GEOSCIENCE NEWS

for the Alumni and Friends of the
Department of Geological Sciences
University of Michigan, Ann Arbor, Michigan

December 1999

Paleontologists Discover the First Primitive Automobile, Big Badlands, 1932

In this Issue:

Greetings from the Chair

Dear Friends of the Department:

In last summer's issue of our newsletter I wrote in this space about the transitions that occur in our lives, with specific mention that in our academic/professional world the goodbyes often occur a year or two before the hellos. Last year we bid farewell to Jim O'Neil and Alex Halliday. Losing these two widely known and highly respected faculty members from a department that prides itself on its geochemistry could have been a big setback for us. But it wasn't.

The other note I wrote last winter dealt with serendipity in the matter of gifts from friends and alums. I mention this because there was a hint of serendipity in how we were able to find just the right person to come to Ann Arbor and fill our vacated geochemical shoes. A year and a half ago, in the fall of 1997, our then Dean Edie Goldenberg announced that a chaired professorship, the John D. MacArthur chair, would be made available to our college of Literature Science and the Arts. The chair that rotates among the several Schools and Colleges of the University, is occupied as long as the holder is on the faculty, and its present occupant is retiring from the College of Engineering. Dean Goldenberg made the decision to exclusively offer the chair to the science departments for a year, and if we couldn't find someone, then it would go elsewhere in the college. Within a month of this news, Alex Halliday announced his departure. At that point we began to consider the dozen or so senior geochemists in the world who might be interested in coming to Michigan, run a big lab, interact widely with the faculty already here, and teach an exciting suite of courses - in short, do it all.

The person we identified as both an outstanding scientist and the best possible fit with all these criteria was Joel Blum, then a professor at Dartmouth. We were second in the queue to make an offer of the MacArthur chair to Joel, behind one of our sister science departments. After a six week wait, the other department's offer was declined and we were able to proceed, the second time in this procedure that fortune smiled on us. The upshot of all this is that last winter we made an offer of the MacArthur Professorship to Professor Blum, and he accepted. He and his family will join us this summer, along with two technicians and two graduate students. I have never seen our faculty so uniformly enthusiastic about the arrival of anyone. Joel's research involves the use of radiogenic isotopes and trace-element geochemistry in the study of surficial processes, the nature and history of chemical weathering, and the biogeochemistry of surficial phenomena. He is already far along in the planning of renovations for the Radiogenic Isotope Geochemistry Laboratory on our fourth floor - I hope they will be done by the time I write the spring 2000 Chair's letter.

There is another transition that I should mention here. Edie Goldenberg left the Dean's Office a year ago, and since then we have been lead by an Interim Dean, Patricia Gurin, previously the Chair of Psychology. Pat has done a wonderful job in caring for the college in this year of change. The new permanent Dean was announced a few weeks ago. She is Shirley Neuman, presently Dean of the Faculty of Arts and Professor of English at the University of British Columbia. My British Columbia friends tell me that she is well known and nationally respected in Canada, and that her departure from UBC was front-page news in the Toronto Star. I met with her recently and am delighted by her recognition of the importance of learning quickly about the nature/activities/ concerns of her new science departments, the insight of her questions, and her enthusiasm for her new job.

We have another piece of good news that should be shared with all of you. The national rankings of graduate programs in the sciences are compiled every three years by U.S. News and World Report. Although there may be a bit of the "beauty contest" in these rankings (and we never ask about the error bars on the scores), it is the most widely referred to listing of top departments and programs and is widely used by students looking for a good graduate schools. This year, we were ranked fifth nationally among all geology departments, the same as in 1996. We increased our standing in the subspecialties to second in geochemistry, second in sedimentary geology - stratigraphy, and fourth in paleontology. An important aspect of our continued improvement is the ongoing support of the Departments' many friends.

I look forward to seeing many of you at Camp Davis this summer; we have over 150 people signed up for the reunion as of last week. If you can't make it to the Hoback in August (and even if you do) we will be having our usual alumni/ae reception at the Geological Society of America meeting in Denver this fall. The reception is on Monday evening, October 25, 1999. Please join us for conversation and the usual refreshments.

Sincerely yours,

David K. Rea

David K. Rea

Chair and Professor

A Case of Mistaken Identity

by Robert H. Dott, Jr. (BS '50, MS '51)
University of Wisconsin

I was more than a little surprised a few years ago to read that Ermine Cowles Case of the University of Michigan had met *her* death in South Africa in 1923. Pinch me, I thought! Had I just imagined knowing and talking to E.C. Case when I was a student at Ann Arbor in the late forties? And, moreover, that *he* was a *she*? (Fig. 1). Inquiry revealed that this bit of mistaken identity had resulted from the very understandable misinterpretation of the unusual first name "Ermine" as feminine and then connecting it with a 1923 obituary notice in the New York Times of the death of "Mrs. Ermine Case in Africa." I later learned from Prof. Gertrude Case Buehring of the University of California at Berkeley that her grandmother, Mary Snow Case, had accompanied her husband to Africa in 1923, where she contracted an infectious disease, then developed pneumonia, and died suddenly in Cape Town.

Why should a 75 year old tragedy catch my eye? Answer: the Dott family had had a special relationship with Michigan's Professor Case. When my father, Robert H. Dott (Sr.), was a student at the U of M in the teens (BS '17, MS '20), "Doctor Case" took a special, fatherly liking to him. Their friendship persisted long after my dad departed to the oil patch to become one of Case's "Oil Babies." They corresponded frequently for more than twenty years. Around 1930, Dr. Case once or twice stopped overnight at our home in Tulsa en route to or from his field work in west Texas. He was almost as excited about my sister's birth as were my parents, and wrote to my father that "I know the baby is wonderful! I would like to look it over for Ape-like rudiments, but our friendship would end." So instead, he admonished that she must have a large sand pile to play in, and later asked repeatedly if such had been provided. At Christmas in 1929, he sent her a special doll. In response to her 'thank you,' he wrote that "I am so glad Santa Claus took my hint about a nice little girl in Tulsa. I did want him to get you a nice dolly. He brought some nice things, too [for me], some

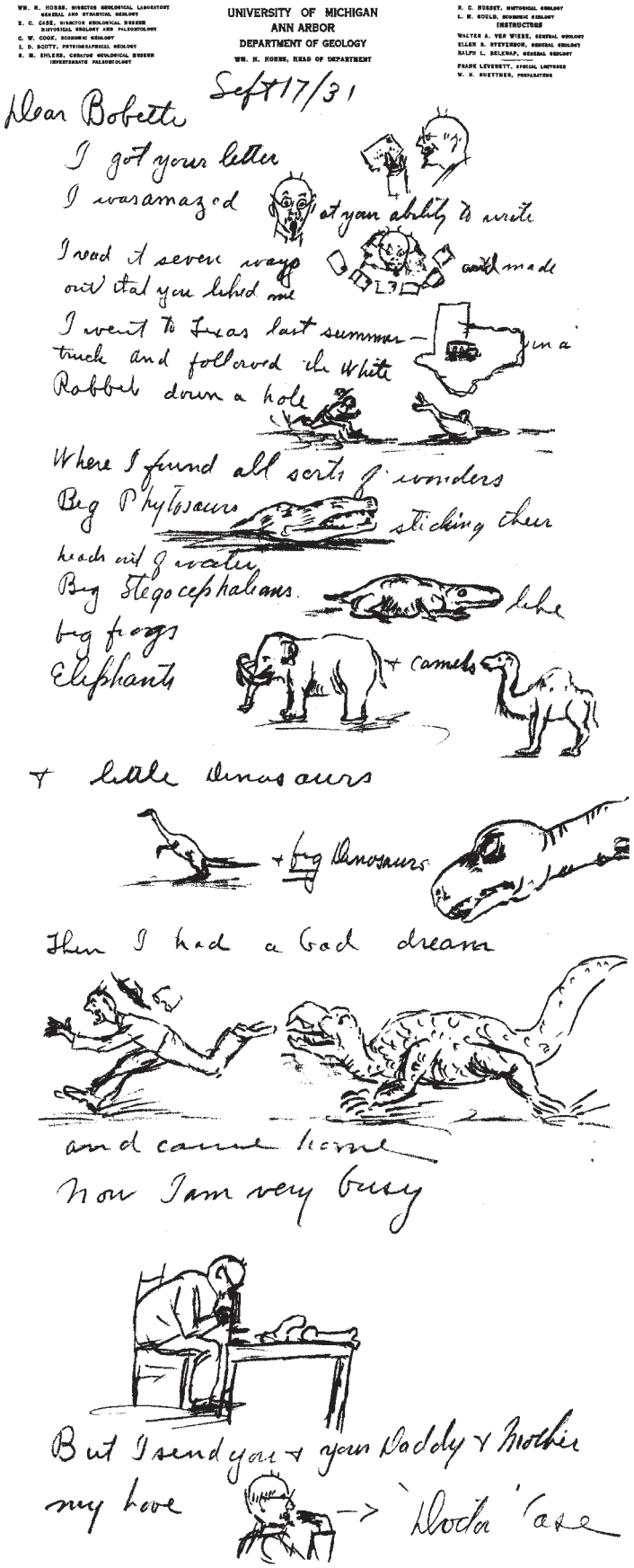


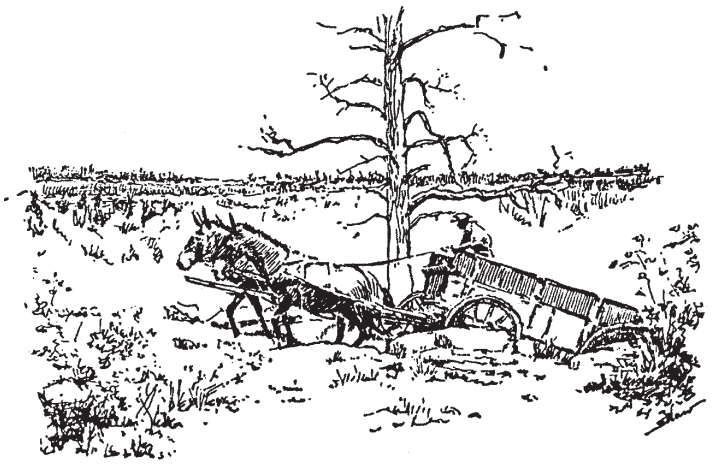
Figure 2. Excerpt from an illustrated letter of September 17, 1931 from E.C. Case to young Bobette Dott. This was the longest and most thoroughly illustrated of several notes to the Dott children.

nice 'smokes.' Yours, Mr. Professor Doctor Bone Hunter Case." In 1930 he decided that it was time for sister to have her own copy of *Alice in Wonderland*. After one visit, she received a two-page letter from Case telling of his fossil hunting adventures, which he illustrated with charming sketches of some of the ancient monsters that he studied (Fig. 2). This and some other letters with sketches became family heirlooms, and my casual mention of these a couple of years ago prompted Henry Pollack to solicit this reminiscence about one of Michigan's past Greats.

E.C. Case was a mythical, grandfather figure for my sister and me as we grew up in Tulsa and Norman, Oklahoma. Besides the little notes and presents spanning more than ten years, an autographed photo of him in our father's study was as familiar as pictures of our own family forebears. So naturally, when I arrived in Ann Arbor myself in the fall of 1948 to become a third-generation Wolverine, I soon looked up Professor Emeritus Case in his lair in the Museum of Paleontology. He would have just reached his 77th year, but was alert, witty, and seemed glad to meet me. I remember Dr. Case as a small, balding man with glasses, moustache (Fig. 1) and an ever-present cigarette between his fingers. He still rolled his own Bull Durham cigarettes, and they always seemed to have an over-extended ash, which distracted one's attention from the conversation — when would it drop off? Although rather reserved, he was always full of witty anecdotes and occasional unsolicited counsel, which flowed freely once he got uncorked.

In last year's Geoscience News, Helen Foster related a characteristic Caseanecdote, which bears repeating. It seems that one day in the 1940s, Dr. Case came to see graduate student Orlo Child's in his office. Case was only about five and a half feet tall, but Child's towered almost seven feet. According to Foster, E.C. entered the office with his hat on the end of his umbrella and raised it up to Orlo's eye level as he said "Good morning, Mr. Childs."

Case liked to reminisce about his many collecting trips out west. His first expeditions were in the 1890s, when my native state of Oklahoma was still Indian Territory and transport was mostly by team-drawn wagons (Fig. 3). When automobiles replaced wagons, the tires were so thin, Case reported, that they seemed to puncture even at the sight of a cactus or sharp rock (Fig. 4), so he always carried several spares. I recall especially stories about trips to west Texas during the 1930s. He noted that the drought of the dust bowl days was so bad "That people got excited when a cow pissed on the prairie." Those of us who lived through the pink dust storms of the thirties can also appreciate his story about pink biscuits. It seems that occasionally he would bake biscuits in camp, which were brightly colored by the west Texas water rich in pink Permian clay. To Case's chagrin, his companions always seemed under-appreciative of the proud chef's ferruginous creations. On another occasion, he told me that "he had decided he must be getting old when he found he could not



MOUNTING THE MESA RIM
Improved road in New Mexico.

Figure 3. Sketch of a mule-drawn wagon in New Mexico, circa 1900 (from Case's 1942 article, "My Monument," Michigan Alumnus Quarterly Review *, v. 48, p. 233-242).*

catch a jack rabbit uphill, but had to get it out on the flat."

During one of my early visits to the Museum, Dr. Case explained at length his "monument", a meter-high pile of discarded dirt and broken bits of stone outside his office window. It seems this was where he had cast out the waste from years of cleaning his fossils. In the 1942 *Michigan Alumnus Quarterly Review*, he published a charming reminiscence titled "My Monument," based upon the contents of that pile. It is a delightfully crafted autobiographical sketch, which recounts several especially poignant experiences in the career of a scholar whose eloquent style and warm humor can still inspire two generations later. It is nicely illustrated with four drawings of field work long ago (Fig. 3). In the article, Case revisited the life and times of the Eocene Green River Formation of Wyoming and a camp from which he collected relicts of those times. Of course he also took the reader back to those Permian 'red bed' times of Texas, which made him famous, but he surprises us with "I know of no fossil field that the collector comes to hate so much...as that region of Texas." Soon we learn why in his account of desperate drought years, when the only water was to be found in small, foul, alkali-rich pools for which he had to compete with multitudes of thirsty snakes and miserable cattle. Drought times alternated with monsoon years of violent winds and deluges of bone chilling rain. Next he transported his reader to the Big Badlands of South Dakota with roads that turn to gumbo when the sky clouded over, and another recollection of a severe wind, rain, and hail storm, which bruised bodies, shredded tents, and strewed equipment across the prairie. (He seems to have attracted storms forever after his grade school was flattened by a tornado.) The terror of that Badlands mishap was softened by an invitation to a neighboring collectors' camp for a gala Fourth of July celebration. Thanks to the tempest, however, they were hard pressed for suitable attire for such an august

Figure 4. Photo of E.C. Case (rightmost) and three companions, Bobeng, Buettner and White, by their field station wagon in the Big Badlands, 1932. William Buettner was a preparator in the Paleontology Museum. (Courtesy Gertrude Case Buehring). Apparently Case adapted quickly to the automobile and soon developed a reputation for fast driving.

occasion. The article is rounded out with recollections from Case's travels in Africa, including a rhapsodic description of "their" visit to Victoria Falls of the Zambezi. He concluded with "My monument is just a little heap of rubbish but for me it holds the power to evoke memories of a life and a world."

As for counsel, I recall that Case one time pointed up on a high book shelf in his office at Charles Lyell's *Principles of Geology* and recommended that, if I read nothing else, I should study that thoroughly. It was more years than I like to admit before I finally took his advice; I am a slow reader. When I was finishing up at Michigan in 1951, I stopped by to tell Dr. Case of my plan to go on for the PhD at Columbia University. After a barely audible grunt, he commented that "Whenever he went to New York City, the first thing he looked up was the next train out." I went anyway.

Who was Ermine Cowles Case? He was born in Kansas City on September 11, 1871, and was descended from a long line of public spirited preachers and missionaries to the Indians. His father was a physician, who was active in civic affairs and the promotion of science education. His mother was the daughter of a missionary and later mayor of Kansas City. Ermine attended the University of Kansas from 1889 to 1893, intending to follow his father into medicine, but anatomist-paleontologist Samuel W. Williston turned him to vertebrate paleontology. Mary Margaret Snow Case also came from an eminent family. Her father, a noted entomologist, was Chancellor of the University of Kansas. Her mother was from a prominent New England family (an aunt was the wife of President Franklin Pierce). Ermine and Mary apparently met in Lawrence, Kansas, soon married, and had two sons. Francis became a professor of chemistry at Temple University, but never married. Theodore became a professor of neurology at the University of Chicago, and had three daughters, Margaret, Janet, and Gertrude. Ermine doted over his three granddaughters, who remember recycling his little Bull Durham tobacco pouches – after very thorough washings – to use as coin purses and trinket bags. Gertrude Case Buehring was very helpful in providing me with family background, photographs, and various documents.

Case was a member of several University of Kansas collecting expeditions, which ranged all up and down the High Plains until he entered Cornell University in 1894. After a year, he transferred to the University of Chicago, where he studied under Professor George Bauer, a protegee of that infamous pioneer paleontologist O.C. Marsh. Case received the PhD in 1896 and took a position at the Wisconsin State Normal School in Milwaukee. He came to Michigan as Professor of Historical Geology in 1907, became director of the Museum of Geology (later Paleontology) in 1921 and Chairman of the Department of Geology in 1934. Soon after finishing his PhD, he began the research that would be the principal focus of his career and for which he became duly famous. This was the painstaking collection and study of Permian and Triassic amphibians and reptiles, especially from Texas, New Mexico and Oklahoma. The most important results of that work were published in several monographs of the Carnegie Institution of Washington. Two are particularly notable, *The Permo-Carboniferous Red Beds of North America and Their Vertebrate Fauna* (1915) and *The Environment of Vertebrate Life in the Late Paleozoic of North America*. (1919).

Case was a member of that first generation of American scientists trained in formal, professional university curricula, rather than being self-educated and/or apprentice-trained practitioners like their predecessors. He was a man of international reputation, who together with William H. Hobbs, Edward H. Kraus, and Frank Leverett, achieved distinction for Michigan's geology and mineralogy programs during the formative years of the early 20th century. By an odd coincidence, Case and Hobbs both died in 1953, only eight months apart. Case's 1923 visit to South Africa must have been a bittersweet mixture of tragedy in the loss of his wife but a triumph of welcome by colleagues. Surely it was a dream come true to see for himself at this antipodal position to his Texas field home, equivalent-aged Permo-Triassic strata containing the world's finest fossil mammal-like reptiles, which were destined to play an important role in validating continental drift. Little could E.C. Case realize that his own pioneering contributions to our knowledge of the American relatives of those Gondwana creatures would help pave the way for the ultimate understanding of the life and environment of the supercontinent Pangea. Could he come back for a visit today, no doubt he would have some droll observation to offer....as his cigarette ash grew longer and longer.

Field Trip 1999

As the sun's rays gently break the horizon of the desert sky, one envisions the serenity and quiescence of the early morning on a backpacker's venture into the wilderness. This silence, however, is abruptly broken by the deep roar of Bruce Wilkinson's voice, a chorus that ends in "rise and shine, step up to the dollar line". So begins another day on the 1999 Soft Rock Field Trip.

Bruce Wilkinson continues to captivate students' interest at an outcrop of fossiliferous Ordovician strata in Southern Indiana.

This year's field trip, guided by Bruce Wilkinson and Kacey Lohmann, engaged 32 participants on a two week journey through the Great Plains, to the Basin and Range, and finally to the Gulf Coast. The field trippers included a broad cross section of the department with five Ph.Ds (post-docs, assistant professors, and research scientists), and equal numbers of graduate and undergraduate students). Integrating aspects of regional stratigraphy and tectonics with details of the paleontology and sedimentology, the excursion provided a balanced presentation of geology of the mid-continent region. Some of the geologic features examined during this excursion included: fossiliferous late Ordovician Richmond Group and Silurian reefal carbonates of Indiana and Kentucky; mid-continent Carboniferous cyclothems of Kansas; deformed sedimentary sequences of the Arbuckle Mountains; the classic Permian Reef Complex and Carboniferous shelf sequences of New Mexico; Tertiary extrusives and intrusives of Big Bend region; deformed Paleozoic units in the Marathon and Llano uplifts; and the Cretaceous shelf and reefal carbonates of the Edward Plateau. After long days of travel combined with long hikes into mountains, participants also had the opportunity to discover the diversity of local foods along the journey. Of particular note are Pete's Deluxe Cafe for breakfasts and Lucy's Mexican Resturant (for multiple dinners) during their stay in Carlsbad, NM. Perhaps future trips should be more properly advertised as the annual Soft Rock Field and Food Trip.

Undergraduate students "Mo" Kreple and Carrie Menold experience their first outcrop of varved anhydrite in the Castille Formation of the Permian Basin, West Texas.

After a long and hot hike through the Permian Reef Complex of New Mexico, students and faculty were blessed with this magnificent view of El Capitan on the southern margin of the Guadalupe Mountains.

The funds necessary to undertake a field trip of this magnitude were provided from the *Field Excursion Endowment,* recently established with a generous gift from an alumnus of the department. Importantly, this gift enables undergraduate and graduate students the unique opportunity to explore a diversity of geology that is not available in short trips around Michigan. By integrating direct field observations of rock materials within a regional geologic context, students and researchers are provided an experience that complements their training classroom settings. The Department and its students again thank our alumni for their continued support of this educational opportunity.

Michigan Geology Maintains High National Ranking

The recent US. News and World Report Survey on "America's Best Graduate Schools" ranks the Department of Geological Sciences in Ann Arbor as 5th in the nation (tied with Columbia University). The Department's Sedimentology and Geochemistry programs rank 2nd in the nation outpaced. Such high rankings reflect the combined investments of the University and alumni in building the analytical facilities and securing faculty and students of highest quality during the last decade. For additional information, contact: *http://www.usnews.com/usnews/edu/beyond/gradrank/gbgeolog.htm.*

Ph.D. - Geology (1999)

Rank/School		Average reputation score (5=highest)
1.	California Institute of Technology	4.9
2.	Massachusetts Institute of Technology	4.8
3.	Stanford University (CA)	4.5
3.	University of California-Berkeley	4.5
5.	Columbia University (NY)	4.3
5.	***University of Michigan-Ann Arbor***	4.3
7.	Harvard University (MA)	4.1
7.	Pennsylvania State University-University Park	4.1
7.	University of Arizona	4.1
10.	University of Chicago	4.0
11.	Cornell University (NY)	3.9
11.	Johns Hopkins University (MD)	3.9
11.	Princeton University (NJ)	3.9
11.	University of California-Los Angeles	3.9
11.	University of California-San Diego	3.9
11.	University of Texas-Austin	3.9
17.	University of Wisconsin-Madison	3.8
18.	Brown University (RI)	3.7
18.	University of Washington	3.7
20.	Yale University (CT)	3.6
21.	University of California-Santa Barbara	3.5
21.	University of Minnesota-Minneapolis	3.5
23.	University of California-Santa Cruz	3.4
23.	Washington University (MO)	3.4
25.	Arizona State University	3.3
25.	SUNY-Stony Brook	3.3
25.	University of California-Davis	3.3

Geochemistry

1.	California Institute of Technology
2.	***University of Michigan-Ann Arbor***
3.	University of California-Berkeley
4.	Massachusetts Institute of Technology
5.	Pennsylvania State University-University Park
6.	Columbia University (NY)
7.	Yale University (CT)
8.	University of Chicago
9.	Harvard University (MA)
10	Washington University (MO)

Sedimentology/Stratigraphy

1.	University of Texas-Austin
2.	***University of Michigan-Ann Arbor***
3.	Pennsylvania State University-University Park
4.	University of Arizona
5.	Stanford University (CA)
6.	Massachusetts Institute of Technology
7.	University of Wisconsin-Madison
8.	Columbia University (NY)
9.	Virginia Tech
10	University of Kansas

Paleontology

1.	University of California-Berkeley
2.	University of Chicago
3.	Harvard University (MA)
4.	***University of Michigan-Ann Arbor***
5.	University of Kansas
6.	Yale University (CT)
7.	University of Iowa
8.	Ohio State University
9.	University of Cincinnati
10	University of Texas-Austin

Alumni News

Ra Eldredge (MS '85) recently announced her departure from BP after 13 profitable years in the company. She and her family will be returning to Alaska to rekindle old friendships, relearn the art of skiing, and bring another young child into the world. For those that want to contact Ra directly, she has included her email address: *jtrautwein@compuserve.com.*

Andy Nyblade (PhD '92) and Sue Brantley have a new daughter, Lena Joan Nyblade, born March 22 in University Park, Pennsylvania. Lena joins her older sister Madeleine in the new Nyblade-Brantley generation.

Steve Smith (BS '97) is a VISTA volunteer in Sitka, Alaska. He writes that Sitka is the most beautiful and peaceful town he could imagine! Besides watching eagles, bears, whale, mountain goats and ravens he is working with elementary school kids and some adult male clients in a halfway home. He is helping the adults to learn how to print their native artwork via a silk screen, as well assisting them with career development and assessment. He's teaching the younger residents health education and junior achievement. Steve thinks about geology in his spare time while hiking on Mt. Edgecumbe, an extinct volcano across the bay.

Gail Nishioka Wayper (M.S., '83) and her husband, John, are the happy recipients of a their first child, Robert, who was born in April 1999. Gail can be reached at *GK160@aol.com.*

Camp Davis Reunion Update

The response to the Camp Davis Reunion on August 10-12th has been overwhelming. So far, we have nearly 150 people signed up! Needless to say, all the cabins in camp are taken, but if anyone else would like to join us - and are willing to camp or find a motel nearby - it is still not too late to sign up. The cost is $50 per adult and covers all meals, including a special BBQ on August 11th. If you have any questions, contact Becky Lange (734-764-7421; becky@umich.edu). This reunion promises to be a great event - we're looking forward to seeing you there!!

Paula Kunde Retires after 14 Years with Geological Sciences

The Department honored Paula Kunde, who after 14 years of service, retired from the University. Paula served the many needs of the faculty and staff including her efforts in preparing the alumni newsletter and maintaining records of present and past members of the Department. We will all miss her contributions and wish her a relaxing retirement.

Faculty, Staff, and Student News

Last fall **Jeff Alt** and **Damon Teagle** attended a Penrose conference on Ophiolites and Ocean Crust in Tomales Bay, California. Discussions with Prof. Rick Varne from the University of Tasmania, has inspired them to initiate another project to investigate the hydrothermal alteration of the Macquarie Island, a desolate sliver of young oceanic crust, that has been tectonically exposed along the Pacific-Australian Plate boundary, far to the south of New Zealand. Jeff presented an invited talk there and at a meeting about hydrogeology of ocean crust in Santa Cruz, just after the fall AGU meeting. Damon spent the festive season in the southern ocean, on ODP Leg 183 to the Kerguelen Plateau, investigating the influence on Large Igneous Province eruptions on ocean chemistry. Thankfully, the expected sequences of monotonous, low temperature altered tholeiitic basalts were partially eclipsed by the completely unpredicted recovery of silicic and alkalic igneous rocks and pyroclastic deposits as well as rare river pebbles of garnet-gneiss! Jeff will spend the Spring in the western Pacific on ODP Leg 185, a geochemistry leg sampling old ocean crust and sediment to investigate recycling in subduction zones. He is also beginning work on serpentinite seamounts in the Mariana forearc, studying hydration and sulfur metasomatism during subduction. After more that six enjoyable and productive years at Michigan, Damon is preparing to move in July to a faculty position at the School of Ocean and Earth Science in the Southampton Oceanography Centre, England. New geochemistry laboratories are presently being built and hopefully this will be an exciting period of growth at one of Europe's major oceanographic institutions. Visitors will be most welcome.

Eric Essene continues to be busy with students and research. **Liping Wang** (MSc, '94; PhD, '99) has successfully defended his dissertation cochaired by **Youxue Zhang** and Eric. Liping is taking a post-doc at Stony Brook Univ. this spring. **Meg Streepey** (MSc, '98; PhD, '01) continues her Adirondacks work with Ben Van Der Pluijm and Eric. She won a prestigious DAAD fellowship and will be spending five months at Univ. Muenster in Germany with Prof. Klaus Mezger (UM postdoc, '89-91). **Casey Donohue** (MSc, '99; PhD, '03) is continuing experiments on trace element partitioning in garnets at UCLA with Craig Manning (himself a former postdoc with Steve Bohlen, MSc, '77; PhD, '79) and Eric. **Eric Tohver** (MSc, '99; PhD, '03) will be exploring the structure, petrology and chronology of Grenville age terranes in Mato Grosso, Brazil, with Ben and Eric. **Craig Carpenter** (MSc, '99; PhD, '03) is finishing a MSc thesis on Bulgarian eclogites and tectonites with Sam, and Eric has become involved with part of that work. **Weidong Dong** (MSc, '00) is working with **Don Snyder** (UM postdoc, '98-00, with Lars Stixrude), Youxue and Eric on studies of mineral inclusions in Chinese diamonds, an outgrowth of **Donggao Zhao's** (PhD, '98) research and of work already published by Youxue.

Eric is running a five-day field trip with Sam and several students this spring to the southern Appalachians, in part to Ducktown, Tennessee, where Bruce Nesbitt (MSc, '76; PhD, '79) did his dissertation with Bill Kelly and Eric. They will also visit Lake Chatuge, Georgia, an area that provided some amusement and garnet pyroxenites ("eclogites") for a project With Drew Isaacs (BSc, '78; MSc, '81), Phil Brown (MSc, '76; PhD, '80), John Valley (MSc, '76; PhD, '80), Don Peacor and Eric nearly 20 years ago. They will be joined for a day in North Carolina to see some real eclogites with Kevin Stewart (BSc, '80), who now is a tenured professor at UNC. Kevin wants everyone to know that he was the TA for Becky Lange and Don Snyder, and that he formed their future careers as petrologists while they were still undergrads at Berkeley! However, because Steve, John, Phil, Drew and Bruce all were Kevin's TAs, it is clear where the real influence began.

Dan Fisher and his students have moved toward completion of a number of projects this winter. Simulation experiments testing the relative efficacy of conventional cladistics and stratocladistics at discovering phylogenetic history were reported in a manuscript submitted to Science by **David Fox**, Dan, and **Lindsey Leighton**. The manuscript, which demonstrates the enormous potential of including stratigraphic data in phylogenetic analysis, fared well with reviewers and editors alike, and may already have appeared by the time you read this. **Josh Trapani** completed his master's project on the use of tusk microstructure for identifying various proboscidean genera. David Fox has successfully defended his dissertation, on dietary and paleoclimate reconstructions for Miocene gomphotheres, and Lindsey Leighton is on-deck for the defense of his dissertation, on functional morphology and phylogeny of productidine brachiopods. These events would be cause enough for celebration, but to top it off, both David and Lindsey recently heard that they had been awarded NSF postdoctoral fellowships. Michigan will loose both to California, David to Santa Cruz and Lindsey to Davis, but we know that as these young men go west, they will be following in the capable footsteps of their new hosts and collaborators, **Paul Koch** and **Sandy Carlson**.

Steve Kesler has spent most of his spare time recently on projects related to the Society of Economic Geologists, for which he was President from April, 1998 to April, 1999. Lots of attention went to the start of construction on a new SEG Headquarters Building in Denver, made possible by $5 million given to the Society by an anonymous donor. Two annual meetings were held by SEG, one in Toronto in October at the GSA meeting and another in Denver in March at the AIME meeting. At Toronto, Steve gave an invited lecture at the NSF-NAS session on Basic Research Opportunities in the Earth Sciences, and at Denver, he delivered his SEG Presidential address entitled Tomorrow's Ore. In March, Steve lectured on recent research on massive iron oxide deposits (largely from **David Borrok**, M.Sc. at Ohio State and attended the Prospectors and Developers Meeting in Toronto. In April, he visited Grigore Simon (Ph.D., 1998), who is working for Shell

Alumni celebrate the December, 1988 groundbreaking for the new headquarters of the Society of Economic Geologists. Tom Melrose, John Thoms, Bob Blair and Steve Kesler (left to right) during lunch shortly after the ceremony.

in the Netherlands, and Jim O'Neil (emeritus, 1998), who is spending a year at the University of Tuebingen with Torsten Vennemann (post-doc, 1990-1995). At home, work with graduate students continues. Jim St. Marie is almost finished with his M.Sc. study of the Pend Oreille mine and the genesis of Fe-rich MVT deposits, and **Zaojun Ye** is about to leave for a summer of field work in Nevada.

Dave Rea spent a busy summer of 1998 planning, talking about, and doing science. He is a member of the newly-formed Climate and Tectonics planning group of the Ocean Drilling Program, a group charged with developing programs that will investigate the linkage between tectonism and climate change on geologic time scales. Dave also was invited to an ODP workshop on the topic of geochemical cycling through subduction zones, and presented the work on sediment cycling through that system he did with **Larry Ruff** a couple of years ago. In June, along with **Ted Moore**, students **Becky Robinson** and **Peter Knoop**, and alums **Steve Hovan** and **Mitch Lyle**, Dave spent 10 days at the core laboratory of Oregon State University. That lab houses the piston cores Ted and Mitch took on the ODP site survey cruise to the east Pacific in December and January of 1997/98. During our visit to the OSU core lab we opened, described, photographed, measured the physical properties of, and sampled that suite of cores. In order to be in the same room as the gamma ray emitter (for measuring sediment bulk density), Dave and Ted had to pass the radiation safety training course at both Michigan and Oregon State. We hope that this work will lead to an ODP cruise in the year 2001, as well as some good theses to be done in Ann Arbor. In August of 1998, Dave, along with **Phil Meyers** and **Ted Moore** attended the 6th International Paleoceanography Congress, held in Lisbon, Portugal. This is a conference that occurs every three years and brings together about 700 paleoceanographers and marine geologists from around the world. Dave was a member of a panel that discussed whether or not CO_2 was the main/only player in long-term Cenozoic climate change (possibly main, certainly not only). Dave's students have been busy working on their various paleoceanographic and paleoclimatic projects. **Libby Prueher** has had her paper on the possibilities of volcanic-related cooling at the time of the onset of northern hemisphere glaciation published by *Geology* last fall. Libby hopes to defend her thesis this spring. **Leah Joseph** participated in ODP Leg 181, a two month deep-sea drilling cruise south and east of New Zealand early last fall. Her objectives were to sample sediments that contained the Cenozoic history of bottom waters flowing from the Antarctic region into the Pacific Basin. This work involves both sedimentological analyses and magnetic fabric work being done in conjunction with Ben van der Pluijm. Leah has been invited to a conference in New Zealand this summer to present her work on the paleoceanogrpahy of the Southern Ocean.

Ben van der Pluijm spent considerable time last Summer and Fall on the development and teaching of the web-supported Global Change course. This two-semester course is co-taught by about 8 faculty from three different schools. Interdisciplinary teaching and reaching are taking a prominent place at Michigan, of which this course is one example. Working with several colleagues from different departments creates new challenges, such as curriculum content, arranging cross-campus meetings, maintaining the course schedule, etc. Yet in spite of the greater effort this course requires, it is a stimulating experience for students and faculty alike based on the feedback received. You can go to the website if you want to see what we are doing, at *http://www.sprl.umich.edu/GCL/*. On the Departmental teaching front, a group of five "solid Earth" faculty **(Carolina Lithgow-Bertelloni, Lars Stixrude, Ben, Rob Van der Voo and Peter van Keken**) created a new graduate course on Tectonophysics last Fall, which offers an advanced overview of the physical Earth and discusses recent developments in this rapidly evolving field. Ben also maintained an (un?)healthy service role as the Department's financial support officer and several university committees, including Chair of the Research Policies Committee. Most of these assignments expire next year, but new duties undoubtedly await. With Spring having arrived early in Ann Arbor, the outdoor season is upon us. Ben will again coach soccer, but has moved from Wouter's team (he is now in the "pros") to Robbie's 1st grade team. Fourteen enthusiastic kids who actually listen to you, what more can you want? Read the next Geoscience News for Ben's annual research update and the summer adventures.

This past year has seen a steep learning curve for **Rob Van der Voo**, as he started his job as Director of the Honors Program in the College of Literature, Science and the Arts. A whole new world of student and collegiate concerns is occupying his time, while he continues to teach in the Department and also still tries to maintain a viable research program. Happily, the research projects in tomography with seismologists Wim Spakman and Harmen Bijwaard of Utrecht University are coming to fruition with one paper published in *Nature*, one other paper in revision and likely to be accepted by *Earth and Planetary Science Letters*, and possibly one more study in the works. As reported in the last issue of *Geoscience News*, the high P-wave velocity anomalies imaged in the deeper mantle under the Asian continent are interpreted as the remnants of oceanic lithosphere. These lithospheric slabs were subducted when oceans closed in continent-continent collisions between

Siberia, Mongolia-North China, Tibetan blocks and India in a Mesozoic-Early Tertiary process of Asian supercontinental amalgamation. Research is also continuing with Associate Research Scientist **Josep Parés** and Prof. **Xiao-Min Fang** (Visiting Scientist, 1996) in a collaboration to study Quaternary and Late Tertiary environmental changes in and around Tibet. Graduate student **John Kollmeier** is about to finish his M.Sc. research, under the joint supervision of Prof. **Ben van der Pluijm** and Rob. John has found that the highly curved Asturian-Cantabrian belt in northern Spain was bent and tightened from an originally more or less straight trend, amplifying on the conclusions of **Arlo Weil's** paleomagnetic studies. Arlo meanwhile has moved on to Precambrian paleomagnetic studies involving rocks from the Grand Canyon, in a collaboration with Prof. **John Wm. Geissman** (Ph.D. '80 and adjunct faculty at U-M). The aim of this work is to establish better paleomagnetic poles for the interval of 1100 to 900 Ma for Laurentia, with which continental reconstructions for that time interval can be improved. Graduate student **Weiming Zhou** is likely to complete his Ph.D. studies later this year, co-directed by Rob and Prof. **Donald R. Peacor.** Weiming's thesis, dealing with alteration of magnetic oxides in ocean-floor basalts, documents that the original size of titanomagnetite grains is an important factor in determining the likely extent of their subsequent alteration. Some very small titanomagnetite grains appear to have been "armored" by surrounding interstitial glass, thereby escaping alteration. They thus seem to preserve their original magnetization and may also be good candidates for determinations of the ancient geomagnetic field intensity.

Degrees Granted

Our congratulations go to the numerous students who have completed their degrees at the University during the last year. Ph.D. degrees awarded include: Dr. David Fox, Dr. Xiaoxhang Luo, Dr. Wen Yi, and Dr. Liping Wang. Masters of Science degrees awarded include: Josh Trapani, and Alex Piotrowski. Bachelor's degrees include: Scott Berger, Leslie Hartig, Craig Smolin, Emily Berolini, Gabriel Bowen, Justin Hersh and Daniel Peters. May these honored students continue their productive careers and maintain the spirit of Michigan that has guided them through their academic experiences in the Department.

In Memoriam

James Arthur Masterson, 73, died February 11, 1999, at his home, following a six-month battle with cancer. He was born July 6, 1925, in St. Paul, Minnesota and was raised and educted in Michigan and Indiana. In 1943, he joined the Army Air Corps and later was honorably discharged with the rank of first lieutenant.

On August 20, 1949, he married Mary Watson at the home of her parents in Grosse Pointe, Michigan. After earning his bachelor's and master's degrees at the University of Michigan, he moved to Casper in 1951. He first worked for Stanolind Oil and Gas; then from 1954 to 1964, he was employed by Canada Southern Oil and Gas. In 1964, he opened offices in Casper for Prenalta Corp. and Bluewater Oil and Gas. Following the sale of Prenalta Corp, 35 year later, he formed Laramide LLD and Laramide Production LLC.

He was a longtime member of the American Association of Petroleum Geologists, the Wyoming Geological Association, the Wyoming Association of Petroleum Landmen, the Rocky Mountain Oil and Gas Association and Independent Petroleum Association of the Mountain States. He was a lifetime member of the American Radio Relay League and was an amateur radio operator for more than 60 years. Jim served the Department of Geological Sciences as a member of the Alumni Advisory Board from 1991 through 1995.

Robert M. Hutchinson, 80, died 13 January 1999 from injures sustained in an automobile accident. Dr. Hutchinson received his BA in Economic Geology from Princeton University in 1941, after which he worked in a civilian capacity until 1942 with the U.S. Army Corps of Engineers. From 1942-1945, he served as an Exploration Geologist with the Strategic Minerals Branch of the U.S. Geological Survey in Washington, engaged in exploration for and mapping of critical war minerals, surface and underground, throughout the United States. In 1948, he received his MA in Geology from the University of Michigan and then assumed the position of instructor of Petrology and Field Methods at the University of Texas where he received his Ph.D in 1953. Dr. Hutchinson then served on the faculty of Kansas State University from 1953 to 1956 after which time he joined the faculty of the Colorado School of Mines. At the time of his death, he was still energetically teaching his highly respected Optical Mineralogy course. He never tired of teaching and his students can be found in every level of the minerals exploration industry and geology profession on nearly every continent.

Spring Banquet, 1999

The annual banquet, sponsored by the Department's Geology Club, was again held in the downtown German Trinkhalle with a full complement of faculty, spouses, and students. This year's attraction, Chef Eric Essene (below), provided his "cutting-edge" assistance in the kitchen. The more discriminating attendees provided an on-site evaluation of beverages (above: Judy Meyers, Suzy Owen, and Joyce Budai). Smiles from everyone—another successful gathering of the Department and friends for 1999.