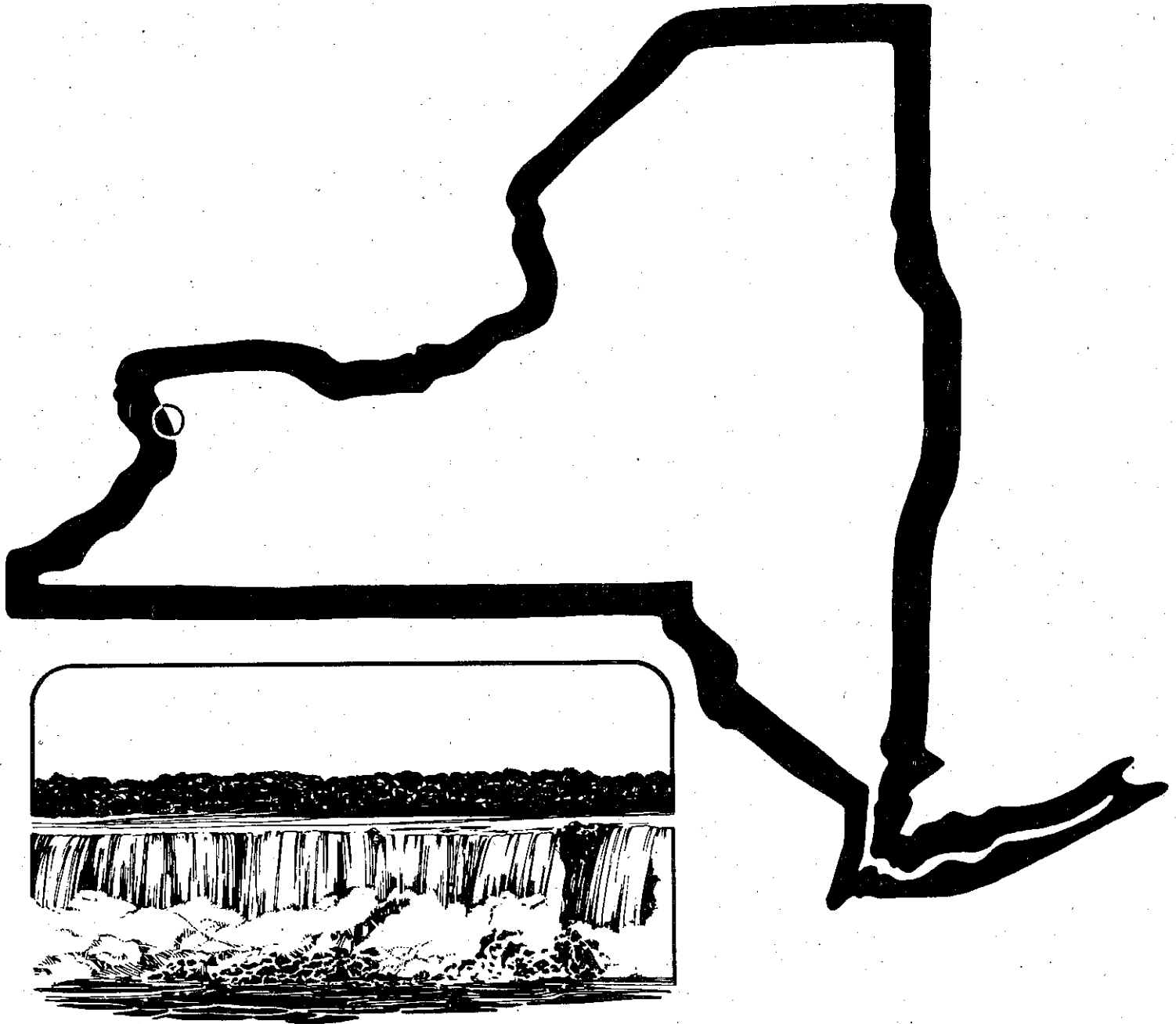


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# NEW YORK GLACIOGRAM



DEPARTMENT OF GEOLOGY

University at Buffalo  
Buffalo, New York 14260

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

Parker E. Calkin

Gregory C. Wiles

Cameron L. Baker---Ontario Geological Survey, Sudbury

This past summer, Dr. Peter Barnett began a multi year geological investigation of the Oak Ridges moraine, north of Lake Ontario. Other staff members, involved with the Quaternary, Drs. Andy Bajc, Tom Morris and Christine Kaszycki, were involved in drift exploration projects in various parts of northern Ontario.

The aggregate potential of several townships in Northumberland County was investigated. The areas mapped include the eastern end of the Oak Ridges moraine. Other areas of mineral aggregate mapping were undertaken, however, they are not close to New York State. Ross Kelly, a recent addition to our staff, is currently overseeing the activities of the aggregate group.

James E. Bugh, State University College at Cortland

I have worked on the Juneau Icefield and adjacent areas for the last two summers doing a study of the mass balance and using the Icefield as a proto-typical model for the Valley Heads glaciation of central New York. The 1991-92 accumulation on the Juneau Icefield was the greatest since records were begun in the late 1940's. However, on the continental side of the Icefield, discontinuous permafrost present into the 1970's has disappeared.

Thomas Dwyer, a SUNY Cortland student, has begun a project described below.

Holocene lake level fluctuations of Canandaigua Lake, NY, are being studied in the dry valley south of the lake. Four drill cores (avg. 10m) have revealed repeating sequences of fossiliferous lacustrine (marl), peat and clay-rich flood plain deposits. The sediment record suggests early Holocene lake level fluctuations followed by a continuous regression to a present-day low stand. Temporal data are currently being gathered by radiocarbon dating. Analyses of the cores for organic matter and carbonate content are currently being conducted for stratigraphic correlation. An analysis of the fossils found in the lacustrine deposits is being conducted to understand more fully the depositional environments.

Further investigation will involve coring in the neighboring Finger Lakes' dry valleys to determine if lake level fluctuations resulted from climatic change.

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Parker E. Calkin --- Dept. of Geology, University at Buffalo

Michael Liener (MA) student is still working on the glacial geology of the Rochester area. He is putting together the data from subsurface drilling logs and tying it to the surficial geology at 1:62,500 scale.

Steve Metzger reports that his MA study of the eskers of New York State is in first draft state and that I could be receiving a copy for review very soon. Both Steve and Michael are working full time jobs- a problem with many graduate students.

A paper titled "Pleistocene Stratigraphy of the Erie and Ontario Lake Bluffs in New York" will appear before year's end in Quaternary Coasts of the United States: Marine and Lacustrine Systems, SEPM Special Publication No. 48. This is the product of studies by Muller and students and Calkin and students that started in 1973 or so. Ernie and I are also cooperating on a paper concerned with the timing of glaciation in New York. (See Muller's contribution).

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Tom Davis---Department of Natural Sciences, Bentley College, Mass.

**Multiple Glaciations and Deglaciation of a Transect from Boston, Massachusetts, to the White Mountains, New Hampshire.**

P. Thompson Davis, Dept. of Natural Sciences, Bentley College, Waltham, MA 02154-4705, (617) 891-3479, Woodrow B. Thompson, Byron G. Stone, Robert M. Newton, and Brian Fowler. 2 days. Cost: \$130.

This two-day trip will examine drumlin exposures in northeastern Massachusetts that exhibit two tills separated by a weathering profile; glacial outwash features and eskers in central New Hampshire; and preglacial weathering profiles ("rottenstone"), glacial depositional features (till, erratics, moraines, alluvial fans, lake sediments), and erosional landforms (grooves, striations, potholes, roches moutonnees, cirques, U-shaped valleys, the "Old Man of the Mountains") in northern New Hampshire. Of particular interest will be: 1) the "two-till problem," 2) the relative sequence of continental and cirque glaciation in the White Mountains, and 3) the mode and chronology of continental deglaciation. The trip is dedicated in memory of Richard P. Goldthwait.

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David DeSimone---Department of Geology, Williams College

This summer past provided me with an eye-opening tour of alpine glaciation features in the San Juan Mountains of Colorado. Under the auspices of the Keck Foundation, specifically the Keck Geology Consortium established in 1987 to fund cooperative faculty-student research, I joined three Williams College honors thesis students along with seven additional students and three faculty members from other consortium colleges to begin field work which would lead to year-long thesis projects in glacial geology. As the easterner in the group, kames, eskers, and stagnant ice features started popping into view but, funny thing, they weren't supposed to be present in these mountains. The subsequent stagnant ice versus active ice discussions in the field between the participating faculty certainly got the students cranked up about their projects. Kelly MacGregor ('93), Scott McMillin ('93), and Eric Small ('93) had a fine time.

Closer to home, Eric worked on the deglaciation of Shaftsbury, VT, and plans an abstract for the GSA sectional meeting in Burlington next March. We have identified lower (900 ft and below) levels of Lake Bascom north of Bennington through an area Shilts (1966) recognized as having been a glacial lake based on his recon mapping. We have documented that to account for Lake Bascom being there, the Hoosic and Vermont Valley ice tongues must have retreated in a very non-contemporaneous way, and Eric has some specific suggestions as to why this occurred.

His work will require some revisions in my previous ice margin correlations through the area. Fortunately, what has recently appeared in print (DeSimone and Dethier, 1992, and DeSimone and Sedgwick, 1992, back-to-back articles in Northeastern Geology) is largely valid as a foundation for extending ice margins in the Hoosic River drainage basin northward into Eric's field area. He is attempting to "chase" these ice margins now and is giving Jay Fleisher's graphical method a test. Thesis time constraints (his Colorado work) have made this largely a spring semester project, though. We discovered organic material within an ice contact sequence. Unfortunately, our first C<sup>14</sup> date proved to be contaminated and we hope our second attempt at obtaining a sample will yield better results.

As one of the participants in this past spring's Friends trip, I would like to thank all of you who attended, especially for being patient with the flu virus which confiscated the strength from my voice that weekend. Those Williams Geology hats might become available on a limited basis. Send your order now!

Mapping for the town of Hancock, MA, has been completed and the hydrogeologic portion of the investigation is underway by Bob LaFleur and myself. We have quite an inventory of well logs on computer for eastern New York--mostly Rensselaer and Columbia counties. Do any of you have a similar inventory of logs for different parts of the state? If so, we should trade data. It would be great if the State Survey got all well information on diskettes for us!

Next field season is very open at this point. The recession has dampened town level interest in the hydrogeologic/surficial geologic work Bob LaFleur and I have been doing for the last four years, and no new projects are on the horizon. I am hoping to do some work for the USGS in either Vermont, New Hampshire, or out West.

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Aleksis Dreimanis---Department of Geology, University of Western Ontario

My time has been divided between several partly finished or temporarily shelved projects on the Late Pleistocene of Southwestern Ontario and several similar joint projects with Latvian geologists, that had resulted from field investigations in Latvia during the summer of 1991. Also, I am trying to assist the geological institutions in the Baltic countries with scientific journals and books.

Two papers dealing with the Pleistocene stratigraphy of S.W. Ontario and the adjoining parts of the U.S. have been published recently in the GSA Special Paper 270 on the Last Interglacial-Glacial Transition in North America:

- 1) Early Wisconsinan in the north-central part of the Lake Erie basin: a new interpretation (pp. 109-118), and
- 2) co-authored by S.R. Hicock: Sunnybrook drift in the Toronto area, Canada: re-investigation and re-interpretation (pp. 139-161)

Four papers are in press:

- 1) Transition from the Sangamon interglaciation to the Wisconsin glaciation along the southeastern margin of the Laurentide ice sheet, North America, in the Proceedings of the Mallorca NATO ARW, NATO ASI, Series I, vol. 3, pp. 225-2251 (Springer Verlag, Heidelberg),
- 2) Co-authored by S.R. Hicock: Deformation till in the Great Lakes region: implication for rapid flow along the south-central margin of the Laurentide Ice Sheet, in Canadian Jour. of Earth Sci., vol.29,
- 3) Downward injected till wedges and upward injected till dikes, in Festschrift dedicated to Jan Lundquist Geological Survey of Sweden, Uppsala),
- 4) Co-authored by O. Aboltins: Glacigenic deposits in Latvia, in Glacial deposits of North-East Europe (A.A. Balkema, Rotterdam).

I am presently working on two papers on unusual glacial flutes at present-day glaciers.

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FOR NEW YORK GLACIOGRAM FROM P. JAY FLEISHER

The Bering Glacier Research Group enjoyed a fifth successful field season by advancing several topics currently under investigation. With retreat of the Bering Glacier from Weeping Peat Island, the adjacent lakes expanded into a newly formed channel that separates the island from the ice. Here, subaqueous upwelling was observed at the ice margin and monitored by Gary Priscott, SUNY-Oneonta undergraduate. He is working up the data in preparation of a NE-GSA abstract. Two West Point cadets, Rob Eldred and James Densmore, were also involved in independent field-oriented projects and assisted Ernie Muller in the excavation of several trees buried by lacustrine sediments while in the growth position, broken 2 m above their base by a mechanism that did not interrupt sediment accumulation. It's an interesting problem because the wood (still fresh) shows signs of directional stress at the point of failure, yet the upper portions are missing.

Thanks to Col. Palmer Bailey (CRREL) and the students, a fifth-year surface profile was obtained across an interlobate moraine. Don Cadwell and I are currently analyzing the files that document gradual change related to vertical adjustment associated with englacial water movement and downwasting. The cumulative data (1988-1992) suggest that ice on one side of the moraine is periodically raised several meters by buoyant forces associated with englacial drainage of a seasonal supraglacial lake. Lifting creates surface tension that leads to the development of chaotic crevasses (unrelated to normal ice flow) that open in response to englacial drainage, then close by subsidence as the ice returns to its original position following water passage.

In addition, we were able to collect more bathymetric, turbidity and temperature data to define the physical setting of ice-contact Tsiu and Tsviat Lakes and confirm the occurrence of supercooled water. Column-style sediment traps, similar to those used in '90 and '91, were tested to determine the influence of trap design on the amount of sediment trapped. We found that, among other variables, length of collection column had a significant and direct influence on the amount of sediment collected by the trap. This helps place in perspective the validity of previously reported data that suggest rates so high as to be suspect. These data are now being compared with stratigraphic evidence obtained by the excavation of remnant silt deposits that accumulated during a known three-year period, thereby yielding net rates of annual accumulation.

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Jane L. Forsyth---Department of Geology, Bowling Green State University

Despite being retired (as of June 1, 1992; mandatory), life has been very busy for me with lectures to give, field trips to run, and conferences to contribute to (as well as pleasure trips to Colorado, Alaska, and New Zealand), all personally very rewarding but unproductive of research. Indeed, unfinished research materials are still lost in boxes in my new smaller office, and must be found before they can be finished.

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Paul F. Karrow---Department of Earth Sciences, University of Waterloo, Ontario

This is a catch-up since I last submitted in the spring of 1991. I did go to Manitoulin as planned but weather prevented the visit to Cockburn Island in May. We added two more profiles to the main Algonquin shoreline and went back in July and October to survey on Cockburn.

Another five rotasonic holes were drilled across the Waterloo moraine in 1991 and the regional government has drilled six more holes, the first phase of a continuing drilling program in the moraine area to define subsurface stratigraphy and clarify the distribution of aquifers. Two M.Sc. students, V. Paloschi and K. Rajakaruna are working on the core stratigraphy. Holes range up to 330 feet in depth and the lab has been congested for prolonged periods of core logging and sample analysis.

Ph.D. student Andy Bajc completed his thesis on the Ft. Frances area, dealing with the glacial stratigraphy and Lake Agassiz history. W. Buhay is continuing his detailed O-C isotope work on tree rings testing paleoclimatic interpretation over the last few centuries for his Ph.D. This is co-supervised with Tom Edwards.

Undergraduate students K. Holden and J. Thomas spent much of the summer of 1991 compiling well data for bedrock topography of areas new Lake Simcoe and Waterloo. J. Thomas returned part time in 1992 to complete five maps to be submitted to the Ontario Geological Survey for publication.

Open File reports on St. Joseph Island (near Sault Ste. Marie) and Brampton were released by O.G.S. in the fall of 1991. The final report on Stratford-Conestogo is promised for December 1992 from O.G.S.

In September 1991, the Quaternary Sciences Institute sponsored a symposium on Great Lakes archeology and paleoecology. The proceedings volume is expected to be published by the end of 1992. In June 1992, the International Associate for Great Lakes Research met at Waterloo. Good sessions were held on neotectonics, shoreline geomorphology, and sediment record.

I was away on sabbatical at Victoria, B.C. January to May, 1992, having chosen it as the only place in Canada one could plan on winter field work. With a warmer and drier winter than normal, I was happily able to pursue my interests in interglacial stratigraphy and the history of glaciomarine deposits - five more unfinished projects resulted. On my return to Waterloo I accepted the position of Interim Chair for six months (July - December, 1992) so have had little research time lately. I return to sabbatical January - June, 1993 and intend to write! I have managed brief forays to study a Lake Algonquin site near Georgian Bay brought to my attention by Lyman Chapman, and to sample a new exposure of fossiliferous interglacial gravel at the Woodbridge cut near Toronto. With Kevin Seymour (Royal Ontario Museum), Barry Miller (Kent State U.) and Barry Warner (UW) it should be possible to complete and submit a ms. on the Mill Creek site in Michigan early in 1993.

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Marie Morisawa---Department of Geology, SUNY at Binghamton

Although retired, I am still trying to get Ph.D. and M.A. students to finish up. Missing the students and to keep in shape, I am currently teaching a course in Natural Hazards. Am also working on a revision of my little STREAMS book which will be published by Oxford University Press next year. Am doing an ongoing monitoring of erosion on Choconut Creek for the Town of Vestal. As if that isn't enough to keep me out of mischief, editorial work for GEOMORPHOLOGY expands to fill all available time. The journal is thriving and Elsevier has offered reduced price subscriptions to all members of the Q G and G Division of the GSA.

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**ERNEST H. MULLER, Heroy Geology Lab, Syracuse University,**

Though retired, I continue to consider myself active in New York glacial geology. Field work got short shrift this past year, but several papers are in the mill, co-authored with Parker Calkin on New York drift stratigraphy and chronology; with Jess Craft and Les Sirkin on the Tahawus site in the central Adirondacks; with Don Pair on the northeastern Ontario lake plain; with Frank Getchell on a subsident area in Onondaga Valley.

With Jay Fleisher, Don Cadwell, Palmer Bailey, and three students, I benefitted once more from a few weeks in Alaska, studying late Holocene stratigraphy of the Bering Glacier foreplain with its buried forest beds.

Freedom from teaching enabled me to take part in field trips and professional meetings that would otherwise have been impossible. After having to cancel in previous years, I plan to attend the Southeastern Friends of the Pleistocene meeting in Virginia, which reminds me to spread the word that:

<p>Carol Hildreth and Richard Wright have agreed to host the 1993 reunion of the Northeastern Friends of the Pleistocene in examination of</p> <p><b>LATE WISCONSINAN DEGLACIATION STYLES IN PARTS OF THE CONTOOCOOK, SOUHEGAN AND PISCATAQUOAG BASINS NEW HAMPSHIRE.</b></p> <p>Tentative date: May 21-23, 1993</p>
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Once upon a time, most research in glacial geology was done by government surveys or by faculty members and graduate students. Contributors to the GLACIOGRAM have been, almost without exception, from academia.

Today, on the contrary, a large share of active investigation is carried out by consulting geologists engaged in environmental or engineering work. Much of the information gained in this manner never reaches the reservoir of generally available knowledge, or settles out prematurely. This is an unfortunate waste. With all due protection of client's interests, much of this useful information can, and should, be made public.

What can be done to draw more consulting geologists into the circle of readers and contributors to the GLACIOGRAM?

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**Donald Pair - Department of Geology, University of Dayton**

Research in the Adirondacks continued this summer with the generous support of the University of Dayton's Research Institute and the New York State Geological Survey. This fieldwork constituted the beginning of the 'next phase' of glacial research on the Adirondack Sheet. The month of August was spent refining and revising morphostratigraphic-based arm waving, studying a number of excellent exposures in the famed Adirondack eskers with student Geoff King, sampling of additional sites to refine the paleomagnetic curve for the region, and locating and sampling outcrops of possible subglacial calcite with Jim Street and Ernie Muller. The calcite work is part of Don Siegal's larger project looking at isotopic values of glacial meltwaters and was the topic of a jointly authored paper at the recent GSA meeting in Cincinnati.

In the Spring I'll have an opportunity to present a portion of the deglaciation story as part of the *Glacial, Lacustrine, and Marine Environments in the St. Lawrence and Champlain Lowlands* symposium associated with the NE-GSA meeting in Burlington. New York fieldwork this coming summer will continue to concentrate on the Adirondack flank with the goal to tie the deglaciation patterns into the overall eastern Great Lakes and New England chronologies. Research will also begin on a paleohydrology project examining a series of Holocene(?) fluvial terraces along the Stillwater River north of Dayton.

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Mrs. Bruce E. Raemsch---West Oneonta, N.Y.

The late Professor Bruce E. Raemsch of Hartwick College was a loyal colleague who worked to instill high academic standards among his students, the chairman of the anthropology department said Monday. "All I can say is good things about the man," said Mark S. Mosko, associate professor of anthropology at the Oneonta college.

Upon hearing the news that Raemsch had died, Hartwick College lowered flags to half-staff Monday, according to a college spokesman.

Raemsch, 70, died Friday, Jan. 3, at A.O Fox Memorial Hospital. Funeral services were to be held Monday.

Raemsch joined Hartwick College faculty in 1965 and retired in 1986 as a Professor Emeritus in anthropology. During his tenure at the Oneonta college he directed field work in archeology.

For a long time Raemsch was curator of Hartwick's Yager Museum, which houses more than 20,000 archaeological specimens, including the Willard E. Yager collection of artifacts from the Paleo-Indian to Late Woodlands periods. Raemsch did not want the remarkable collection overlooked, said Mosko.

"He struggled to keep local interest in the Yager collection alive," said Mosko.

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Richard A. Young---Department of Geological Sciences, SUNY at Geneseo

The preliminary information on a probable Middle Wisconsin section in the Genesee Valley reported at the Surficial Map Conference at Oneonta last Spring has been confirmed by a total of five Carbon 14 accelerator dates on three additional units in the range of 21,000 to >40,000 BP. One final date is still in the works for the oldest material in the section.

In addition to the age information in Livingston County, the samples from Monroe County (Rochester) indicate that sediments with similar ages are also present in the deep borings at Irondequoit Bay (briefly described in the 51st Friends of the Pleistocene Guidebook, 1988). It appears that equivalents of both the Port Talbot and Plum Point Interstadial events may be represented in the middle and lower Genesee Valley at depths varying from 30 feet to 355 feet below the present surface. In view of these findings and their distribution, it would seem prudent to reconsider the potential age or complexity of other thick sections of glacial sediments that have no absolute chronology. It seems reasonable that other evidence of these events must be present in central NY. Limited exposures of strata similar to those I have collected from would be virtually indistinguishable from typical Late Wisconsin deposits.

I restate my offer to provide samples from the >40,000 peat samples if anyone has an interest in looking at the material, other than pollen, which Les Sirkin has agreed to examine.

In conjunction with William Kappell of the USGS, Ithaca, I have begun a general study of the glacial and postglacial stratigraphy of the Montezuma Wildlife Refuge at the north end of Cayuga Lake. This project was given impetus by a desire to expand educational displays and by the recent construction of a new, mile-long canal to bring additional water from Cayuga Lake to the marsh. Additional test drilling indicates there is a surprisingly thin postglacial sequence over a large region above the first buried till unit. Given the geographic location and the known deglaciation events in this part of NY, there is surprisingly little outwash or "varved" lake clays in areas where postglacial fluvial reworking has been minimal.

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