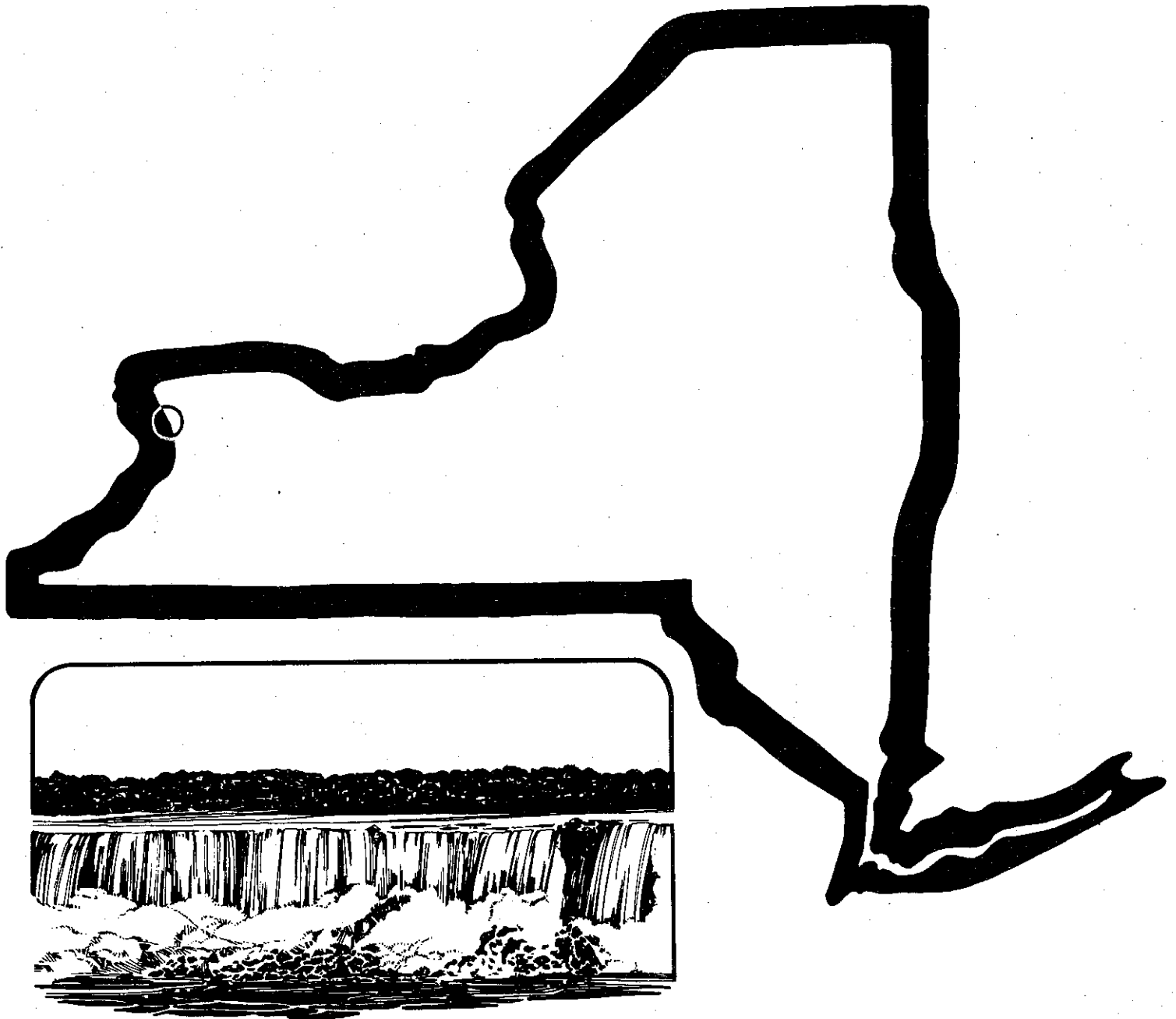


VOLUME 22, NO. 2 • NOVEMBER 1987

NEW YORK GLACIOGRAM



DEPARTMENT OF GEOLOGY

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. It is suggested that reference to information in the GLACIOGRAM be identified merely as informal communication.

Parker E. Calkin

Thomas M. Berg - Pennsylvania Geological Survey

The Pennsylvania Survey continues active investigations and mapping of the Commonwealth's Pleistocene and surficial deposits. The work of the Survey staff is summarized below.

All of us were deeply saddened by the passing of George Crowl. At the time of his death, George was planning for several weeks of field work on the Illinoian deposits of the Allentown region. We will miss him very much.

The Survey has begun a new geologic mapping program in the Pennsylvania Piedmont; the work will be carried out under the direction of Rodger Faill. In addition to bedrock investigations, the types of surficial deposits will be determined, and the extent of saprolite development will be studied. Bill Sevon will begin a pilot mapping project in early 1988 in a four-quadrangle area of southern Lancaster County. He will evaluate mapping methodologies to deal with Piedmont surficial materials and saprolites.

Bill Sevon has completed surficial materials maps of 42 7½-minute quadrangles (1:24,000 scale) in Potter, Tioga, Bradford, and Susquehanna Counties. When Bill finishes compilation of 17 additional 7½-minute quadrangles, the surficial mapping of the Wellsboro and Towanda 30x60-minute Quadrangles (1:100,000 scale) will be completed. Release of the 1:24,000 maps through the Survey's open file system is being discussed. Full-color publication of the two 1:100,000 quadrangles is under consideration.

Tom Berg is proposing that the next State Geologic Map be issued as an atlas of the 1:100,000 quadrangles, to include both bedrock and surficial maps, as well as hydrogeologic and other derivative maps. The possibility of providing the maps in a digital format to be used in geographic information systems is also being discussed, but a statewide GIS does not yet exist. Tom is proposing that the individual 1:100K quadrangles be published as soon as they are completed. The Wellsboro and Towanda Quadrangles might be the first surficial maps of this series, but nothing is definite right now. Stay tuned!

Many readers are probably familiar with the 9x12 inch educational series maps of Pennsylvania that have been available for many years. Most have seen the one titled "Glacial Deposits of Pennsylvania" that Bill Sevon prepared several years ago. Bill has now prepared another small map titled "Surficial Materials of Pennsylvania," which will be published sometime in 1988. The map was generated as part of one of the chapters for the "Geology of Pennsylvania" textbook being compiled through the Pittsburgh Geological Society. If you need any of the small, free, page-size maps, give us a call. They are handy for class work.

Dave MacLachlan has completed mapping the surficial materials in the Freeburg 7½-minute Quadrangle 30 miles north of Harrisburg. The area was partially glaciated during the Illinoian. In addition to the Illinoian tills, Dave has mapped terrace deposits, colluvium, alluvium, and loess. After a brief assignment on the Mesozoic, Dave will join the Piedmont team.

The Allenwood and Milton 7½-minute Quadrangles were mapped for a detailed atlas report by Jon Inners. These quadrangles are located 50 miles north of Harrisburg and straddle the West Branch Susquehanna River. The Washingtonville and Millville 7½-minute Quadrangles just east of Milton were mapped by John Way (now teaching at Lock Haven University) for an atlas report. Both atlases include detailed surficial maps (1:24,000) showing many glacial and periglacial units. They will be published by mid-1988.

Jon Inners is currently mapping the Eastern Middle Anthracite Field of Pennsylvania. Besides dealing with the complexities of the anthracite structure and stratigraphy, Jon is discovering exposures of till in the strip mines that are greatly extending the known limits of Illinoian glaciation toward the south. He has completed detailed mapping of the Conyngham 7½-minute Quadrangle, and the atlas report is in review. Jon is now mapping the Hazleton 7½-minute Quadrangle. The 1988 Field Conference of Pennsylvania Geologists will be run out of Hazleton, and is being organized by Jon Inners and Duane Braun (Bloomsburg University). The conference will touch on many aspects of Illinoian glaciation and anthracite geology.

The 1987 Field Conference of Pennsylvania Geologists focused on the glacial deposits and shoreline features of the Erie region. Helen Delano of the Environmental Geology Division of the Pennsylvania Survey worked together with Dave Thomas and Ray Buyce of Mercyhurst College, and Charles Carter of Akron University to produce an excellent guidebook for the two-day field conference. Shoreline features of the multiple lake levels were examined, and particular emphasis was placed on the past, present, and future of Presque Isle. Copies of the guidebook may be purchased for \$5.00. Make checks payable to Field Conference of Pennsylvania Geologists, and mail your order to Pennsylvania Geological Survey, Box 2357, Harrisburg, PA 17120.

Helen Delano is continuing her research on the Lake Erie shoreline. She is currently working on a short-term project to characterize the stratigraphy and attributes of the unconsolidated deposits of the Lake Erie bluffs. She is assessing various field methodologies in anticipation of a larger, long-term project aimed at mapping the geology and slope stability factors of the shore zone. Helen is also preparing a guide to the geology of Presque Isle State Park.

Pete Wilshusen and Helen Delano have completed their report on the landslide areas of the Williamsport 1:250,000 Quadrangle. Their analysis shows a very close relationship between glacial deposits and landslides. The report should be published in mid-1988.

Tom Berg continues with his reconnaissance revision of the geologic map of Warren County, Pennsylvania. Last summer, he was assisted on the surficial geology by Chuck Cubbison, a graduate of Slippery Rock University. Chuck is now doing graduate work at SUNY Binghamton. Much of the glacial geology (mainly the stratified drift) has been refined or revised, and plotted on 1:24,000 quadrangle maps. The only prior glacial mapping was that done by Shepps and others in 1959, and Butts in 1910. The revised geologic map will be used by the Water Resources Division of the U. S. Geological Survey for a county groundwater report. The map will be published at 1:50,000 scale.

Donald H. Cadwell - New York State Geological Survey, Albany

I want to take a few minutes to write my contribution to the Glaciogram or else the deadline will pass before I realize it. I hope all is well with you. Thank you for all your work on the Niagara Sheet this past summer and fall. I am in the final collating stage now - and hope to get it off to the publisher by the end of the year.

This has been a very busy and productive summer and there are several things I would like to mention in the Glaciogram. Please note that my new phone number is 518-486-2012.

1. The Surficial Geologic Map of New York, the Hudson-Mohawk Sheet, is now in print and joins the Finger Lakes Sheet that was published last year. These maps may be purchased for \$6.00 each, (with checks made payable to the New York State Museum) from the Publications Office, 3140 CEC, Albany NY 12230.

2. The reconnaissance review and field revision of the Niagara Sheet was completed this summer. It was a very difficult process to change the stratigraphic mapping units to the new materials base. Sincere appreciation is extended to P.E. Calkin, G.G. Connally, P.J. Fleisher, G.A. Kelley, E.H. Muller and R.A. Young for all of the hard work under difficult (?) conditions at Ellicottville. Assuming all goes well with the compilation this winter, this sheet should be in print next summer.

3. Plans are beginning to gel for the field review of the Lower Hudson Sheet next summer - with publication during '89.

4. The vast Adirondack Sheet is gradually being mapped. Anyone interested doing some mapping up there should contact Bob Dineen at 518-486-2013.

Parker E. Calkin - Geology, SUNY, Buffalo

At the present time most of our UB glacial students are involved in the Seward Peninsula or Kenai Peninsula, Alaska; however, masters student Lynne Baumgras is doing careful correlation of boring logs in the Buffalo area and Ph.D. student Kevin Owen is working with dinoflagellate assemblages in the glacial Lake Warren sediments.

Lynne's work (above) is directed by my colleague Ross Giese and involves analysis of the earthquake stability of the sediments as well as their stratigraphy and correlation. She will work closely with our civil engineers and the Buffalo Earthquake Center.

Kevin Owen (above) is attempting to evaluate temporal trends in the density and diversity of dinoflagellates of Lake Warren. In the processes of this study Kevin will attempt careful analysis of the rhythmic clays and silts from cores and where possible in exposures of the glacial lake deposits. His work is directed by limnologist Ken Stewart of the Biology Department at UB.

I was involved with the Cadwell team of Niagara Sheet mappers (see Don Cadwell, Ernie Muller, Dick Young) for only a week but found it very informative as well as frustrating. While I recognize the need for materials maps, the new legend of the NY Geological Survey series seems less informative overall than that of the old Niagara Sheet. Let's hope the Survey saves all that extra mapping data to put together additional map types in the future.

AMQUA 1988 will take place at the University of Massachusetts from June 6 through the 8th. Three pre-meeting field trips and four post-meeting trips are already planned. Applications and information can be obtained by writing:

AMQUA 1988
University Conference Services,
Campus Center
University of Massachusetts
Amherst, MA 01003-0026

Please note John Szabo's note about a GSA field trip in Ohio on 21 April, 1988.

Indeed, I will miss Walter Newman (see Nicholas Coch and also Rhodes Fairbridge contributions). I will also miss the cheer of George Crowl on Pleistocene and glacial trips (see Tom Berg). We all gave George a hard time about his pipe but I almost got used to it. His work in Pennsylvania, particularly along the New York border area will be an important reference for many years.

Donald R. Coates - SUNY at Binghamton, Geology

Although my work in May and June was not in New York State it was relevant in an unusual way. I was in China with my PhD student Mingqin Yang, and our chief purpose was to study the Lushan Mountains of eastern China and determine if they had been severely glaciated during the Quaternary. For more than 60 years a big controversy has waged in China over the problem of glaciation in the eastern mountains. After our investigation I gave several lectures throughout China on the results of our work, and in specific made certain comparisons with the Catskill Mountains. I hope to return to China in August 1988 to attend a special symposium on the problem. Although at least 85 percent of the Chinese believe they were severely glaciated, my vote is a nay.

Many of my consulting projects involve knowledge and interpretation of glacial sediments and features. For example we have just completed a 272 page report for Chemung County on the hydrogeology of their landfill. In 1975 someone had the good sense to locate the landfill on a suitable site on a till shadow hill. Thickness of drift can exceed 160 feet. I emplaced a total of 49 monitor wells at the site, and previous workers had installed 23 wells. Thus I believe I probably have the most complete data set on the character and stratigraphy of glacial deposits in this environmental setting. Although till comprises more than 90 percent of all sediment, there also is present some ice contact beds and lacustrine sediments. Three different till types are represented...lodgement till, flowtill, and an ablation-surface meltout till. With the exception of a few feet thickness of some ice contact materials all sediment is highly impermeable, thus forming a locality for emplacement of solid waste where the "bathtub effect" can be realized.

Currently there are several students completing their Masters at SUNY-Binghamton

Llewellyn Moose is working on the glacial geology of the Tioughnioga River

Douglas Chichester is using quantitative morphometric analysis to compare contiguous areas of glacial and non-glaciated topography.

Joe Campisi is comparing two different fly ash disposal sites where the material is buried in different types of glacial sediments. He is doing the stratigraphy of the glacial deposits and the geochemistry of the groundwater.

Mingqin Yang, a PhD student will do his research in New York State

I enclose the M.A. abstracts of theses done by Tim Pagana and Greg Wiles.

Abstract from: Pagano, Tim. S., 1987, Hydrogeologic and geomorphic properties of several tributary drainage basins of the Susquehanna River Basin, New York: State Univ. of N.Y. at Binghamton, M. A. Thesis, 153 pages

ABSTRACT

Sixteen tributary drainage basins of the Susquehanna River in New York were studied to determine the influence of different types of stratified and unstratified glacial deposits on low flow. It was found that occurrences of unstratified glacial deposits in valleys and valley side slopes exerted a negative influence on low flow, in addition to the previously established positive effect noted for permeable stratified drift deposits. Other possible correlations to low flow included a positive influence from unusually thick or permeable glacial till deposits in the uplands and a negative influence from the typical "fragipan" glacial till soils in the uplands. By using a technique seldomly employed in geological sciences, the slope values from individual soil units were combined

to obtain an "average slope" of till soils in each basin. This "average slope" parameter was found to have a negative correlation with low flow.

Sieve analysis was performed on surficial valley fill samples from two basins within the study area. Results generally agreed with past studies which suggested that the areal extent of stratified deposits exerted the main influence on low flows. However, the question of how the position and thickness of the subsurface valley fill deposits affected the rate of groundwater flow to the streams could not be determined by the analysis of surficial deposits.

Borehole data were accumulated from each basin in order to address the possible affect of subsurface sediment permeability on groundwater flow to the stream. Although qualitative deductions could be made, the information was sparse and too scattered to establish quantitative correlations.

Additional work should be done to establish what effects low permeability unstratified and stratified deposits have on groundwater flow to streams in a valley fill setting. To aid in this effort, it is recommended that New York, require the submittal of all borehole data for cataloging and use in future investigations.

Abstract from: Wiles, Greg C., 1987, Deglaciation of the southern Catskills:
State Univ. of N.Y. at Binghamton, Masters Thesis, 86 pages

ABSTRACT

This study is the first detailed surficial geologic mapping and analysis of glacial depositional and erosional features to be performed on four 7.5 minute quadrangles in the southern Catskills. The unique location of the study area on the lee of the high Catskill escarpments, straddling two very different geomorphic sections of the glaciated Appalachian Plateau allowed for important observations concerning the glacial and deglacial chronology of the area.

Glacial sediments of the area are assigned a Late Wisconsinan, Woodfordian Age, resulting from a single glacial episode. Ice flow indicators suggest that glacial movement through the area was initially toward the southeast and later toward the southwest. The southeasterly flow refutes previous northwest ice flow directions in the area.

Deglaciation in the study area was controlled by the southern escarpment and the contrasting topographies between the Small Lakes and Catskill geomorphic sections. Areas in the Small Lakes section are characterized by kame and kettle topography and, deltaic and glaciolacustrine deposits recording a deglacial history of discontinuous lake events. The Neversink River Valley contains one complete outlet-controlled morphosequence suggesting systematic ice retreat was active during deglaciation. The Catskill Mountain geomorphic section is characterized by mass stagnation as ice retreat over the southern escarpment left behind large masses of stagnating ice.

Morphosequence reconstruction, detailed surficial geologic mapping, and kame tracing in the study area led to the identification of the Neversink ice retreatal margin. This retreatal margin represents the northernmost ice margin south of the southern escarpment and may be the northern extension of a more continuous margin extending down the Ellenville Valley between the Wallkill and Culvers Gap margins.

Nicholas K. Coch - Geology, Queens College, CUNY
 "From a letter to P. Calkin 13 July 1987"

It is with great sadness that I inform you of the death of Walt Newman on May 18, 1987. Walter fought a valiant battle against cancer for almost a year. During that time he conducted his research, academic and personal life with the enthusiasm, spirit and sense of humor for which he was known, Walter's recent research on Project Noah, the techniques of storing water in large volumes on the continents to minimize the effects of sea level rise, had brought him national and even international attention. His work on the Pleistocene geology of the Hudson Valley, neotectonics, and the relationships between glacial loading, sealevel rise and crustal compensation have made significant contributions to our knowledge of the Pleistocene Epoch.

A memorial service for Walter has been scheduled for September 21, 1987. Details are provided on the enclosed announcement. Walter's enthusiasm gave many students an interest in geology. He was also very involved with students and their welfare. Walt's family and friends have established a field camp scholarship in his name as a memorial which reflects his lifelong devotion to students and his love of field work.

Walt was a long-time and loyal member of the Eastern FRIENDS and looked forward to our reunion each year. We will all miss him very much both as a colleague and a friend.

Aleksis Dreimanus - Geology, University of Western Ontario

My main task this summer was to complete the final report on genetic classification of tills, an INQUA project that had grown more complex than originally envisaged, 14 years ago. The main emphasis in this report and its presentation at the 12th INQUA Congress in Ottawa was not on the classification itself, but on its growth and development, and the polygenetic and transitional nature of till, grading laterally and vertically from one end-member into another. The influence of the polygenetic character of till upon stratigraphic interpretations was discussed in another paper, given at the plenary session of the INQUA Congress, with examples from N. America, Europe and Siberia. The till report contains also a dictionary of 21 selected glacial terms in 21 languages.

I participated, as co-author, at three poster papers, presented at the Penrose Conference on Glacial Facies Models at Toronto, the 12 INQUA Congress in Ottawa, and its Field Excursion A-11 in S. Ontario. They dealt with the complexity of subglacial sedimentation, glaciectonic structures in an interlobate zone, and Middle to Late Wisconsinan stratigraphy. Because of the tight writing deadlines, my field work this summer was restricted to re-examination of such sections where the current genetic or stratigraphic interpretations appeared to be controversial.

The following three papers written in 1985-86 were published this summer.

Dreimanis, A. Port Talbot Interstadial site, southwestern Ontario, in D.C. Roy, ed., Geol. Soc. Amer. Centennial Field Guide, Northeastern Sec., p. 345-348.

Dreimanis, A. Genetic complexity of a subglacial till tongue at Port Talbot, Ontario, Canada, in R. Kujansuu and M. Saarnisto, eds., INQUA Till Symposium, Finland, 1985, Geological Survey of Finland Spec. Paper 3, pp. 23-38.

Dreimanis, A., Hamilton, J.P. and Kelly, P.E. Complex subglacial sedimentation of Catfish Creek till at Bradtville, Ontario, Canada, in J.J.M. van der Meer, ed., Tills and glaciectonics, Rotterdam: Balkema, p. 73-87.

Also, a Latvian-English-German dictionary section of some 2500 geologic terms was published, with O. Kārklis as co-author, in vol. 5 of the Dictionary of Latvian Technical Terminology, thus completing a 10-year project.

The report on 'Genetic classification of tills' will be published in the Balkema volume on 'Genetic classifications of glacial deposits', edited by R.P. Goldthwait & C.L. Matsch, this winter.

In 1987/88 I am teaching a grad. course on subglacial sedimentation, beginning it with a field project along the bluffs of Lake Erie. In mid-November, I will participate at a symposium on paleoclimatology of the last glaciation at Mainz, Germany, presenting there an invited paper on the last glaciation in the area of Laurentide Ice Sheet. On returning, I have to complete couple of local unfinished projects dealing with till-forming processes and last glaciation.

It is probably time to slow down, considering some reminders of past activities received this summer or fall: the Honourary INQUA Membership, the Distinguished Career Award of the Division of Quaternary Geology and Geomorphology of the Geological Society of America, the Centennial Medal of the Geological Society of Finland, and the Ontario Voluntary Service Award for serving more than 15 years (since 1948) in the Latvian community at London, Ontario.

Rhodes Fairbridge - Geology, Columbia University

In Memoriam

WALTER S. NEWMAN

(1927--1987)

Coastal specialists around the world will be grieved to learn of the death of our distinguished colleague Walter Newman. He died of a lingering and painful lymph cancer on May 18, 1987.

Walter was born in New York, May 24, 1927 and spent most of his life close to the boroughs of Brooklyn and Queens, very much a part of that distinctive and close-knit community, for which he had an unflagging affection, serving them well in countless private and public-spirited acts. He was best loved (and good-naturedly criticized) for his infectious enthusiasm and keen interest in people and ideas. He would emphatically reject something one day, and then perhaps a few days later would phone and say after thinking it over that perhaps you were right after all. Equally frankly, he would argue against some popular theme or "sacred cow."

Walter got his B. S. at Brooklyn College (1950), M. S. at Syracuse (1959), Ph. D. at N. Y. U. (1966). He had professional experience with the U. S. Coast and Geodetic Survey in 1951, the Lake Mead seismological survey; with the U. S. Army Corps of Engineers, 1951-1956, on various projects including studies in Bermuda that got him started on sea levels; with several engineering geology groups (Frederic R. Harris Inc., 1957-58; Moran, Proctor, Mueser and Rutledge, 1958-59); and as scientific assistant to the late Maurice Ewing at Lamont-Doherty Geological Observatory (1959-60).

In 1960-66 Walter served as a lecturer in geology at Queen's College of the City University of New York, moving up in steps to become chairman of the Department of Earth and Environmental Sciences (1968-71) and full professor (1978-87). In recent years he has been senior research associate at Goddard Institute for Space Sciences (NASA), 2880 Broadway, New York 10025. He has also been serving recently as a summer employee of the U. S. Geological Survey, on Quaternary mapping in New England.

At Goddard Institute Walter learned about computers and had completed a comprehensive global catalog of radiocarbon-dated coastal indicators (peat, wood, shells, corals, middens) classified by latitude and longitude, and by elevation. It is therefore possible to summon up a printout on any geographic area and through any time frame. Walter collaborated with the INQUA Shorelines Commission and the IGCP sea-level projects (61 and 200). He attended many of the INQUA field conferences, including the Hudson Bay, several European meetings (Black Sea, Ireland, etc.) and South America. Collaborating with archeologists he made several trips to the coast of Israel.

He was always interested in neotectonics and glacioisostatic rebound, contributing a joint paper (with the writer) on "Postglacial crustal subsidence in the New York area" (Zeitschrift f. Geomorphologie, NF 12, 296-317). And at the time of his death he was working with the writer on another paper on sea-level curves for IGCP-200. Rhodes W. Fairbridge, New York.

Robert Gillespie - Art, Penn Yan, N.Y.

Video Available on Geologic History
of Finger Lakes

A clay-animated story of the Finger Lakes region from Cambrian times to present has been created by artist Robert Gillespie and producer John Bloomquist. Tasteful electronic music and clear descriptive narration by Chris Holder combine to form an accurate overview of the tectonic setting, depositional sequence, upliftment and erosion, as well as pleistocene ice advances and high level lake series.

The 28 minute videotape is recommended as an introduction to Central New York geology, containing a wealth of geologic terms and a "time-model".

The 1/2" VHS tapes are priced at \$50 and will be shipped beginning February 1988. Payment must be within 30 days of delivery but pre-payment is appreciated where possible.

Please send one VHS videotape or cassette of REBUILDING NEW YORK: KEUKA LAKE

@ \$50 to: name _____ phone _____

address _____ mail to _____

Robert Gillespie
2888 Sherman Hollow Rd
Penn Yan, N.Y. 14527

Lake's formation, history brought to life in slide show

By MAURICE DUMAS

PENN YAN — To Bob Gillespie, a rock is not just a rock; it's part of the living history of the Earth.

Gillespie, the art teacher at Penn Yan Middle School, has spent countless hours over the course of a year compiling a slide show on the formation of Keuka Lake.

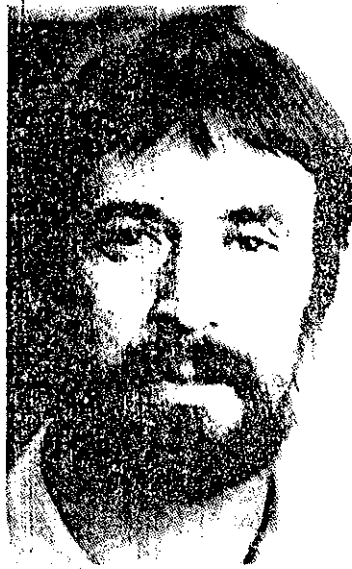
"We think of rocks as dead objects and lifeless things," said Gillespie, who is quick to discount that image. "Over time, the planet's landscape has a life of its own. It's ever changing, just like people."

Using research he collected while on a five-month sabbatical a year ago, Gillespie brought those changes to life by photographing clay models of the lake. He made the models, using the same animated clay technique that brings California raisins to life in TV commercials.

To show the advance and retreat of the last glacier — from 12,800 to 12,600 years ago — Gillespie took a series of slides as he extended the glacier with white clay. The glacier doesn't dance and sing like the raisins, but it does flow realistically over Upstate New York, filling both arms of Keuka Lake with a mass of ice.

The 28-minute slide show is stuffed with scientific information and got a warm reception last week, when Gillespie showed it for the first time to about 100 friends and supporters, including the Penn Yan school board.

Initially, Gillespie's sabbatical, which started in September 1986, was to be used to study Keuka Lake's last glacial period. But to truly understand the local geology,



Bob Gillespie
Slide show explains lake

he said, he eventually had to extend his project in time and breadth. It now goes back 500 million years and covers the entire globe.

"I had to search through lots of professional papers and books with crude diagrams and maps," said Gillespie, who finished the script and created the models after his sabbatical ended — that meant getting up at 5 a.m. each day and working until the start of school.

The show's models bring to life the theory of plate tectonics and the movement of entire continents, which lead to the creation of this region. Only after covering that did Gillespie focus on the lake.

According to the slide show and

Gillespie's studies, which were verified by geologists from three colleges, Keuka Lake was created and its arms connected as the glacier retreated.

The high waters of the lake spilled out at Bellona, creating what is now called Kashong Glen. The village of Penn Yan and all of Flat Street were under water while the glacier retreated.

Gillespie plans to put the show on videotape and make it available to area schools. One teacher who's anxious to get a copy of it is William Breitling, the earth science teacher at DeSales High School in Geneva.

"It's magnificent!" said Breitling. "It contains a ton of information, and it's very pictorial. It gives kids the visual impact that's needed."

Breitling plans to show the videotape to his classes at least three times. "Each time, the kids (will) pick up more," he said. "It's not the type of thing you can just show once."

The show is the coming together of art and science, said Breitling, noting how Gillespie "used the artist's touch to make it come alive."

Gillespie, who studied engineering for three years before turning to art, credits John Bloomquist, a Rochester slide show producer, with helping give his presentation a professional look. And he credits his grandfather with getting him interested in geology nearly 20 years ago.

Gillespie expects the show to help students apply what they learn in class to their surroundings.

"I want them to realize earth science happens right here, and it happens every day," he said.

Edward Hinchley - Geology, Syracuse University

This summer Hank Mullins and I completed the reflection phase of seismic analysis in the Finger Lakes. We now have more than 1000km of data with an average trackline spacing of ~1km in all eleven lakes. We are currently compiling a seismic sequence and facies analysis of Seneca Lake that will be correlated with piston cores collected from the R/V Explorer. This summer we also initiated wide angle reflection experiments in collaboration with John Ladd of Lamont-Doherty Geological Observatory. We hope to ascertain interval velocities within the sedimentary fill to convert time sections into "true" depth profiles.

Since June 1987, we have been mapping the lateral extent of high frequency (1 - 7kHz) acoustic impenetrability in Otisco Lake on a monthly basis. This work is being done in collaboration with Don Woodrow of Hobart and William Smith Colleges. The zone of acoustic impenetrability has been increasing in size since the beginning of the summer stagnation, currently 95% of the lake sediments are impenetrable. This work will continue through the spring overturn in April or May of next year.

Field plans for next summer are not definite but may include wide angle reflection and/or seismic refraction work in the Finger Lakes and possibly a seismic reconnoiter of Lake MacDonald (Glacier National Park). We are also considering near-shore seismic reflection along the north shore of Lake Ontario in conjunction with Nick Eyles of the University of Toronto.

THE FOLLOWING IS AN ADVERTISEMENT:

I have worked in the Finger Lakes four consecutive field seasons, an area of profound glacier origin, however I have never witnessed a modern glacial environment. I would like to solicit my field assistance to any of my colleagues contemplating field work (or visiting) a modern glacier this summer. I am currently seeking independent funding to defray travel expenses. So, if anyone needs a field assistant or has room for an observer this summer, please notify me at (315) 423-2672 or (315) 423-3828.

Paul F. Karrow- Earth Sciences, University of Waterloo

Access to the Don Brickyard continues to be foiled in spite of new government ownership. The INQUA field trip, led by Peter Barnett, was allowed to visit the site in July but not to climb the face; that restriction is forecast to remain in effect for the foreseeable future and precludes any use in student field trips or scientific study. There is now less access than there was when owned by a developer.

Drilling programs were repeatedly set back this summer. Thus far, three rotary holes and a continuously-cored hole have been completed to bedrock in the Kitchener-Waterloo area, funded by an Ontario Geological Survey grant. This project incorporates geophysical logging to establish characteristics of the Quaternary stratigraphy for correlation purposes. A cored hole to bedrock is currently underway near the Woodbridge Cut (northwest of Toronto) to extend the stratigraphy down from the York Till (Illinoian).

Brampton area mapping was completed in the April-June period. The Toronto airport proved to be an oasis of undisturbed ground in the midst of an urban-industry area. Several bedrock pop-ups were found, mainly near the Iroquois shoreline. Barry Warner helped sample an organic deposit on the Iroquois terrace. A kettle bog near Georgetown has yielded a ¹⁴C date of 11,700 B.P. and probably has a record similar to that of the kettle bogs on the Brampton esker, described by Terasmae recently.

B.Sc. theses are underway by Steve Ross and Andy Heath on till lithology in G.S.C. drilling projects near Timmins and

Geraldton in northern Ontario. Andy Bajc continues his O.G.S.-supported Ph.D. thesis in the Fort Frances area, northwestern Ontario, where 35 vibracored holes to bedrock reveal at least three tills under Agassiz sediments. Peter Barnett completed his Ph.D. thesis on Lake Erie north shore stratigraphy.

My technician of some five years (Susan Sieradzki) resigned in June and has been succeeded by Leslie Ken-Lawson, who will devote most of her time in the next several months to preparing papers from her M.Sc. thesis on molluscs, plants, and microvertebrates from the Sangamonian Don Fm. at Toronto.

This fall marks 20 years of running the Quaternary Discussion Group at the University of Waterloo. Our new Quaternary Sciences Institute is now the sponsor. The fall program is the busiest ever with 10 speakers spread over four meetings. Most speakers and attendees are drawn from an area between Toronto and London.

The INQUA Subcommittee on North American Stratigraphy met at INQUA and at GSA in Phoenix. Les Sirkin is covering the northeastern U.S. and has compiled a list of stratigraphic units for Long Island to be prepared for publication according to our standard format. Anyone interested in helping in this region should offer their help to Les. We need help from working stratigraphers who will live up to their offers.

New M.Sc. students are Rob Delorme, who plans to study the sedimentology of the Oro Sandhills (near Lake Simcoe) under Dave Lawson, and Karen Hanf, who is doing a palynology thesis on a bog near Cambridge, supervised by Barry Warner. Tom Edwards completed his Ph.D. with Peter Fritz on oxygen isotopes in wood cellulose and continues as a Post-Doctoral Fellow in the Department.

Work this winter will concentrate on writing manuscripts, logging and analyzing continuous core samples, and processing and identifying various interstadial and late-glacial fossil samples. Work on Florida fossil collections will continue.

Norton G. Miller - Biological Survey, New York State Museum

Richard Futyma has completed a study of the paleoecology of Byron-Bergen Swamp, a 2000-acre, northward-sloping lowland in Genesee Co., New York. The swamp is a mosaic of moist hardwood-conifer forest, conifer swamp, and marly openings containing many rare and unusual plants. Springs along its southern border supply the lowland with lime-rich water, from which marl is deposited through physicochemical precipitation and, to a lesser extent, through biochemical precipitation by Chara and other algae.

Two cores ca. 120 m apart provide pollen stratigraphies and radiocarbon chronologies. The stratigraphies exhibit many of the same features as other pollen diagrams from the region: dominance of spruce and pine in the early postglacial (ca. 11,000-10,000 B.P.), a pine period (ca. 10,000-8000 B.P.), and dominance by hardwoods and pine (8000 B.P. - present). However, the record of local vegetation is very different at the coring sites. A core from an open marl area has woody peat immediately overlying a basal clayey silt. This peat indicates a swamp forest of pine, spruce, and tamarack beginning ca. 10,700 B.P. White cedar entered this forest by 9000 B.P. and became dominant by 7500 B.P. Beginning ca. 3500 B.P., the forest was replaced by sedge-dominated herbaceous vegetation, and the sediments changed to marl. At the second site marl overlies clayey silt, which represents a shallow pond probably inhabited by sedges. By 5600 B.P. the marl gave way to a peat deposited under a white cedar swamp, and the site has remained under a swamp-forest canopy.

The results from these two cores and stratigraphic studies at two intervening sites show that after the drainage of Lake Tcakowageh (name proposed by V. E. Schmidt), a local postglacial lake in which the basal clayey silts had been deposited, the Bergen-Byron swamp lowland has been occupied by a patchwork of swamp forest and marly pools supporting sedges and herbs. Over the course of postglacial time, the spatial arrangement of these vegetation units changed, with marly sites becoming swamp forest in some places, and swamp forest being replaced by marly openings in others. These vegetational dynamics are probably governed by changes in hydrological patterns in the swamp resulting from marl accumulation and lateral shifts in drainage pathways.

David Steadman is conducting field studies on various islands in the Pacific Ocean in order to evaluate evidence for massive late-Holocene bird extinctions that appear to be related to the foraging activities of the indigenous Polynesians. He will be excavating stratified archeological sites and limestone caves for bones and other fossils.

Steadman, Miller, and archeologist **Robert Funk** of the State Museum have begun exploratory work in the "black dirt" area of Orange County, New York. This lowland produced in 1801 the first complete skeletons of mastodons to be found in North America, and numerous discoveries of extinct megafauna have been made in Orange County since then. Nevertheless, the late Pleistocene

depositional environments of the "black dirt" region remain poorly understood. Over the next several years we will begin to link the lowland fossil record with that preserved in lake sediment and in cave deposits such as Dutchess Quarry No. 8, which, some years ago, yielded evidence of Paleoindian occupation and fossil bones of extinct or extirpated vertebrates. Our research will be a race against time as the development of Orange County (which is within commuting distance of New York City) is proceeding rapidly.

Norton Miller has completed a pollen diagram from Diver's Lake (Genesee County, New York). The pollen stratigraphy, while similar to that at sites on the Allegheny Plateau, differs in a number of intriguing ways. For example, beech and oak pollen percentages change reciprocally during the Holocene, and hemlock, after reaching an early Holocene maximum, is poorly represented throughout the middle and late Holocene. The core contains plant macrofossils, and these promise to provide information on the presence of populations of certain trees in the watershed. The pollen stratigraphy has been dated by traditional radiocarbon methods; certain dates will be verified by AMS. Work will commence this winter on the Mendon Ponds area near Rochester, with the immediate goal of producing a pollen diagram for Hundred Acre Pond.

Alan V. Morgan - Quaternary Sciences Institute, University of Waterloo

Well, the XII INQUA Congress has come and gone, and I don't suppose that it will be back in this neck of the woods until long after we have become part of the "permanent" record of the Quaternary!

I suppose it is not my position to judge how the Congress went; many of you will be better able to comment on aspects of Congress affairs. However, since I am in the process of writing up the Compte Rendu for the Ottawa meeting I do have a few observations that I wish to pass along.

I was personally surprised that the numbers of participants did not reach the 1,100 mark (I felt that anywhere from 1,200 - 1,400 Quaternary workers would attend). I know that many regarded the Congress as expensive, although I thought the pre-registration fees (about \$160 U.S.), plus about \$17 U.S. per night for accommodation, was pretty reasonable compared with the respective Quaternary meetings that I have been at in different parts of North America.

Putting the cost aside, I also realise that the Congress was in mid field season for others, and further, regarded as foreign travel for many U.S. government employees. Bearing some of these facts in mind I still found it interesting to compare the final registration figures with the potential Quaternary attendance from both the United States and Canada. Membership in AMQUA indicates that there was a potential U.S. membership in the range of probably 50 - 100% over those who actually participated. This leads to some interesting questions. Was the low attendance of American participants a function of perceived high costs, was it because of an inconvenient timing, was it the duration of the Congress, or was it a lack of awareness as to what INQUA represents? For those who might be interested I have given the relative attendance figures from each country in numerical order for each of the last three meetings of INQUA. The listing was generated on the number of participants at the 1987 meeting. The 1982 meeting was in Moscow, and the 1977 meeting in Birmingham. In each case the highest number of registrants was from the host country (indicated by an asterisk), and the 1987 Congress was no exception.

YEAR OF CONGRESS:	1987 ¹	1982 ²	1977 ³
CANADA	372*	11	55
USA	278	68	135
UK	61	26	167*
FRANCE	43	39	65
FRG	29	31	41
JAPAN	26	13	26
USSR	25	721*	14
CHINA	21	24	--
ITALY	20	16	19
NETHERLANDS	20	11	37
SWEDEN	19	16	24
FINLAND	15	18	10
NEW ZEALAND	14	3	13
SPAIN	14	6	4
NORWAY	13	7	14
AUSTRALIA	11	5	13

ISRAEL	11	14	7
POLAND	10	20	9
SWITZERLAND	9	4	6
BRAZIL	8	2	7
SOUTH AFRICA	6	1	3
ARGENTINA	5	--	--
BELGIUM	5	12	21
DENMARK	4	3	6
HUNGARY	4	15	5
INDIA	4	8	3
IRELAND	4	4	11
PORTUGAL	3	1	1
AUSTRIA	2	3	1
SENEGAL	2	1	4
THAILAND	2	3	--
CHILE	1	--	--
R. P. CONGO	1	--	2
GERMAN DEM. REP.	1	18	2
CZECHOSLOVAKIA	1	17	6
GREECE	1	4	--
GUYANA	1	--	--
IRAN	1	2	2
MEXICO	1	1	1
NIGERIA	1	2	1
PERU	1	--	--
PHILIPPINES	1	--	--
SOUTH KOREA	1	--	--
TURKEY	1	--	2
VENEZUELA	1	--	3
YUGOSLAVIA	1	2	3
	-----	-----	-----
TOTAL MEMBERS	1075	1200	1002
TOTAL COUNTRIES	46	49 **	50 **

Summarising what has been presented above I guess it is simply getting a lot tougher to obtain travel funds to attend these major Congresses.

For those of you who wished (as I did) to be able to attend the different field excursions, the listing below provides a breakdown of what eventually went where, and with the numbers of participants.

PRE-CONGRESS EXCURSIONS:

A 3 15 (Atlantic Provinces)
 A 7 12 (Southern Quebec)
 A 8 10 (Ottawa Region)
 A 11 16 (Southern Ontario)
 A 18 17 (Southwestern Cordillera)
 A 20(a) 7 (Yukon Territory)
 A 20(b) 10 (Yukon/Old Crow)
 A 22 7 (Coppermine, N.W.T.)

 Total participants = 94

POST-CONGRESS EXCURSIONS

C 2 5 (Baffin Island)
 C 3 13 (Atlantic Prov.)
 C 4 13 (Gaspé)
 C 10 16 (S.E. Hudson Bay)
 C 13 14 (W. Canada)
 C 16 21 (Alta./S. B.C.)
 C 25 29 (S.E. Ontario)

 Total participants = 127

Once again the number of participants (in total 221), was well below what we had anticipated. Again, costs were cited as a major factor that worked against the field excursions, but this happens to be a fact of life in Canada. (It costs \$950. for one return air fare to Kangiqsualuujaq, which is in eastern Ungava Bay, about 3 hours by jet from Toronto; for the same amount one can get a return air ticket to Hawaii, or Europe)! The one-day mid-Congress Ottawa region field excursions were very well attended with a total of 460 participants.

Field Excursion guides for 20 INQUA field trips are available from:

**PUBLICATION SALES AND DISTRIBUTION,
NATIONAL RESEARCH COUNCIL OF CANADA,
OTTAWA, ONTARIO, CANADA K1A 0R6**

Much of the data included in the field guides is unpublished elsewhere, and represents the most current syntheses of Quaternary events and activities in Canada. The complete set should be available in all university libraries in the northern United States, and certainly in all border state geological libraries.

One of the things that really created some serious problems for the Programme Committee, and also generated some disappointment for participants was the large number of "no shows"; papers which should have been given, but were not. We are trying to get to the bottom of this one and I shall be making further remarks on this subject in the Compte Rendu.

On the pleasant side, the introduction of Poster Sessions (not new in North America, but a first for INQUA), created many favourable comments, and the sessions were very well attended. Similarly, the technical exhibits established another first for INQUA, and seem to have been enjoyed by most. The social functions were an unqualified success. The ice-breaker started things off well, and the opening of the mammoth display at the National Museum was something to be remembered. The INQUA banquet (with the R.C.M.P. band in attendance) was another highlight. I shall be elaborating on these, and other points, when the Congress final report is published in early 1988.

Now onto some other things. For my sins as Secretary-General of INQUA I ended up falling into the position of President of CANQUA for the period 1987 - 1989. Anyone who is not a member of CANQUA, but wishes to participate, should contact either myself, or Ed Sado, Secretary-Treasurer, CANQUA, Ontario Geological Survey, Room 1120, 77 Grenville St., TORONTO, Ontario, Canada M7A 1W4. Membership dues for 1988 are \$20. (Canadian), and includes a subscription to four issues of *Geographie physique et Quaternaire*. (If the prospects of a French title frighten you to death, don't let it; the publication is excellent, and contains a large number of papers published in English)! If you get the chance, look at the special issue produced for INQUA. This single part, devoted to the growth and demise of the Laurentide Ice Sheet (with associated maps), is worth \$20. by itself!

Another item of interest to Quaternary workers in the United States, and which should also be available for university libraries, is a report prepared for the Canadian Geoscience Council. This provides an analysis of the status of the Quaternary Geosciences in Canada. The full title and reference is given below.

Bird, J.B., Christiansen, E.A., Dredge, L.A., Hillaire-Marcel, C., Kupsch, W.O., Locat, J., Morgan, A.V., Mudie, P.J., St. Onge, D.A., Slaymaker, O., and Stalker, A.M. 1987. **Quaternary Geosciences in Canada: Their status, National Need and Future Direction.** Geological Survey of Canada Paper 87-18.

The report is 41 pages, costs about \$4.50 U.S. (\$6. Canadian), and is available from the Canadian Publishing Centre, Supply and Services Canada, OTTAWA, Ontario, K1A 0S9, as Cat.# M44-87/18E.

On the home front research has slowed down, but Jerry Pilny is still progressing with the re-organisation of the modern Coleoptera collection at Waterloo (now pinning and labelling 25 - 30,000 specimens), and we have started work on two new sites in Indiana. A number of other sites are close to completion and I shall comment on these in later issues of the "Glaciogram".

Finally, one exciting piece of news is that the 1990 meeting of AMQUA will be the first joint meeting with CANQUA, and will be hosted at the University of Waterloo. Already there are some interesting and innovative events being lined up, and we look forward to seeing you two years down the line. The joint AMQUA/CANQUA will be the next best thing to missing the last INQUA, and will certainly be a lot cheaper than the next (XIII) INQUA in Beijing!

Ernest H. Muller, Geology, Syracuse University

Ten days in June with Parker Calkin in Alaska opened my eyes to possibilities for field work contrasting glacial responses of landfast and tidewater glaciers on opposite slopes of the aourh-western Kenai Peninsula (Harding Ice Field).

Ten days in July went to reexamination of map sheets bordering the Salamanca Re-entrant (Randolph to Limestone) and east of the upper Genesee Basin (Nunda to Angelica) as part of Don Cadwell's team effort toward republication of the Niagara Sheet (1:250,000). Deposits outside of the mapped Late Wisconsinan drift border still appear older and more modified than those to the north. Fortunately map units are to be lithologic and do not require correlation.

Don Pair and I labored mightily with unfamiliar desktop graphics programs last spring to prepare camera ready copy for a geologic guide to the Seaway Trail for the '87 tourist season but we are still waiting for it to be published. For information on several projects which Don has in the works, see his note elsewhere in this Glaciogram.

This year I seem to have fewer than usual new ideas of my own and to have benefitted more than usual from working with others of you in one way or another. I have welcomed opportunities to study glacial features of mutual interest in the field, and to learn from discussions with:

Ed Evenson, Hilton Johnson, Dan Lawson and Doug Stahmen and Don Pair, more about the internal workings of drumlins around the north end of Cayuga Trough;

John Shaw, Dave Sharpe, Dana Naldrett, Lyn Murray and Tim Fisher, about scour features in Jefferson County, produced by ice, slurry and water in the subglacial environment, and their possible relationship to drumlin origins;

Steve Winkley, about the subsurface Quaternary geology of Onondaga County;

Hank Mullins and Ed Hinchey, about geophysical evidence of lake bottom stratigraphy in the Finger Lakes basins;

Michael Wilson, Todd France and Don Cadwell, about gravimetric evidence of the bedrock profile across the presumed course of the Ancestral Allegheny River east of Randolph (Cattaraugus County).

With Duane Braun, Bill Brennan, and Dick Young, I am beginning preparations for the Friends of the Pleistocene trip next May 27-29 (Memorial Weekend) in the Genesee Valley, to be hosted on the campus at Geneseo. A first mailing, planned for January, will go to all who attended last year's 50th Anniversary Meeting in Northampton, and any other persons who express an interest

Donald Pair- Geology, Syracuse University

My field work and surficial mapping in 1986 and 1987 (in conjunction with dissertation research and NYS Geological Survey mapping) has centered on the northwestern Adirondack borderland. Of interest so far are a range of glacial erosion features from sichelwannen to trough (scour ?) valleys, a number of glaciolacustrine sites suitable for paleomag., and a series of ice marginal positions marking Late Wisconsin recession from northwestern New York. An abstract regarding the ice-marginal history has been submitted for the Portland GSA meeting.

Regional correlations and chronologic control are being furnished by the coring of 8 lakes on the northwestern Adirondack flank. This was done in 1986 in association with Thane Anderson (GSC). This work will also be integrated with paleomagnetic analyses of the glaciolacustrine deposits associated with ice retreat. Paleomagnetism is also being combined with the ecostratigraphically zoned marine sediments of the Champlain Sea (with Cyril Rodrigues, Univ. of Windsor) in hopes of tying the marine record into the paleomagnetic secular variation curves. Preliminary work from a site exposing both lacustrine and marine sediments at Sparrowhawk Point has already yielded promising paleomagnetic results.

An extensive ice margin has also been identified in the course of this summer's work. The Carthage-Harrisville moraine (northeast of Watertown) is traceable southwestward to Lake Ontario and a radiocarbon date of $12,500 \pm 140$ (GSC-4370) on organics from the bottom of a kettle south of Harrisville, provides an important minimum date for deglaciation of the northwestern Adirondack flank.

John P. Szabo- Geology, University of Akron

Things have been busy at Akron for the north-central meeting of GSA on April 21, 1988. Charlie Carter and I are running a field trip up to Lake Erie to examine lithofacies of the Ashtabula Till, and postglacial dunes and deltas which have been mapped previously as beach ridges. There appears to be some variability in mineralogy among various lithofacies of the Ashtabula Till and some dispersion of parameters toward the southeast. Additionally, I'm co-chairman of the Hydrogeology of Glacial Terrains Symposium. This has been one of the larger symposiums in the section over the past few years. I look forward to seeing many of you at the meeting this spring.

Stanley M. Totten- Geology, Hanover College, Indiana

Report of Investigations No. 139, Glacial Geology of Mahoning County, Ohio, by Stanley M. Totten and George W. White, will be published by the Ohio Geological Survey before the end of 1987. Publication of the Geauga County glacial report is scheduled for 1988.

Owen L. White and Edward V. Sado- Quaternary Geology Program,
Ontario Geological Survey

The Quaternary Geology Subsection of the Engineering and Terrain Geology Section is responsible for the conduct of scientific investigations on glacial and recent sediments throughout Ontario.

The mapping of Quaternary sediments in southern Ontario is continuing in increasing detail with greater information on sediments that occur at depth. Multi-disciplinary projects are becoming more common. Current projects involve:

Urban Geology Studies: Dr. P.F. Karrow, University of Waterloo will complete field mapping of the Brampton area this summer. A preliminary map for the western half of the Brampton area was released in March 1987 (Karrow, 1987). The eastern portion of the Brampton area is heavily urbanized and consequently extensive use of the Toronto Geotechnical Data Bank will be made to complete this portion. Dan Roumbanis is compiling geotechnical data for this purpose.

Ross Kelly and Dan Roumbanis will examine natural exposures and building excavations within the Toronto region for the purpose of improving stratigraphic and sedimentological control. Reference sections will be established to help with correlations using the geotechnical data currently in the data base.

Neotectonics: Several agencies have recently become interested in the neotectonic record in eastern Canada and have joined forces to form an informal group "Multi Agency Group for Neotectonics in Eastern Canada" (MAGNEC). The agencies include the Ontario Geological Survey, Ontario Hydro, Geological Survey of Canada, Ontario Centre for Remote Sensing and the Atomic Energy Control Board. The objective of this group is to devise ways and means of improving the assessment of seismic hazard at low levels of probability. There are five major components of interest:

1. earthquake studies
2. stress measurements
3. geological studies of soft sediment deformation
4. identification of "recently active faults"
- and 5. the identification of a structural framework.

This year the GMR will contribute to ongoing research in this area by undertaking structural geology mapping and study of Prince Edward County. Dr. Owen L. White is the project manager and will be assisted by a geologist yet to be assigned. The study area consists of predominantly shallow drift over Ordovician limestone bedrock containing numerous "pop-ups" of varying sizes. The "pop-up" features show well on airborne colour and thermal infrared imagery acquired through Vern Singhroy, Ontario Centre for Remote Sensing. These "pop-ups" intersect several raised shorelines of post-glacial lakes (Iroquois series) in the Lake Ontario basin. The relationships of the "pop-ups" to these shoreline features will be investigated as well as deformation features within the overburden.

Remote Sensing: Peter Barnett in co-operation with Vernon Singhroy, have commenced a field investigation and interpretation of airborne remotely sensed data that has been acquired early this spring for an area around Barrie, Ontario. This study is a continuation of their joint research into the usefulness of airborne remotely sensed data. Thermal and false colour infra-red and radar imageries have been used to delineate near surface buried aggregate deposits, following up on a previous study at Woodstock, Ontario (Singhroy and Barnett, 1984).

Compilation Maps: Ed Sado is completing a compilation map of the Quaternary geology of northern Ontario which will be display at the INQUA conference in Ottawa. Work on a similar map for southern Ontario has already begun.

Central Lake Erie Area: Peter Barnett is completing final revisions to a report on the Quaternary Geology and Shoreline Stratigraphy and Sedimentology of the Port Burwell to Long Point section along Lake Erie. This is also the topic of his doctoral thesis at the University of Waterloo under Dr. P.F. Karrow.

Dr. Alexis Dreimanis is also completing his final report for the Port Stanely area to the west.

International Union for Quaternary Research (INQUA)
Congress.

The Engineering and Terrain Geology Section is heavily involved in the upcoming INQUA Congress July-August 1987 in Ottawa. Staff are involved in leading four field trips throughout Ontario and have submitted abstracts for four papers and six posters for presentation during the congress. We are looking forward to meeting many Glaciogram readers at this important meeting.

Aggregate Resources Inventory Program at the
Ontario Geological Survey

by

S. Szoke, Supervisor
Aggregate Assessment Office
Engineering and Terrain Geology Section

The goal of the Aggregate Resources Inventory Program is to provide basic geological information on the location and nature of aggregate deposits for municipalities designated under the Pits and Quarries Controll Act, and other areas of the province where this kind of information is needed for orderly development. The objective is to ensure adequate resources of aggregates remain available for

future use, with the least amount of disturbance to the social and natural environment. To date over 100 Aggregate Resources Inventory Programs have been published covering municipalities both in southern and northern Ontario.

In order to provide geological information on the location and nature of the aggregate deposits in the Sudbury area and possibly to alleviate the alkali-aggregate reactivity problem occurring with the local aggregate, staff of the Aggregate Assessment Office initiated a detailed aggregate resources inventory west of Sudbury during the 1985/86 field season. A reports entitled "Aggregate Resources Inventory west of Sudbury, Regional Municipality of Sudbury and District of Sudbury" will be released in June 1987 identifying 22 deposits of sand and gravel which will be able to supply good quality aggregate for the above area. A number of these deposits should contain gravel which can be used to reduce the production cost of heavy duty concrete in the Sudbury area.

During the 1987/88 field season Aggregate Assessment office staff will carry out fieldwork on the Bruce Peninsula and along the Highway 69 transportation corridor between Parry Sound and the French River.

Richard A. Young - Geology, SUNY at Geneseo

Continuation of the exploratory drilling project near the head of Irondequoit Bay under the direction of William Kappel (USGS, Ithaca) has demonstrated the continuity of the Pinnacle Hills moraine beneath the modern valley floor at shallow depths. Six additional holes drilled this summer completed a relatively comprehensive cross-section view of the subsurface. Finalization of maps and reports under way will document the complex nature of the aquifer system in this valley. The concept of a much oversimplified "Irondogenesee" aquifer occupying much of this buried valley is invalid, as much of the valley fill consists of glacial till.

The complexity and stratigraphy of the portion of the valley system under the bay (as revealed by drill data) make it an ideal topic to cover during the "Friends" meeting this spring in the Genesee Valley.

I was pleased to be able to provide some modest support in the field revision of the Niagara Sheet of the Surficial Geologic Map of NY this past summer (as will no doubt be noted by other workers), and I look forward to the publication of the sheets currently nearing completion.

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