



Quaternary Geologist and Geomorphologist

NEWSLETTER OF THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Volume 25, no. 2

September 1985

SLATE OF CANDIDATES FOR 1985 DIVISION ELECTION

The Division Nominating Committee composed of William C. Bradley, Chairman, David M. Mickelson, and Stephen G. Wells has compiled the following slate of candidates for the 1985 Division election.

Chairman.....	Gail M. Ashley
First Vice-Chairman.....	Victor R Baker
Second Vice-Chairman.....	James C. Knox
	George I. Smith
Panel Members.....	Jon C Roothroyd
	R. M. Bud Burke
	Robert J. Fulton
	Thomas C. Gustavson
	W. Hilton Johnson
	Louis J. Maher, Jr.

NOMINATIONS FOR THE 1986 PANEL MEMBERS

Clip out and mail this ballot before November 15, 1985, to:
Richard F. Madole
U.S. Geological Survey
Box 25046, MS 966
Denver, CO 80225

All members except Division officers, present or retiring Panel members, and Student Associates are eligible for nomination to the Panel. The six names receiving the highest number of votes will appear on the annual ballot. Each voting affiliate of the Division (member other than Student Associate) may nominate up to three persons.

- (1) _____
 (2) _____
 (3) _____

 Name of Nominator

DIVISION FINANCIAL STATEMENT FOR CALENDAR YEAR 1984

Financial condition of the OG&G Division as of December 31, 1984:

OG&G Division Fund	
Fund balance 12/31/83	\$ 908.26
Dues income 1984	2216.00
Transfer from Awards Fund (4/84)	546.00
Total Division resources and income.....	\$3670.26
Division expenses	\$1488.48
Funds transferred to Mackin Fund	1090.89
Total deductions.....	\$2579.37
Adjusted Division Fund balance as of 12/31/84.....	\$1090.89
J. Hoover Mackin Appropriated Fund	
Fund balance 12/31/84.....	\$7257.90
Earnings and contributions	\$ 508.27
Division Fund transfer	1090.89
Total income.....	\$1599.16
Grant Awards	(\$1000.00)
J. Hoover Mackin Fund balance as of 12/31/84.....	\$7857.06

MACKIN GRANT APPLICATIONS FOR 1986

The deadline for receipt of applications for the Mackin Grant for research in geomorphology or Quaternary geology is February 15. Two awards will be made, one to a Master's degree candidate and one to a Ph. D. candidate. Winners will be decided by April 15, 1986.

Application forms may be obtained from the Division Secretary, Richard F. Madole, U.S. Geological Survey, Box 25046, MS 966, Denver, CO 80225.

1985 MACKIN GRANT WINNERS

Eighteen applications for Mackin Grants were received in 1985. Eleven were from M.S. degree candidates and seven were from Ph.D. candidates.

The Mackin Grant for a M.S. degree candidate was awarded to Karin A. Hoover, University of Washington, for study of "The relation of fluvial processes to facies: the Holocene stratigraphy and sedimentology of the Wells Reservoir area, eastern Washington" under the supervision of Stephen C. Porter, Joanne Bourgeois, J. D. Smith, and Thomas Dunne.

The Mackin Grant for a Ph.D. candidate was awarded to Peter D. Lea, University of Colorado, for study of "Late-Quaternary stratigraphy and paleoenvironments of the Nushagak region, southwestern Alaska" under the supervision of John T. Andrews, David M. Hopkins, and Robert C. Walter.

1985 MACKIN GRANT COMMITTEE

The Management Board made several recommendations for improving the Mackin Grant evaluation procedure at the meeting in Indianapolis in 1983. One of the major recommendations was to increase the size of the committee from four to seven members. This was to be accomplished by appointing three at-large committee members to join the four Management Board members who form the nucleus of the Mackin Grant committee according to Division bylaws.

The new evaluation procedure was fully implemented for the first time in 1985 and was very effective. The three at-large committee members made the difference. The at-large committee members for 1985 were:

Arthur L. Bloom
David M. Hopkins
Louis J. Maher, Jr.

On behalf of the Division, I want to thank these three individuals for their good work and their willingness to serve.

GLADYS W. COLE MEMORIAL RESEARCH AWARD FOR 1985

Athol D. Abrahams, State University of New York at Buffalo, is the recipient of the Gladys W. Cole Memorial Research Award for 1985. The amount of the award this year is \$1800. It will be used for study of rock-slope form in the Mojave Desert.

COLE MEMORIAL RESEARCH AWARD APPLICATIONS FOR 1986

Guidelines for administration of the Cole Award were modified in 1984. The limits on the age of the investigator, the minimum amount of the award, and restrictions on reapplication for support were changed. This award is for investigations of the geomorphology of semiarid and arid terrains in the United States and Mexico. It will be given each year to a GSA Fellow between 30 and 65 years of age who has published one or more significant papers in geomorphology. Funds cannot be used for work already accomplished, but recipients of a previous award may reapply if additional support is needed to complete their work. The minimum amount of the award has been increased to \$1,500. Application

forms for the Cole Award may be obtained from the Executive Director, The Geological Society of America, P.O. Box 9140, Boulder, CO 80301; Phone (303) 447-2020. Applications must be postmarked by February 15, 1986, to be eligible.

NOMINATIONS FOR THE KIRK BRYAN AWARD FOR 1986

Nominations for the Kirk Bryan Award for 1986 will be accepted until December 1, 1985. To nominate a paper for the Kirk Bryan Award simply identify the paper and provide a statement about its significance. Send nominations to the Division Secretary, Richard F. Madole, U.S. Geological Survey, Box 25046, MS 966, Denver, CO 80225. The Kirk Bryan Award is for a specific work published within the past 5 years. The work may be by a single author or several authors. Note that the deadline for submitting nominations has been changed. Previously, it was February 1.

1985 KIRK BRYAN AWARD

The Kirk Bryan Award will not be given in 1985 because too few nominations were received. Nominations received in 1985 will be retained and reconsidered for the 1986 Kirk Bryan Award.

The procedure for soliciting nominations for the Kirk Bryan Award was an item on the agenda of the Management Board Meeting in Reno. The following is a summary of the discussion of this agenda item as it appeared in the QG&G Division Report to Council, May 1985. "Chairman Easterbrook discussed the difficulties encountered in obtaining a suitable number of nominations for the Kirk Bryan Award in some years and commented on the desirability of greater membership participation in the nomination process. Although the Kirk Bryan Award need not be given annually, Division policy is to give the award whenever possible, especially as there is generally no shortage of worthy papers, just a shortage of nominations. It was decided that future issues of the Division newsletter will include a clip-out form for making Kirk Bryan Award nominations. Hopefully, by making it easier to nominate papers, more nominations will be received." A clip-out form was included in the January 1985 Newsletter but did not achieve the desired result.

Members of the Panel and Division Officers have since provided several suggestions for obtaining a suitable number of nominations. These suggestions will be evaluated at the Management Board Meeting in Orlando.

CHANGE IN NEWSLETTER PUBLICATION SCHEDULE

The publication schedule for the Newsletter has been changed to make compliance with various deadlines (grant applications, nominations, election ballots, etc.) easier. The first issue of the Newsletter will be received in March rather than January and the second issue will be received in September rather than June. Members wishing to use the Newsletter as a means of communicating with the Division membership must provide the information to the Division Secretary by July 20 for inclusion in the September Newsletter and by January 15 for inclusion in the March Newsletter.

ACKNOWLEDGMENTS TO PANEL MEMBERS RETIRING IN 1985

As Division Secretary and Chairman of the Division Panel, I want to thank, on behalf of the Division, those Panel members whose terms expire in 1985 for the service they gave so generously. Thanks for a job well done:

Jane L. Forsyth
David M. Mickelson
Stephen G. Wells

DIVISION-SPONSORED SYMPOSIUM, 1985 ANNUAL MEETING, ORLANDO, FLORIDA

The Division is sponsoring a half-day symposium on "Sedimentary processes and deposits of low-energy coastlines." This symposium has been coordinated with the symposium on "Engineering geology of low-energy coastlines" sponsored by the Engineering Geology Division. The two symposia will be held in consecutive sessions in the same room (times and place listed below) seating capacity 616; Albert C. Hine and Daniel F. Belknap are the convenors of the Quaternary Geology and Geomorphology symposium and Robert L. Schuster is the convenor of the Engineering Geology symposium.

Hine and Belknap have organized a symposium that will appeal to a broad range of interests. The community of coastal geologists/process-oriented sedimentologists has been historically interested in relatively high wave energy, sandy barrier beaches and barrier islands. Consequently, low wave energy, fine-grained/organic/biologically dominated coasts are not as well known as high-energy coastlines even though they are common and include, for example, the enormous length of the interior coast of North Carolina (shorelines of all the estuaries and Pamlico Sound), the coast of the Chesapeake Bay, the leeward sides of large carbonate islands such as Andros Island on the Bahama Banks, and approximately one-third of Florida's 1300 km long coastline. In addition, low-energy coasts may have been much more common in the geologic past. Coastlines bordering the low-gradient sea-floors of ancient epicontinental embayments probably received lower wave energy flux than many of the modern, sandy coastlines that are found along the continental margin adjacent to the deep sea. Since epicontinental seas were more common in the past than at present, many shallow-marine deposits seen in core or outcrop may have formed in low-energy settings.

Dr. Schuster also has organized a symposium that will interest a broad range of specialists. Care has been taken to coordinate the content of the two symposia in much the same manner as was done for the highly successful cosponsored symposium on "Debris Flows/Avalanches: Process, Sedimentology, and Hazard Mitigation" held at the Annual Meeting in Reno, November 1984.

NO: 5 SESSION Monday, Oct 28

GSA QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION SYMPOSIUM: SEDIMENTARY PROCESSES AND DEPOSITS OF LOW ENERGY COASTLINES

8CD Orange Blossom, Convention Center, 8:00 a.m.

Albert C. Hine and Daniel F. Belknap, Presiding

- 1 Miles O. Hayes*: LOW-ENERGY COASTS: AN ASSESSMENT.....8:00 A

- 2 Eugene A. Shinn*: THE SOFT SHORELINE.....8:30 A
- 3 J. T. Wells*, G. P. Kemp: DOWNDRIFT DELTAIC SEDIMENTATION: THE ORIGIN AND DYNAMICS OF LOUISIANA MUDFLATS.....8:50 A
- 4 Robert G. Gerdes, Shea Penland*: LOW-ENERGY BEACH RIDGE SEDIMENTATION IN THE MISSISSIPPI RIVER DELTA PLAIN.....9:10 A
- 5 A. C. Hine*, D. F. Belknap, E. B. Osking J. G. Hutton, M. R. Evans: BEDROCK CONTROLS OF SEDIMENTATION ALONG A MARSH-DOMINATED, OPEN-MARINE, LOW ENERGY COAST-LINE: WEST-CENTRAL FLORIDA.....9:30 A
- 6 Randall W. Parkinson*: HOLOCENE SEDIMENTATION AND COASTAL RESPONSE TO RISING SEA LEVEL ALONG A LOW ENERGY COAST, SOUTHWEST FLORIDA.....9:50 A
- 7 Michael J. Chrzastowski*, John C. Kraft: PRE-TRANSGRESSION MORPHOLOGY AND HOLOCENE STRATIGRAPHY OF THE DELAWARE ESTUARINE AND ATLANTIC COASTS.....10:10 A
- 8 J. W. Pierce, J. F. Donoghue*: SHORELINE EROSION AND SEDIMENT BUDGET IN A LOW-ENERGY ESTUARY: RHODE RIVER, MARYLAND...10:30 A
- 9 Stanley R. Riggs*: EVOLUTION OF COUPLED FLUVIAL/ESTUARINE/BARRIER COASTAL SYSTEMS THROUGH THE LATE QUATERNARY OF NORTH-EASTERN NORTH CAROLINA.....10:50 A
- 10 Diane L. Kamola*: BACK BARRIER FACIES OF A MICROTIDAL COASTLINE, UPPER CRETACEOUS BLACKHAWK FORMATION, UTAH.....11:10 A

NO: 14 SESSION Monday, Oct. 28

GSA ENGINEERING GEOLOGY DIVISION SYMPOSIUM: ENGINEERING GEOLOGY OF LOW-ENERGY COASTLINES
8CD Orange Blossom, Convention Center, 2:00 p.m.

Robert L. Schuster, Presiding

- 1 Randall K. Bushey*: TIDAL INLET INFLUENCE ON LONGSHORE TRANSPORT PROCESSES ON LOW-ENERGY SHORELINES.....2:00 P
- 2 Christopher C. Mathewson*: SEVERE STORM PROCESSES ON LOW-ENERGY COASTLINES.....2:20 P
- 3 John R. May, Lawson M. Smith*: ENGINEERING-GEOLOGIC MAPPING OF THE MISSISSIPPI RIVER DELTAIC PLAIN.....2:40 P
- 4 Stephen C. Knowles*, Suzette K. May: OCEAN CITY INLET, MARYLAND: A CATALYST FOR COASTAL CHANGE.....3:00 P
- 5 Charles W. Finkl, Jr.*, Pamela A. Matlack: ACCELERATED BEACH EROSION IN THE SOUTH ATLANTIC COASTAL ZONE: IS MITIGATION OF ARTIFICIALLY RENOURISHED BEACHES IN SE FLORIDA A RATIONAL PRACTICE OR FOLLY?.....3:20 P
- 6 Thomas F. Donn*, Mark R. Boardman: EROSION OF ROCKY CARBONATE COASTLINES: ANDROS ISLAND, BAHAMAS.....3:40 P

COFFEE BREAK.....4:00 P

- 7 John R. Reid*, Mark D. Millsop: BANK RECESSION ALONG A SEASONALLY HIGH ENERGY SHORELINE, LAKE SAKAKAWEA, NORTH DAKOTA....4:20 P
- 8 David J. Davies*, Robert J. Stanton, Jr., Eric N. Powell: CORE ANALYSIS OF HOLOCENE SHELL BEDS: A TOOL FOR PREDICTING COASTAL ZONE STORM FREQUENCY AND SEVERITY.....4:40 P
- 9 Joann Mossa*, Shea Penland, Thomas F. Moslow: EFFECTS OF COASTAL ENGINEERING PROJECTS ON SEDIMENT DISPERSAL ALONG LOUISIANA'S BARRIER SHORELINES.....5:00 P

- 10 **Earl F. Titcomb, Jr., Robert V. O'Kelley***:
DREDGING IN COASTAL LIMESTONE TERRAINS IN
THE SOUTHEASTERN UNITED STATES.....5:20 P
- 11 **Christopher C. Mathewson***: SITING OF DREDGED
MATERIAL ISLANDS IN BAYS AND ESTUARIES
ALONG LOW-ENERGY COASTLINES.....5:40 P

**DIVISION-SPONSORED WORKSHOP 1985 ANNUAL MEETING,
ORLANDO, FLORIDA**

Antarctic Glacial Marine Sedimentation
Sunday, Oct. 27, 8:00 a.m. to 5:00 p.m.

Because of its glacial setting, great depth, and rugged shelf topography, the seafloor surrounding Antarctica is one of the most unique sedimentary environments on earth. During recent years there has been a concentrated marine geologic survey of the continental margin, resulting in the acquisition of hundreds of piston cores and thousands of kilometers of high-resolution seismic records. This new information has resulted in a much greater understanding of sedimentation in this unique setting. This workshop will consist of combined lectures and examination of seismic records and cores. Emphasis will be placed on sedimentary processes, facies models, and applications to ancient glacial deposits. Faculty: John B. Anderson, Rice University. Dr. Anderson has participated in eight marine geologic expeditions to the Antarctic region. His research over the past 8 years has been dedicated to establishing a better awareness of sedimentation on the Antarctic continental margin. He has authored and coauthored numerous papers on the subject. Fee: \$50, includes course notes. For information: John B. Anderson, Department of Geology, Rice University, P.O. Box 1892, Houston, Texas 77251; (713) 527-4884.

FIELD TRIPS, 1985 ANNUAL MEETING, ORLANDO, FLORIDA

Field trips for the Orlando meeting are selected and scheduled by the Local GSA Organizing Committee. The Division has no role with respect to field trips, except to encourage members to propose them. Fourteen field trips are scheduled. A partial list of trips of possible interest to Division members include:

Premeeting Trips

- Sedimentology of a Barrier Island and Marsh Dominated Coast, West-Central Florida.** Richard A. David, Jr., University of South Florida, Tampa; Albert C. Hine, University of South Florida, St. Petersburg; and Daniel F. Belknap, University of Maine, Orono. 3 days, October 25, 26, 27.
- Pleistocene and Holocene Carbonate Environments on San Salvador Island, Bahamas.** H. Allen Curran, Smith College, Northampton, Massachusetts; Roger J. Bain, University of Akron, Akron, Ohio; James L. Carew, College of Charleston, Charleston, South Carolina; John E. Mylroie, Murray State University, Murray, Kentucky; James W. Teeter, University of Akron; and Brian White, Smith College. 3 1/2 days, October 24, 25, 26, 27.
- Karst Hydrogeology of Central and North Florida.** Barry F. Beck, University of Central Florida, Orlando. 1 day (meet previous evening), October 27.
- Coastal Geology and the Occurrence of Beachrock: Central Florida Atlantic Coast.** Donald K. Stauble, Florida Institute of Technology,

Melbourne, and Donald F. McNeill, Environmental Science and Engineering, Inc., Gainesville, Florida. 3 days, October 25, 26, 27.

During Meeting Trip

- Winter Park Sinkhole.** Self-guided with handout prepared by Florida Sinkhole Research Institute. Transportation provided. Two separate one-half day trips. October 29, 30.

Post-meeting Trips

- Cenozoic Geology of the Apalachicola River Area, Northwest Florida.** Walter Schmidt, Florida Bureau of Geology, Tallahassee; Jeffrey Wagner, Northwest Florida Water Management District, Havana; Howard Kirk, Floridin Clay Company, Quincy. 1 day, November 1.
- Coastal Morphology of Southwest Florida and Its Relevance to Past Human Occupation of That Coast.** Jerald T. Milanich, Florida State Museum, Gainesville; Thomas M. Messimer, Messimer & Associates, Cape Coral. 3 days, October 31, November 1, 2.

DIVISION COCKTAIL PARTY, 1985 ANNUAL MEETING, ORLANDO, FLORIDA

The Division will host its Second Annual Cocktail Party on Tuesday night, October 29, in the Jasmine Room of the Marriott Hotel from 7:30-10:30 p.m. The idea for this event grew out of the need for a time that the entire membership could gather socially. The Annual Luncheon is an important event, but it does not provide much time for socializing, and only a limited number can attend. It was felt that more student members would be able to attend a Cocktail Party. The first annual party at Reno was a big success.

**FOP ROCKY MOUNTAIN CELL FIELD TRIP, OCTOBER 4-6, 1985--
GEOMORPHOLOGY, QUATERNARY GEOLOGY AND SOILS OF THE
ANIMAS RIVER VALLEY, COLORADO AND NEW MEXICO**

The Rocky Mountain Cell of the Friends of the Pleistocene will hold its annual field trip on October 4-6 in the Animas River valley. This area on the southern flank of the San Juan Mountains had one of the largest late-Pleistocene icefield-outlet glacier complexes in the Rocky Mountain region. Moraines of only three major advances are preserved, but a more complete sequence of roughly 20 outwash terraces extends down-valley from the moraines.

Major discussion topics will include: features of the glaciated upper valley, such as dated bog deposits, karst topography and landslides; the stratigraphy of till, outwash, eolian and alluvial fan deposits; till fabrics in a relatively wet dispositional environment; phasing of deposition in this transitional area between the mountains and the Colorado Plateau; soil development with increasing age of the parent material and varying climatic conditions; and structural and possible neotectonic influences on terrace development.

The trip will begin near Molas Lake, Colorado (south of Silverton) and end near Farmington, New Mexico. To register, contact Mary Gillam, Department of Geological Sciences, University of Colorado, Boulder, CO 80309; (303) 444-2644. Co-leading the trip will be Dr. Robert W. Blair of Fort Lewis College.

**NINTH BIENNIAL AMQUA MEETING, UNIVERSITY OF ILLINOIS,
CHAMPAIGN, ILLINOIS, JUNE 2-4, 1986**

The Ninth Biennial AMQUA meeting will be held at the University of Illinois-Champaign campus, June 2-4, 1986. The program theme will be "Environments at Glacier Margins--Past and Present." Kenneth L. Pierce, is program committee chairman, and committee members include Raymond S. Bradley, Richard E. Morlan, and Thomas D. Hamilton. Wayne M. Wendland is in charge of the local arrangements committee and James E. King is organizing the field trips.

Some of the topics to be featured include: (1) physical (glaciological) processes and conditions of the ice margin--temperature conditions, sedimentation, erosion, etc.; (2) periglacial areas and phenomena broadly defined; (3) polar and maritime margins of the ice sheet; (4) human interaction with ice-margin phenomena; (5) plant and animal aspects of ice-marginal and periglacial areas; and (6) present-day analogs of Pleistocene conditions.

Field trips to nearby type sections and archeological sites will be held both before and after the meetings. For information, contact Wayne M. Wendland, AMQUA Local Arrangements Committee, Illinois State Water Survey, 2204 Griffith Dr., Champaign, IL 61820 (217-333-0729).

FIFTH INTERNATIONAL CONFERENCE ON PERMAFROST

The Fifth International Conference on Permafrost will be held in Trondheim, Norway, in June 1988. Most of the publications of the Fourth International Conference, Fairbanks, Alaska, 1983, are now available from the following sources:

Permafrost: Fourth International Conference, Abstracts and Program. Fairbanks, University of Alaska, 1983, 278 p. with supplement, \$10.00. (Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701.)

Permafrost: Fourth International Conference. Washington, D.C., National Academy Press, 1524 p., \$65.00. (National Academy Press, 2101 Constitution Avenue, NW, Washington, D.C. 20418.)

Guidebooks 1-7. Alaska Division of Geological and Geophysical Surveys, 794 University Avenue, Basement, Fairbanks, Alaska 99701.

Permafrost: A Bibliography, 1978-1982. Glaciological Data Report GD-14, Boulder, World Data Center for Glaciology, 1983, 172 p., \$10.00. (University of Colorado, Box 449, Boulder, Colorado 80309.)

RECIPIENTS OF THE KIRK BRYAN AWARD

1958 Luna B. Leopold and Thomas J. Maddock, Jr. (U.S. Geological Survey)
The hydraulic geometry of stream channels and some physiographic implications: U.S. Geological Survey Professional Paper 252, 57 p., 1953.

1959 Jack L. Hough (University of Illinois)
Geology of the Great Lakes: University of Illinois Press, 313 p., 1958.

1960 John F. Nye (University of Bristol)
The distribution of stress and velocity in glaciers and ice sheets: Royal Society Academy, Proceedings A, v. 239, p. 113-133, 1957.

1961 John T. Hack (U.S. Geological Survey)
Studies of longitudinal stream profiles in Virginia and Maryland: U.S. Geological Survey Professional Paper 294B, 97 p., 1957.

1962 Anders Rapp (University of Uppsala)
Recent development of mountain slopes in Karkevagge and surroundings, northern Scandinavia: Geografiska Annaler, v. 42, p. 71-200, 1960.

1963 Arthur H. Lachenbruch (U.S. Geological Survey)
Mechanics of thermal contraction cracks and ice-wedge polygons in permafrost: Geological Society of America Special Paper 70, 69 p., 1962.

1964 Robert P. Sharp (California Institute of Technology)
Wind ripples: Journal of Geology, v. 71, p. 617-636, 1963.

1965 Gerald M. Richmond (U.S. Geological Survey)
Quaternary stratigraphy of the La Sal Mountains, Utah: U.S. Geological Survey Professional Paper 324, 135 p., 1962.

1966 Charles S. Denny (U.S. Geological Survey)
Alluvial fans in the Death Valley region: U.S. Geological Survey Professional Paper 466, 62 p., 1965.

1967 Clyde A. Wahrhaftig (University of California at Berkeley)
Stepped topography of the southern Sierra Nevada, California: Geological Society of America Bulletin, v. 76, p. 1165-1190, 1965.

1968 David M. Hopkins (U.S. Geological Survey)
Quaternary marine transgressions in Alaska, in The Bering Land Bridge: Stanford University Press, p. 47-90, 1967.

1969 Ronald L. Shreve (University of California-Los Angeles)
The Blackhawk landslide: Geological Society of America Special Paper 108, 47 p., 1968.

1970 Harold E. Malde (U.S. Geological Survey)
The catastrophic late Pleistocene Bonneville flood in the Snake River Plain, Idaho: U.S. Geological Survey Professional Paper 596, 52 p., 1968.

1971 A Lincoln Washburn (University of Washington)
Instrumental observations of mass wasting in the Mesters Vig district, northeast Greenland: Medd. Gronland, bd. 166, nr. 4, 1967; and Weathering, frost action, and patterned ground in the Mesters Vig district, northeast Greenland: Med. Gronland, bd. 166, nr. 4, 1969.

1972 Dwight R. Crandell (U.S. Geological Survey)
Postglacial lahars from Mount Rainier volcano, Washington: U.S. Geological Survey Professional Paper 677, 75 p., 1971.

1973 John T. Andrews (University of Colorado)
A geomorphological study of post-glacial uplift: London, Institute of British Geographers, Special Publication No. 2, 156 p., 1970.

1974 Robert V. Ruhe (Indiana University)
Quaternary landscapes in Iowa: Iowa State University Press, 255 p., 1969.

1975 James B. Benedict (Colorado State University)
Downslope soil movement in a Colorado alpine region--rates, processes and climatic significance: Arctic and Alpine Research, v. 2, p. 165-226, 1970.

1976 Geoffrey S. Boulton (University of East Anglia)
Processes and patterns of glacial erosion: Binghamton, State University of New York, Geomorphology Symposium, 5th, Proceedings, 1974.

1977 Michael A. Church (University of British Columbia)
Baffin Island sandurs: A study of Arctic fluvial processes: Geological Survey of Canada Bulletin 216, 208 p., 1972.

- 1978 Richard L. Hay (University of California at Berkeley)
Geology of the Olduvai Gorge--a study of sedimentation in a semiarid basin: Berkeley, University of California Press, 1976.
- 1979 Stanley A. Schumm (Colorado State University)
The Fluvial System: New York, John Wiley and Sons, 338 p., 1977.
- 1980 James A. Clark, William E. Farrell, W. Richard Peltier
Global changes in postglacial sea level--A numerical calculation: Quaternary Research, v. 9, p. 265-287, 1978.
- 1981 J. Ross Mackay (University of British Columbia)
Pingos of the Tuktoyaktuk Peninsula area, Northwest Territories: Geographie Physique et Quaternaire, v. 33, no. 1, p. 3-61, 1979.
- 1982 Kenneth L. Pierce (U.S. Geological Survey)
History and dynamics of glaciation in the northern Yellowstone Park area: U.S. Geological Survey Professional Paper 729-F, 90 p., 1979.
- 1983 Leland H. Gile, John W. Hawley, Robert B. Grossman
Soils and Geomorphology in the Basin and Range Area of Southern New Mexico--Guidebook to the Desert Project: New Mexico Bureau of Mines and Mineral Resources Memoir 39, 222 p., 1981.
- 1984 Steven M. Colman (U.S. Geological Survey)
Chemical weathering of basalts and andesites--Evidence from weathering rinds: U.S. Geological Survey Professional Paper 1246, 51 p., 1982.
- 1985 No award given.

PAST CHAIRMEN OF THE DIVISION

1985 D. F. Eschman	1974 D. R. Crandell	1964 A. L. Washburn
1984 D. J. Easterbrook	1973 H. E. Malde	1963 L. B. Leopold
1983 J. T. Andrews	1972 R. F. Flint	1962 J. G. Fyles
1982 T. L. Pewe	1971 R. P. Goldthwait	1961 J. T. Hack
1981 M. Morisawa	1970 D. M. Hopkins	1960 C. S. Denny
1980 S. A. Schumm	1969 A. D. Howard	1959 G. W. White
1979 W. B. Bull	1968 W. D. Thornbury	1958 G. W. White
1978 A. L. Bloom	1967 H. E. Wright, Jr.	1957 J. H. Mackin
1977 W. C. Bradley	1966 R. F. Black	1956 J. H. Mackin
1976 L. H. Lattman	1965 G. M. Richmond	1955 E. Blackwelder



**THE
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