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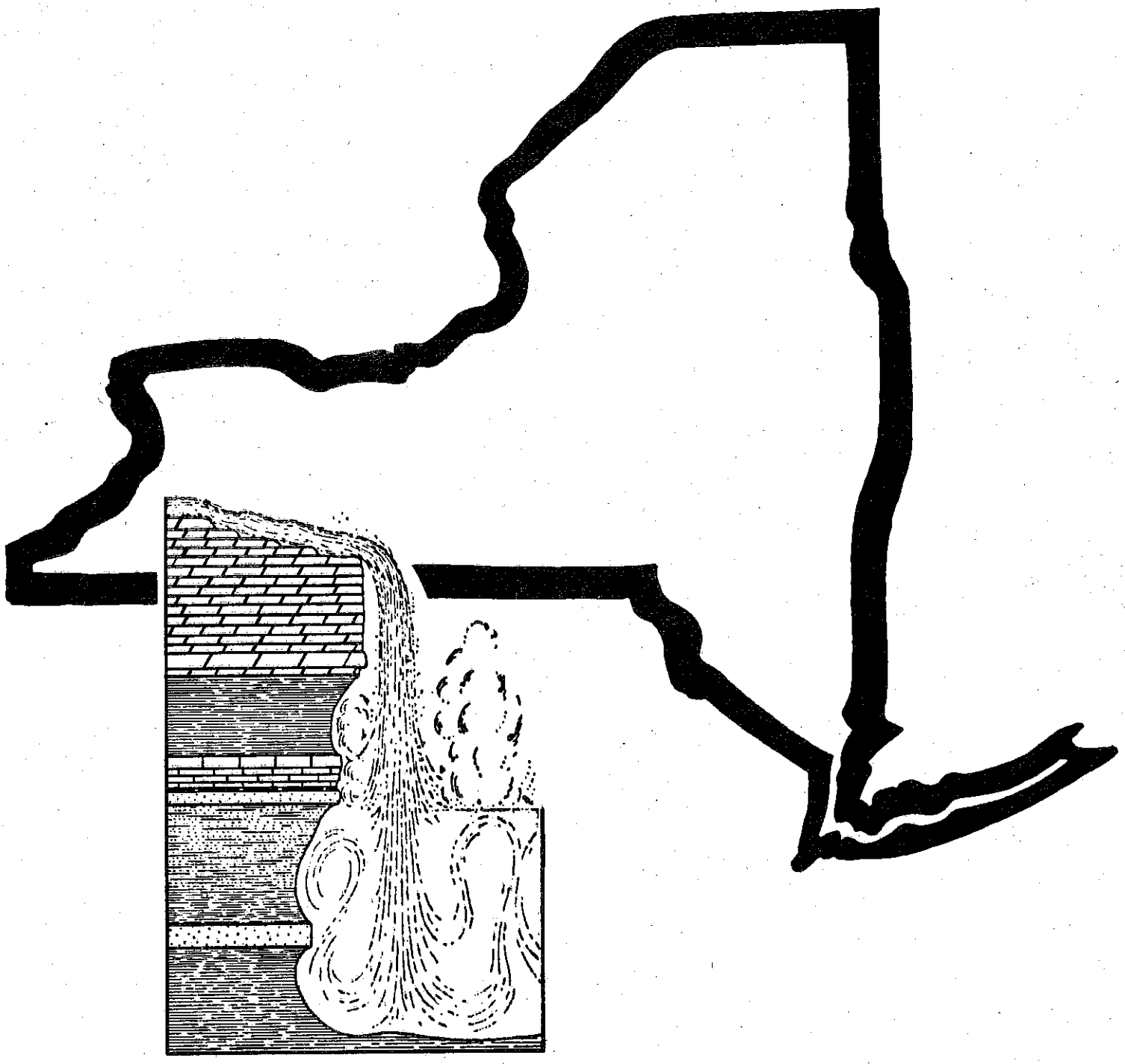
NEW YORK GLACIOGRAM



DEPARTMENT OF GEOLOGICAL SCIENCES

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EDITORIAL

There is a growing concern with the misuse of radiocarbon dates. These dates are being used, indiscriminantly by some people and injudiciously by others, as a club with which to make the scientific community aware of a point of view. The rationale seems to be that if you hit somebody frequently enough, or unexpectedly enough, your point of view - duly quantified will be accepted.

Perhaps the most innocuous misuse is to report an obviously bad date and select evidence to support it. No one takes Steve Avrill's post-9,125 years B.P. glaciation (Avrill, 1975) very seriously but it now stands in the serious scientific literature as a serious hypothesis.

A more flagrant misuse occurs in an abstract by Walt Newman where he states "A C-14 date of 13,470...was obtained...beneath the uppermost till in Queens County" (Newman, 1973). Lo and behold, when we went to hear Walt deliver his paper we learned that the "uppermost till" contained bricks! In actuality Walt inferred that the peat occurred below a till which cropped out elsewhere. Nonetheless, his "radiocarbon dated till" stands in the scientific literature as fact, rather than inference.

Perhaps a less serious misuse of dates has been practiced by George Crowl and Bill Sevon who have spent two years talking about a young age for deglaciation in eastern Pennsylvania without ever presenting their dates and data to their colleagues for scrutiny. Although this in itself does not constitute a misuse it led Milena Bucek to accept their interpretations and make the absolutely irresponsible statement "The Woodfordian Terminal Moraine (13,233 $\pm$ 1,618 B.P.)..." in her abstract at Syracuse (Bucek and Parizek, 1975). When I questioned Milena after her delivery she apologized and said that it was a mistake to include the date. Nonetheless, a statement of the age of the Terminal Moraine in Lycoming County, Pennsylvania now stands as fact in the professional literature.

What can we do about this growing problem; it appears to be restricted to abstracts? Abstracts have always been treated as legitimate professional literature but continued abuse and misuse will serve to make all abstracts suspect. Walt Newman is fond of saying "No one really knows the age..." which is true - as scientists we can only know logical validity rather than truth. However, the misuses I have pointed out may someday serve as "factual" premises with which a future geologist may build a strong logical argument.

Should we permit only full professors to publish radiocarbon dates?... only those with tenure?...only those with children? I suggest that those

persons responsible for reviewing abstracts start to recognize their responsibility to the rest of the scientific community. A little careful screening by knowledgable and dedicated people might have precluded the misuses cited here, which, in turn, might keep a valuable part of the scientific literature from being clubbed to death.

G. Gordon Connally

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; we agree with this suggestion.

Parker E. Calkin and G. Gordon Connally

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Parker E. Calkin

In case no one else lists them, the below conferences involved material important to New York Quaternary scientists: (all since January 1st)

17 Feb.	- Royal Society of Canada Conference on Till at Ottawa
6-7 March	- Geological Society of America at Syracuse
24-25 April	- Guelph Symposium on Mass-wasting
10-11 May	- Eastern Friends in eastern Pennsylvania
12-17 May	- Paleoecology Conference, NC section GSA, Geological Society of Canada all at or out of Waterloo
20-23 May	- Conference on Great Lakes Research at Albany
23-25 May	- Quaternary Stratigraphy Symposium at York University, Toronto

One of the most important papers given at the Great Lakes Conference was by John Bowlby, (Geological Sciences, Queens Univ.). He postulated the presence of fossil ice wedge casts in the Kingston Basin of eastern Lake Ontario and in turn, suggested a new position for the low water phase of Early L. Ontario which occurs totally within the existing deep eastern basin.

This summer I will try to write up the Gowanda Hospital Site (SEE GSA Abstracts of Syracuse Meetings) where Ernie and I have a good paleosol below wood older or equal to 51,600. I will also work on the dating of Niagara Falls recession via the shell dating (See GSA Abstracts of Syracuse Meeting). In addition I will work on the glacial stratigraphy of the south shore of Lake Ontario as part of my contribution to the Buffalo Sea Grant Program-covering all the Great Lakes beaches-cliffs in New York, and besides map on the Maine Coast with the Maine Survey.

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Donald R. Coates

"These past months since reporting in the fall Glaciogram have been very busy at the old homestead, with no promise of a letup in the months that lie ahead. Undoubtedly the biggest time-consumer is the new St. Lawrence Project (see enclosed press release). The point I wish to make is that glacial geologists can play very important roles in environmental and construction fields. They are in the perfect position to unite other disciplines which is certainly the exciting and intriguing part of the project. It is also my view that more and more money will become available through contracts and "mission-oriented" tasks, and less and less through grants. What is hoped, of course, is that the contract falls within the area of expertise and interest of the researcher, and that with a modicum of flexibility he can

respond and everyone becomes a winner. For many months I will be involved with Quaternary sediments in the St. Lawrence and am happy to have Jim Kirkland in charge of the field parties who are doing the reconnaissance field work.

Another glacial endeavor is the paper I will present at Bill Mahaney's symposium on Quaternary Stratigraphy in Toronto in late May 1975. It is a review of the Quaternary of New York and Pennsylvania and will be published in the proceeding volume. I wish to take this opportunity to thank the many friends of Glaciogram who responded to my request for the latest information in their sectors. The paper could not have been written without their support.

Additional glacial work continues with my consulting work with New York State Department of Transportation and the writing of source reports on sand and gravel operations, and work with the Attorney General on sand and gravel condemnation court cases.

So as not to neglect other areas of geomorphology I have been involved in such activities as:

1. Editing papers for publication in what will be a Geological Society of America Memoir entitled "Urban Geomorphology".

2. Writing an article on "Open Space" which will be part of a longer paper by seven authors which will be published in Geology.

3. Continuing liaison work with our investigators of the south Shore of Long Island. Our Sea Grant funding runs out this summer, but the data must now be assembled for distribution during the coming year."

4. Organization of our 1976 Symposium on "Geomorphology and Engineering".

NEW YORK STATE ATOMIC AND SPACE DEVELOPMENT AUTHORITY

FOR RELEASE

A.M. Tuesday, May 6, 1975

The New York State Atomic and Space Development Authority announced today that a team of sixteen geologists from the State University of New York at Binghamton have begun a geological study in the St. Lawrence region of New York State under an agreement between the Authority and SUNY-Binghamton.

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James G. Cline, Chairman of the Authority, noted that the study, entitled "Identification of Late Quaternary Deformation and Its Relation To Seismicity in the St. Lawrence River Valley," is an important new component in the geological research sponsored by the Authority as part of its program for New York State of research into electric power production compatible with environmental and social goals.

Professor Donald R. Coates, who will lead the SUNY-Binghamton team of researchers, noted that the project is based upon studies made in California in 1973 by the U.S. Geological Survey. "These studies," stated Professor Coates, "linked structures in certain clays, called "thixotropic" or "quick", with earthquake vibrations and identified some of these clays as products of certain known earthquakes. Although the St. Lawrence Valley region has similar clays, it has not experienced recent earthquakes of high intensity. A sufficient number of seismic events has occurred in the area, however, to require a better understanding of their past frequency."

In studying these clays the investigators hope to develop new criteria to distinguish sediment changes caused by earthquakes from those caused by the collapse of melting ice, landslides or pressure of overlying materials.

Dr. Warren L. Prell, the Authority's Director of Oceanographic and Geologic Programs explained that, "The calculation of a potential seismic event at a specific site is presently based on the historical record of earthquake magnitude and distribution. The historical record for New York State and the eastern United States represents less than 300 years of data. Records over this limited time span are not adequate for reliable statistical predictions of either earthquake magnitude or location.

"This research will include compilation of a complete bibliography of publications relating to the problem; geological reconnaissance of the region to locate areas containing lake and marine clay sediments; and field observation to identify clay structures caused by previous earthquake activity," concluded Dr. Prell.

SUNY-Binghamton was selected from four institutions which submitted proposals in response to a solicitation of proposals by the Authority. Geoscientists from SUNY-Binghamton participating in the study and their specialties are: Drs. Coates, geomorphology and glacial geology; Thomas Donnelly, mineralogy and neotectonics; Paul Enos, sedimentology; Iaakov Karcz, sedimentary structures and hydraulics; David Kersey, sedimentology; James T. Kirkland, glacial geology and air photo interpretation; Marie Morisawa, geomorphology and Quaternary tectonism; James Sorauf, sedimentology and stratigraphy; and Francis Wu, geophysics, with specialization in seismicity.

This project will involve more members of the SUNY-Binghamton Department of Geological Sciences than have joined in any other single research project, according to Dr. Coates.

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G. Gordon Connally

From May 9 to 11 the Friends of the Pleistocene met in the vicinity of Stroudsburg, Pennsylvania to examine the morphology, lithology, and stratigraphy of the Terminal Moraine and associated features in eastern Pennsylvania. The trip was hosted by George Crowl, Bill Sevon, and myself. George has been tracing the moraine across the State, Bill has been responsible for mapping several quadrangles for the Pennsylvania Geological Survey, and I have been mired down in the Saylorsburg and Bangor 7½' quadrangles for the past seven years working with Jack Epstein of U.S.G.S. I think that the Friends carried away with them an understanding of both the amount of work that has been going on in Pennsylvania and the number of very basic problems that we face in continuing our work and in erecting a local stratigraphic column.

One of the best features of the trip was the addition of a number of soil scientists, unearthed(?) by Bill and George, to the list of working Friends. The weathering profile in general, and the solum in particular, has long been used to differentiate tills and in many cases as a means of separating tills of differing ages. It has been used in Pennsylvania since the days of Frank Leverett to distinguish Illinoian tills (Sangamon weathering profile) from Wisconsinan tills. We are now using the soil profile to separate Woodfordian and pre-Woodfordian tills.

Two related problems became apparent during the trip. The first is that geologists appear to be describing a thinner solum than the soil scientists. The second is that a fragipan, or B_x horizon may be pedogenic and/or geologic in origin.

Most Pleistocene workers can recognize a color profile and a color B. A few are even adept at recognizing the texture B caused by illuviated clay and/or organic material. Geologists & Soil scientists appeared to agree on the base of the B_2 horizon at each stop. However, soil scientists consistently detect a fragipan, or B_x horizon below the easily recognizable B_2. The B_x is perhaps best described as a structure B. In my opinion, the nature of the fragipan is so variable, and the origins of the features that define it are

so much in doubt, that the traditional $A-B_2$ solum still appears to be the best criterion for general usage in determining relative age-all other factors being equal - that is available to geologists. I hope that future issues of The Glaciogram will serve as a forum for diverse opinions on this critical subject.

One very exciting item from the Bangor quadrangle is the rediscovery of the Kansan till. A few years ago I reported finding a deep red, highly weathered till beneath the Illinoian near Stockertown. I took some very bad sunset pictures of the exposure which was covered over the following day. Well, in cleaning up exposures for the Friends, I came across a new exposure of the Kansan till. Hopefully, I will get back to this unit late this summer after I return from Mexico.

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Thomas M. Cronin

Since this is my first contribution to the Glaciogram I would like to say that it is a pleasure to report my work to the Pleistocene geologists of the area. I suppose I add a different dimension to the present group of contributors sinc I am a "marine" paleontologist and I hope that I can contribute something worthwhile to the Pleistocene history of the area.

I am working on my Ph.D. at Harward and I am concerned with the paleoecology of the Champlain Sea, particularly the deposits of New York and Vermont. I am examining the growth and shell development of the molluscs Hiatella arctica, Macoma balthica and Portlandia arctica with emphasis on the varying environmental conditions which affect the Molluscan fauna. Any of you who have worked in areas of Champlain Sea deposition have surely seen these common species and you may wonder what there is to know about them (other than that shown by Goldring). As you may know lowered salinities in certain areas supposedly caused stunted growth of the Bivalves. I am looking at these "dwarfed" faunas to determine what other environmental factors (temperature, depth and substrate) caused the variable shell development. Salinity was not the only environmental factor which affected these Bivalves!

In reconstructing the paleoecology I have found that the long-neglected Foraminifera of the Champlain Sea are well known from Recent deposits and are good indicators of environmental conditions. Therefore I am presently examining the relative frequencies of various taxa in the Foram assemblages and correlating the results to the macrofaunal communities. If any of you or your students are interested in these problems, please don't hesitate to contact me.

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This summer I'll spend some time collecting along the St. Lawrence (Malone, Massena, Ogdensburg) and I'd appreciate hearing from anyone who has recently worked in the area and who may know of good localities. I'll also be in Quebec and Ontario to obtain samples for comparison with those I already have from the Champlain Valley.

Art Bloom's comments in the last Glaciogram are well taken. However geographical and political boundaries are not the only limitations which may inhibit the full potential of one's work. The scope of professional interest of each Quaternary geologist is limited. But to attain a complete understanding of the Quaternary all disciplines must contribute. I feel that the paleontology of Quaternary marine deposits has been neglected relative to other areas of Quaternary geology. The climatic and ecological data to be obtained from marine organisms is well worth the effort needed to study them. Therefore let's not let the limits of our professional interests become barriers to the total understanding of Quaternary history. To attain such a goal requires the communication among workers in different states and countries and in various scientific disciplines.

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Kernan W. Davis

On eastern Long Island, the Harbor Hill Moraine is the foundation material for proposed nuclear power plants. Concern has been raised that jetties, to be built in order to protect the cooling water intake from siltation, may have an adverse affect upon the adjacent shore front properties. Selection of the aquifer to be used as a source of potable- and boiler-water is another important consideration. The occurrance of the "Jacob Sand" is involved in the evaluation of site suitability. Hearings are now under way in Riverhead, New York so I am not at liberty to publicly express my ideas about these issues at this time, but shall, under oath at the hearings.

It may be said, however, that understanding the glacial geologic history of the area is necessary in order to properly plan or evaluate such engineering works.

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Edward B. Evenson

Nothing real important to report. Perhaps next year as I am going on sabbatical in Canada I will be at University of Western Ontario working with Alex Dreimanis on the origin of water-laid tills. Although our work

will be mainly on the Canadian side of Lake Erie we may visit the N.Y. shore or at least "generalize" our interpretations to that state!

We have made some revisions in stratigraphic nomenclature that will eventually effect N.Y.S. We (Farrand, Mickelson, Eschman, Maher) have suggested rejection of the term "Valderan" and are proposing the term "Greatlakean" as a replacement. The definition of the rock stratigraphic package will remain unchanged from that proposed by Frye et al. This should be ready for QR in a week or so. In addition Mickelson and I have a paper in "Geology" demonstrating that the two rivers till and the type Valders till are not equal. Thus the "story" continues.

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Rhodes W. Fairbridge

The 1976 Joint AAPG-SEPM meeting will be held in New Orleans, Louisiana, May 24-26. The subject of the SEPM Research Symposium is: "Paleoclimatic Indicators in Sediments." Convener Rhodes W. Fairbridge has requested that earth-scientists wishing to participate in this symposium should advise him as early as possible. This interesting and rapidly developing area of investigation of sedimentary sequences provides valuable criteria for interpreting earth history, especially within the context of plate tectonics. Papers presented will be considered for a special publication to honor the 50th Anniversary of the SEPM. If you are interested in contributing to this symposium please send title and extended outline of your paper by July 1, 1975, to Rhodes W. Fairbridge, Department of Geology, Columbia University, New York, New York 10027.

The British Quaternary Research Association is proposing to hold a symposium on "Quaternary Climates" (3rd January, 1976, in Manchester).

I write to ask if by chance you know of any possible American contributors who might be in the U.K. at this time. I should like to write to anyone who might be interested in giving a paper at the symposium.

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Jane L. Forsyth

I've had your invitation to contribute to the NEW YORK GLACIOGRAM for some time, and I guess I really don't have any news to contribute.

I've been working on the great flood of Lake Erie, the relation of vegetation to geologic substrates, the late-glacial history of Lake Erie, and the glacial geology of northwestern Ohio, but nothing new and exciting has emerged from all this at this time.

There is an announcement that might well be made with this issue. We have just decided to have another Geobotany meeting here at Bowling Green. We had the first such meeting here in 1968, and my cohort in paleobotany in the biology department, Bob Romans, suggested we do it again, which I am thoroughly in agreement with. The date is to be February 21, 1976, and it will be just a one-day affair, hopefully with a few invited papers and several offered papers. Some of the GLACIOGRAM receivers might like to know.

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Richard P. Goldthwait

Marcus Hoyer has rerun some of the oriented clay samples from Teays Valley in southeastern Ohio. Again most of the clay is magnetically reversed and therefore at least 700,000 years old. Again the clays reflect minerals from local rocks with glacier-fresh minerals added. Just where the glacier-blocking took place is not clear. Two of Mike Quinn's maps of the several drifts in Champaign and Ross Counties, with a pamphlet, are in stages of printing by Ohio Geological Survey. In the complicated ice-marginal array of drifts Boston Till (21,300 YBP) appears again in Paint Creek and is always very different from other Wisconsin tills; because of its low carbonates and loess cover it is leached of carbonated twice as deep however. It correlates well with A. Gooding's Fayette Drift. Steve Derksen and I will spend 1 to 3 months in Alaska again, near Brady Glacier, solving glacial expansions and old sea-level "highs".

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Walter S. Newman

With the assistance of six splendid undergraduates, we continued our boring program through the winter in the Hudson Highlands Gorge. In both the Con Hook and Manitou tidal marshes, peat and organic silt achieve a maximum depth of 19 meters below mean high water.

Arenaceous Foraminifera are found throughout the length of this stratum. In both marshes, sand was encountered at the -19 meter level. Pollen analyses disclosed the marsh bottomed in the Pine ("B") Pollen Zone. We have so far been unable to punch through the sand stratum below. Thanks to the cooperation of the New York State Department of Transportation we were able to secure samples from a bore just off the dock area of the Bear Mountain Interstate Park immediately south of the Bear Mountain Bridge. The bore extended from sea level to bedrock at 140 feet below the surface of the estuary. Jan Miller's pollen analyses finds the bore penetrated deep into the Boreal ("A") Pollen Zone. Very few Foraminifera were encountered in this bore and the organic silt was quite sandy in the lower levels of the hole. We next intend to bore the Constitution Island tidal marshes.

We have been impressed by the vast expanses of bare bedrock encountered near estuary level in the Highlands Gorge. Con Hook Island, for example, is almost devoid of erratics. The same is about true of the Manitou peninsula. Its almost as if the gorge has been swept clean of glacial drift.

Richie Pardi has been working hard since the beginning of April on our never quite completed Radiocarbon Lab and hopes to start turning out dates in June. We'll be counting liquid benzene.

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George W. White

Reports by George W. White on the glacial geology of Lake County, Ohio, and of Ashland County, each with a colored map 1/63,360, are now in press by the Geological Survey of Ohio. Similar reports and maps by White and Stanley M. Totten for Columbiana County, Ohio, and of Mahoning County by Totten and White, are also now in press. Field work by White and Totten has been completed for Ashtabula County, and the report and map will be submitted early in the summer. Stanley Totten will bring to conclusion field work for a map and report on Medina County for the Ohio Survey this summer. White and Totten will revise earlier maps and publications on Summit County (Akron) and give some attention to revision of drift boundaries in Portage County, particularly the Lavery Till.

The completion of these maps now make it possible for the compilation by White of a 1/250,000 map and monographic report of the glaciated Plateau in northeastern Ohio.

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For the Ashtabula County report Stanley Totten has mapped the early lake beach deposits in detail and precision based on field work and the new very detailed soil maps of Ashabula County, the 1/24,000 topographic maps with five-foot contour interval, and new aerial photos. The varying kame elements in the great moraine into which the earliest lake waters cut provided varying character and amount of beach and other lacustrine deposits. Prediction of favorable locations for commercial gravel may be possible.

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Richard A. Young

Initial funding has been received to begin a project which will utilize ERTS and SKYLAB photography as an aid for delineating and differentiating glacial deposits in the Genesee Valley region. False color images will be produced by direct photographic processing and use of computer compatible tapes. The resulting images will be utilized in conjunction with standard aerial photography and field mapping studies

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