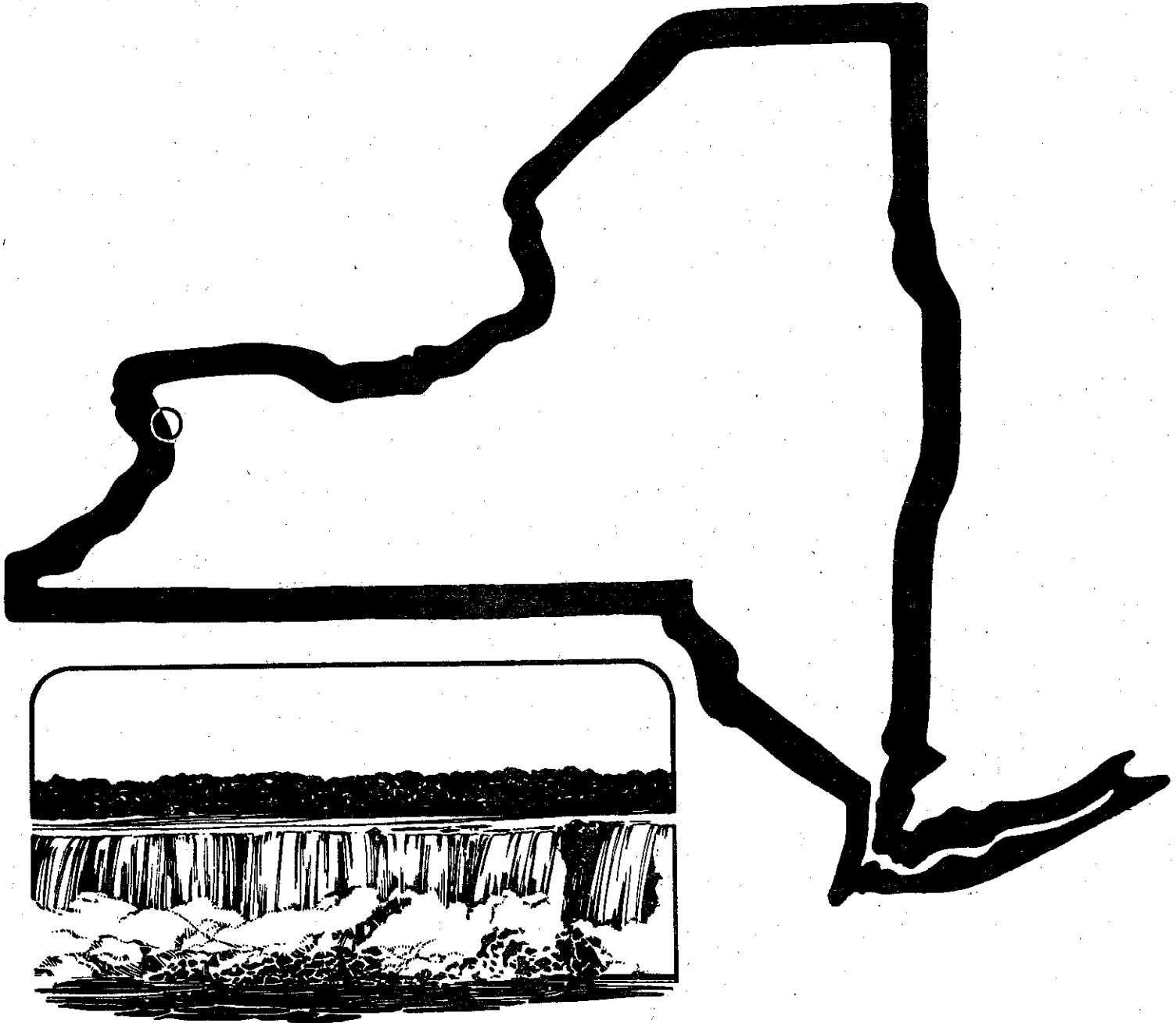


VOLUME 19, NO. 1 • MAY 1984

NEW YORK GLACIOGRAM



DEPARTMENT OF GEOLOGICAL SCIENCES

State University of New York at Buffalo

Buffalo, New York 14226

EDITORIAL POLICY

The GLACIOGRAM is intended to be a collection of informal notes concentrated on Quaternary work relating to New York either directly or indirectly. It is not a formal publication and is not circulated to libraries nor to individuals not engaged in Quaternary research. The information included is often of a preliminary and tentative nature and as such should not be quoted and certainly not without communication with appropriate authors. One of the charter contributors (Muller, v. 6(1)) has suggested that reference to information in the GLACIOGRAM be identified merely as informal communication; I agree with this suggestion.

Parker E. Calkin



Jerry Brown, CREEL

Publications of the
Fourth International Conference on Permafrost

Proceedings

- 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)
- Permafrost: Fourth International Conference, Final Proceedings, est. 500 p. (in preparation).

Guidebooks

- Published by Alaska Division of Geological and Geophysical Surveys, 794 University Avenue, Basement, Fairbanks, Alaska 99701
- Guidebook 1: Richardson and Glenn Highways, Alaska. T.L. Péwé and R.D. Reger (eds.), 1983, 263 p., \$7.50.
- Guidebook 2: Colville River Delta, Alaska. H.J. Walker (ed.), 1983, 34 p., \$2.00.
- Guidebook 3: Northern Yukon Territory and Mackenzie Delta, Canada. H.M. French and J.A. Heginbottom (eds.), 1983, 183 p., \$8.50.
- Guidebook 4: Elliott and Dalton Highways, Fox to Prudhoe Bay, Alaska. J. Brown and R.A. Kreig (eds.), 1983, 230 p., \$7.50.
- Guidebook 5: Prudhoe Bay, Alaska. S.E. Rawlinson (ed.), approx. 200 p., \$6.00.
- Guidebook 6: The Alaskan Railroad Between Anchorage and Fairbanks. T.C. Fuglestad (ed.), approx. 130 p., in preparation.

Other

- 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)

Donald Cadwell, N. Y. S. Geological Survey

There are several topics I would like to report on for the spring glaciogram:

1. Status of surficial mapping on the Hudson-Mohawk 1:250,000 scale sheet:

We have now completed 161 of 211 7½ minute quadrangles (76%) on the Hudson-Mohawk sheet. We are getting even closer to the completion of this sheet. The largest void areas are north of the Mohawk River - just waiting for someone to help finish. Anyone who wants to help can call me at 518-473-8056. As usual, our budget will be limited.

2. The proceedings volume from the Pleistocene Time-, Rock-, and Morpho-Stratigraphy Symposium (1983, Kiamesha Lake) is currently out for external review. This volume will be published as N.Y.S. Museum Bulletin 455, with the title "The Wisconsinan Stage of the First Geological District of eastern New York." This should be published by the spring 1985. The papers in this volume describe the glacial geology of areas within the First Geological District of 1837, and the volume is to appear during the Sesquicentennial of the founding of the New York State Geological Survey; hence, the title of the volume.

3. My surficial mapping during 1983 concentrated in the upper Susquehanna River drainage basin, between Cassville and Cobleskill. The ice margin positions that both Jay Fleisher and I have mapped are going to be the focus of our field trip at the 1984 NYSGA Meeting at Hamilton College. We will examine the style of deglaciation and correlation of ice margins in this Appalachian Plateau region. We anticipate considerable debate about the Valley Heads and Cassville-Cooperstown ice margins.

4. My field work this summer will be to the south and west of Cassville.

Parker Calkin, Geological Sciences, SUNY Buffalo

A good deal of my time has been spent assembling "Evolution of the Great Lakes" for this month's GAC London Symposium on the Quaternary history of the Great Lakes. I continue to be amazed how much of our accepted Quaternary history was compiled before 1900. Hopefully, a Geological Association of Canada Special Paper will carry the proceedings of this symposium and be available in about one year.

There has been little progress in the Buffalo area for a few seasons, but PhD. student Pierrette Turcott will rekindle her study of till stratigraphy of western New York with some concentrated field measurements this summer in Cattaraugus and Erie Counties.

Peter Clark, Geological Sciences, University of Illinois

Jim Street and I are leading the 47th Eastern Friends of the Pleistocene field trip through the St. Lawrence Valley, New York. We will investigate till stratigraphy, styles of deglaciation, and lake and marine history. The trip will end at historic Covey Hill Gap.

I will be working in the northern New York area this summer. Major objectives are to identify specific ice marginal positions of the ice sheet retreating northwards out of the Adirondacks. This will include mapping strandlines formed in local, ice dammed lakes in the northern Adirondacks. I also plan to study sedimentation in Iroquois and post-Iroquois lakes as revealed in superb exposures of perched deltas.

Recent publications that may be of interest:

Clark, Peter, and Karrow, P.F., 1983, Till stratigraphy in the St. Lawrence Valley near Malone, New York: Revised glacial history and stratigraphic nomenclature: Geological Society of America Bulletin, v. 94, p. 1308-1318.

(A Discussion by A. Dreimanis and Reply by Clark and Karrow of this paper is forthcoming).

Clark, Peter, and Karrow, P.F., 1984, Late Pleistocene water bodies in the St. Lawrence Lowland, New York, and regional correlations: Geological Society of America Bulletin, v. 95, in press.

Donald Coates, SUNY Binghamton

Since May there have occurred a few more items that I can report. First of all here is a listing of students doing glacial and glacially related work:

- Dave Ozsvath for PH.D. Glacial mapping in the western Catskills
- Matt Gubitosa for M.A.. Glacial studies in the Hancock region.
- Tim Pagano for M.A. . Hydrologic comparison of north and south flowing streams.
- David Terry for M.A. Detailed sedimentology of glacial deposits near Windsor
- Llewelan Moose for M.A. Analysis of deltas in Seneca and Cayuga Lakes.

My own work has been very diverse. I continue to build up a big data base as a result of numerous test holes, monitor wells, backhoe pits, and other surface and near-surface studies done for various New York State and industrial clients. For example I have new information on sites at Massena, Rochester, Buffalo, Penn Yan, and many sites within a 20 mile radius of Binghamton. Some of these studies have been allied to geophysical investigations and to rising head and falling head permeability tests. Among the many bits of information obtained are such goodies as:

1. The reliability of seismic refraction when compared to actual boring logs at the same spots. We have had very good results with the geophysics comparison.
2. The ability of the geophysics data to delineate depths of ablation till and colluviated/frost riven horizons, as contrasted to in situ and unmolested lodgment till.
3. Complete vindication of my till shadow studies. For example many till depths of 200 feet or so have been entirely substantiated.

G.H. Crowl, Ohio Wesleyan University

The map and report on Denny Marchaud's work on old drifts in the Susquahanna Valley is now under review. I am compiling a map of old drift occurrences in central and western PA. Even at this stage, questions raise their ugly heads. A small group of us will have a field conference in May and try and ascertain the Illinoian boundary in the valley to the west branch of the Susquahanna near Loch Haven.

Robert Dineen, N. Y. S. Geological Survey

This winter was spent assimilating the field data that I collected in the eastern Mohawk Valley last year. I can now trace the Delmar readvance ice margin northwest from Rotterdam to Pattersonville. The margin is quite vague near the Mohawk River, but can be seen quite distinctly in the Galway Lake area, where it is marked by a kame moraine that extends northeast from Perth to Porters Corners. The Delmar readvance dammed a lake at an elevation of 800 ft in the Sacandaga and Mohawk Valleys. A lower lake received outwash that built the 730 ft Hagaman delta (north of Amsterdam), the outwash came from a recessional margin at Galway Lake. Both lakes spilled through the Delanson-Duanesburg-Bozenkill channel.

I am still a Fan of the Alluvium. Bob Funk, Don Lewis, and Beth Wellman (of the NYS Museum) and I have found distinct evidence for two major cut-and-fill episodes in the Susquehanna valley. These episodes appear to correlate with shifts from moist to dry climate. The earlier episode of floodplain scour and subsequent terrace building occurs during the earliest Pine Pollen Zone, as the Spruce-fir forest was replaced by the Pine-Oak forest. The second scour and terrace building episode occurred during the earliest C-2, Oak-Hickory-Birch pollen zone, as the C-1 Oak-Hemlock forest declined in response to severe droughts. My working hypothesis-of-the-day is that the increasing incidence of drought effectively decimated the forests and destabilized the soil, allowing infrequent, heavy storms to severely erode the valley sides of the Susquehanna. The storm run-off delivered large quantities of sediment to the river. This increased sediment load could not be carried away due to the decreased perennial river discharge. Moist periods are usually not recorded by extensive terrace sedimentation, suggesting that sediment is carried out of the drainage basin by the more competent stream.

Jay Fleisher, SUNY Oneonta

From continued mapping in the Susquehanna Drainage Basin, I've developed a set of landform criteria for the recognition and correlation of ice-marginal positions. They basically fall into two categories: a Valley Floor Facies, which includes kame moraines and associated outwash, valley train and pitted outwash, and dead-ice-sinks (mega-kettles), and a Slope and Divide Facies, consisting of isolated kames and ablation till (from downwasting), underfit tributary streams, and upland meltwater channels. In addition, I am beginning to formulate associations between the high relief terrain of the Appalachian Plateau and local ice-flow patterns as reflected in landform development.

I look forward to sharing these ideas and reviewing the field evidence on the NYSGA field trip that Don Cadwell and I will be conducting in September.

Edward Evenson, Geological Sciences

Although we have not submitted a report to the GLACIOGRAM for some time, the "Lehigh Group" is alive, well and active. Important, recent developments include the completion of projects by Jack Ridge (now a Ph.D. candidate at Syracuse) and Jim Cotter (in residence at Lehigh). Jack's M.S. thesis (tome!) entitled "The Surficial Geology of the Great Valley Section of the Ridge and Valley Province in Eastern Northampton County, Pennsylvania and Warren County, New Jersey" contains a detailed morphosequence deglaciation history (thanks to Carl Kotteff!) for the area and is being considered for publication as a cooperative Pennsylvania/New Jersey Geological Survey report. Jim Cotter's dissertation entitled "The Minimum Age of the Woodfordian Deglaciation of Northeastern Pennsylvania and Northwestern New Jersey" is finished and demonstrates that Woodfordian deglaciation began prior to 18,500 yr. B.P. Ron Witte is actively studying the deglaciation of the Ogdensburg/Sparta region in New Jersey and tying into the morphosequences mapped by Jack Ridge. In an attempt to better understand the origin of debris in heads-of-outwash, we have begun a detailed multiyear study on "debris entrainment, transport and deposition" on active Alaskan glaciers. These observations will be coupled with investigations of Pleistocene heads-of-outwash in the East to increase our understanding of the genesis of these useful morphosequence mapping tools. January 1984 was spent in Argentina working on the deglaciation chronology of Patagonian Andies -- I'll have to think about how this work applies to New York, but I'm certain it must!

Jane Forsyth, Geology, Bowling Green State University

My own research has been limited by classes, committees, theses and a chance to visit southern Alaska (gorgeous!) last summer. However, my graduate student, Bob Metzler, completed a thesis on the environmental geology of Hancock in northwest Ohio county, which included an exacting and exciting mapping of the buried bedrock surface (deeply dissected Silurian dolomite ridge, raising questions about the influence of early glaciers there, and encouraging my search for others to do adjacent counties) and a survey of the postglacial lacustrine and channel deposits there. This work, in conjunction with similar information from an incomplete thesis to the east, (Wyandot Co.) and my own continuing study of postglacial lacustrine and channel features farther west (Allen, Auglaize and Putnam Counties) represents one of my most intriguing, ongoing research studies. Another deals with the relation of modern plant distribution to geologic substrates, a subject on which I invite correspondence from other interested persons.

G.M. Haselton, Chemistry and Geology, Clemson University

This summer I plan to examine a Pleistocene stratigraphic section on the east side of the Presidential Range in New Hampshire. Work will be in a location called Peabody River Valley; tills varves, and possible late, up-valley flow of residual Wisconsin ice. Details later.

Ernest H. Muller, Syracuse University

Work in the Mohawk Valley has evolved with revision of the manuscript which Franzi, Ridge and I prepared for the GSA Symposium at Kiamesha Lake a year ago. Recent theses bearing on this area, some of which have been previously reported in the Glaciogram, include:

- Antonetti, M.D., 1982, Pleistocene Geology of the South Trenton 7.5-minute Quadrangle, Unpub. M.S. Thesis.
- Loewy, J.M., 1983, Pleistocene Geology of the Oriskany, N.Y. 7.5-minute Quadrangle. Unpub. M.S. Thesis.
- Lykens, C.A., 1983, Pleistocene Geology of the Little Falls, N.Y. 7.5-minute Quadrangle. Unpub. M.S. Thesis.
- Franzi, D.A., 1983, Glacial geology of the Ramsen-Ohio Area. Unpub. Ph.D. Dissertation

Two additional M.S. theses are in progress:

- Foresti, R.J. Macrofabrics, microfabrics, and microstructures of till and Pleistocene Geology of the Ilion Quadrangle, Mohawk Valley, New York.
- Flick, G.R. Pleistocene Geology of the Herkimer, N.Y., 7.5-minute Quadrangle.

In his doctoral dissertation research centered on the Mendonville and Newport Quadrangles, Jack Ridge is working to establish a paleomagnetic declination curve which, hopefully will afford a key to the history of evolving lacustrine impoundment. (Gordon, there is no such word, but there should be, if only to include all the lakes which never existed because they were impermanent, and hopefully tie it to the chronology of the Finger Lakes area and western New York.

Franzi and Ridge will be leading a field trip in the Upper West Canada Creek Valley and the headwaters of the Black Creek for the New York Geological Association Meetings this September. This will serve to complement the trip being organized by Cadwell, Krall and Fleischer on the plateau northwest of the Catskills.

Meanwhile, under the tutelage of Vic Prest, I have been trying to understand some of the subtleties of the history of late Late Wisconsinan lakes in the Ontario Basin -- and hoping to do so in time to present our account at the Geological Association of Canada Symposium on the Quaternary history of the Great Lakes May 16th in London.

With the background of the Great Lakes Symposium and a projected informal evening discussion session among symposium participants, I am looking forward to the Friends of the Pleistocene Field Conference which Peter Clark and Jim Street will be leading in the Massena area the following weekend.

During this past semester we have greatly enjoyed the presence in our Department of Dirk and Irmi van Husen. Dirk is Austria's most active Quaternary geologist teaches in the faculty of the Institut für Grundbau, Geologie u. Felsbau in Vienna.

Jaan Terasmae, Geological Sciences, Brock University

During the 1980-82 period, Quaternary geology was mapped in the Trenton-Kingston-Campbellford area covering nine 1:50000 scale sheets north of Lake Ontario. The work was done by Jim Leyland and Maryann Mihychuk, in conjunction with their graduate theses projects, for the Ontario Geological Survey. Recently the last of this group of maps was published in the OGS Preliminary Map series.

1. Leyland, J.G., 1982. Quaternary geology of the Belleville area, southern Ontario. Ontario Geol. Survey Map P. 2540.
2. Leyland, J.G., 1982. Quaternary geology of the Wellington area, southern Ontario. Ontario Geol. Survey Map P. 2541.
3. Leyland, J.G. and Russell, T.S., 1983. Quaternary geology of the Bath - Yorkshire Island area, southern Ontario. Ontario Geol. Survey Map P. 2588.
4. Leyland, J.G., and Mihychuk, M., 1983. Quaternary geology of the Tweed area, southern Ontario. Ontario Geol. Survey Map P. 2615.
5. Leyland, J.G. and Russell, T.S., 1984. Quaternary geology of the Sydenham area, southern Ontario. Ontario Geol. Survey Map P. 2587.
6. Leyland, J.G. and Mihychuk, M., 1984. Quaternary geology of the Trenton - Conseccon area, southern Ontario. Ontario Geol. Survey Map P. 2586.
7. Leyland, J.G. and Mihychuk, M., 1984. Quaternary geology of the Campbellford area, southern Ontario. Ontario Geol. Survey Map P. 2532.

These maps have marginal notes, and a summary report has been prepared to synthesize the information provided by the maps.

Jim and Maryann have also completed their M.Sc. theses:

Mihychuk, M., 1984. A petrologic and geochemical study of the "Dummer" Moraine, and associated Paleozoic bedrock in the Havelock area, Ontario. M.Sc. Thesis, Dept. of Geological Sciences, Brock Univ.

Leyland, J.G., 1984. Quaternary geology of the northeastern Lake Ontario basin. M.Sc. Thesis, Dept. of Geological Sciences, Brock Univ.

A paper titled "Chronology and correlation of glacial lake phases in the northern Lake Ontario region" by J. Terasmae and J. Leyland will be presented at the Geological Association of Canada meeting in May (Abstract published in GAC Program 1984, vol. 9, p. 110).

A joint paper (P. Barnett, J. Coakley, C. Winn, J. Terasmae) titled "Chronology and significance of a Holocene sedimentary profile from Clear Creek, Lake Erie shoreline, Ontario" is in preparation and relates to the lake level history in the Lake Erie basin near Long Point.

Richard Waitt, USGS, Vancouver/Tom Davis, Geology, Mt. Holyoke College

I am investigating certain critical areas of highlands in the Northeastern States in an attempt to resolve some of the contrary evidence on whether local glaciers re-formed after the Laurentide icesheet disappeared. Reconnaissance reveals no evidence that the Mount Mansfield area, Vermont regenerated local ice. Downwasting Laurentide ice became partly segmented by emerging high-relief topography, and some icesheet-fed valley tongues deposited alpine-like moraines. Reconnaissance with Tom Davis in the northern Presidential Range, New Hampshire shows the general soundness of earlier arguments by the Goldthwait's that the most recent ice in the mountains was Laurentide. Most of the evidence in both areas on which post-Laurentide local ice has been argued is highly dubious. These results are consistent with Davis's field evidence against post-icesheet local glaciation at Mount Katahdin, Maine. Of highlands in the Northeastern States that have been inferred sources of local glaciers, only one drainage in the Adirondack Mountains, New York contains still-unrefuted evidence of post-icesheet alpine glaciers.

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The nation continues to be awed by and indebted to the sterling communications media at Buffalo--the Glaciogram and Mark Russell.

Walter Newman, Earth & Env. Sciences, Queens College

Working towards the R.W. Fairbridge 70th birthday symposium on climate, 21-23 May 84 at Barnard/Columbia. Still working on sea-level, neotectonics and paleogeodesy as well as the Hudson Estuary sea-level and Ramapo Fault Zone problem.

Richard Young, Geology, SUNY Geneseo

My present focus is on the DNAG Geomorphology Volume for the GSA Quaternary Geology and Geomorphology Division with the working title, "Geomorphic Systems of North America" (as it appears are several others normally seen on the Glaciogram mailing list). Although my contribution is on the Cenozoic landscape evolution of the Colorado Plateau, this volume will have chapters on all of the physiographic regions of North America. Its stated purpose is to "synthesize recent advances in the science of geomorphology against the general background of geomorphic research". The volume will emphasize processes, and for that reason, should be of general interest to all of us who study Cenozoic landscapes and their evolution. One question of general interest to Pleistocene geologists has been how to assess the general effects of increased "Pleistocene runoff" on fluvial systems outside the glaciated regions of North America. The evolution of the Colorado River system can provide some important insights regarding erosion rates, landform evolution, and the relative importance of tectonic vs. climatic influences throughout the Cenozoic.

Detailed outlines of all chapters by all contributors will be completed by September 15, 1984, and final drafts will be completed by September 1986.

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