by presenting a talk about Charles Lyell's contributions to American geology during four visits to North America during the 1840s. I also co-authored with alumnus **William M. Jordan** (Ph.D. 1965) another talk about a colorful fossil collector of the mid-19th century, Albert Koch, who was prone to inserting a few extra bones to make his animals appear larger than life. He also made strange and extravagant claims about them, such as that a Mastodon from Missouri was probably the Biblical Leviathan and a primitive Eocene Cetacean (a mammal) from Alabama was the largest sea serpent that ever lived. We were asked to write an article about Koch for *Geotimes*, which will appear next spring.

Since Toronto, I have begun writing about my latest historical project, which concerns those "Geologists Who Made Wisconsin Famous" (see cover) and the diffusion of important concepts of structural geology across the Atlantic from Wisconsin to Europe during the 1920s. Come to our Sesquicentennial Alumni Reunion in May, 1999, and you can hear all about it!

Lloyd Pray

1998 ended my first decade of retirement. I have thoroughly enjoyed it. Retirement has allowed **Carrel** and me more time for visits with three of our sons' families including ten of our dozen grandchildren in California, Montana, and Ohio. Retirement has provided more time for pleasurable puttering with garden and surroundings at our farmlet home; more time for travel for Carrel and me, and still some time for my hobby, geology. I have thoroughly enjoyed the fun as Emeritus Professor–i.e. without responsibilities, of participating in the department's sedimentary geology program, especially the field trips that **Toni Simo** leads to my old haunts, such as the Guadalupe and Sacramento Mountains of New Mexico and West Texas. Fortunately Carrel and I have remained in good health throughout our 70s (we'll be octogenarians before the millennium).

Looking back to the 1960s little attention was paid to carbonate sedimentary geology at the UW-Madison, or in the upper Midwest. I now take satisfaction in the presence of a strong carbonate program here under **Toni Simo**, and also that four of my former students are teaching sedimentary geology in the region (**Carol Mankiewicz** at Beloit College, **Kent Kirkby** at the University of Minnesota, **Dan Lehrmann** at the University of Wisconsin-Oshkosh and **Mark Harris** at the University of Wisconsin-Milwaukee). All these and many other Badger sedimentary types in academia, industry or government are "doing themselves and UW-Madison proud."

Overall, 1998 for me resembled the preceding years, but with more family focus and less on science. A highlight in March was that Carrel and I had a long-desired excursion "Around the Horn" on a small cruise ship with interesting shore encounters at various Argentinean and Chilean ports. Despite legends of horrible weather and winds, we had unusually good and calm weather. Chile's Torres del Paine National Park, with magnificent glacially carved mountain scenery was worth the trip alone. In May I was fortunate to receive at AAPG's annual convention their "Distin-

guished Educator Award." This award required the best efforts of **Bob Goldstein** and **Evan Franseen**, former Ph.D. students, to come up with a biographical sketch making it appear that I deserved it and also required an "Aw shucks" response from me (both printed in the May AAPG Bulletin). Summer, mostly in Wisconsin, was fine. In early September we spent a week on Washington Island (Door Peninsula) where I snooped around the Silurian shoreline crops while Carrel took a watercolor course. I had not been in that area since working with **Jim Brooks** on his Silurian M.S. thesis research in the 1970's. The rocks look the same—interesting, but not as exciting as in the SW. In late September, Toni and I gave a paper at the 25th Anniversary Celebration in Carlsbad, New Mexico of the establishment of Guadalupe Mountains National Park, Texas. At that conference, to my complete surprise, I was given the first "Wallace E. Pratt Research and Resource Management Award." I admit to great pleasure in this, as it is partly a tribute to the actions of my many graduate students working in that national park. Following the conference two geology friends and I spent an eye-boggling week as "first- timers" in the vast Big Bend National Park, Texas. October was notable for Carrel and me with a visit to our oldest son, a minister in Big Timber, Montana, and to the adjacent Beartooth-Absaroka Wildness area. Tough duty. In later October, I again lead a Memorial Union "mini- course" on the "Geology of Wisconsin" (lectures and two all-day field trips). Interested lay persons of a non-credit mini-course make for a fun, relaxing teaching experience. Carrel and I finished off the year with two weeks at Christmas time in festive Santa Fe and the adjacent northern New Mexico wonderland. So, onward! I cherish the 30 years I have been a part of the geology scene at the University of Wisconsin, and hope for many more. Best wishes to all you Badger geologists out there. May your life and career be as interesting and fun-filled as mine has been.

Geology and Geophysics Students Honored at the Spring Banquet–April 16, 1998

Newly elected Geoclub officers are: (left to right) Ann Ebenreiter, undergrad rep; Ben Smith, soda czar; Jeff Munroe, field trip coordinator, Wes Dripps, elucidator; Sarah Principato, treasurer; Salma Monani, secretary; and Darrell Stanley, vice-president. President Tim Lee is not pictured.

Below: Among students receiving awards were: (Left) Eric C. Carson and Ayako Kameda–The Stanley A. Tyler Award for excellence in teaching at the introductory level, and (right) Weston R. Dripps–TheThomas E. Berg Award for excellence in teaching at the intermediate level.

University of Wisconsin-Madison

Department of Geology and Geophysics

Lewis G. Weeks Hall
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Annual Report for 1998

Training Teachers in Paleontology

1998 marked the first year of the "Paleontological Experiences for Teachers," a four-year program funded by the Howard Hughes Medical Institute, the University's College of Letters and Science, and the Department of Geology and Geophysics' Louis G. Weeks Bequest. Joseph Skulan, assisted by high school teachers Steve Bower and Marilyn Hanson, gives school teachers hands-on training in vertebrate paleontology, combining classroom and laboratory activities with fieldwork in Kansas. The participants discovered, among other fossils, a mosasaur skeleton that they will excavate next June. With the help of the teachers and selected students, Joe is planning to prepare the skeleton, mold it and supply each of the participating schools with a replica.

Tours, Events and Courses

Our educational exhibits once again attracted scores of school children with their teachers, while their yellow school buses waited in the Weeks Hall parking lot. Tour Coordinator Haddie Heitkamp had her hands full meeting the many inquiries and requests from area schools.

The Museum's Annual Open House featured programs on groundwater, plate tectonics, dinosaurs, and the ever-popular Free Rock Pile for Kids. Plan B Design Studio of Hazel Green, Wisconsin, made dinosaur masks with our youngest visitors.

The week-long **Geology for Kids Summer Program** chaired by Susan Werther, introduced fourth and fifth graders to various facets of the geologic sciences.

Museum Upgrade

In her last year before receiving her Master's degree, outgoing Project Assistant Jennifer Lien replaced the labels for all specimens on exhibit, giving the museum a long-overdue facelift.

Museum Evaluation

The Museum has received a Collection Assessment Grant from the Washington-based Institute for Museum and Library Services. In September, Helen Alten of the Northern States Conservation Center, St. Paul, Minnesota, reviewed our collection management, storage facilities, and museum exhibits. In her report, Ms. Alten expressed serious concern regarding the pressing need for adequate cataloguing and for computer documentation of our extensive collections.

Shows and Lectures

Once again, the Museum was represented at the prestigious International Gem and Mineral Show in Tucson Arizona. This year's educational exhibit featured fossil arthropods. Tom and Anne Bandow, managers of the Cave of the Mounds, Blue Mounds, Wisconsin, arranged for the transport of the exhibit to and from Arizona.

In October, Museum Director Klaus Westphal represented the Department of Geology and Geophysics at the University's Faculty Showcase in Houston, Texas, with a slide program on "Dinosaurs and Other Prehistoric Creatures." Other speaking engagements included talks given to hobby clubs, senior citizens, an elementary school, and to a local earth science teachers conference.

At the University's Faculty Showcase in Houston, (left to right) Christy Smith, Walter Wornardt, Laurel Babcock, Bob and Elizabeth Hickman, Jack Babcock, Klaus Westphal, Dave Delgado, George Froming, Don Neville, Jay Nania, John Biancardi, Pat Lehman, Sharon Rector.

The Museum was one of 13 venues participating in the county-wide "Nature Passport" summer program that brought families to museums and outdoor sites to explore area resources dealing with natural history.

Guest Exhibit and New Acquisitions

In October, the Cleveland Natural History Museum loaned us a special guest exhibit entitled "What is a Museum Quality Mineral Specimen to You?" The display featured some outstanding and unusual mineral specimens that have been accumulated over the past 100 years.

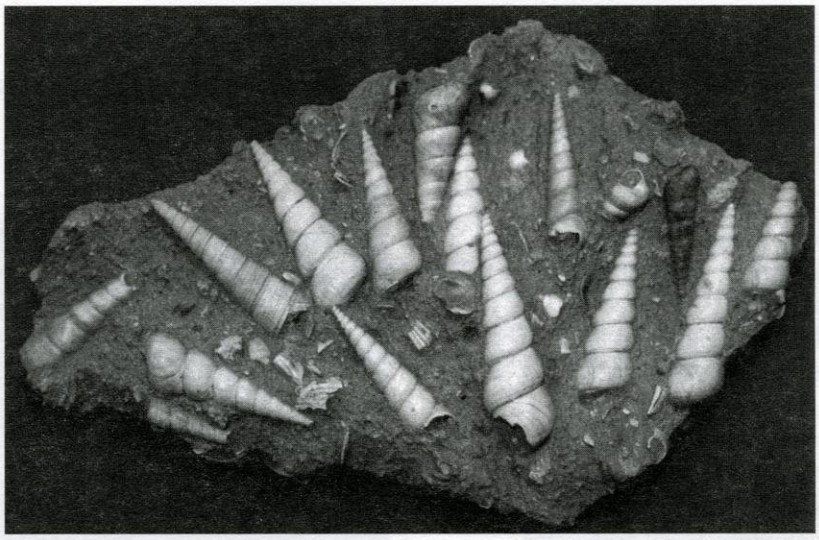
Significant additions to our Museum included part of the lower jaw of a Gomphotherium (Trilophodon) from the Tertiary Period of China, an early relative of the Ice-Age mastodon. The fossil was donated to us by Dr. Maury D. Bramson, Madison.

The Friends of the Geology Museum presented us with a rock specimen containing a scattering of the high-spired snails *Turritella* from the Tertiary Period of France. A large (14 in.) limestone specimen containing blade-like crystals of the mineral marcasite altered to limonite, from southern Wisconsin was donated to our collections by Mark L. and Lynn E. Langenfeld, Madison. Nathan Isely, Madison, contributed a collection of calcite and fluorite specimens from Waterloo, Iowa.

Allen Debus, Bartlett, Illinois, donated a small-scale model of the extinct rhinoceros *Brontotherium* that he has sculpted specifically for the museum. The model now accompanies our two *Brontotherium* skulls from the Badlands of South Dakota.

Fossil Skeletons

Work continued on the restoration of the bones of the Cretaceous-age dinosaur *Triceratops*. A significant number of bones of this three-horned dinosaur has been collected from different localities in eastern Montana. Reconstruction of the 5 1/2-foot-long skull is nearing completion. Remains of such large animals commonly show signs of scavenging: the bones are scattered, broken, and occasionally show tooth marks. Undergraduate student Christopher Ott studied the



Turritella *snails from France*

upper right leg bone (humerus) from one of the sites. He concluded that a narrow piece missing from its edge was broken when a scavenging dinosaur stepped on this bone. In the fall, Chris presented a poster on his findings at the Annual Meeting of the Society of Vertebrate Paleontology in Snowbird, Utah.

Also, Chris has all but completed the construction of the full-size model of the flying reptile *Pteranodon*. With its 20-foot wingspan it will soon hover high above the other skeletons in the Museum's vertebrate hall.

The Friends of the Geology Museum

The Museum owes much of its success to the Friends of the Geology Museum. This group of dedicated supporters includes amateur geologists, teachers, alumni, and University faculty and staff. The non-profit organization supports the Museum's expeditions, the restoration of dinosaur bones and other fossils, the educational outreach programs, and the occasional acquisition of a specimen for display. In 1998, the Friends committed to initiate an endowment to ensure continuous funding of the Museum's outreach and special projects.

Financial Contributions

Our dinosaur program and other museum projects were generously supported with gifts from many individuals including: Dr. and Mrs. Kenneth W. Ciriacks, Santa Fe, New Mexico; David Jones, Worthington, Minnesota; and the Amoco Foundation. We are indebted to all who have contributed to the Museum's success.

The Triceratops *leg bone with gash caused by the foot of a scavenging dinosaur*

The Geology Museum gives thanks to its staff and the many dedicated volunteers:

Steven Bower: Teacher Training Program
Anna Bradshaw: tour guide
Lisa Braun: tour guide
Amy Brost*: student aide, cataloguing
Eron Drew: volunteer, fossil preparator
Christin Engstrom: tour guide
Susan Flickinger: tour guide
Jim Freiheit, volunteer: fossil preparator
Lou Goodman, volunteer: fossil preparator
Maggie Guzinski: volunteer, fossil preparator
Marilyn F. Hanson: Teacher Training Program
Haddie Heitkamp: tour guide and tour coordinator
Jon Hendricks: volunteer, fossil preparator
Elizabeth Hermsen: volunteer, fossil preparator
Julie Hill: tour guide
Geoff Hosack, volunteer: fossil preparator
Ryan Jakubowski: tour guide
Blake Kellogg: volunteer, fossil preparator
Richard Krause: volunteer, fossil preparator
Matt Kuchta: project assistant
Jennifer Lien*: project assistant
Laura Norton: volunteer, Geology for Kids program
Gwen Ohlson: tour guide
Shawn Olson*: tour guide
Christopher Ott: student assistant, fossil preparator
Craig Pfister: fossil preparator
John Ptacin*: volunteer, tour guide
Nick Salkowski: volunteer, fossil preparator
Joseph L. Skulan: staff, coordinator of Teacher Training Program
Ellen Stephenson: volunteer, tour guide
Ellis Taff: volunteer, tour guide
Juli Thompson, volunteer, fossil preparator
Stephen Vihel: tour guide
Susan Werther: coordinator, Geology for Kids Summer Program
Christine Westphal*: volunteer, tour guide
Stephan White*: fossil preparator
Mary Williams Norton: Geology for Kids Summer Program
Melissa Wraalstad: tour guide

* indicates no longer with the Museum

...and The Friends of the Geology Museum,

John R. Rettig, President,
Richard Emerson, Vice President,
John Evans, Treasurer
Maxine Triff, Secretary

Thank you!
Dr. Klaus W. Westphal, Director

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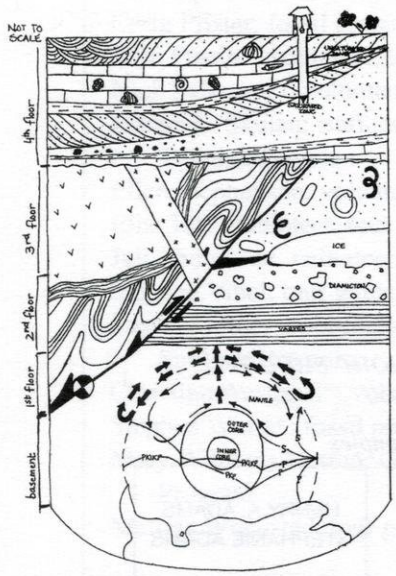

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On the front cover:

T.C. Chamberlin was the principal leader of the Second Geological Survey of Wisconsin from 1876 to 1882. In 1881 he became Chief of a new Glacial Division of the U.S. Geological Survey, and from 1887 to 1892 was President of the University of Wisconsin before moving to the University of Chicago in 1893. He was a close associate of R.D. Irving and C.R. Van Hise, and became a world leader in Pleistocene geology.

R.D. Irving was the first professionally trained geologist on the university faculty. He came in 1870 and was soon involved in the second state survey. He laid the foundations for subsequent studies of the Precambrian rocks of the Lake Superior region, and in 1882 was appointed part time chief of a new U.S. Geological Survey Lake Superior Division based at the university. Until his untimely death in 1888, he chaired both a new Department of Mineralogy and Geology (created in 1878) and also the USGS Precambrian investigations.

C.R. Van Hise was a protégé of Irving, and the recipient of one of the two first Masters degrees (1882) and the very first Ph.D. degree (1892) granted by the university. With the death of Irving, he suddenly inherited both the headship of the department and of the Lake Superior Division—at the age of 31. He directed most of the investigations and the publication of eight USGS monographs concerning the Precambrian iron ranges, which effort spanned three decades. In 1903 he became president of the university. It was during his 13 year tenure that the concept of Educational Extension blossomed fully, as did research as a companion to education, and the institution gained national and international stature.

C. K. Leith was in turn a protégé of Van Hise, who joined the USGS Precambrian investigations, and then, like his mentor had done before, suddenly inherited both the directorship of that effort and chairmanship of the Department of Geology. Leith brought to wide public attention the important conclusions from the work of Van Hise and the USGS' Lake Superior 'army' as well as guiding the expansion of the department from 1905 to 1935. During the 1910s and 1920s, students and post-doctoral scholars were attracted from all over the world to The Wisconsin School of Geology.

W.J. Mead was in turn a protégé of Leith, who after graduation, immediately joined the faculty in 1908 and remained until called to MIT to be chairman in 1934. Leith recognized Mead's exceptional talents for applying quantitative and experimental approaches to geological problems, and that those talents would be strong complements to his (and Van Hise's) field approaches. Leith's textbook *Structural Geology* (1913) and the Leith and Mead *Metamorphic Geology* (1915) provided pace-setting syntheses of much of the fundamental earlier Wisconsin work in these subdisciplines.

A.N. Winchell brought to the faculty in 1908 a new level of expertise in mineralogy and petrology. His influence upon the later stages of the Lake Superior Precambrian investigations was profound, and he proved to be a leader in optical mineralogy and igneous petrology. In this way, he helped expand the Wisconsin reputation beyond Precambrian structural and metamorphic geology. Winchell also worked with mineral deposits. He retired in 1945.

W.H. Twenhofel joined the faculty in 1916, and for three decades built the strong reputation in sedimentary geology and paleontology, which the department still enjoys today. 'Twen' was a pioneer in the field of sedimentation, now called sedimentology. He chaired the National Research Council Committee on Sedimentation, which produced the milestone *Treatise on Sedimentation* in 1926. In that same year, he was a co-founder of SEPM, the Society for Sedimentary Geology, and in 1931 became the first editor of the *Journal of Sedimentary Petrology*, which office he held for 13 years.

—R.H. Dott, Jr.

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