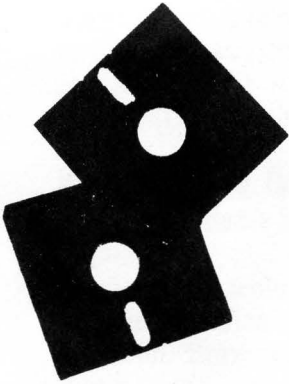


TOOLS for TOMORROW

Archaeological Methods in the 21st Century



**Ontario Archaeological Society
18th Annual Symposium
October 25, 26, and 27, 1991
Skyline Hotel, Ottawa**



Welcome to the 18th Annual Symposium of the Ontario Archaeological Society hosted this year by the Ottawa Chapter

**Our theme is technology and its application in the field
of archaeology.**

***Are archaeologists still working with technologies better
suited to the cultures they study?***

This years' speakers are evidence to the contrary. Archaeologists and specialists in various technologies will share with us the benefits and trials of using specific technologies in many areas of the archaeological process, from remote sensing to computer mapping, dating to conservation. The 21st Century will be upon us very soon and the field of archaeology will not be left in the past! Be sure to visit our display room where you will find additional information relating to the theme of Technology.

***What good are these wonderful new applications if most
researchers don't have access to them?***

A panel of archaeologists and suppliers of technology will address this most significant question in an open discussion on Saturday afternoon. Bring your ideas and concerns and help to resolve the access issue.

What is a future without a past?

The annual Banquet this year honours the Founding Members of the Ottawa Chapter on the occasion of our 20th Anniversary. We hope you'll join the celebration, share the "Founders' Cake" and enjoy a few anecdotes and images from the Chapter's history.

***The Ottawa Chapter proudly invites you to discover the
Tools for Tomorrow!***



Tools for Tomorrow

Archaeological Methods in the 21st Century

Saturday October 26th, 1991

8:00 - 9:00 Registration

9:00 *Ottawa Chapter President's Welcome*
Helen Armstrong

Morning Program Session Chair
Peggy Smyth

9:05 - 9:30 *Computer Systems and Archaeology*
Eric Sharp

**9:30 - 10:00 *Dendrochronology as an Absolute Dating
Technique for Upstate New York***
Christina B. Reith

**10:00 - 10:30 *Developments in Archaeological Conservation:
The Role of Scientific Research***
Judith A. Logan

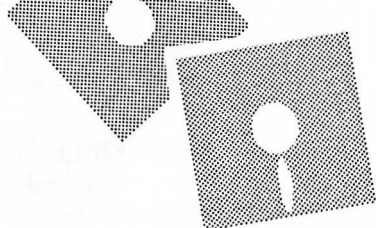
10:30 - 10:45 COFFEE BREAK

**10:45 - 11:15 *Historic Ojibway Cemeteries on Beausoleil Island:
Broadening our Perspectives***
Brian D. Ross

**11:15 - 11:45 *Mapping Archaeological Distributions by
Computer***
Dr. Morgan Tamplin

11:45 - 12:15 *Aerial Photogrammetry for Archaeologists*
Stephen M. Perkins

12:15 - 1:15 LUNCH



1:15 - 1:30 Door Prizes

Afternoon Session Chair
Dr. Ian Dyck

1:30 - 2:00 *Elements of Archaeology:
A Chemical Analysis of Northern Ceramics*
**Dr. Carole Stimmell, Dr. Jean-Luc Pilon,
Dr. R.G.V. Hancock**

2:00 - 2:30 *Geophysical Surveys on Archaeological Sites
in Ontario*
L. A. Pavlish

2:30 - 2:45 Coffee Break

2:45 - 4:45 *Panel Discussion on
ACCESS to TECHNOLOGY*
Moderator: Phill Wright
Panelists: Barry Mitchell
Larry Pavlish
Eric Sharp
Andrew Thriscutt
Ken Vrana
Ron Williamson

**Please be sure to visit our display room
during lunch and coffee breaks**

6:30 The Founders' Banquet

Recent Research in Ontario

Sunday October 27th, 1991

**8:30 - 10:00 Ontario Archaeological Society
Annual Meeting**

Morning Session Chair
Clive Carruthers

**10:00 - 10:30 *1991 Excavations at Hunter's Point*
James Molnar**

**10:30 - 11:00 *Trade in the 16th Century on the St. Lawrence:
Anomaly and Misconception*
Dr. J.F. Pendergast**

**11:00 - 11:30 *Archaeological Analysis of Complex
Archaic/Woodland Multi-component Sites
using Micro-computer based
Statistical Procedures*
Gordon D. Watson**

**11:30 - 12:00 *An Analysis of the Ceramic Assemblage from
Operation 2, Inge-va*
Dena Doroszenko and Richard Gerrard**

**12:00 *Closing Remarks*
Peggy Smyth**

ABSTRACTS - Tools for Tomorrow



Computer Systems and Archaeology

Presented by:

**Eric Sharp, Archaeological Data Coordinator,
Canadian Parks Service, Archaeological Research Branch**

With the increased availability of high tech equipment, new methods are being offered for maximizing archaeological information. This paper will discuss the application of Dossier (the Canadian Parks Service's archaeological data base), Computer Assisted Design and Drafting (CADD), Remote Sensing (including side scan sonar), and Global Position Systems, and how they relate to archaeology.

→ Auto Yacht - San Juan recon. struc

Dendrochronology as an Absolute Dating Technique for Upstate New York

Presented by:

**Christina B. Rieth, SUNY-Albany,
Department of Anthropology**

Schoharie Valley

Recent evidence indicates that dendrochronology may serve as a viable technique for absolutely dating both historical structures and artifacts in the Northeast. Douglas' skeleton plot method combined with statistical correlation tables and absolute width measurements provide an objective means of measuring variation in ring width sequences. Tree-ring sequences, as recorded from cores extracted from pine (*Pinus* sp.) and oak (*Quercus* sp.) trees, have been successfully cross-identified to create the initial stage in the formulation of a "master chronology" for the area. Barns

- relationship of narrow - wide rings
- sensitive ring series are NB where trees are stressed

Developments in Archaeological Conservation: The Role of Scientific Research

Presented by:

**Judith A. Logan, Chief, Archaeology and Textiles Division,
Canadian Conservation Institute,
Department of Communications**

Co-authored by:

**Gregory S. Young, Charlotte L. Newton, David W. Grattan,
Ian N.M. Wainwright**

Conservation has become increasingly dependent on advances in analytical science in order to solve problems related to treatment development and artifact examination. The area of archaeological conservation has benefitted greatly by the integration of the work of the conservators and scientists to devise treatments that will preserve objects for future study with the least possible alteration to their chemical make-up. This paper will describe four areas of research at the Canadian Conservation Institute that have either already had a demonstrable beneficial effect on the conservation of artifacts from Canadian sites, or show interesting potential for application in archaeology. These are:

- research in the area of skin and leather treatment;
- experiments with a laser scanner to accurately record details of three-dimensional objects;
- the use of Parylene as a consolidant for extremely fragile objects;
- digital image processing to enhance rock art images.

not available

coating as vapour

In order to illustrate the potential application of these developments, four projects will be discussed:

- the conservation of a parchment document written by William Edward Parry during his first voyage searching for the Northwest Passage;
- the recording of the very fragile, corroded surface of a lead plaque found in the grave of Father Jean de Brébeuf;
- CCI's work on the consolidation of archaeological textiles;
- image enhancement of a rock painting at Mazinaw Lake, Bon Echo Provincial Park.

see ORACA newsletter for paper on CCI techniques used to record rock art

Historic Ojibway Cemeteries on Beausoleil Island: Broadening our Perspectives

Presented by:

Brian D. Ross, Project Archaeologist, National Parks and Native Sites Programme, Canadian Parks Service, Ontario Region

Two historic Ojibway cemeteries on Beausoleil Island, in Georgian Bay Islands National Park, were investigated and documented this summer. One cemetery has been well maintained; while the other had been completely forgotten until its re-discovery in 1990. The intent of this project was to gather as much information as possible on the true extent and orientation of these cemeteries without any site intrusion. Each cemetery was first mapped using standard surveying techniques and then mapped by remote sensing, using a Geonic's EM-38 ground conductivity meter. A comparison between the two mapping techniques indicates that such remote sensing is a valuable predictive tool in locating archaeological resources.

Mapping Archaeological Distributions by Computer

Presented by:

**Dr. Morgan Tamplin, Department of Anthropology,
Trent University**

Co-authored by:

**James Britton, Cartographic Coordinator,
Sir Sandford Fleming College**

We have produced a series of computer programmes which interactively map the distribution of archaeological data according to criteria supplied by the user. Our system started as a spin-off of a project to produce a comprehensive catalogue of bird remains from archaeological sites in Ontario by Doug Sadler and Howard Savage. Their data include over 200 possible taxa from about 200 sites and the creation of distribution maps would have been both time-consuming and prohibitively expensive. Moreover,

manually drawn maps inhibit asking questions about combinations of species or archaeological cultures. We needed to put the spatial data (site locations) and archaeological data (bird taxa) into a Geographical Information System (GIS) which could display maps on a monitor screen showing the distribution of any group of sites in the area according to the spatial, species and cultural criteria selected. The programme is general enough that any region or archaeological data could be substituted for Ontario birds.

Commercial GIS packages are beyond the means of most archaeologists. They require expensive hardware and are themselves among the most expensive programmes to purchase. Both data and output are usually locked in to the chosen configuration. The system which has been developed can run on a minimal IBM-PC computer with EGA graphics capability and uses standard data files derived from common programmes such as dBase or Lotus. After selecting the desired distribution maps on the screen, the investigator can produce hard copy versions on a laser printer.

Although our original goal was simply the production of maps for publication, we encountered a number of interesting technical problems during implementation. The design of the system also raised fundamental questions about the nature of archaeological data and what we want to do with it. The programme will be demonstrated during the session.

Aerial Photogrammetry for Archaeologists

Presented by:

Stephen M. Perkins, Toronto, Ontario

An introduction of photogrammetry and its associated products will lead into a brief technical examination of map production. The major products examined in this paper will be planimetric maps, photomaps and mosaics produced from near-vertical photography. Terrestrial and close-range photogrammetry as well as remote sensing will be briefly discussed.

With this background into photogrammetry, this paper will discuss site specific applications and products. Some topics include; site survey control, feature interpretation, ground slope analysis, digital database construction, hard copy map production, and photo mosaics. Each item will be discussed with specific related examples.

With both a general examination into photogrammetry and a close look at products, this discussion should help archaeologists decide on the benefits and drawbacks of the use of aerial photogrammetry in their work.

Elements of Archaeology: A Chemical Analysis of Northern Ceramics

Presented by:

**Dr. Carole Stimmell, Archaeological Resource Centre,
Toronto Board of Education**

Co-authored by:

**Dr. Jean-Luc Pilon, Archaeological Survey of Canada,
Canadian Museum of Civilization**

**Dr. R. G. V. Hancock, SLOWPOKE Facility, University of
Toronto**

Neutron Activation Analysis (INAA) can provide important data to identify sources of ceramic raw materials and changes in prehistoric pottery technology. In this paper, INAA of ten major,

minor and trace elements is used to characterize ceramics from a number of Northern Ontario and Manitoba Woodland period sites. This technique, in conjunction with other methods of physical examination, has yielded valuable information on ceramic materials from the Northern Boreal forest.

The precise data on chemical composition gained from INAA has allowed the authors to recognize ware groups in otherwise unsorted assemblages. Neutron Activation can also help identify regional patterns of source materials. When used in combination with analysis of local resource, regional trade and communications, networks can be proposed. Finally these methods can distinguish technological changes in regional ceramic traditions.

Geophysical Surveys on Archaeological Sites in Ontario

Presented by:

**L. A. Pavlish, Archaeometry Laboratory,
Department of Physics and Department of Anthropology,
University of Toronto**

Co-authored by:

R. M. Farquhar, Department of Physics, University of Toronto

The use of geophysical equipment to measure magnetic and electrical contrast in sediments encapsulating archaeological sites found in Ontario has not been extensive. There are a variety of reasons for this situation occurring including the relatively low success rate of the surveys, the high costs, and difficulties associated with obtaining qualified personnel to conduct the survey and reduce and interpret the data with an archaeological perspective. The kinds of targets that one could reasonably expect to identify with current equipment are discussed with respect to both prehistoric and historic archaeological sites.

ABSTRACTS - Recent Research

1991 Excavations at Hunters Point

Presented by:

James Molnar, University at Albany, SUNY

Hunter's Point is a contact period Odawa camp on the Georgian Bay side of the Bruce Peninsula. The site is located on an undisturbed cobble beach strand and provides the opportunity to examine the spatial patterning of past behaviour at a very detailed level. Findings and preliminary interpretations of the 1991 season of work are presented including discussions of pit features, activity areas and a possible structure.

Trade in the 16th Century on the St. Lawrence River: Anomaly and Misconception

Presented by:

Dr. J. F. Pendergast

This paper examines the absence of trade goods on the 16th century archaeological sites on the St. Lawrence River relative to the numerous European journeys to this region, and to the misconception that the Susquahannock Iroquois were trading with the French on the St. Lawrence River and at Brest on the Strait of Belle Isle prior to 1600.

Archaeological Analysis of Complex Archaic/Woodland Multi-Component Sites using Micro-computer Based Statistical Procedures

Presented by:

**Gordon D. Watson, Research Associate in Anthropology,
Trent University**

The recent availability of advanced statistical programmes for use with more powerful micro-computers makes it possible to undertake microcomputer analysis which has previously only been possible using a mainframe computer. In addition, the application of Accelerator Mass Spectrometry to the determination of C14 dates with an accuracy of about +/- 30 years on milligram sized charcoal samples makes the dating of different levels in a shallow multi-component site much more feasible. AMS dating has also been applied to the dating of charred food deposits on individual ceramic vessels. This procedure eliminates the usual uncertainty about the association between ceramic vessels and radiocarbon dates from nearby hearths. Present and future applications of these techniques to the analysis of archaeological data from two excavated multi-component sites of the Rideau Lakes area will be discussed.

An Analysis of the Ceramic Assemblage from Operation 2, Inge-va, Perth, Ontario

Presented by:

**Dena Doroszenko, Archaeology Co-ordinator,
Ontario Heritage Foundation**

and

Richard Gerrard

Toronto Historical Board

From 1987 through 1989, archaeological excavations have been conducted at the Inge-va estate in Perth, Ontario under the auspices of the Ontario Heritage Foundation. Built in 1823, Inge-va represents one of the finest Neo-Classical Georgian

since its construction, the archaeological work has focused on the Radenhurst family and in particular, the excavation of a pit deposit which uncovered over 15,000 artifacts in 1988. The large number of ceramic vessels recovered from this discrete feature and the high degree of vessel completeness allowed several analytical and cultural questions to be addressed. Primary data analysis was accomplished with a 4GL relational database, ORACLE. A detailed stratigraphic analysis using a Harris matrix allowed the deposit to be organized into discrete depositional events. These were used as the basis for exploring post-depositional disturbance to the ceramic assemblage as a first step towards developing socio-economic and behavioral inferences.

Access to Technology - Panel Discussion

What technology is available that is of benefit to archaeology?

How does one get access to the appropriate technology or its results?

* ***Moderator:***

**Phill Wright
Mount McGovern Co, Ltd.**

* ***Panellists:***

Barry Mitchell, Ottawa Chapter

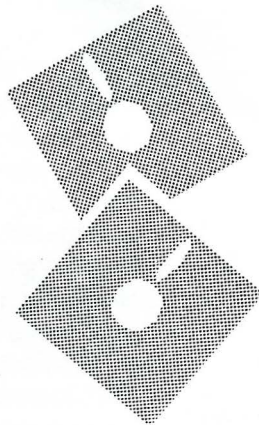
**Larry Pavlish, Archaeometry Laboratory,
University of Toronto**

**Eric Sharp, Archaeological Research Branch,
Canadian Parks Service**

Andrew Thriscutt, Intera Information Technologies

Ken Vrana, Michigan Sea Grant Extension

Ron Williamson, Archeological Services Inc.



After an introduction by the moderator, the panellists will briefly address the issues from their perspectives as facilitators, suppliers or consumers of archaeologically related technology.

The discussion will be open to the floor after the response of each panellist.

Thanks!

On behalf of the OAS and the Ottawa Chapter the Symposium Committee would like to thank the following individuals and institutions for their generous support of this conference:

**The Association of Professional Archaeologists
(Ontario)**

BALDWIN
audio-visual

The Canadian Museum of Civilization, Directorate

**The Canadian Museum of Civilization,
Archaeological Survey of Canada**

**Canadian Parks Service,
Department of the Environment**

Canada's Capital Visitors and Convention Bureau

The City of Ottawa

**The Department of Communications,
Access to Archaeology**

The Ontario Heritage Foundation

Marian Clark

**The Ontario Ministry of Culture and Communications,
Field Services Branch**

Tilley Endurables

...and the many Ottawa Chapter volunteers!

The Founders' Banquet

Saturday October 26th,
Top of the Hill, Skyline Hotel

Special Guests:

The Founding Members of the Ottawa Chapter

6:30 - Cash Bar
with an on-going Slide Show from
Chapter Archives

7:30

Dinner

8:30

Presentation Of Awards

J. Norman Emerson Silver Medal
to Gordon D. Watson B.A. 1940, M.A. 1980

Archaeological Heritage Conservation Award
to the Poole Family

25 year pins
to Charles Garrad, Conrad E. Heidenreich,
and Stanley Wortner

Ottawa Chapter 20th Anniversary Celebration

Introduction of the Founding Members
Comments by Founding members
Founders' Cake and Coffee

9:30 - Dance

Ottawa **20**_{YRS}
