



Quaternary Geologist and Geomorphologist

NEWSLETTER OF THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Volume 32, Number 1

February 1992

MANAGEMENT BOARD MEETING SAN DIEGO, OCTOBER 1991

The Management Board of the QG&G Division met on Tuesday, October 22, 1991, during the Annual Meeting of the Geological Society of America in San Diego. Attending were: R. Madole, D. Mickelson, S. Wells, P. Calkin, D. Harden, W. Wayne, J. Vitek, P.T. Davis, D. Ritter, B. Molnia, M. Morisawa, F. Donath, R. Dorn, and V. Baker.

The meeting agenda included the following items. (1) Approval of minutes of 1990 meeting. (2) Verification of 1991 election results. (3) Division membership is 1,402, making QG&G the third largest GSA Division. (4) The Division has received a bequest of \$25,000 from the estate of Julia Howard to start an Arthur D. Howard Fund. Interest from the fund, which will be managed by GSA Foundation, will be used to support research grants. (5) The Board discussed the ongoing problem at recent annual meetings of overlapping sessions in Quaternary geology and geomorphology. The solution, beginning in 1993, will be to have only a single "Discipline" box on abstract forms titled

Quaternary Geology and Geomorphology, rather than separate boxes. The program committee should then avoid scheduling concurrent sessions in the same discipline. (6) The Board voted to include the Past Chair on the QG&G Management Board, effective immediately. (7) Beginning in 1992, the Mackin Award will be increased to \$1,000 for the Ph.D. award; the Master's award will remain at \$500. (8) Elsevier will offer the journal **Geomorphology** to Division members for \$50/yr. (9) The Division will continue to support a committee to investigate the health of Quaternary geology and geomorphology; hopefully the committee will expand to include representatives from AGU, AAG, AMQUA, and other organizations. (10) Fred Donath, Institute for Environmental Education, discussed the first annual environmental forum, which will be held in Cincinnati the Sunday before the GSA Annual Meeting. The first forum will discuss ground water and will include legal and legislative aspects. J. Vitek will serve as liaison to the Institute.

QUATERNARY GEOLOGY & GEOMORPHOLOGY DIVISION

Financial Activity Summary August 31, 1991

Division Fund Balance 12/31/90	2,100.49	
1991 Division Dues Income	<u>5,298.00</u>	
Total Division Resources		\$7,398.49
Division Expenses:		
Newsletters and Ballots	638.74	
Member labels	45.00	
Postage, handling & envelopes	<u>332.38</u>	
Total division expenses		<u>1,016.12</u>
Division Fund Balance 8/31/91		\$6,382.37

J. HOOVER MACKIN APPROPRIATED FUND

Financial Activity Summary August 31, 1991

Fund Balance 12/31/90		\$11,583.19
Income		
Contributions	250.00	
Interest	433.51	
Expenses		
Awards 90/91	2,000.00	
Service charges	42.79	
Balance 8/31/91		\$10,223.91

HOW TO HAVE INPUT TO THE DIVISION

1. Submit nominations for Division offices and awards.
2. Submit suggestions, gripes, etc., for consideration by the Division Management Board.
3. Submit contributions to the Division Newsletter.

Correspondence to the Division may be sent to our Division Secretary:

Deborah R. Harden
Department of Geology
San Jose State University
San Jose, CA 95192-0102

Or you may write directly to the Division Chair:

David M. Mickelson
Department of Geology and Geophysics
University of Wisconsin--Madison
Madison, WI 53706-1692

Newsletters are mailed in February and August of each year; deadlines for contributions are January 15 and July 15, respectively. Members are encouraged to use their Division newsletter to communicate with other members. Please send contributions to the Newsletter Editor:

William E. Scott
Cascades Volcano Observatory
U.S. Geological Survey
5400 MacArthur Blvd.
Vancouver, WA 98661
Phone (206) 696-7909 Telefax (206) 696-7866

NEWS FROM THE CHAIR

Dave Mickelson provided the following news items about QG&G committees.

✓ We now have a **Committee on Environment** that is chaired by John Vitek. Other committee members for this year are Marie Morisawa, Gary McKenzie, Jack Ridge, and David Mickelson.

✓ Dave Mickelson and Ron Dorn are working to create a **U.S. Geomorphology Coordinating Board**. They hope that the Board will consist of members of QG&G Division, GSG-AAG, and Hydrology-AGU. Hopefully this can be finalized before the Management Board meeting in Cincinnati.

✓ Vic Baker will continue as chair of the ad hoc **Committee on the Future of Quaternary Geology and Geomorphology**, a.k.a., the scientific health committee. Other members are Art Bloom, Bill Dietrich, Waite Ostercamp, Milan Pavich, Ken Pierce, and Cathy Whitlock. A summary of the forum organized by the committee at San Diego on the future of our profession follows.

SUMMARY OF THE SAN DIEGO FORUM ON SCIENTIFIC HEALTH OF QUATERNARY GEOLOGY AND GEOMORPHOLOGY

On Wednesday, October 23, 1991, at the GSA Annual Meeting in San Diego, about 120 QG&G members and other interested scientists attended a forum to discuss methods for bolstering the scientific health of Quaternary geology and geomorphology. The September 1991 issue of **Quaternary Geologist and Geomorphologist** contains a summary of deliberations of the ad hoc committee of seven chaired by Vic Baker on the future of Quaternary geology and geomorphology. Three of the committee's proposals were introduced by Vic for discussion at the forum: (1) Form an "American Geomorphology Association" to serve as a liaison with the international geomorphology community, a coordinator of geomorphology activities in the U.S., and a unified voice for the geomorphology community in its dealings with the public, governmental organizations, etc. (2) Consider conducting a large-scale research project that would encompass many geomorphologists and focus on a major global concern. The hope is to increase the field's profile and attract major funding. (3) Encourage a National Research Council study of geomorphology that could serve to influence funding agencies and university and governmental administrators.

Interest in formation of an "American Geomorphology Association" was mixed. Most people agreed some coordination is needed, but most didn't see the need for another formal organization with a governed structure and membership. (See note above about **U.S. Geomorphology Coordinating Board**). One fear expressed was that in trying to create a new umbrella organization we would actually add to fragmentation and discourage interaction because geomorphology is a highly integrative science that is pursued by scientists who have a wide range of professional allegiances.

The group seemed fairly negative toward proposing a large-scale research project. Many felt funding opportunities aren't that bad; many geomorphologists are supported on small grants from a variety of funding agencies. Fears were expressed of a large project siphoning off funds that would otherwise support numerous small projects.

The group was generally supportive of developing a rationale (position paper?) for a National Research Council study of geomorphology. Clearly a majority of the group felt that Quaternary geology and geomorphology are poorly funded and get little recognition from both the geologic and broader scientific communities. A similar assessment by an NRC committee coupled with an appreciation for the importance of Quaternary geologic and geomorphologic research in global change and environmental programs would hopefully lead to increased funding and recognition. The committee should investigate this issue further.

1991 QG&G DIVISION AWARDS

The complete citation and acceptances for the Kirk Bryan Award, the Society award that is bestowed by the QG&G Division, will be published in the March 1992 Bulletin. Therefore, in the interest of economy, only excerpts are printed here. As the Distinguished Career Award is solely a Division Award, its citation won't be published elsewhere, and thus is printed in full.

**PRESENTATION OF KIRK BRYAN AWARD TO
MILAN J. PAVICH**

Excerpts from Citation by Steven M. Colman

I am pleased to represent the Quaternary Geology and Geomorphology Division of the Geological Society of America in presenting the Kirk Bryan Award this year to Milan J. Pavich, for his paper "**Processes and Rates of Saprolite Production and Erosion on a Foliated Granitic Rock in the Virginia Piedmont**", which was published in 1986 in the book Rates of Chemical Weathering of Rocks and Minerals. The paper deals with both a classic geomorphic study area, the Appalachian Piedmont, and with classic geomorphic problems, including the evolution of low relief landforms and the rate of formation of weathered regoliths. I note with interest that this is the first time in 30 years that the award goes to a paper dealing predominantly with the eastern United States. Perhaps not coincidentally, the last Kirk Bryan Award to go to such a paper was given to John Hack in 1961. John has had a major influence on Milan's work.

The paper for which Milan receives the Kirk Bryan Award focuses on processes affecting saprolite in a small drainage basin in Virginia, but because the processes that produce and remove saprolite dominate the landscape of the Appalachian Piedmont, the paper documents the complete geomorphic evolution of a Piedmont drainage basin. The paper is unusual in the breadth and diversity of processes studied and of methods used. The delicate interplay among chemical, mineralogical, and physical processes are elegantly illustrated. The implications of the work are not geographically restricted, so that the results are applicable to virtually any landscape in which saprolite forms; only absolute rates vary from place to place. The paper develops a model in which regolith chemistry and mineralogy, soil properties, water chemistry and discharge, slope erosion, and fluvial transport all combine to produce a physical and hydrological balance. With this multidisciplinary approach, Milan neatly documented a classic case of an open-system, steady state landscape. This landscape is produced by the balanced interactions among weathering, pedogenesis, physical erosion, and slow uplift, and is, as Hack suggested, in dynamic equilibrium.

I don't mean to imply that Milan has solved all of the problems of landform evolution on the Piedmont. In particular, the time and spatial scales on which each of the processes operate, and how those processes vary in time and space, need further attention. We all hope that the unresolved questions will provide Milan with an excuse to go back to research when he finishes his present turn at administration.

I am happy to have played a part in Milan's receiving this award, through editing, along with Dave Dethier, the book in which it was published, and in nominating the paper for which the award is given. Unlike many previous citationists, I have not served Milan as a mentor in any way, nor have I worked closely with him in his research. I am simply a friend and colleague who appreciates Milan's work, which truly deserves the Kirk Bryan Award. Congratulations, Milan.

Excerpts from Acceptance by Milan J. Pavich

It is a true honor to receive this award, and I am particularly

pleased to be this year's recipient, first, because of the privilege of sharing the podium with Luna Leopold, Reds Wolman and Steve Colman, all of whom have a special place in Quaternary geology and geomorphology and all of whom I hold in the highest personal regard. Second, because of the focus of this year's meeting on Global Change. Kirk Bryan's work exemplified the role of the geologist in interpreting the effects of geologic processes on human cultures. His concern for rigorous inquiry into the processes of change has never been more timely.

There are some people that I would particularly like to acknowledge for their teaching and patience. I feel my career began in my high school biology class with a teacher known as Lash LaRue who encouraged experimentation rather than memorizing taxonomy. I took many experiences gained in his class on with me to Franklin and Marshall where I had the great fortune of another excellent biologist, Joe Richardson, to guide my interest in nature. I also give a special thanks to Dusty Ritter, who as my first geology professor and freshman advisor listened to my freshman angst and got me interested in the non-organic Earth. John Moss convinced me to go to Hopkins, much against my will, and I owe him a debt of gratitude for his insight into my adaptation to the Hopkins' style of inquiry.

At Hopkins I was most fortunate to work with Owen Bricker, who introduced me to drainage basins, and to Reds Wolman who, even though he moved at the speed of light, always shared an interested question and seemed to understand what I was doing even when I didn't. I also had the great fortune of being introduced to pedology by John Cady.

At the U.S. Geological Survey, I was greatly influenced by my relationship with John Hack, and I'm sorry that he can't be here tonight to accept my thanks. I also was very fortunate to work with Bill Leo and Steve Obermeier, whose interest in saprolite greatly contributed to the success of my research,

This meeting has been an exceptional experience because of the focus on Global Change Research.....Reflecting on Bryan's work at Chaco Canyon, one can ask whether geologic information would have saved the Chaco culture. Similarly, can it be useful in saving ours? I think that the answer is yes, and we are the umbilicus.

Clearly there is evidence that climate change, and the complex chain of events that it can trigger, can lead to cultural collapse. The Anasazi were stressed by alluviation or channel incision. The Norse in Greenland were a farming culture that couldn't survive the Little Ice Age. If culture is nonadaptive to the changing conditions it will not survive.

What could an Anasazi Kirk Bryan have told his people? Assuming that the cycles of alluviation and incision could have been read from the record, the basic message would have been to adapt. What can we advise a massive, immobile, industrial infrastructure?

First, I think we need to teach that the problems we face are in fact serious.

Second, I think we need to carefully define the most relevant question for geomorphology in the early part of the 21st century. The "age of surfaces" is one that I feel is particularly relevant.

**PRESENTATION OF THE
DISTINGUISHED CAREER AWARD TO
LUNA B. LEOPOLD**

Citation by M. Gordon Wolman

Third, we need to preface our statements with a request to not kill the messenger. Geology has provided much in the service to industrialization, and geology can serve in its further evolution.

Fourth, as exemplified by Bryan's work, we need to stress there are lessons in everything. All of the people that I mentioned earlier had the gift of seeing the infinite in the minute, the seemingly mundane.

Fifth, we need to recognize that we are at an unprecedented stage in our ability to communicate. The information we gather can be translated and transmitted in ways never possible before. Thus our efforts, as obscure as they may seem, do have a potential audience. One that I feel will soon be demanding more, not less.

Finally, and most importantly, we need to provide multiple working hypotheses for the interpretation of the data we collect. Geologic data can be used in a variety of models, and our models of geologic processes will improve only if we maintain the flexibility of creating new, and discarding old, hypotheses. We need to promote alternative cultural hypotheses. Culture is, after all, a model of the human relationship to particular physical, biological or psychological environments.

If cultures are to persist, they need to be adaptive by being open to competing multiple hypotheses. The history of cultures is a testament to their nonadaptation to change. We have the opportunity to do better. I believe that by producing better geologic information, expanding our temporal and spatial scales of observation, we can aid in the evolution of better cultural models.

I sincerely thank you for your recognition of my work. I felt for a long time that the seemingly mundane study of familiar dirt is worthwhile. It's comforting to have some support in that peculiar pursuit. I'm not sure that my work is worthy of such recognition, but you have certainly made me feel the worthiness of the effort.

This Award has provided a reminder of the role of research in the social context. I am very pleased to be the focus of that reminder in 1991.



Recipients and citationists for 1991 Kirk Bryan and Distinguished Career Awards at the QG&G Annual Awards Ceremony in San Diego; l. to rt., M. Gordon Wolman, Luna B. Leopold, Milan J. Pavich, and Steven M. Colman

Luna B. Leopold continues a distinguished career in geomorphology. His published contributions spanning more than half a century range from studies of fundamental processes at the surface of the earth to analyses of critical resource and environmental policies. His career has been remarkable in joining earth science, administration and policy, not simply chronologically but concurrently, in an interwoven and closely related fabric.

An engineer, meteorologist, and geologist, Luna began his career with the U.S. Soil Conservation Service in New Mexico. Family country, his work on characteristics of the climate and hydrology and their relationship to landscape processes is marked by history as well as science. Indeed, P. St. George Cooke, Abert, Ruxton, Fremont, not to speak of Coronado, Lunas, and Bergeres, are ready presences when he is in the field in the Southwest. He pioneered work on rainfall frequency and flood hydrography early on, and continues an interest in alluvial stratigraphy and channel behavior today.

A meteorologist with the Air Force, Leopold published on forecasting and, as early as 1951, on the climatic conditions of the Los Angeles area in relation to air pollution. Continuing in the field, as Chief Meteorologist of the Pineapple Research Institute in Hawaii, he contributed not only to an understanding of the climate of the islands, but established one of the first controlled experiments on the efficacy of cloud seeding in increasing precipitation.

Publication in 1953 of the Hydraulic Geometry of Stream Channels and Some Physiographic Implications (U.S. Geological Survey, Prof. Paper 252) with Thomas Maddock, Jr., not only initiated a distinguished lineage of studies by Leopold and colleagues, but stimulated quantitative field and laboratory inquiries on all facets of the landscape throughout the world. Measurement of geomorphic processes and careful mapping of landscape features are hallmarks of Leopold's style and approach. (Since rivers, mosquitoes and black flies appear to be symbiotic, those who have counted slow clicks of current meters in sluggish waters, or held stadia rods at bobbing water surfaces can vicariously share this "style.")

Luna Leopold's observations and measurements are guided by theory, hypothesis, and their forerunners, hunches. With Walter Langbein, Leopold introduced the use of variational principles involving the distribution of energy into studies of landform evolution, river and hillslope processes. In virtually every aspect of geomorphology, hydrology, and climatology in which he has worked, he has introduced fresh ideas stimulating new inquiry by scholars throughout the world. A few of these include; frequency distribution of rainfall intensities, downstream velocity in rivers, channel form and pattern, hillslope runoff and erosion, energy distribution and random phenomena in streams, drainage networks, and topography, longitudinal profiles of bedrock rivers, reconstruction of Pleistocene hydrology and climate, and channel response to base-level change. Much of Leopold's work is interdisciplinary including continuing efforts to integrate the physical and biological attributes of river systems.

Not all of Leopold's ideas have met with instantaneous acceptance. Another geomorphologist of weak conviction, Hoover Mackin, debated the "supposed" downstream increase in velocity of rivers, and argued that the shape of the "fishing pole," meaning the longitudinal profile of a river, is controlled downstream at the handle and not "upstream" at the tip.

Leopold's career is not science alone. As Chief Hydrologist of the U.S. Geological Survey he initiated a broad program stimulating continuing productive research in hydrology, geomorphology, and water resources. He established both the Vigil Network of river channels for long-term observation of channel change, and the network of Benchmark Gaging Stations in nearly pristine watersheds to provide baselines against which to measure both natural and anthropogenic change in stream and drainage basin behavior. The value of these Benchmarks has already been realized in demonstrating the changing impact of acid precipitation on streams in the Northeast, a prospective use not emphasized in the original design. A remarkable series of Circulars of the USGS by Luna deal with philosophic as well as practical aspects of water management, conservation, ecology, and environment. These are joined by analyses of issues ranging from flood control to environmental policy. Luna Leopold is both analyst and active participant combining continuing scientific inquiry with a passion for the earth, the legacy it represents and the future it must be nurtured to sustain.

The dynamism of Luna Leopold's career is only partly captured by the magnitude and seminal character of his publications. He is indefatigably inspiring--whether you are tired or not. In fact, he has new ideas even when he should be tired. Data obtained in the field is plotted in the field, air mattresses were originally for the effete (he succumbed) but camp food should be good, eaten hot, and don't kick up the dust. True fishermen tie their own flies, whether destined for a light landing at a precise spot at the head of a pool or--for a treetop. Luna teaches everywhere--in a lively weekly seminar, from the podium in a formal address, in otherwise tedious committee meetings, and, of course, in the field. Not only did he establish a continuing research project on river behavior and sediment transport on the East Fork near Pinedale, Wyoming, he initiated there the first American Geomorphological Field Trip.

Attendance at the short courses given at Pinedale demonstrates both the catholicity of the field of geomorphology and Luna's breadth of interest. Ecologists, foresters, geologists, engineers, and policy analysts talk rivers, landscape, and environment recognizing that the earth is an inseparable whole--not a collection of disciplines.

Luna B. Leopold's contributions to geomorphology are immense, they are visible in his publications and in the host of students and colleagues pursuing an understanding of how the surface of the earth works. Luna has received many honorary degrees in this country and abroad, including most recently the National Medal of Science. There is no higher award than direct recognition by one's peers. I am especially pleased to serve as citationist for the 1991 Distinguished Career Award of the Quaternary Geology and Geomorphology Division of the Geological Society of America. I do so as a representative of the Division and as a friend, with an immeasurable debt to Luna for inspiration and help, one I share with many colleagues.

NOMINATIONS FOR 1992 DISTINGUISHED CAREER AWARD

The Distinguished Career Award was established in 1985 to recognize Quaternary geologists and geomorphologists who have demonstrated excellence in their contributions to science. The recipient need not be a member of the Geological Society of America or the QG&G Division. Nominations will be accepted at any time during the year, but the deadline is April 15, 1992. Nominations should be sent to the Division Secretary, Deborah Harden, and require: (1) a supporting letter of nomination documenting the contributions of the nominee, (2) three letters or signatures of additional members supporting the nomination, (3) a resumé of the candidate (such as a photocopy from American Men and Women of Science), along with a bibliography of the nominee's most significant papers. The Division Chair will appoint a committee to oversee the collection and completion of award nominations. The names of unsuccessful candidates proposed for the award will remain open without renomination for the following three years. Further consideration after this period will require renomination.

1992 GSA ANNUAL MEETING

The QG&G Division is co-sponsoring two theme sessions and one symposium at the 1992 Annual Meeting of the Geological Society of America in Cincinnati. The symposium, **History of Late Glacial Runoff from the Southern Laurentide Ice Sheet**, is being organized by Jim Teller (University of Manitoba). It will concern the paleohydrology of meltwater generation and its flow from the southern Laurentide ice sheet through a complex and varying network of drainage routes. It will examine the late glacial records of ice-marginal lakes and their overflow to the oceans from the Canadian Plains through the Great Lakes and south to the Gulf of Mexico and east to the Atlantic. Jim is also organizing a theme session entitled, **Origin and Nature of Meltwater Release from the Laurentide Ice Sheet and Its Impact on Late Glacial Oceans**. Finally, the Division will co-sponsor a theme session entitled, **Environmental Issues in Urban Settings**. This is being organized by Jack Vitek (Oklahoma State University) and John Giardino (Texas A&M) and will consider environmental issues related to population density such as water supply, garbage disposal, and adaption to geomorphic processes such as floods, landslides, coastal processes, and other natural events.

VOLUNTEERS NEEDED FOR QG&G STANDING COMMITTEE ON EDUCATIONAL PROGRAMS AND ISSUES

QG&G Chair Dave Mickelson is looking for volunteers to serve on a Division Standing Committee on Educational Programs and Issues. There is a good deal of interest in GSA to develop educational initiatives, and Dave has received a request from Edward Geary (see below), the new coordinator for educational programs, to develop a profile of what the Division has done in the past and what it might do in the future. In addition, there is interest in co-sponsoring a session on precollege educational activities with the Geoscience Education Division. Is anyone willing to chair this committee? Is anyone willing to be a member if not chair? If interested, please contact Dave Mickelson.

**FRIENDS OF THE PLEISTOCENE
1992 FIELD TRIPS**

South-Central Cell: March 27-29, 1992

Rolfe Mandel and Chris Caran will lead a trip to the Inner Gulf Coastal Plain of Texas, near San Antonio, that focuses on Tertiary and Quaternary alluvial stratigraphy, paleosols, and landscape evolution. Other topics that will be discussed at various stops include paleontology, paleobotany, and archaeology. Controversy and lively debate are guaranteed by the leaders. To receive more information, write to Rolfe Mandel, Department of Geography-Geology, University of Nebraska-Omaha, Omaha, NE 68182-0199.

Pacific Cell: May 22-24, 1992

Gary Carver and Bud Burke (Humboldt State University) and Dorothy Merritt (Franklin and Marshall College) are organizing a trip to north coastal California that will examine Quaternary tectonics, stratigraphy, soils, and geomorphology in the area near Arcata and the Mendocino Triple Junction. Information will be mailed shortly to those on the Pacific Cell mailing list.

Rocky Mountain Cell: September(?) 1992

Ken Pierce (US Geological Survey-Denver) is organizing a trip to Jackson Hole, Wyoming, that focuses on glacial history. An announcement containing details will be mailed to Rocky Mountain Friends this spring.

BINGHAMPTON GEOMORPHOLOGY SYMPOSIA

The 23rd Binghampton Geomorphology Symposium, **Geomorphic Systems**, will be held 25-27 September 1992 at Miami University, Oxford, OH. The symposium will explore the structure, function, and behavior of both generalized earth surface systems and specific geomorphic systems such as drainage basins, catenas, hillslopes, and shore zones. Contact organizers for information: Jonathan D. Phillips, Department of Geography and Planning, East Carolina University, Greenville, NC 27858-4353, (919) 757-6082, and William H. Renwick, Department of Geography, Miami University, Oxford, OH 45056, (512) 529-1362.

The 24th symposium will be held August 25, 1993, as part of the Third International Geomorphology Conference (see below) at McMaster University in Hamilton, Ontario, Canada. J.D. Vitek (Oklahoma State University) and J.R. Giardino (Texas A&M) are organizing a symposium of invited papers on **Geomorphology: the Research Frontier and Beyond**.

TENTH SYMPOSIUM ON COASTAL SEDIMENTOLOGY

The 10th Symposium on Coastal Sedimentology will be held as part of the Third International Geomorphology Conference (see below), McMaster University, Hamilton, Ontario, Canada. The topic will be **Beach Ridges**. William F. Tanner (Geology Department, Florida State University, Tallahassee, FL 32306) is organizing the Coastal Sedimentology Symposium; contact him for more information.

**THIRD INTERNATIONAL
GEOMORPHOLOGY CONFERENCE
With 24th Binghampton Symposium
and 10th Symposium on Coastal Sedimentology**

**International Association of Geomorphologists
23-29 August 1993, McMaster University**

The second circular with registration, abstract, and field excursion details has been sent out; a third circular will be mailed in March 1993 to all persons who have completed advanced registration. Deadline for advanced registration, abstracts, and 20% deposit for field conference excursions is December 31, 1992. For more information contact Third International Geomorphology Conference, Department of Geography, McMaster University, Hamilton, Ontario, Canada L8S 4K1, (416) 525-9140 Ext. 4535, FAX (416) 546-0463, E-Mail GEOMORPH.

**INQUA COMMISSION ON FORMATION AND PROPERTIES
OF GLACIAL DEPOSITS: Work Groups on
Glacial Tectonics and Mapping Glacial Deposits**

A field conference and GIS workshop will be held in mid-May 1993 in Regina, Saskatchewan, Canada. For information contact: D.J. Sauchyn (Department of Geography, University of Regina, Regina, Saskatchewan, Canada, S4S 0A2 Canada; phone (306) 585-4030; FAX (306) 585-4815) or J.S. Aber (Earth Science, Emporia State University, Emporia, KS 66801; phone (316) 341-5981; FAX (316) 341-5997). Manuscript deadline is June 1, 1992; abstract deadline is February 1, 1993.

**GEOLOGY FIELD SEMINAR
Coast of Maine, Summer 1992**

Dr. Harold W. Borns, Jr., will lead a field seminar, **The Late Glacial History of Eastern Maine: A Microcosm of Global Environmental Change**, July 7-13. Additional information can be obtained from Eagle Hill Wildlife Research Station, Steuben, Maine 04680; phone (207) 546-2821. Numerous courses in biological sciences are also offered at the station.

NEW BOOK SHELF

Quaternary Ecology, a Paleoecological Perspective
by Hazel R. Delcourt and Paul A. Delcourt

Published by Chapman-Hall, 29 West 35th St., New York, NY 10001. Hardbound, \$74.50; paperback, \$35.00.

Contents: The paleoecological perspective. Dispersal, invasion, expansion, and migrational strategies of populations. Plant succession. Gradients, continua, and ecotones. Factors that structure communities. Ecosystem patterns and processes. Application of Quaternary ecology to future global change. References. Index.

QUESTIONNAIRE ON EDUCATIONAL PROGRAMS

Edward Geary, new GSA coordinator for educational programs, has asked for the following information from members of the QG&G Division. If you respond to any of these questions in the affirmative, please cut out this questionnaire, fill in your name, and send it to Dave Mickelson, Department of Geology and Geophysics, University of Wisconsin-Madison, 1215 W. Dayton St., Madison, WI 53706. Deadline is April 1, 1992.

1. Are you involved in precollege or college earth science education outreach?
2. Are you a Partner for Excellence?
3. Are you willing to act as a reviewer for precollege or college earth science education materials related to QG&G?

4. Would you be willing to work with SAGE Program to co-sponsor a session on precollege educational activities at an annual or regional meeting? Are you willing to write up a brief career description for QG&G including information on employment, salary, types of activities, and educational requirements?

In the space below, please indicate any educational initiatives you think the Division might be interested in developing.

Name: LAST FIRST

JONATHAN O. DAVIS SCHOLARSHIP Quaternary Sciences Center Desert Research Institute

Jonathan O. Davis, a prominent U.S. geologist and geoarchaeologist, was tragically killed in an automobile accident in December 1990. The family and friends of Jonathan have established an endowment which provides monies for the Jonathan O. Davis Scholarship. This scholarship will be given annually to support the field research of a graduate student working on the Quaternary geology of the Great Basin or surrounding areas. The initial grant will be \$750. The scholarship, administered by the Quaternary Sciences Center of the Desert Research Institute, is open to graduate students enrolled in a M.S. or Ph.D. program at any U.S. university. Quaternary geology as used here encompasses a wide range of topics normally considered as part of Quaternary science. The research, however, must have a substantial geologic component or demonstrate a strong reliance on geologic techniques.

The application deadline for 1992 is past, but look for announcements for the 1993 award.

If you wish to help the endowment grow, contributions can be sent to: Executive Director, Quaternary Sciences Center, Desert Research Institute, P.O. Box 60220, Reno, NV 89506. Checks should be made out to the Board of Regents-DRI. Please indicate on the check or in a separate note that the donation is for the Jonathan O. Davis Scholarship Fund.

HANS JENNY, 1899-1992

Hans Jenny, Professor Emeritus of Soil Science at the University of California, Berkeley, passed away on January 9, 1992, at the age of 92. Dr. Jenny is best known to geologists for his book, **Factors of Soil Formation**, published by McGraw-Hill in 1941, in which he proposed that soils be studied as open systems dependent on factors such as climate, organisms, relief, parent material, time, and, as of 1991, the influence of humans. Based on his approach, many studies of soils became integral to geomorphic and Quaternary geologic studies, the most notable being the soil chronosequence. Also, his work on soil carbon and nitrogen contributed tremendously to the work on terrestrial carbon in global change studies.

A native of Switzerland, born on February 7, 1899, Dr. Jenny received a doctorate in agricultural chemistry from the Swiss Federal Institute of Technology in Zurich (1927). He also received honorary doctorates from the University of California, Berkeley, and the University of Glessen in Germany. He officially retired in 1967, but continued to conduct research for the following 25 years, which included publication of his book, **The Soil Resource: Origin and Behavior**, field studies of Mt. Kilimanjaro at age 82, and field studies of the Pygmy Forest in California until his last months. On behalf of his accomplishments and efforts with his wife, Jean, to preserve soils and ecosystems in California, contributions can be sent to the "Hans Jenny Fund", c/o Sierra Club Foundation, 220 Sansome Street, San Francisco, CA 94104.

--Contributed by Jennifer Harden

IN MEMORIAM

Charles F. Bassett	Unknown	Morris F. Skinner	12/15/89
Marian M. Fidler	04/09/91	Oscar W. Tollefson	Unknown
Frederick K. Heller	01/01/91	Aaron C. Waters	05/17/91



BIOGRAPHIES OF THE CANDIDATES
QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

CALKIN, PARKER E., b Syracuse, NY, April 33; m 55; c 2. QUATERNARY GEOLOGY, GEOMORPHOLOGY. Educ: Tufts, BS, 55; Univ Brit Columbia, MSc, 59; Ohio State Univ. PhD (geol), 63. Prof Exp: Asst Prof SUNY Coll at Buffalo, 63-65; Asst Prof 65-68 to Assoc Prof 68-75 to Prof SUNY at Buffalo 75-; Concurrent Pos: Vis scholar Univ Cambridge, 70-71, 86; Vis scholar Univ Colo, 79. Mem: Geol Soc Am (fel), Quaternary Geology & Geomorph (panel 86-88), Am Quat Assn (councilor 85-88), Int Glaciol Soc, Sigma Xi (pres. Buf. Ch. 74), NYSGA (pres. -82). Res: glacial - Quaternary geology and geomorphology Alaska, Antarctica, Great Lakes - eastern North America; environmental geology of Great Lakes shorelines in New York. Mailing add: Dept. Geol, State Univ of New York at Buffalo, Buffalo, NY 14260.

COLMAN, STEVEN M., b New Kensington, PA, April 1, 49; m 72; c 2. QUATERNARY GEOLOGY, GEOCHRONOLOGY, PALEOCLIMATOLOGY. Educ: Notre Dame Univ, BS, 71; Penn State Univ, MS, 74; Univ. Colorado, PhD, 1977. Prof Exp: RESEARCH GEOLOGIST, US Geol Surv, Menlo Park, CA, 72-74; USGS, Denver, CO, 75-83; USGS, Woods Hole, MA, 83-. Mem: Geol Soc Am (fel), Am Quat Assn (Council), Am Geophys Union. Hon & Awards: NDEA Fellowship, 71-73; Geol Soc Am QG&G Panel, 85-86; Geol Soc Am, Kirk Bryan Award, 84. Res: Lacustrine and estuarine history and paleoenvironments, sea level and coastal geologic evolution, Quaternary dating methods, soils and weathering processes, glacial chronology. Mailing Add: U.S. Geological Survey, Woods Hole, MA 02543.

GIARDINO, JOHN R., b Pueblo, CO, October 21, 46; m 69; c 1. QUATERNARY GEOLOGY GEOMORPHOLOGY. Educ: Univ of Southern Colorado, BS, 69; Arizona State Univ, MS, 71; Univ of Nebraska, Ph.D., 79. Prof Exp: Lecturer, Univ Zambia, 72-74; Asst.Prof., Texas Tech Univ, 78-84; Assoc. Prof., Texas A&M Univ, 84-88; Prof. and Head, Texas A&M Univ, 89-present. Mem: Geol Soc Am; Am Quat Assn; Int Permafrost Assoc, NAGT, Sigma Xi. Res: Quat., geomorphology, engineering geology, periglacial, rock glaciers, coastal. Mailing add: Department of Geography, Texas A&M University, College Station, TX 77843-3147.

GILLESPIE, Alan R., b Schenectady, NY, Oct 22, 47; m 73; c 2. QUATERNARY GEOLOGY, GEOCHRONOLOGY, REMOTE SENSING. Educ: Stanford, BS 69; Caltech PhD (geol) 82. Prof. Exp: Mmbr Tech Staff, NASA/JPL 69-87; Vice Pres., Geolimages, Inc., 75-79. Res. Assoc. Prof., Univ. Washington, 87-. Adjunct Prof., Humboldt State Univ., 88-. Hon. Awards: AGU, editor's citation for reviews, 1985, 1990. Mem: Geol. Soc. Am; Am. Geophys. Union; AMQUA. Res: Glacial geology of Sierra Nevada, Paleo equilibrium-line altitudes, weathering, ⁴⁰Ar-³⁹Ar dating, relative dating, image processing, spectral mixture analysis. Mailing Add: Dept. Geological Sciences, AJ-20, Univ. Washington, Seattle WA 98195.

HANSEL, Ardith K, b Edgewood, IA, Aug 27, 48. QUATERNARY GEOLOGY, GEOMORPHOLOGY. Educ: Univ N Iowa, BA, 70; Univ N Iowa, MA, 76; Univ Illinois, Ph D, 80. Prof. Exp: Instructor, Iowa St Univ, 74-75; Research Asst-Assoc, Illinois St Geol Surv, 79-80; Assist-Assoc geologist, Illinois St Geol Surv, 80-88; GEOLOGIST, ILLINOIS ST GEOL SURV, 88-. Mem: Geol Soc Am, AMQUA. Res: Quaternary stratigraphy and sedimentology; glacial geology and geomorphology; late glacial and postglacial lake-level fluctuations in the Lake Michigan basin. Mailing add: Illinois St Geol Surv, 615 E Peabody, Champaign, IL 61820.

HARDEN, DEBORAH R., b Pittsfield, MA, Sept. 19, 50; m 79; c 2; GEOMORPHOLOGY, FLUVIAL PROCESSES, QUATERNARY GEOLOGY. Educ: Stanford University, BS, MS, 73; Univ. Colo Ph.D., 82. Prof Exp: Phys Sci Tech, Hydrologist, US Geol Surv, 71-78; Geologist, Woodward-Clyde Consultants, 80-83; Consultant, Instructor, College of San Mateo, 84-85; ASST PROF, SAN JOSE STATE UNIVERSITY, 86-. Mem: Geol Soc Am, 79-; Current Res: Incised meanders, Quaternary terraces, calcic soils, central Colo Plateau; Offroad vehicle impacts, Hollister, CA; Drainage disruption, Calaveras Fault, CA. Mailing Add. Dept. Geology, San Jose State University, San Jose, CA 95192-0102

KOCHEL, R. Craig, b Lancaster, PA, December 16, 53; m 75; c 2. GEOMORPHOLOGY. Educ: Franklin & Marshall College, BA, 1975; Southern Illinois Univ., MS, 1977; Univ. Texas at Austin, PhD, 1980. Prof. Exp: Asst. prof, Univ. Virginia 80-81, 82-84; Asst. prof, SUNY Fredonia 81-82; Asst.-Assoc. prof, Southern Illinois Univ. 84-90; ASSOC. PROF AND MacARTHUR CHAIR, BUCKNELL UNIV, 90-. Mem: Geol Soc Am (fel), Sigma Xi, YBRA. Res: Flood geomorphology, paleohydrology, fluvial geomorphology, alluvial fans, environmental geology, barrier island geomorphology, climate and geomorphic processes, groundwater geomorphology, planetary geomorphology. Mailing Add: Department of Geology, Bucknell University, Lewisburg, PA 17837.

LEONARD, ERIC M., b San Francisco, CA, Sept 1, 49; m 89; c 1. QUATERNARY GEOLOGY, GLACIAL GEOLOGY, GEOMORPHOLOGY. Educ: Univ. California Berkeley, A.B. 71; Simon Fraser, M.A. 75., Univ. Colorado, PhD, 1981. Prof. Exp. Instructor Colorado Col 81-2, Asst Prof Colorado Col 82-88, ASSOC PROF, COLORADO COL 88-. Res Affil INSTAAR, Univ of Colorado. Mem. GSA, AGU, AMQUA. Res: Glacial geology and Pleistocene ice dynamics, Colorado Rockies; glacial lake sedimentation and Holocene glacial history, Canadian Rockies; marine terrace stratigraphy and coastal neotectonics, Chile; rock glacier kinematics, Colorado Rockies. Mailing Add: Dept. of Geology, Colorado College, Colorado Springs, CO 80903.

LOWELL, THOMAS V., b Lincoln, ME, Feb 07, 54; m 1991. QUATERNARY GEOLOGY, GLACIAL GEOLOGY. Educ: Rensselaer Polytechnic Institute, BS, 1976; University of Maine at Orono, MS, 1980; State University of New York at Buffalo, PhD 1987. Prof Exp: contract geologist, Maine Geological Survey, 78-90; Research Associate Greenland Ice Sheet Project, 80; Research Associate Institute for Quaternary Studies, University of Maine 85-86; regional compiler Maine Geological Survey, 80-83. ASSISTANT PROFESSOR, 1986-, DEPARTMENT OF GEOLOGY, UNIVERSITY OF CINCINNATI. Mem: Geol. Soc. Am; AMQUA, Inter. Glaciological Society, Sigma Xi, Ohio Academy of Science, Geological Society of Maine. Res: glacial geology of northern Maine; reconstruction of ice flow history; sea level changes and deglaciation, Gulf of Maine; glacial erosion processes; till genesis and lithostratigraphy Ohio; radiocarbon dating of glacial advances; geoarcheology, loess deposition Indiana. Mailing Add: Department of Geology, University of Cincinnati, Cincinnati, OH, 45226.

MODE, WILLIAM N, b Jefferson, WI, September 10, 51; m 74; c 2. QUATERNARY GEOLOGY, PALYNOLOGY. Educ: Augustana College, AB, 73; Univ Wisconsin, MS(2), 76; Univ Colorado, PhD, 80; Prof Exp: Post-Doc Fellow, Inst Polar Studies and Dept Zoology, Ohio State Univ, 80-81; Asst-Assoc-PROF, DEPT OF GEOLOGY, UNIV WI OSHKOSH 81-. Mem: Geol Soc Am; AMQUA; CANQUA; Sigma XI; Arctic Inst NA; NAGT; WI Acad Sciences, Arts, and Letters. Res: Quaternary stratigraphy and climatic change, Canadian Arctic and Midwest. Mailing Add: Dept. of Geology, Univ of Wisconsin Oshkosh, Oshkosh, WI 54901-8649.

WELLS, STEPHEN G., b Linton, IN, March 4, 49; m 74 c 2. GEOMORPHOLOGY, QUATERNARY GEOLOGY, ENVIRONMENTAL GEOLOGY. Educ: Indiana Univ., BS, 71; Univ. Cincinnati, MS, 1973; Univ. Cincinnati, PhD, 76. Prof. Exp: Asst. Prof, Univ. New Mex., 76-82; Assoc. Prof., Univ. New Mex., 82-89; PROF. and CHAIRMAN, DEPT. OF GEOLOGY, UNIV. OF NEW MEX., 89-. Concurrent pos: Faculty research assoc., US Air Force/Am. Soc. Eng. Educ., 77; AAAS Desert & Arid Zones Research Panel, 79; USGS Faculty appt., 82-85; Quat. Geol. & Geom. Panel 83-85; Edit. Board, GSA Geology, 84-90; Edit. Board, Geomorphology, 85-; Visiting Affiliate, Los Alamos Nat. Lab, 89. Hon & Awards: Presidential Lecturer, Univ. of New Mex., 88-90. Mem: Geol. Soc. Am.; AGU; Int. Assoc. Sed.; AMQUA; NM Geol. Soc. Res: desert geomorphology and Quaternary landscape evolution; surficial processes and land management in semiarid watersheds; Quaternary climate change and hydrologic responses; tectonic and volcanic geomorphology. Mailing Add: Dept. of Geology, Univ. of New Mexico, Albuquerque, NM 87131.